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International Transfer of Core Competencies in Service Sector: A Case Study of Office Depot Operations in Japan

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Topic Area: International Business- Strategy
Abstract

This research looks at Office Depot’s experience in the attempts to transfer a set of core competencies developed in the U.S. to its Japan operations. While applying the hybridization process model developed from studies focusing on production activities to the analysis of the case study, some limitation of the model in its suitability to transferring service business core competencies is suggested. This research found that hybridization process model tacitly suggests learning by doing leading to initiation of constant incremental improvements, which can be a constraint in a scenario where quick innovation is required. The author tentatively suggests combining hybridization model with the concept of value innovation as a model of transferring service business core competencies into Japan and even other cross-border transfers. Again, this research suggests the need for further research re-examining the suitability of hybridization process model to understanding and even practical application to planning and execution of international transfer of operational core competencies in the service sector.
Introduction

When companies move their operations abroad through foreign direct investment (FDI), they often select for relocation operations what they consider as their core competitive competency (Dunning, 1997). The core competencies selected by a company are normally developed within a specific socio-cultural, institutional and economic environment. As such, successful launch and profitable sustenance of corporate operations while leveraging the core competencies in a new business environment, is by and large, dependent on synergy between investing company’s competitive core competencies and host country’s socio-cultural, institutional and economic environment. Consequently, asymmetry between two countries’ wider business environment raises the pertinent question of to what extent competitive core competence of the investing foreign company can leveraged without some adaptation to ensure success in the host country.

In the 1980s and even some part of the 1990s, perceived and real differences between Japanese socio-cultural, institutional and economic environment and that of the countries experiencing a wave of Japanese foreign direct investment (FDI) led to a plethora of academic research. At first, the main focus of the research was to determine the possibility of transferring distinct competitive core competence of Japanese companies in foreign countries. Later, the focus shifted to analysis and attempts at building models explaining the process of transferring Japanese production and management practices like quality control and just-in-time production systems amongst many other distinct Japanese production and organizational practices. What finally emerged from some of the most notable research efforts was the necessity of adapting business practices in host countries (Abo, 1994; Adler, 1999; Babson, 1998; Bonazzi, 1996; Brannen, Liker and Fruin, 1999; Kimbara, 1991; Kenny, 1999; Itagaki, 1997). Though these past researches on international operations of Japanese companies almost exclusively focused on manufacturing operations, little attempt has been made to apply lessons learned to the process of international transfer of operations in service sector, not just outside but also within Japan. That is even more accurate when a foreign company’s FDI operations are based on FDI to Japan. The underlying rationale is that corporate practices and general organizational systems are predominantly a function of external environment (Adrich and Pfeffer: 1976, Lawrence and Lorsch, 1967). As such, environmental factors prompting the development of core competencies determining competitiveness may not be present in the new environment in which FDI takes place (Pil, Frits, and MacDuffie: 1999).

Compared to other industrial nations and other Asian economies Japan receives significantly little FDI (Eaton and Tamura, 1994). However in recent years, there has been an increase in FDI flows into Japan. In 2000 fiscal year, the level of FDI into Japan stood at $28.3 billion, a five-fold increase over the levels in 1997 (JETRO 2000). Most of the investments are in the non-manufacturing sector, finance and banking taking the largest share, while the rest goes to general service businesses including retail. Therefore,
it can be predicted that a large part of any future FDI flows into Japan will be in the service sector. The entrance into the Japanese retail market by the U.S. giant retailer Wal-Mart could be the beginning of a trend marked by relatively significant foreign participation in the Japanese service sector. Currently Wal-Mart owns 37.7% of Seiyu, and has the option of increasing the ownership to 66.7% by 2007 (Business —FT.com, April 22, 2003).

Table 1: Japan FDI Inflows by Industrial Sector

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<th>Fiscal Year 1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
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<tr>
<td>Manufacturing</td>
<td>2500</td>
<td>2700</td>
<td>8000</td>
<td>7300</td>
</tr>
<tr>
<td>Non-Manufacturing</td>
<td>3000</td>
<td>7500</td>
<td>12000</td>
<td>21000</td>
</tr>
<tr>
<td>Total</td>
<td>5500</td>
<td>10200</td>
<td>20000</td>
<td>28300</td>
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Source: JETRO

Increased FDI in the Japanese service sector necessitates a consideration of the need for building business adaptation models suitable for service sector. That is just as much as a plethora of studies into Japanese FDI led to hybridization or recontextualization models upon which international transfer of production operations can be conceptualized and even be practiced. There are two justifications for sounding the need for adaptation models specific to international operations of service sector business in Japan. First, is that unlike manufacturing operations, service sector businesses must deal and even directly shift through a myriad of tacit aspects of the host country’s culture. Such tacit aspects are as in behavioural aspects defining customer behaviour. Secondly, it is a known fact that companies are always eager to transfer their aspects of their core competence that are already tested and have been known to efficiently work in other markets. However, successful operations in a number of foreign countries can never be a guarantee to success in all foreign markets. For instance Taco Bell failed miserably in their attempt to gain a foothold in Japan for their restaurant chain. The case of Taco Bell market entry failure largely attributed to inability to adapt its service and products in Japan is even more puzzling given that Taco Bell itself is a successful adaptation of Mexican food into the U.S.

Office Depot is one of the service businesses that have experienced dramatic growth and expansion both in the U.S. and internationally. However, unlike Office Depot’s other international operations, the Japan operations have been struggling ever since inception. An analysis of Office Depot operations in Japan could provide invaluable lessons regarding successful transfer of core competencies in service sector business in
foreign market environment. The industrial organization of Japan has been cited as an explaining factor to the low level of FDI inflows to Japan. The industrial structure and accompanying modes of transacting business are seen as impediments (Encarnation and Mason, 1990; Encarnation, 1992; Mason, 1992; Ito, 1991, and 1996; Lawrence, 1991 and 1993; Ito and Maruyama, 1992; and Weinstein, 1996). Successful transfer of core competence as such hinges on how well a foreign company can quickly fine-tune its core competence as an ongoing and situated learning process. Obviously, mode of market entry significantly determines the result and performance, but it is also possible that even when the most expedient entry methods like joint venture is chosen, success cannot be guaranteed. That is because some past market entry cases, while based on joint venture entry mode have ended up in failure due to ensuing divergent interests and conflicting business practices. Office Depot is a good example of a joint venture entry strategy that ended up in a fall-out with partner.

**Background**

Currently, Office Depot is the largest seller of office products in the world, a fact that is rendered even more remarkable by the short period of time that the company has managed to earn such covetable distinction. Despite fast growth in revenue and expansion, the company leadership perceives their company as very young. While announcing Office Depot’s third quarter earnings for 2002, the chairman and CEO commented thus, we’re a young company, our doors first opened in 1986. As a $12 billion company, our goal is to be the most compelling place to work and shop, and on that basis I’m convinced we’ll be a compelling place to invest. (Office Depot News Release, September 28, 2002). The company opened its first store in Fort Lauderdale, Florida in October 1986. In a five-year period, the company had opened another 173 stores, and by the end of 2000, Office Depot had 1,020 stores in the United States, Canada, and nine other countries. Partly, the rapid expansion can be explained by the acquisition of Viking Office Products in Europe in 1998, making Office Depot to be the leading provider of office products and services worldwide (Office Depot, Corporate Profile). It is also worth noting that the company is also the industry leader in every distribution channel, including stores, direct mail, contract delivery, the internet, and business-to-business electronic commerce.

Office Depot’s Japan operations were launched in 1996 through a business alliance with a Japanese retailer known as DEODEO Corporation. The choice of DEODEO as a market entry partner in Japan can be understood within the perspective that other than the large office products market in Japan, Office Depot was seeking retail network and local market knowledge as strategic assets. DEODEO with its wide network of retail outlets for electronic goods (including personal computers and office equipment), and home appliances seemed to have been a good choice of partner. However, the business alliance did not last long as the business tie ended in 1999. Office Depot therefore became a 100% foreign affiliated company and official corporation in Japan. Currently, Office depot has 12 stores in Japan’s major cities of Tokyo, Yokohama and Osaka. Despite the opening of the stores in major Japanese cities, the operations have been regarded as discounted and much operational effort have been geared towards
gaining a foothold in the market, thus making Japan operations the only unprofitable compared to other Office Depot international operations.

**Research Method and Analytical Framework**

Based on interviews with Office Depot manager in charge of store openings and operations, a number of interview questions were asked. The interview questions targeted obtaining a clear knowledge of the core competencies and details of operations of Office Depot in the U.S, and details of the experiences with transferring the competencies and operation style in all business areas. The author also made a number of visits to Office Depot stores in Osaka and a casual visit to Office Depot U.S store. The purpose of the store visits was to compare small details as product type and arrangement, color and lighting in the store, location of the stores, and manner of interaction with customers inside the stores. Further, a comparison of the company’s American and Japan Web sites and product catalogues was also done to see if there were any significant differences, reflecting deliberate attempts at adapting to the Japanese market.

Drawing from past research analysis of various organizational theories that are part of hybridization process model, this research analyzes the Japan experiences of Office Depot. Noting that much research has been done in the attempt to accurately understand organizational behavior, a myriad of literature exists on the subject. Yet, the focus on different variables and issues by the various organizational theories can be distracting. Westney (1999) takes a compressive analysis of the several major past organizational studies and categorizes the theories based on key variable focus of the theories. The categories are- strategic design paradigm, social construct paradigm, and political paradigm. Strategic design paradigm views organizations as entities purposely created to maximize the attainment of goals. Thus this paradigm helps to direct us to organizational structure and processes- also viewed as sources of core competence. Essentially, corporations would try to transfer aspects of structure and process that are viewed as sources of competitiveness. Social construct paradigm, on the other hand deals with how organizational members interpret and attach meaning to the processes and structure of their organization, and the entire environment external to their organization. This paradigm deals with bounded rationality as in the case of culture, which leads to varying interpretations of issues. Political paradigm views organizations as entities within which power and interests abound. This paradigm directs our attention to potential conflict issues, and interests that must be negotiated. In pragmatic terms, our attention is drawn to corporate aspects impacting interests of both internal and external corporate environment stakeholders.

Apart from expedient categorization of the past organizational research, Westney’s research goes further to assert that the three categories of organizational theories are not mutually exclusive. That is, a combination of the paradigms facilitates a comprehensive understanding of organizations. Integrating the paradigms is effectual in any attempt to capture all the salient variables that organizations must contend with, especially in the case of cross-border transfer of corporate operations. Identification and the focus on variables falling within the three organizational paradigms can help smooth
the process of hybridization, which involves innovation of corporate organizational value creating processes. However, there seems to be a limitation to application of hybridization model to service sector business operations, specifically operations dealing with sale and delivery of service of standardized and mature products. Hybridization model tacitly advocate for leveraging extant corporate core competency based on the understanding that changes are made as a result of evolutionary learning. In service sector, specifically those that deal with sales and service of standardized products, the main point of differentiation and competitiveness lies in organizational and process innovation. Invariably, the urgency for innovation may be more pronounced for service business operations, specifically the type of innovation that has synergy with the three organizational paradigm variables of the host country.

In asserting a higher level of urgency for innovation for transfer of international operations in service businesses, need for going beyond hybridization process model emerges. In as much evolutionary innovation is important for successful transfer of service business international operations, this research suggests that quick and radical innovation approach to operations from the onset of market entry is what can shorten learning period and quicken the strive for success. Whereas Office Depot was catapulted to dramatic growth and expansion in the U.S. market by its set of core competence, Japan experience has been contrary. Currently, Office depot is in its seventh year of operation, and in the past six years the operation has been a discounted one (no profit). For a company that has attained a meteoric pace of growth and expansion based on a set of core competence that are a function of innovation, the slow pace of and struggling Japan operations is a typical of Office Depot.

Since evolutionary innovation as envisaged by the hybridization model does not suit operations requiring urgent innovations, this research suggest a different approach. That is, using a combination of hybridization model with value innovation concept. Kim and Mauborgne (1999) advance the concept of value innovation as the antidote to the problem of lack of growth for businesses engaged in production, sales and services related to mature and standardized products. Whereas hybridization model focuses on how companies leverage a set of their core competence and make changes based on success and or failures over a period of time, value innovation concept asserts the need for discovery of new ways with regard to where value resides for customer, how value changes, and nurturing capability to act on value-related insights. In essence, value innovation approach informs of the necessity of starting a fresh by identifying factors that deliver superior value vis-à-vis factors on which competitiveness is determined in a given industry. By asserting radical value innovation from the onset through an inclination to start a fresh, value innovation concept is complimentary to hybridization model, which suggest evolutionary innovation. Applying a combination of hybridization model and value innovation concept, this research analyzes Office Depot experience in Japan while envisaging a successful transfer scenario.

Based on interviews the author conducted, Office Depot’s set of mutually reinforcing core competencies in the U.S. emerges and are identified as; strategic location and customer service, relationship building based on value delivered, discounted pricing
stemming from efficient supply chain management, leveraging technology to create value as represented by the use of state-of-the-art E-commerce system, and an entrepreneurial human resource. Hybridization model based on the use of a combination of the three organizational theories provides a road map that can be applied to analyze the process of transfer of the above set of core competencies. At the same time, combining value innovation concept with hybridization model provides a framework within which failure can be understood, and makes it possible to suggest things the company could have done in the case of an immediate successful operation scenario.

**Figure 1: Analytical Framework: Illustration**
Office Depot Japan Experience

Office Depot started its operations in Japan through a strategic alliance with DEODEO Corporation. From operational strategic perspective, the alliance seemed as a suitable one. Obviously Office Depot entrance into Japan cannot be narrowly viewed as market seeking investment only, but also as asset seeking investment, specifically those assets that facilitate success of operations. As such, the alliance with DEODEO can be interpreted as a critical part of business strategy aimed at acquiring local market knowledge, access to retail network across Japan and a first step to nurturing relationships. DEODEO has been a key player in the Japanese retail market since 1947, and has a chain of stores and franchise outlets selling items ranging from electronic goods and home appliances, personal computers and office equipment, musical instruments, and product related services as repairs. However, the alliance with DEODEO did not work well and thus ended in 1999. It was not possible to get accurate details and reasons regarding why the alliance never worked, but obviously contentious issues between the partners in the alliance existed. As such, this research tries to stay away from such details and reasons that can be advanced.

In its operations, Office Depot opened stores in high traffic areas of the three largest cities in Japan- Tokyo, Yokohama and Osaka, with most of the stores being located in Tokyo (seven out of twelve stores). In Tokyo, the stores are mainly located on the Yamanote-line train stations. The Yamanote-line forms a ring around Tokyo, and as such provides access or train connection to all major points in the city. Location choice within these high traffic and business concentration suggests an emulation of U.S. operations. However, the location strategy immediately drove the company into financial problems because of the high real estate cost in such prime locations. The company executives were forced to renegotiate previously signed real estate contracts. Contrary to the American situation where Office Depot enjoys affordable strategic location advantage in high traffic areas near mega stores like Wal-Mart, locating the company’s spacious retail stores in high traffic areas has proved to be a money guzzler in the Japan operations. Office Depot also launched catalog and online sales channels to both individual and corporate customers. Selling products through the company’s state-of-the-art e-commerce system has been slow in picking up as compared to its success in the U.S. and other international operations.

To recruit personnel fitting the company’s concept of entrepreneurial human resource, Japanese graduates of American Universities were given first priority based on the belief that they could bring in the best of both worlds. However expedient a method this approach seems, subtle cultural issues impacting task organization and fulfillment, and work processes still remained. The manager in charge of store opening and operations whom the author interviewed narrated his recruitment experience for a director position for a division of their operations. The candidate was a Japanese graduate of one of the top American business schools. Given the candidate’s relatively young age, he expressed shock at being offered the position of a director and actually declined the offer. He instead accepted to climb up the career ladder after gaining experience at the company. Conceptual issues tied to this behavior will be discussed in the next section.
Regarding sales operations, the company has experienced frustrations getting new Japanese corporate customers, both small and big businesses alike. Majority of Office Depot’s corporate customers are foreign businesses in Japan. Most of foreign firms are located in Tokyo and Yokohama area, a fact that partly explains the company’s concentration of its stores in that single area. In relationship building, the company has so far been able to forge working relationship with a number of prominent Japanese vendors. The major vendors are NEC CustoMax, Kokuyo, Zebra, Lion Office Product, Casio Computer Company, Canon Sales Company, King Jim and Company.

Discussion

What does the experiences of Office Depot mean for transfer of service business operations into Japan and may be other cross-border transfers? Can hybridization model used in understanding the process of operation transfer of Japanese production system into other countries be adequately used to understand and be practically applied to the transfer of service business core competencies? Using hybridization process model, the first part of this discussion focuses on analyzing the attempt to transfer Office Depot’s set of core competencies to its Japan operations. In the hybridization process model, identification of salient variables that fall within the three organizational paradigms is a crucial first step, followed by an examination of the nature of their interaction with the set of core competencies Office Depot decided to transfer from the time of inception of Japan operations. The second part of the discussion focuses on envisaging a successful transfer scenario by way of making a combination of quick innovations while also targeting constant incremental small innovations that stem from learning by doing. A combination of the hybridization process model and value innovation concept will be used as an analytical framework to make out what would have transpired in successful operational transfer scenario.

While pursuing a similar location strategy based on identification of high traffic zones as in the case of the operations in the U.S., Office Japan operations have had contrasting results from location strategy. Location in high traffic zones as in the case of close proximity to mega stores in the U.S. goes hand in hand with design of large sized stores in which all types of office products and stationary are sold. It has been possible to implement the practice of strategic location of stores in high traffic areas as in the U.S., the difference being proximity to major train stations in the three major cities in Japan. Comparatively, Office Depot Japan stores are smaller than those in the U.S are. Nevertheless large store design has been done at a highly prohibitive cost to the operations. The high cost of real estate has placed serious limitations to Office Depot’s expansion through new store openings. As such, expansion in Japan has been slow, a stark contrast to fast rate of expansion witnessed in the U.S (173 stores opened in 27 states in four years since inception). Given that Office Depot Japan operations is in the seventh year and only twelve stores have been opened, it can be concluded that a similar growth path cannot be repeated in Japan. More than half of Office Depot’s stores are located in
Tokyo, thus gaining nationwide brand recognition in Japan will be difficult if not impossible to achieve in the near future. Despite the real estate cost impediment to expansion and attainment of profitable operations, the company can still count itself lucky for not having been faced with conflict of interests issues as posited under the political paradigm. Even though Japan’s Daitenho (Big Store Law- see Flath, 2002) has been relaxed over the years, its appendages still exist. It is possible that had Office Depot’s product line and location posed a threat to the existence of certain small retailers, the company would have had to contend with conflict resolution related to store location. Again, in office product and stationary retail, changes have occurred over the recent years. Discounting and large retail chains such as home centers and convenient stores can be spotted in most parts of Japan.

Relationship building has been one area where Office Depot’s has had to contend with an evolutionary approach. In the U.S., Office Depot has built its relationships quickly based on compelling efficiency in delivery and pricing. Japan operations have faced a different scenario given that personal contacts and long term relationships supercede mere value proposals (see Callister, 2002). This is reflected in the reported reluctance of many small and large Japanese businesses to buy Office Depot’s products simply based on value proposal. To these businesses, switching product supplier is considered to be at the cost of long term relationships. However, Office Depot has not had problems working with the major vendors of office supplies and stationery in Japan. This can be explained by the simple fact that to these vendors Office Depot represents an outlet through which they can increase sales of their products. It is conceivable that relationship with these vendors will benefit Office Depot’s Japan operations in the long run through possible new customer introductions.

Customer service is one area where Office Depot has not had to make big changes as its strategic location satisfies customer value of ease of accessibility. Little changes that have been made include making store interior much brighter, and using brighter colors than stores in the U.S. This was done as a response to Japanese subtle cultural preference for well-lit store interior and brighter colors to correspond to the mix of bright colors in the streets. In products category, an adjustment has been made in the technology section where computers and related equipment is sold in the U.S. This was done based on the realization that Japanese customers almost exclusively buy such products from large electronic goods retailers. However, Office Depot has not been able to maximize the use of its state-of-the-art information technology system that facilitates convenient buying, quick delivery and providing additional value to corporate customers as in the case of a handbook on starting and running small business, downloadable business forms and financial spreadsheets. In the U.S. sales from Office Depot’s individual customer and business-to-business Web sites increased 421% ($99 million) in the third quarter of 1999, compared to only $19 million in the third quarter of the previous year (InformationWeek, December 13, 1999). Lack of such similar dramatic success in Japan can be explained by the fact that societal use of technology is closely linked to societal values. Whereas value proposition in itself is a compelling factor to influence buying behavior of American corporate and even individual buyers, the same cannot be said of Japan. It can be said that in the case of Japan, relationships must be nurtured first, followed by an immigration of the evolved relationship online. This assertion specifically applies to the case of corporate customers.
Transferring entrepreneurial human resource concept as part of Office Depot’s set of competencies did not go smoothly with Japanese employees. The reluctance of the Japanese graduate of a top American University to take up a directorship position opens a window to certain conceptual issues related to the difficulty of a quick transfer of the concept of entrepreneurial human resource. Entrepreneurial human resource entails taking initiatives, making difficult decisions and taking responsibility for one’s actions. This suggests a good deal of individualism in actions and decision making, a practice that works well in the U.S. Decision making in Japan, especially those that might affect other individuals is usually made slowly through a long process of consultations with others (See Simeon, 2002). Through this system of decision making, the concept of sekinin (responsibility) for decisions made is also shared. As such, transferring the concept of entrepreneurial human resource has been difficult, and thus has progressed in an evolutionary fashion.

Using a combination of hybridization process model and the concept of value innovation, successful transfer each of the Office Depot’s set of core competencies can be envisaged. Whereas the hybridization process model of transfer suitably applies to those issues such as entrepreneurial human resource concept, location, store size and design, and effective use of Office Depot’s state-of-the-art information technology system would have benefited from value innovation approach. For instance, it would have been imperative for Office Depot to cultivate relationships first and direct them to migrate online, thus permitting effective use of its information technology system. This suggestion is confirmed by Office Depot’s recent practice of requesting both individual and corporate customer’s to willingly supply their email addresses upon the purchase of any small item, and following it with compelling offers. This reflects the need to understand how and where value is created for customers.

Conclusion

Though this research is based on a single case, Office Depot’s experience reflects the difficulty of transferring service business core competencies, even those that have contributed to high level of competitiveness elsewhere. Whereas hybridization process model tacitly suggests learning by doing and the initiation of constant incremental improvements, this research tentatively suggests combining hybridization model with the concept of value innovation as a model of transferring service business core competencies into Japan and even other cross-border transfers. Again, this research suggests the need for re-examining the suitability of hybridization process model to understanding and even practical application to planning the transfer of operational core competencies in the service sector.
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Chinese SOCs: How to narrow the gender gap in managerial skill utilization

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Norihiko Takeuchi, JSPS and Aichi Gakuin University, Japan, and
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Abstract

Past studies have demonstrated that a supportive work environment can positively influence managerial skill utilization. Adopting the instrumentality-expressiveness perspective, the present study extended the past research by illustrating the moderating effect of gender on this relationship. It found that the relationship between the work environment and managerial skill utilization is stronger among female managers than among male managers, and further, that this interactive effect is more pronounced in a low incentive situation than in a high incentive situation in terms of reaching a high level of training performance. The theoretical and practical implications of the results are discussed.

Introduction

Recently, researchers have attached more importance to studying effective methods of skill utilization (Bolino and Feldman, 2000; Meir and Green-Eppel, 1999; Chen and Wakabayashi, 1997b; Teagarden and Gordon, 1995). According to O'Brien (1980), skill utilization means the degree of match or congruence between an individual’s skills and the opportunity to use these skills in that individual’s work role.

Research on managerial skill utilization has generally taken two directions. One direction has focused on identifying likely consequences of the utilization of skills (Bolino and Feldman, 2000; Meir and Green-Eppel, 1999), and the underutilization and misutilization of skills (Feldman and Bolino, 2000a). The results of such studies show that managerial skill utilization may determine organizational outcomes and performance, such as job performance and organizational citizenship behavior (Feldman and Bolino, 2000a), job attitudes (Teagarden and Gordon, 1995), job satisfaction (Meir and Green-Eppel, 1999), organizational commitment (Naumann, 1993), work morale and efficiency (Wang, 1994), and management development (Chen, 1996).

Given the positive consequences of managerial skill utilization, the other direction of research, which has been towards organizational and individual determinates of managerial skill utilization, seems very important (Chen, 1996; Chen and Wakabayashi, 1997b; Tziner, Haccoun, and Kadish, 1991; McSherry and Taylor, 1994; Fagenson, 1990). For example, the following organizational and individual attributes have been found to be positively associated with managerial skill utilization: a supportive work environment (Baumgartel, Reynolds, and Pathan, 1984), in-company training experiences and performance-based promotion (Chen, Wakabayashi, Huang, Chen, and Zhong, 2000), age and tenure (Norburn, 1986), and level of education (Bjrkman and Lu, 1999). In regard to gender, there is a substantial body of research demonstrating that men have higher levels of career progression than do women (Talmud and Izraeli, 1999; Xie and Whyte, 1997). However, little research has been carried out to explore the interactions between the organizational and individual factors of managerial skill utilization (Fagenson, 1990).

Thus, the present study continues along the second direction of research by exploring the interactions between the organizational and individual factors of managerial skill utilization.
utilization. Here, the instrumentality-expressiveness learning perspective may provide us with a new angle to look at such interactions. Spence and Helmerich (1980) suggest that instrumentality-expressiveness is the most representative of the trait dimensions used to describe gender differences. According to this perspective, instrumentality (masculine) is consistent with independence, self-confidence, proactivity, and self-orientation, while expressiveness (feminine) is characterized by concern for others and for interpersonal relationships. This perspective sees men as being more instrumental and women as being more expressive. Furthermore, the instrumentality perspective predicts that men will emphasize individual goals and incentives more than women will, while the expressiveness perspective predicts that women will emphasize relationships and the work environment more than men will. Some empirical research supports this perspective. For example, Bu and McKeen (2001) found that when engaging in managerial skill learning, women tend to pay more attention to the work goal of the work environment, while men tend to pay more attention to the work goal of career success. These concepts and findings lead us to argue that female and male managers have different learning objectives or purposes when they engage in training. More specifically, the work environment has a stronger influence on female managers’ skill utilization than on that of male managers, whereas training incentives have a stronger influence on male managers’ skill utilization than on that of female managers.

Thus, based on the instrumentality-expressiveness perspective, this study explores the interactions between the work environment, gender, and training incentives of managerial skill utilization. This study predicts that a supportive work environment has a more positive effect on female managers than on male managers when training incentives are lower. This research adds to the knowledge of the conditions under which managerial skill training is operative, thereby shedding light on the questions of why and how to train managers (Tannenbaum and Yukl, 1992).

**Literature Review and Hypotheses**

**Managerial skill utilization**

Past studies have identified different kinds of managerial skills. The most famous is Katz’s (1974) conceptual study, which argues that managers need three essential managerial skills in their day-to-day operations, namely technical, human, and conceptual skills. According to Katz (1974), technical skills are an understanding of, and proficiency in, a specific kind of activity, particularly one involving methods, processes, procedures, or techniques. Technical skills are primarily concerned with things. Human skills are primarily concerned with people, in the sense of the ability to work with other people. Finally, conceptual skills mean the ability to think and conceptualize about abstract situations, to see the organization as a whole and the relationships among its various subunits, and to visualize how the organization fits into its environment.

While it is unrealistic to assert that these managerial skills are totally independent of one another, this approach to skills affords us the opportunity to clarify managerial skill development (Rodela, 1991). Although empirical research on managerial skill utilization is limited (Bolino and Feldman, 2000), studies on the transfer of training have shed some light on the question of how to study it.

Wexley and Latham (1991) define positive transfer of training as the degree to which trainees apply the knowledge, skills, behaviors, and attitudes gained in training to their jobs. Also, Baldwin and Ford (1988) argue that for transfer to have occurred, learned behavior must be generalized to the job context and maintained over a period of time on the job. Thus, in the present study, managerial skill utilization implies that managers have perceived opportunities
for using trained managerial skills in their day-to-day work.

The importance of the work environment

The work environment is important for the application of newly acquired behaviors and skills (Tracey, Tannenbaum, and Kavanagh, 1995; McSherry and Taylor, 1994). According to Ford et al. (1992), trainees who perform similar jobs may experience significantly different opportunities to apply recently trained skills on the job. For some manager trainees, the work environment may limit their ability to transfer what they learned. Moreover, these managers will probably exhibit greater skill decay than those who get more chance to practice what they learned (Pentland, 1989). For example, Baldwin and Ford's (1988) model of the transfer process indicates that the work environment will influence the maintenance and enhancement of trained skills. Thus, we can understand that elements of the post-training environment can encourage (e.g., job aids), discourage (e.g., ridicule from peers), or actually prohibit the application of new skills and knowledge on the job (e.g., lack of necessary equipment) (Tannenbaum and Yukl, 1992).

Actually, there is some empirical evidence that supports the notion of the work environment being important. Rouiller and Goldstein (1993) found that the transfer of learning is increased in a work environment that supports training. Tracey, Tannenbaum, and Kavanagh (1995) demonstrated that a supportive work environment has a positive relationship with post-training behaviors; for example, trainees in a less supportive work environment will be less likely to acquire new knowledge and skills gained from training programs. Even well-learned skills may not be maintained on the job due to lack of supervisory support (Baldwin and Ford, 1988).

The studies cited above have increased awareness of the importance of the work environment. However, additional research is needed for a clear understanding of the influence of the work environment on managerial skill utilization. What is needed is the identification of key work-environment variables and the operationalization of these variables, especially the effects of the work environment on skill utilization and skill decrements after completion of a training program (Baldwin and Ford, 1988). Therefore, in our study, we examine the influence of a supportive work environment in terms of an environment for managerial development on managerial skill utilization. By the term environment for managerial development, we mean a perceived general organizational support for enhancing managerial skills, which includes superior and peer support of skill learning, a clear understanding of what kinds of managerial skills should be learned and taught, and skills- and performance-based promotion. The few empirical studies in this area suggest that social support for development at work is related to managers' beliefs that they are capable of improving and developing their skills (Maurer and Tarulli, 1996). Evidence from research also suggests that a supportive organizational environment facilitates managerial skill learning (Chen and Wakabayashi, 1997b). Thus, we expect that a supportive work environment (in this study, an environment which facilitates managerial development) has a positive relationship with managerial skill utilization. We call this influence the environment effect in the current paper.

Hypothesis 1. An environment for managerial development is positively related with managerial skill utilization.

The work environment and gender

According to Sandelands (2002), gender — the fact that we are male or female — ought to be a bigger idea in the study of organizational behavior than it is. In past studies, it has been accepted that women in the working world are more aware of, and more concerned about, the social environment in a working group (e.g., Alpander and Gutmann, 1976).

Although few studies have examined the relationships between gender and the work environment or skill utilization, there is one study which suggests that women have a more positive view of the environment than men (Hite, 1982). Thus, we can expect that women may be more likely to utilize their skills than men.

Hypothesis 2. Women exhibit a higher level of managerial skill utilization than men.
some light on these relationships. According to Baxter Magolda (1994), when discussing knowledge and skill learning, women normally talk in terms of incorporating other people’s perspectives and making connections with peers, and they often focus on collective perceptions in collaborative settings. Men, on the other hand, normally adopt an individual perspective, focusing more on their own learning processes. For example, Hughes (1995) found that when learning corporative skills, women — in contrast to men — seem to have less affinity for competitive ways of working. Evidence from research also shows that when engaged in learning tasks, gender differences occur due to women’s placing more emphasis on interpersonal relationships (Daubman and Sigall, 1997), placing greater value on social harmony, and preferring competition less (Byrne, Fraser, and Hattie, 1986) than do men. Furthermore, Tracey et al. (1995) found that in the application of newly acquired behaviors and skills, the work environment is more important for female managers than for male managers. These findings indicate that the skill learning process for women is social-environment-related, while for men it is individual- and strategy-related. Thus, it is reasonable to expect that the environment effect on managerial skill utilization will be more positive and stronger among female managers than among male managers. We call this gender moderating effect on the environment, the environment-gender effect.

Hypothesis 2. There will be an interactive effect between the environment for managerial development and gender on managerial skill utilization. The positive relationship between the environment for managerial development and managerial skill utilization will be stronger among female managers than among male managers.

The importance of training incentives

According to expectancy theory, managers should be more willing to work hard toward training objectives if they feel they will be rewarded and will receive appropriate incentives for doing well on the training program, which includes putting into effect what they have learnt back on the job (Lawler, Porter, and Hackman, 1990). Also, according to the theory of outcome expectancies (Frayne and Geringer, 2000), which describes beliefs concerning the short- and long-term consequences of behavior, a manager will expect specific outcomes from a given action. The above arguments demonstrate the importance of training incentives as an influence on managers’ training behaviors.

Recently, evidence from research has shown that training performance is a predictor of performance adaptability (Kozlowski et al., 2001). Chen et al. (2000) also found that using performance-based criteria to promote managers and in-company training experiences is positively associated with managerial skill utilization. Therefore, in the present study, we use perceived training-performance-based promotion as a representative of perceived training incentives. By the term training-performance-based promotion, we mean the perceived importance of training performance as a criterion to promote managers, such as records of training, achievement in training programs, promotion test results, and skill certification.

The interaction between the work environment, gender, and training incentives

Hypothesis 2 predicts that, in general, a supportive work environment has a stronger positive relationship with managerial skill utilization among female managers than among male managers. However, examining only the general differences may be inadequate for the simple reason that managers’ training motivation may play an important role in managerial skill utilization. Generally speaking, when managers perceive that their organization will promote them based on their training performance, they will work on their managerial skills harder during training than when they perceive that the organization will not promote them even if they demonstrate high levels of skill utilization (McKee and McKee, 2000).
and Helmerich (1980), when engaging in management training, male managers are more likely to focus on their individual goal achievement (instrumental) and female managers are more likely to focus on human relations and the work environment (expressive). Also, Gasser, Flint, and Tan (2000) found that male managers have higher promotion expectations for male- and neutral-oriented jobs than do female managers. Furthermore, Schein and her colleagues (e.g., Schein and Mueller, 1992) continuously found that successful managers are indeed perceived to be very similar to men but not to women. It is reasonable to expect that male managers have higher promotion expectations than do female managers. Thus, we argue that male managers will be more highly motivated than female managers by an individual-goal-related incentive, such as training-performance-based promotion, when being trained and when using managerial skills.

According to Noe (1986), when managers regard training highly, it is easy for them to justify any rewards they receive. Wertheim, Widom, and Wortzel (1978) point out that instrumentality and expressivity are related to career choice. For example, male managers have a stronger desire to take on a dominant role than do female managers (Spence and Helmerich, 1980). Xie and Whyte (1997) also point out that male managers have a significantly higher need to be aggressive and to dominate than do female managers. Thus, on the one hand, in a situation of high training incentives (where promotion is based on training performance), male managers have a higher level of motivation than do female managers to learn and use managerial skills, which will reduce the environment-gender effect (Hypothesis 2). More precisely, the extent of the more positive and stronger relationship between a supportive work environment and managerial skill utilization among female managers than among male managers will be negatively influenced by the higher motivation level of male managers to achieve their individual career goals (e.g., to be promoted). On the other hand, however, in a situation of low training incentives (where managers will not be promoted even if they reach a high level of training performance), male managers have less (or equal) motivation than (to) female managers to learn and use managerial skills, which will increase (or keep at the same level) the environment-gender effect (Hypothesis 2). The above arguments lead us to make the bold hypothesis that training incentives (in this study, training-performance-based promotion) will moderate the environment-gender effect.

Hypothesis 3. There will be a three-way interaction effect between the environment for managerial development, gender, and training-performance-based promotion on managerial skill utilization. The proposed interactive environment-gender effect (Hypothesis 2)—which means that the relationship between the environment for managerial development and managerial skill utilization will be more positive and stronger among female managers than among male managers—will be more pronounced in a situation of low training-performance-based promotion than in one of high training-performance-based promotion.

Methodology

Participants
This study was conducted in Chinese SOCs located in three major cities in a major province, Zhejiang, in the PRC. The cities were Hangzhou, Ningbo, and Shaoxing. Economically, Zhejiang is one of the most important provinces in China. It is a neighbor of Shanghai and is located in the prosperous southern and coastal areas. Hangzhou is the capital of Zhejiang and has the second highest GDP among provincial capital cities in China. Ningbo and Shaoxing are the other two major cities in Zhejiang. We selected these cities because the pace of economic reform has been faster there than in the Chinese inland regions (Ding, Goodall, and Warner,
Further, these cities have attracted a large amount of foreign direct investment and have adopted management practices appropriate for a developing market economy.

Investigations to test the above hypotheses were based on a sample of managers from 12 Chinese SOCs in the above three cities in Zhejiang Province. The entire sample of Chinese SOCs was in the manufacturing industry. The survey was conducted in 1997. Before selecting these sample SOCs, we visited the relevant department of the provincial government and asked for their support. Based on a list of the manufacturing SOCs the department gave us, we randomly selected six SOCs in Hangzhou, four in Ningbo, and two in Shaoxing in order to provide a statistical representation of the economic situation and the numbers of SOCs in these cities.

Prior to administering the questionnaire surveys, some interviews were conducted with the top managers of the sample corporations concerning the general situation of their organizations and the nature of their work, in order to get a general impression and basic material for the validation of the measurements. We took this opportunity to explain the objectives of the study in order to gain their cooperation and support. All the respondents had attended at least one management training course to improve their managerial skills run by their current employer, and were expecting to attend further courses of this kind — these being the main qualifications for their inclusion. All eligible managers in the SOCs from all levels were asked to respond to the questionnaires, except for the team leaders who were randomly selected. The subjects consisted of managers from three managerial levels: top, middle, and lower-middle. The top managers were directors and vice directors; the middle managers were department managers; and the lower-middle managers were assistant department and workshop managers (e.g., from the personnel, R&D, technical, sales, and administration departments), and team leaders.

Questionnaires were distributed to each manager via his/her company’s internal mail system. In each case, a cover letter written by the company’s HRM director encouraging participation was included in a packet along with the questionnaire. The managers mailed back their questionnaires directly to the researchers. The cover letter and the questionnaire were written in Chinese.

Questionnaires were given to 250 managers, and 205 returned them (the usable response rate was 82%). Our sample consisted of 38 (18.6%) top managers, 88 (43.9%) middle managers, and 79 (38.5%) lower-middle managers; 141 (68.8%) were male managers and 64 (31.2%) were female managers. The gender distributions according to managerial level and company size are shown in Table 1.

Table 1. Gender distributions in managerial level and company size of the sample

<table>
<thead>
<tr>
<th></th>
<th>Male managers</th>
<th>Female managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>Managerial level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>33</td>
<td>23.4</td>
</tr>
<tr>
<td>Middle</td>
<td>64</td>
<td>45.4</td>
</tr>
<tr>
<td>Lower-middle</td>
<td>44</td>
<td>31.2</td>
</tr>
<tr>
<td><strong>Company size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large (1000 or more)</td>
<td>29</td>
<td>20.6</td>
</tr>
<tr>
<td>Medium (300-999)</td>
<td>44</td>
<td>31.2</td>
</tr>
<tr>
<td>Small (299 or less)</td>
<td>68</td>
<td>48.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

The male and female samples did not differ significantly in terms of background.
information, including age, tenure, length of time in current position, and managerial function. The mean ages of the female managers and the male managers were 37.08 and 39.48 (t = 1.94, n.s.) respectively, while average tenure was 15.67 and 14.59 years (t = 0.83, n.s.) respectively, and length of time in current position was an average of 4.73 and 4.15 years (t = 1.06, n.s.) respectively. The managerial functions in which the female managers and the male managers engaged did not significantly differ: the sample compositions for (1) external-oriented managerial functions (e.g., sales and marketing, service and advertising, finance and accounting, etc.), and (2) internal-oriented managerial functions (e.g., administration, planning, human resources, production, etc.) were 28.1% and 71.9% respectively for female managers, and 30.5% and 69.5% respectively for male managers ($\chi^2(1) = 0.12$, n.s.). In addition to this demographic information, educational level, managerial level, and company size were controlled for the regression analyses.

**Measures**

**Managerial skill utilization.** Managers should have three unique skills: technical, human, and conceptual skills (Katz, 1974). However, there is no single authorized scale currently available for measuring the utilization of these skills. According to Georges (1996), knowing about a skill is not the same as being skilled. Thus, we will use the frequencies of utilizing managerial skills as dependent variables to make sure the trained managerial skills are transferred and utilized in real work situations. Thus, based on Katz's (1974) three skills definitions, and a review of assessment center studies (Wakabayashi, 1980) and managerial leadership-making studies (Chen and Wakabayashi, 1997a), we developed 12 skill items related to managerial jobs to measure the utilization of the above three kinds of managerial skills. Each skill component contained four items. The 12 managerial skill items—strategic thinking, decision-making skills, and so on—were presented with a short sentence paraphrasing the content of each skill. For example, strategic thinking was explained as: [ ] considers market situations, competitors, future goals, and long-term company prosperity when making decisions. Before determining the 12 items, the research team members met with senior managers in the Chinese SOCs to discuss and modify the items of measurement. The purpose of these meetings was to ensure that the items could explain the main contents of the above three kinds of managerial skills.

In the questionnaire, the sample managers were asked to respond to the question of how frequently they used the skills in their day-to-day work on a 5-point Likert scale ranging from 1 (never) to 5 (every day).

The results of a principal component factor analysis indicated that the eigenvalues of the three components were larger than 1.0, which showed that the measurement of managerial skill utilization contained three factors. The results of varimax rotation revealed that each of the three factors contained four items, which is consistent with our expectation. The total percentage of variance explanation was 57.60%. The three expected factors were technical, human, and conceptual skills. Factor loadings ranged from 0.83 to 0.43 for technical skills, 0.79 to 0.54 for human skills, and 0.76 to 0.62 for conceptual skills. The Cronbach's alpha coefficients of the above three scales were .76, .78, and .73 respectively.

**Environment for managerial development.** Chen and Wakabayashi (1997b) used a 19-item scale for their study of the relationship between the most suitable environment for managers’ career progress and managerial skill utilization. We shortened their scale to seven items so that it would focus on the perceived environment for managerial development variable only. This instrument was designed to explore the environment for managerial development variable in the organization that the respondents worked for. The response format of this seven-item scale ranged from 1 (disagree) to 5 (agree). The Cronbach's alpha coefficient was .73.
scale to measure the perceived importance of training performance as a criterion to promote managers. The items were record of training, promotion test results, skill certification, and achievement in the training program. The respondents were asked to rate the degree of importance of each of these items in promotion decisions. The response format for this scale ranged from 1 (unimportant) to 5 (important). The Cronbach’s alpha coefficient was .77.

A statistical remedy of common method variance was employed. We conducted Harman’s one-factor test, which included all the variable measures in a single-factor analysis as recommended by Podsakoff and Organ (1986). The results indicated that neither a single factor nor a general factor could account for the majority of the covariance in the variables. This provided some evidence that common method variance was not a problem in the current sample. Then, in order to demonstrate discriminant validity, a factor analysis with varimax rotation was conducted in which the environment for managerial development and training-performance-based promotion items were included along with the items of managerial skill utilization. The two scale items were located clearly on their own scale factors that were distinct from the three scale factors of managerial skill utilization. Discriminant validity was also demonstrated by testing the overall model fit of a five-factor CFA (confirmatory factor analysis). Applying the standard that values of .90 or greater for the IFI (incremental fit index), and CFI (comparative fit index) indicate good fit (Jaccard and Wan, 1996), while RMSEA (root-mean-squared error of approximation) values of less than .08 imply adequate fit (Browne and Cudeck, 1993), the five-factor measurement model indicated good fit (IFI = .90, CFI = .90, RMSEA = .05) with a sample size of 205. Non-significant chi-square values for these scales also provided evidence that this measurement model fit the data well ($\chi^2 = 347.06, df = 220$).

**Gender.** The variable of gender was coded 1 for female managers and 2 for male managers.

**Control variables.** Six measures were used as control variables: age, educational background, managerial level, length of time in current position, company size, and managerial function. Age was measured by the actual age in years of the managers in our sample. Educational level was measured using four categories based on the Chinese education system: 1 (lower secondary or below), 2 (upper secondary), 3 (junior college), and 4 (university and beyond). Managerial level was measured using three categories: 1 (lower-middle managers), 2 (middle managers), and 3 (top managers). Length of time in current position was measured in years. Company size was measured by the number of employees: 1 (299 employees or less), 2 (300 to 999 employees), 3 (1,000 employees or more). Finally, managerial function, which refers to the managers’ roles, was measured by a dichotomous code of internal/external orientation. Code 1 was assigned to managers who engaged in internally oriented management functions, including the areas of production and technology, personnel and training, administration, planning, and human resources; while code 2 was given to those engaged in externally oriented management functions, including the areas of sales and marketing, service and advertising, finance and accounting, and research and development.

Means, standard deviations, correlations, and reliabilities of the variables used for the present study are presented in Table 2.
Results

Descriptive statistics

Past research has suggested that gender has a minimal influence on managers when they actually adopt a managerial role (Van Engen et al., 2001; Xie and Whyte, 1997; Eagly, 1987b). Thus, before conducting tests of the hypotheses of the present study, we employed t-tests to test for any gender differences in managerial skill utilization. The results showed that there were no statistically significant gender differences in the utilization of technical skills ($t_{(202)} = 1.53, n.s.$), human skills ($t_{(202)} = 0.68, n.s.$), or conceptual skills ($t_{(202)} = 0.30, n.s.$). These results are consistent with the gender-organization view that role making in organizations diminishes gender-role behavior, particularly for managerial jobs (e.g., Eagly, Makhijan, and Klonsky, 1992). Thus, perceived managerial skill utilization is similar for male and female managers in Chinese SOCs.

Hypothesis testing

Table 3. Effects of environment for managerial development, gender, and training-performance-based promotion on technical, human, and conceptual skills utilizations

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Technical skills</th>
<th>Human skills</th>
<th>Conceptual skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.01</td>
<td>0.03</td>
<td>-0.09</td>
</tr>
<tr>
<td>Educational background</td>
<td>-0.07</td>
<td>0.04</td>
<td>0.01</td>
</tr>
<tr>
<td>Managerial level</td>
<td>0.16*</td>
<td>0.13</td>
<td>0.22**</td>
</tr>
<tr>
<td>Length of time in current position</td>
<td>-0.06</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>Managerial function</td>
<td>0.08</td>
<td>0.17*</td>
<td>0.17*</td>
</tr>
<tr>
<td>Company size</td>
<td>0.05</td>
<td>0.11</td>
<td>0.18*</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.03</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>$F(6, 196)$</td>
<td>1.11</td>
<td>1.38</td>
<td>2.79*</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment for managerial development (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (B)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=205. Reliabilities are shown in parentheses. Codings for each variable are as follows. For education, 1=lower secondary or below, 2=upper secondary, 3=Junior College, and 4=university and above. For managerial level, 1=lower-middle, 2=middle, and 3=upper managers. For managerial function, 1=internal, 2=external managerial function. For company size, 1=250 employees or less, 2=250 to 999 employees, and 3=1,000 employees or more. For gender, 1=female and 2=male. Critical values for $r$ are as follows: $p < .05 = .14$; $p < .01 = .18$; and $p < .001 = .23$. 
The hypotheses predicted that the environment for managerial development, gender, and training-performance-based promotion would interact to affect managerial skill utilization. We performed moderated multiple regression (MMR) (Aguinis and Stone-Romero, 1997) analyses for the three dimensions (technical, human, and conceptual skills) of managerial skills. We introduced all predicted interactions into the regression equations after controlling for the main effects of personal background and three independent variables at the first stages of each regression. The multiplicative interaction terms are often criticized because they are so highly correlated with the component variables, creating problems of multicollinearity that can inflate standard errors (Blalock, 1979). To deal with this potential problem, a conventional method of mean centering was applied for the multiplicative interaction variables, by which the mean value for a variable is subtracted from each score (Jaccard, Turisi, and Wan, 1990; Cohen and Cohen, 1983). The results of the regressions are presented in Table 3.

![Figure 1](image-url)

**Figure 1.** Technical skill utilization in terms of environment for managerial development, gender, and training-performance-based promotion.
As shown in Table 3, the crucial three-way interactions were significant for technical-skill ($R^2 = .06, F(1, 189) = 12.82, p < .001$) and for human-skill ($R^2 = .02, F(1, 189) = 3.91, p < .05$) utilizations. However, no significant interaction was found for conceptual-skill utilization. To clarify these interaction terms, we plotted them by using data from the regression equation (Stone and Hollenbeck, 1989). We input the means of the control variables and the high and low values (cut values) for each of the three relevant variables into the regression equation and plotted eight different prediction coordinates. Following the conventions for plotting interactions, the cut values for the high and low states on each variable were one standard deviation above and below the mean respectively.

Figures 1 and 2 depict the pattern of each interaction by breaking the three-way interactions down to two constituent two-way interactions for high and low training-performance-based promotion situations. Under the condition of low training-performance-based promotion, the environment-gender effect was found to exist for both technical-skill and human-skill utilizations. The environment for managerial development had a stronger positive impact on both types of skill utilizations among female managers than it did among male managers. On the other hand, the environment-gender effect was absent under the condition of high training-performance-based promotion. Thus, Hypothesis 3 was supported for the utilizations of technical and human skills, but not for the utilization of conceptual skills.

Overall, Figures 1 and 2 show a general tendency that the influence of the perceived environment for managerial development on managerial skill utilization is moderated by gender only under the condition of low training-performance-based promotion. In other words, the positive influence of the work environment on skill utilization (Hypothesis 1) is stronger among female managers than among male managers (Hypothesis 2), and this gender moderation happens only under a condition of low training incentives (Hypothesis 3). These results clearly characterize the instrumentality-expressiveness perspective of managerial behavior among male and female managers, providing support for Hypothesis 3.

The results shown in Table 3 also indicate that there exists a significant positive effect of the environment for managerial development on technical-skill and human-skill utilizations (which supports Hypothesis 1 for these two managerial skills). A significant two-way interactive effect between the environment for managerial development and gender on technical-skill and human-skill utilizations indicates that the environment for managerial development has a stronger positive effect on managerial skill utilization among female
managers than among male managers (which supported Hypothesis 2). However, since the data generally supported Hypothesis 3, we can say that managerial skill utilization is influenced by three variables, namely the environment for managerial development, gender, and training-performance-based promotion.

**Discussion**

The present study focused on an important dependent variable, managerial skill utilization, that, to date, has not received much attention in the literature on the work environment, gender, and training incentives. Adopting the instrumentality-expressiveness perspective, we explored the effect of three-way interactions between the work environment, gender, and training incentives on managerial skill utilization. By exploring the set of moderators that may improve the quality of the training, our research adds to the knowledge of the conditions under which managerial skill utilization can be facilitated, thereby shedding light on why and how gender and incentives matter in regard to skill utilization.

Past studies found that the work environment is important for the application of newly acquired behaviors and skills (e.g., Tracey, Tannenbaum, and Kavanagh, 1995). However, the present study found that the utilization of trained managerial skills for female managers is more likely to be guided by the perceived environment for managerial development (expressiveness), while for male managers, it is generally reinforced by strong training incentives connected to promotion prospects (instrumentality).

Chrisman et al. (1990) report that males and females are similar in their needs for assistance in the areas of strategic, administrative, and operating activities. The results of this study reveal differences in the mechanisms used to improve managerial skill utilization by both gender groups. The MMR analyses confirmed the three-way interactions between perceived environment for managerial development, gender, and perceived training-performance-based promotion. These three variables predicted the utilization of managerial skills involving technical and human skills. The plotting of the results for these interactions clarified the different pattern of relationships between the environment for managerial development and gender depending on training-performance-based promotion. The work environment has a positive effect on managerial skill utilization, which is consistent with past studies (e.g., Tracey, Tannenbaum, and Kavanagh, 1995). Gender differences exist under a condition of low training incentives only. A supportive work environment has a stronger positive influence on female managers than on male managers only in a situation of low training incentives.

On the other hand, in a situation of high training incentives, male managers are highly motivated by the high incentives (instrumentality perspective), which reduces the gap of the work environment influence between female and male managers. Thus, the work environment effect on managerial skill utilization does not seem to be as strong as under a condition of low training incentives. The findings support the general notion of instrumentality prediction (Spence and Helmrich, 1980) in the sense that male managers tended to exercise their managerial skills when they perceived that their skill learning efforts would be rewarded and, in particular, were connected to their further promotion. These results are consistent with the findings of Miller et al. (1996) that being able to perceive an instrumental relationship between tasks and a valued future goal (i.e., perceived instrumentality) has an important influence on achievement and achievement-related variables.

**Theoretical and Applied Implications**

Perhaps the most promising contribution of the present study is that uncovering
training incentives may moderate the interactive effect between the work environment and gender on managerial skill utilization. In the past, people have assumed that a supportive work environment could positively influence women’s performance more than men’s (e.g., Alpander and Gutmann, 1976) —termed the environment-gender effect in this study. In contrast, our results show that this assumption (or Hypothesis 2 of the current study) is an oversimplification because the environment-gender effect is only operative for managers who perceive their training incentives to be low, such as those who do not think the organization will promote them based on their training performance. For managers who perceive their training incentives to be high, the environment-gender effect is minimal. Clearly, organizations should rely on both a supportive work environment and training incentives to motivate both female and male managers.

The second main contribution of this study is the identification of a proactive way of exploring how organizations can best motivate both male and female managers to improve their managerial skills by establishing a supportive work environment and linking promotion to managers’ training performance. Most previous studies simply attempted to explore the determinants of perceptual skill utilization by regressing skill utilization dimensions to possible predictors. Our empirical work, however, adopted a contingency perspective for predicting improved skill utilization for both gender groups.

The third contribution is the deep understanding of the dynamics of management training that this study provides, as well as the insights into the design of managerial training programs and skill-utilization assessment. The results indicate that the integration of gender differences may produce competitive business advantages. Most management education programs for women are based on traditional male-oriented programs that fail to consider the often different needs of women. Instead, they should be designed to fit women’s roles more closely (Alpander and Gutmann, 1976).

**Limitations and Future Research Directions**

Three limitations of the present study should be noted, which are discussed here as areas that may be fruitful for future research. First, all measures in the present study were based on self-reported data. Although using a writing exercise and giving precise instructions for recalling previous events are effective means of improving recall accuracy (Bradburn, 1983), it is difficult to ensure that such recollections are free of distortion. However, this issue should not completely invalidate the present findings because the current evaluation of the importance of the work environment and training incentives is consistent with the instrumentality-expressiveness learning perspective (Spence and Helmerich, 1980). Nevertheless, in the future, it would be useful to measure managers’ feelings and reactions in situ both before and after management training (e.g., by using a longitudinal design).

Second, the target sample firms of this study were limited to Chinese state-owned corporations. This raises the question of to what extent the current findings are generalizable. Can the findings be generalized to other business, ownership, and cultural settings? Although Chinese SOCs were suitable places to conduct the present study, if more manager samples from other business, ownership, and cultural settings could be included, the results would provide more useful insights into the different mechanisms of managerial skill utilization between the different settings. Thus, we cannot say with full confidence whether our findings are generalizable to other settings. However, since managerial talent might be universal in nature, as Hofstede (1972) and Ghiselli (1971) suggest, and so prevail over differences in cultures, and since Okechuku (1994) found in their study that supervisory ability, achievement motivation, intelligence, self-actualization, self-assurance, and decisiveness explained 74% of the variance in managerial effectiveness ratings in the PRC and 79% of the variance in Canada, we might...
expect similar results in different business, ownership, and cultural settings; especially with results related to the influence of the work environment on female managers and the influence of training incentives on male managers. This is because our study is based on the Western instrumentality-expressiveness learning perspective (Spence and Helmerich, 1980). Nevertheless, further research in different settings is needed to clarify this issue.

Third, in this study, we failed to explore the significant three-way interactions between the environment for managerial development, gender, and training-performance-based promotion that predict conceptual skill utilization. Conceptual skills are considered to be used often by personnel in high managerial positions (Katz, 1974). However, our samples were not made up of an equal number of managers from each of the three levels of management: the number of top managers was smaller than those of middle and lower-middle managers, and the number of top female managers was limited to only five. In this respect, the findings of the study apply mostly to middle and lower-middle CSOC managers. Also, the locations we studied were limited to Zhejiang Province in Mainland China. Future research, therefore, should cover broader geographical and organizational research contexts.

Acknowledgements

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The Changing HRM Practices of Japanese Firms and The Impacts on Compensation Practices of Japanese Affiliates in Malaysia

Area: HRM

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Abstract

The purpose of this article is three-fold. First, it explains the implementation problems following the adoption of PFPS by Japanese firms. Secondly, the author tries to identify general trends of typologies by examining HRM practices of Japanese affiliates in Malaysia, in particular, the compensation system and performance appraisal system (PAS). Lastly, the third purpose is to find whether or not ethnocentric Japanese affiliates are encountering similar HR problems of those in Japan as a result of conventional Japanese HRM systems (CJHRMS). The research reveals that most of the HRM practices in the Japanese affiliates are ethnocentric. However, compensation scheme are geocentrically managed at varying degree. The HR orientation to attract quality HR is mainly driven by policy and strategy of parent firm and organizational background of Japanese affiliates. In concern with employee motivation, Japanese affiliates with ethnocentric compensation practices are facing similar structural and operational problems of those by parent firms as a result of CJHRMS. Even when ethnocentric Japanese affiliates adopt PFPS in accordance to parent firms move, research reveals that the policies and practices are different. The shift from seniority system to PFPS in parent firms has little impact on Japanese affiliates.

I. INTRODUCTION

Many scholars currently criticize the conventional Japanese HRM systems (CJHRMS), in particular, seniority wage system (SWS) and lifetime employment system (LES). Some even claimed that CJHRMS are simply incompatible with a globalised future (Sethi, Namiki, Swanson, 1984) in particular, the tendency of Japanese firms in losing quality staff to other multinational companies (MNCs) due to less attractive compensation practices. Cornered by various changes such as globalization, prolonged recession, high cost of staff maintenance and the changing work values (JIL, 1994), Japanese firms began to recognize the necessity to modify CJHRMS to sustain competitive edge by securing quality HRs. Among the various strategies to promote employee motivation, two most concerned HR issues are (1) the shift from SWS to pay-for-performance system (PFPS); and (2) the changing roles of performance appraisal system (PAS) and the increasing importance of transparency issue of PAS in Japan. The author is concerned with the impact of these changes in CJHRMS on the compensation
practices of Japanese affiliates in Malaysia.

There is little research on HRM between Japan and Malaysia in the areas mentioned above. Literature indicates that embracing globalization in search of organizational effectiveness brings various effects on organizational management and practices that may require some degree of adaptation to local standards in consideration of its great impact on both work motivation of employees and organizational performance (Schuler, Dowling & De Cieri, 1993). Considering these points, the author attempts to examine and understand the changing CJHRMS by drawing upon both MNC typologies.

Taking into account: (1) the different work environment in Malaysia; (2) the tendency of Japanese firms to be home-country oriented; and (3) the change from SWS to PFPS in Japan, the purpose of this paper is (1) to explain the reason behind fading influence of CJHRMS and the trend towards PFPS; (2) to identify general trends of typologies by examining HRM practices of Japanese affiliates, in particular, the compensation practices and performance appraisal system (PAS). By doing so, the data collected help to understand the impact of the shift towards PFPS in Japan on Japanese affiliates in Malaysia; and (3) to find whether ethnocentric Japanese affiliates are encountering similar HR problems of those in Japan as a result of CJHRMS.

Literature Review and Approach

In managing MNCs abroad, there are three primary attitudes, namely ethnocentric, polycentric and geocentric. Some firms might run the organization as local firms (polycentric) while others might still prefer to resemble those of the parent companies (ethnocentric) or some form of hybrid management (geocentric) as described by Perlmutters (1969) concept of typologies. Ethnocentric organizations are country-oriented in which home-national criteria are applied onto foreign subsidiaries. Instructions flow from headquarters to the subsidiaries regularly and people of the home nationality fill key positions in the foreign subsidiaries, indicating high degree of authority and control lay in headquarters. Polycentric organizations are host country oriented and function with standards and policies that are adapted to the host country. Local environmental factors hold greater importance and may be independent. Local executives are trained for top designations and decision-making is relatively low in headquarters. Geocentric organizations are global oriented and interdependent organizations. Best employees are sought after regardless of nationality and adopt standards which are universal and local. Such organizations exert collaborative efforts to meet both global and local objectives.

In concern with work motivation, expectancy theory (Vroom, 1964) explains that people are motivated when the reward has significant value that respond to their expected valence. Although financial rewards play vital roles, people differ in expected valence as some people work for job security whilst others work solely for the money. The difference in the motivating valence for outstanding HRs has strong implications on HR strategies in retaining quality staff.

The research was conducted in Malaysia during July-August 2002. Field research was carried out through distribution of survey questionnaire as well as interviews of top HR managers which includes both Japanese expatriates and Malaysian staff of 17 Japanese affiliates. A combination of collection methods is adopted (postal mail, e-mail and personal distribution and collection). These collection methods help to secure a relatively high response rate. Of the 300 distributions to white-collars, 142 were received and 140 are usable, scoring 47% of response rate. It is intended that only a small part of the results obtained from
questionnaire survey will be used in this paper.

This paper is organized as follows. Section II and III covers the changing practices of CHJRMS. Section II briefly explains the reasons behind the fading influence of CJHRMS while Section III explains the increasing acceptance of performance-oriented incentive systems and implementation problems. Section IV discusses the general HRM practices of Japanese affiliates in Malaysia. Section V discusses the problems arising from CJHRMS in both other foreign countries and Malaysia.


This section explains the reasons behind the fading influence of CJHRMS by focusing on the main components of CJHRMS such as SWS, LES and slow internal promotion practices.

2.1 Seniority Wage System (SWS)

A survey (Schuler & Rogovsky, 1998) suggests that it is more favorable for firms operating in countries with high levels of uncertainty avoidance to offer more certainty in compensation systems, for example, seniority-based or skill-based compensation system. Hofstede and Bond's (1988) finding reveal that Japan ranked high at 92 for uncertainty avoidance dimension and ranked low at 46 for individualism. As data indicates, Japanese characteristics of uncertainty avoidance were strong, reinforces the notion that Japanese in the 1950s preferred SWS and LES to fulfill their security need (Vroom, 1964) due to job scarcity. However, changing environmental forces brought about the emphasis on PFPS. Since pay is a mechanism for increasing efficiency, it should ideally be linked to performance (ILO, 1998).

On contrast, wage levels under SWS do not reflect the necessary degree of individual contribution. Senior employees receive pay which are far higher than their productivity, leading to high maintenance cost. In addition, the large wage differential between senior and junior employees is morally and monetarily demotivating to outstanding employees. Furthermore, SWS immobilize outstanding HRs via deferred payment practices. In view of the cost, employee motivation and recruitment, SWS is getting less important. Table 1 and Table 2 show the shrinking wage gap over three intervals, indicating the les emphasis on seniority in annual wage increment. Japanese firms adopt PFPS as they realized the pre-requisite of a HR system capable of objectively judging and rewarding individual performance, reinforcing that seniority is no longer the major base for performance appraisal (Morishima, 2001).

Table 1: General Salary Structure for Manufacturing Companies*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-39</td>
<td>201,900</td>
<td>100</td>
<td>254,300</td>
</tr>
<tr>
<td>40-44</td>
<td>206,400</td>
<td>100</td>
<td>278,600</td>
</tr>
<tr>
<td>45-50</td>
<td>202,500</td>
<td>100</td>
<td>294,200</td>
</tr>
<tr>
<td>50-54</td>
<td>202,900</td>
<td>100</td>
<td>292,800</td>
</tr>
</tbody>
</table>


Note * Table 1 compares the wages of the same age group over three intervals

Table 2 _Wage Differences for University Graduates*
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-24</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50-54</td>
<td>311</td>
<td>294</td>
<td>263</td>
<td>166</td>
<td>207</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>55-59</td>
<td>289</td>
<td>280</td>
<td>267</td>
<td>132</td>
<td>225</td>
<td>240</td>
<td></td>
</tr>
</tbody>
</table>

Note * Table 2 compares the wages of both the same and different age group over three intervals

2.2 Lifetime Employment Systems (LES)
LES was strategically emphasized in the 1950s to gain full employee commitment and to ensure a stable pool of HR during industrial revolution considering the scarcity of skilled labor and intensive poaching. LES also promoted the lifelong employer-employee relationship via the integration of employer-employee goals to promote employee motivation (Wakabayashi, 2001). However, LES is not in favor now especially among the large firms (Takeuchi and Wakabayashi, 1998). Recent findings (TV, Channel 1, 2001) reveal that Japanese above the age of 40 pay less importance on LES.

2.3 Slow Internal Promotion
Internal promotion was a HR strategy to motivate employees based on job experience and length of service. Promotion provides recognition of achievement, however, it takes about 15 years to reach the post of junior section manager (Takeuchi, 1995). Fast track promotion is usually an exceptional case (Inohara, 1990). Overtime, the limited vacancies resulted in steeper hierarchy structure, indicating less promotional chance and the longer time it took, that further demotivated outstanding employees. In 1995, it was reported that the rank of bucho, kacho and kakaricho were fairly in excess (Table 3). Even though firms promoted employees via grade structure to solve the problem, the strategy only led to higher labor cost. In future, it is anticipated younger employee will be promoted over senior colleague.

Table 3: Labor Demand by Rank

<table>
<thead>
<tr>
<th>Rank</th>
<th>Labor Demand (row percent)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate</td>
<td>Fairly Excess</td>
</tr>
<tr>
<td>Bucho (Department Manager)</td>
<td>46.7</td>
<td>39.1</td>
</tr>
<tr>
<td>Kacho (Section Manager)</td>
<td>35.3</td>
<td>46.5</td>
</tr>
<tr>
<td>Kakaricho (Group Chief)</td>
<td>43.3</td>
<td>30.9</td>
</tr>
</tbody>
</table>

Source: Nikkeiren and Nissankun (1995)

III. Performance-oriented Incentive Systems

3.1 Adoption and Trends
In modifying the CJHRMS in wage, 10.4 percent and 54 percent of firms adopted annual salary scheme in 1993 and 1994 respectively (Kameyama, 1993), indicating welcoming response. Another survey shows that a total of 59.6 percent of respondents evaluated annual pay system positively (RILAA, 1994) whilst 64.9 percent of respondents cited the need to extend better treatment to those with better ability and higher contribution, suggesting change of work attitude. In addition, criteria for PAS are also designed towards more objective-
oriented criteria instead of the sole reliance on the subjective nature of traits characteristics. Nearly 70 percent of firms with PAS (50.8%) attached greater importance to achievement (MOL, 1999), showing a big leap from the 22.3 percent expressed in 1996 survey. More employees are satisfied with PAS with the understanding that performance gets more priority and will ultimately be reflected in their annual pay accordingly. Most survey findings show positive trends of PFPS adoption where firms assign higher weight on performance (Table 4).

Table 4 Weight Attached to Various Criteria in Assessing Employees (in Percentage)

<table>
<thead>
<tr>
<th></th>
<th>Performance</th>
<th>Skill/Ability</th>
<th>Effort</th>
<th>Job Content</th>
<th>Education/Age</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>41.0</td>
<td>26.8</td>
<td>13.8</td>
<td>14.4</td>
<td>4.0</td>
<td>100.00</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>43.9</td>
<td>25.2</td>
<td>12.4</td>
<td>15.0</td>
<td>4.3</td>
<td>100.00</td>
</tr>
<tr>
<td>Non-manufacturing</td>
<td>39.1</td>
<td>27.9</td>
<td>14.7</td>
<td>14.0</td>
<td>3.5</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: FRI, 1998, p.70

3.2 Implementation Problem

Despite the popularity of merit pay for enhancing productivity, the establishment of payout mechanisms proved difficult. At the core of PFPS is PAS that greatly determines the success of incentive system. The failure to project fairness and transparency of the evaluation and reward system will only lead to employee distrust. Unlike the West that largely uses PAS to facilitate salary decision, PAS are conventionally used in Japan for identifying training needs. Japanese firms face similar problems in the area of fairness, transparency and design standards of PAS as past research shows, survey respondents (68.1%) cite the difficulty in achieving satisfaction and justification in evaluation in spite of the highly favored annual pay system for its higher accuracy of evaluation (71.4%) and work motivation (91.3%),. In another survey (JIL, 1998), the problems cited by managers are:

1. **The absence of standardized measures** suggests that the PFPS is still in its infancy stage in Japan. In Japanese firms, manuals, if there is any, are not detailed since employers set loose limits to work and leave details to the discretion of employees (Takeuchi, 1985). A 1999 survey reveals that 45.7 percent of appraisal criteria were unclear or inconsistent (JIL). Furthermore, appraisal criteria emphasize heavily on personal traits such as loyalty and commitment.

2. **The vagueness of yardsticks for assessing performance** further leads to ambiguity on subordinates. PAS are mostly operated in closed system owing to a lack of reasonably objective standards for evaluation and justification. Moreover, managers are restrained from distributing the appraisal results to minimize accusation of subjectivity and demand for justification.

3. **The averaging of evaluation** takes place in Japanese firms (Sumihara, 1994). It is hard to satisfactorily establish the validity of evaluation result the fact that evaluation criteria are not inherent in the jobs themselves though they bring effects to performance as a whole. Hence, supervisors can easily manipulate rating, either by inflating or deflating the score. Japanese social systems that greatly value the harmonious human relationship maintained to gain cooperation in work, tends to be lenient in PAS (20.9%).

Some researchers found that Japanese employees only exert efforts just before appraisal period and supervisors evaluate the whole evaluation term (69.3%) which attributes to inaccuracy since it tends to be based on recent observation. Another concern is job autonomy. Since employees hold greater responsibility for their job performance and results under
PFPS, they should be given higher degree of job autonomy to enable them to exercising their managerial judgment skills to achieve desirable results. After all, job autonomy is one of the variables that affects Japanese employees perception of appraisal accuracy and equity that ultimately determines employee satisfaction on PAS (Ide, 1998). Besides, introduction of PFPS into CJHRMS may cause difficulty on promotion decision in view of the strong influence of human relations (Matsuba, 1997) and cliques for faster promotion (Sethi, Namiki, Swanson, 1984) as only half of the managers are satisfied with the degree of transparency in PAS (JPC, 1999). It is understandable why the differences between societal and PAS values failed to gain Japanese confidence on the effectiveness of PFPS.

IV. Implementation of Japanese HRM Systems in Oversea Operation

This section concerns with the intercultural work environment and IHRMS of Japanese affiliates in Malaysia, as experienced and perceived by both the Japanese expatriates and local top manager working for Japanese firms. The primary objective here is to present a conceptual framework in which culture (i.e. work attitude and values) and external environment (i.e. history, economic and managerial development) are effective analytical variables that form the social system and the source of work motivation of a nation. The firms interviewed cover various industries based on open-ended interviews with 7 Japanese top managers, 7 local top HR managers and 5 local middle managers in Malaysia (Table 5).

Table 5 Types of Companies by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trading Conglomerates</td>
<td>5</td>
</tr>
<tr>
<td>Construction</td>
<td>3</td>
</tr>
<tr>
<td>Electronics Manufacturer</td>
<td>2</td>
</tr>
<tr>
<td>Departmental Store</td>
<td>2</td>
</tr>
<tr>
<td>Automobile parts Manufacturer</td>
<td>1*</td>
</tr>
<tr>
<td>Bank</td>
<td>1</td>
</tr>
<tr>
<td>Insurance</td>
<td>1</td>
</tr>
<tr>
<td>Food and Beverage</td>
<td>1</td>
</tr>
<tr>
<td>Consultancy</td>
<td>1*</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

Note *: small and medium-sized Japanese affiliates

4.1 Local Perspective: Implementation of Japanese HRM Systems in Malaysia

Many Japanese firms invest in Malaysia. Today, there are approximately 1168 Japanese affiliates operating in Malaysia. Section IV discusses the general HRM practices of Japanese affiliates in Malaysia.

4.1.1 Recruitment and Selection

Recruitment and selection practices are not standardized among Japanese affiliates nor do they strongly resemble those of parent companies on fresh graduate recruitment system. It depends on real time HR needs and vacancy. External hiring takes place when suitable candidates from within are not available. Japanese affiliates also adapt to local law whereby male and female receive fair competition in job opportunities, job responsibilities and career advancement. Functionally similar to Spring Labor Offensive, close coordination of the interest of Japanese affiliates in the same industry is run implicitly to minimize job-hopping of local employees via effective recruitment and competitive pay decision.
4.1.2 Promotion and Compensation Practices

Promotion practices in some Japanese affiliates are similar to those of parent firms whereby internal promotion is given utmost priority to solicit loyalty and full employee commitment. Besides complying the statutory requirements, some ethnocentric Japanese affiliates also extend the provision of overtime allowances to local employees with earnings above RM1500 to retain quality HR.

Determination of salary is generally based on the combination of: (1) external labor market price; and (2) the internal agreement of annual salary increment and bonuses among the same industry players along with corporate performance. Every year, the same industry players collectively determine an acceptable range of financial incentives to reduce the incentive gap among players, resulting in narrow differences in incentive offers among Japanese affiliates and yet sufficiently competitive with non-Japanese MNCs to counteract job-hopping due to the tendency of Malaysian to job-hop in short term in the pursuance of faster promotion and salary increment although those with mature career path tend to leave their firms in search of challenge.

Research reveals that only some Japanese affiliates are considering or practicing performance-oriented compensation practices. However, the decision or practice is more likely to be influenced by industry characteristics and organizational features (i.e. corporate business strategy; age; and history and type of establishment and ownership). Sources reveal that large Japanese affiliates which established the initial business as greenfield project and have about 40 years of establishment history in Malaysia tend to be highly ethnocentric where CJHRMS is given utmost importance, irregardless of their extensive global business or globalization strategy that should have prompted Japanese firms to move away from CJHRMS. Some firms claim to emphasize more on performance. However, the ratio of seniority to performance (40:60) shows little difference, suggesting that seniority still play a significant role in PAS and compensation decisions of Japanese affiliates in Malaysia.

Wage incentive varies ranging from simple wage policies to those highly performance-oriented ones in accordance to: (1) corporate business strategies; (2) the intention of adaptation to local practices; and (3) HR strategies and corporate compensation policies. Merit point system is practiced as a form of recognition for outstanding performance. For those firms favoring PFPS, salary formula is more precise, reflecting the provision of various incentives to promote productivity, creativity and initiative effort. For instance, illustrated below are two salary formulas of two wholly-owned Japanese affiliates of the same industry that depict vast departure due to parent firms practices and the different functional (administrative or dynamic) roles of local HR department. Whilst Company A adheres to ISO standards and adapt to local environment in its IHRMS, Company B adheres ethnocentrically to parent firm that favors CJHRMS.

(1) Company A:

\[
\text{Salary Structure} = \text{Base salary (qualification, skill)} + \text{Position allowance (accumulated experience)} + \text{Design allowance (project, scale of project), Hardship}
\]

(2) Company B:

\[
\text{Salary Structure} = \text{Base salary (experience, qualification, age)} + \text{structured increment (rank/performance)}
\]

In concern with the incentive practices of Japanese affiliates that implements PFPS,
Interview findings reveal that the incentive practices are similar to those in Japan where: (1) bonus functions as a reward for annual performance; and (2) the incentive range is narrow to minimize employee dissatisfaction. For instance, in an annual bonus that ranges from one to two and a half months, the average performers receive around one to one and a half months while high performers receive up to two and a half months.

Interviews reveal that Japanese affiliates have very low staff turnover that the firms are not concerned over it. This is due to the sense of security and conducive working environment provided by large Japanese affiliates as part of the HR strategy to retain quality staff. These firms continue offering of attractive salary increment even when business operations are slow. Moreover, generous provision of fringe benefit and the appreciation of Japanese work culture successfully solicit loyalty and sense of belonging of local HRs. These findings are further supported by the survey results that reveal, on average, Malaysian workers in 25-35 age group with small family size in Japanese affiliates spend 5.78 years of their 9.42 years of working years in the same firm after an average of 2.21 times of job switching experience prior to the employment at Japanese affiliates.

In spite of the adoption of PFPS, it is nevertheless misleading to assume that the compensation practices are more performance-oriented. This is particularly true in some Japanese affiliates in which top management has loose reinforcement towards application consistency of procedures. In other words, managers are given the freedom to reward subordinates based on seniority in accordance to their preference even though PFPS is formally institutionalized. Nevertheless, interviews reveal that Japanese affiliates geocentrically manage compensation practices.

4.1.3 Performance Appraisal Systems (PAS)

It is difficult to identify a typical PAS practiced by Japanese affiliates in Malaysia as there are diverse approaches, in particular, with the recent shift to PFPS. PAS of Japanese affiliates are highly similar to those of parent firms in terms of criteria measurement, degree of transparency and avenue for negotiation. Japanese affiliates which face structural issues and problems in PAS and compensation practices due to ethnocentric or CJHRMS orientation are more reluctant to implement an open system. As for the small and medium-sized (SMEs) ethnocentric Japanese affiliates, it was found that even the parent firms are without institutionalized PAS.

Measurement criteria is another area of concern. While 65.8% out of 50.8% of Japanese firms with formal PAS attached greater importance to achievement, it is 13 out of 17 firms of Japanese affiliates in Malaysia. Having noticed that 13 out of 17 Japanese affiliates in Malaysia have some form of PAS and PFPS (Table 6), it is equally surprising that system and practice are dissimilar the fact that some managers can emphasize on seniority and ignore the PFPS in scenario where Japanese affiliates believe that both SWS and PFPS are good practices as long as the manager can convince his subordinates of the benefit and fairness of his personal preference. It is also found that the routine transfer of Japanese expatriates that head the firm every five years makes it difficult to evaluate employee performance accurately. New management head often brings in new ideas and business concepts that require considerable time for local employees to grasp, leading many to perceive that evaluation is only appropriate in the third year under the new leadership.

The degree of transparency of PAS is another concerning issue. Among those with PAS, Japanese affiliates in trading industry are less keen on explaining the details or results to local employees even though clearly defined performance criteria and well-designed PAS are
available. In addition to the justification difficulties, it is also because some Japanese affiliates find it hard to justify appraisal results to the acceptance of local evaluatees, considering that individual perception and communication style of different cultures make the feedback process ever more complicated (Table 6). As highlighted by some managers, often than not, it is rather difficult to capture the full meaning of home country policies in the making of English and Malay manuals. Meanings are lost or less accurately interpreted especially when information is tacit. Furthermore, the same PAS procedures may be interpreted differently due to different language proficiency level and value system. Unlike Japanese that are highly homogeneous, Malaysia is made up of multi-ethnic societies with different values and expectation. As a result, evaluators should not only be versatile but also be able to understand and manage the different cultural values, influencing Japanese affiliates to maintain a closed policy system. As mentioned by Sumihara (1999:105), cross-cultural learning is a constant effort where large part of cultural knowledge is tacit and often taken for granted to be expressed verbally. Hence, justification of appraisal results can be very taxing for Japanese affiliates in particular, those ethnocentric and conventionally oriented Japanese affiliates since PA exercise tends to be limited to Japanese expatriates even when they are not the immediate supervisors. Alternatively, it may be more effective to delegate PA exercise to the local supervisors.

Careful selection of words for expression and reasoning are also important for constructive feedback. Failure to diligently handle feedback session may lead to employee demoralization and dispute. As a result, considerable time investment is necessary for smooth and meaningful feedback session. According to one Japanese expatriate, even though negotiation of PA result can be informally arranged upon special request, the firm insists that the institutionalization of a formal channel for such purpose is deemed unwise for the formal channel may simply shift employee attention to pay and job dissatisfaction that may further escalate complaints. It was also mentioned that although a manager spent more than 10% of his working hours for feedback session, the outcome was nothing spectacular. The time invested was perceived as a loss of time of which could be better used for strategic business generation. Such perception shows that issues of fairness surrounding PAS are yet to be viewed as one of the driving forces behind employee motivation. Simply, the avenue for negotiation is seen as a cost center. Thus, it is not surprising that only 4 out of 17 Japanese affiliates in the interviews provide avenue for negotiation. In particular, the interview reveals that only one out of 17 Japanese affiliates provides the avenue for adjustment after negotiation, suggesting the limited effectiveness of negotiation (Table 6). Table 6 is drawn based on data derived from the interviews with 17 Japanese affiliates.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Degree of Transparency of Performance Appraisal System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Goal-setting</td>
</tr>
<tr>
<td>Trading Conglomerate (5)**</td>
<td>3</td>
</tr>
<tr>
<td>Construction (3)</td>
<td>2</td>
</tr>
<tr>
<td>Electronics Manufacturer (2)</td>
<td>1</td>
</tr>
<tr>
<td>Department Store (2)</td>
<td>2</td>
</tr>
</tbody>
</table>
4.1.4 Training and Development Practices

On-the-job training (OJT) is practiced by all Japanese affiliates to equip the staff with necessary skills. This is particularly seen in regulated industries whereby fund is set aside for training and development (4%) of local employees. However, job rotation is not practiced in all industries depending on the nature of job and adaptation effort to local training practices. Job rotation is more commonly seen in manufacturing industry whereby improvement on floor production skills requires wide exposure and experience on machinery. Both interview and questionnaire survey reveal that most of the Japanese affiliates are generous in sponsoring employees to various kind of training.

4.1.5 Layoff

In addition to compliance of local employment law, some Japanese affiliates in Malaysia also implicitly avoid employee dismissal as practiced in the parent firms. Only one of the five Japanese affiliates in the study has explicit layoff policies. Three of these Japanese affiliates had not laden off any workers (Thong, 1991). Interview findings are parallel with Thong’s research where Japanese affiliates do not easily give up on unproductive employees. Apart from LES, Japanese affiliates invest in training the unproductive employees by introducing skill development, training and job rotation apart from LES.

4.1.6 Managerial Decision-Making

Application of decision-making style varies among Japanese affiliates. Nevertheless, some core practices of parent firms are delegated solely to Japanese expatriates in particularly those large firms with long history of establishment in Malaysia. In general, local top managers often do not involve in strategic business decisions as they mainly execute the strategic plans. One firm revealed that business negotiation with the locals are part of the limited work delegation practiced in the organization towards realizing globalization via localization exercise. Such trends are rather similar to those extensive researches in the U.S (Kleinberg, 1989) and often tend to lead people to perceive that Japanese do not trust the locals in strategic decision-making. However, the personal interviews reveal that language and communication barriers are among the biggest hindrance towards full-scale localization.

Upon the review of the findings, it seems that the Japanese affiliates adopt a combination of HRM practices, those of parent firms as well as the local British or American oriented HRM practices in Malaysia, indicating that the current HRM practices employed by Japanese affiliates are not strongly tuned towards ethnocentric practices or CJHRMS. Considering that: (1) HR departments of Japanese affiliates tend to be functionally more administrative; (2)
strategic decision-making is still mainly handled by Japanese expatriates; and (3) areas such as control and layoff practices resemble those of parent firms, these data suggest that the firms are managed ethnocentrically. On the other hand, HRM practices in Japanese affiliates such as recruitment and compensation in Malaysia resembles more to local practices by adapting to a more performance-oriented compensation scheme besides complying local laws and regulations, suggesting that Japanese affiliates are more polycentric in compensation practices.

V. How Japanese HRM Systems Fair in Foreign Countries: Problems and Implications

5.1 International Perspective

CJHRMS face various problems in oversea operations. White-collar professionals in the United States tend to be highly individualistic and highly intra-firm mobile. They also tend to have higher career expectations towards PFPS, rapid promotion opportunities and clearly laid out career prospects (Zhuang Yang, 1992). These are the keys to the motivational structure underlying the American management behaviour. In addition, the concept of pay equity in the U.S. pay system that requires sophisticatedly developed job evaluation system, salary surveys and evaluation transparency (Milliman, Nason, Glinov, Huo, Lowe and Kim, 1995) are highly different from CJHRMS, resulting in the loss of quality staff in Japanese firms to their competitors.

Likewise, CJHRMS transferred to Japanese affiliates in China are facing similar difficulty of retaining capable employees to the extent that some Japanese subsidiaries are gradually modifying its CJHRMS to suit local practices. Chinese who previously worked for Japanese affiliates left for Western MNCs in China (NHK, 25th September 2002) for higher monetary incentive was one of the main attractions. Other factors for job switch include issues such as job authority, seniority system, organization rules, poor incentive system and ambiguous PAS. Most of the ambitious Chinese are performance-oriented with the zest for speedy upward advancement. They desire recognition of capabilities and fast-track promotion. The Chinese also are dissatisfied with the job description and low transparency of PAS in Japanese affiliates that prevented them from working effectively towards goals that can be a clearer measure to their work performance. In short, Japanese affiliates in China seem to be more ethnocentric in HRM strategies.

Switching the attention to the scenario in Malaysia, this paper attempts to understand the transfer of CJHRMS to Malaysia as well as to identify whether the organizational and HR problems faced by the locals are of any similarities to those experienced by Japanese employees under CJHRMS in Japan.

5.2 Local Perspective:

5.2.1 Problems Identification: Conventional Practices of Japanese HRM Systems

Personal interviews reveal that most of the trading houses and bank strongly resemble the CJHRMS whereby SWS, LES and slow internal promotion are adopted as the key to work motivation and organizational commitment. Other industries adopt different HRMS in accordance to their global business plan for the local operation in addition to adaptation and localization efforts. For those Japanese affiliates that: (1) are eager to be the market leader; (2) adopt expansion strategy; and (3) completing full-scale localization, performance is given utmost importance in salary decisions and internal promotion.

Having said the above, most of the conventionally oriented Japanese trading houses in
Malaysia are facing similar structural and cost effectiveness problems of those in Japan. Firm age seems to influence the content and intensity of CJHRMS as well as its resistance to change. Japanese affiliates with long establishment both in Japan and Malaysia (about 40 years) tend to heavily practice CJHRMS since their establishment in Malaysia. They are more ethnocentric in their compensation and promotion systems and experience structural and wage distribution problems.

Such problems are also attributed by the recruitment failure of Japanese affiliates during establishment. During the early establishment, local employees with minimal skills were employed to start off the business operation by running simple tasks such as handling office equipment machineries. Under CJHRMS, employees are kept in the organization with internal promotion in spite of poor performance and little skill improvement. A survey (Vance, McClaine, Boje and Stage, 1992) reveals that Malaysian employees preferred extrinsically based reward systems. Unfair perception of senior employees in trading houses on their compensation level arises when they perceive that they are underpaid. By comparison, they realize that the given titles and salaries are not parallel with those offered in the external labor market. The senior employees also perceive the presence of incoming juniors as a threat. At the lower managerial level are the juniors with higher qualification and capability to work efficiently that tend to perceive negatively of the management since they are suppressed by low salary and slow internal promotion under SWS.

5.2.2 Performance Appraisal System (PAS)

Japanese affiliates are encountering the objectivity and transparency issues in PAS. Most of the formal PAS based on Management-by-Objectives or ISO are transfers of practice from parent firms that sought consultancy help. Interview findings show that more than half of the 17 Japanese affiliates (as shown in Table 6) have basic PAS but they provide little avenue for negotiation when dispute arises over appraisal result. It is also understood that there is very little effect or adjustment on appraisal result even though employees are given the opportunity to voice out their disagreement and complaints. Given the closed-door policy of Japanese affiliates on PAS, Malaysian employees accept it although they would prefer to be informed of the results as supported by a survey (Vance, McClaine, Boje and Stage, 1992) that indicates Malaysian employees preferred more frequent feedback on their work. Taking this into account with current general practice on PAS, perhaps, Japanese affiliates may want to consider providing frequent feedback on Malaysian employees work performance so as to allow Malaysian employees ample room for improvement as well as to reduce their dissatisfaction over closed policy of appraisal result.

As mentioned earlier, inconsistency is another problem when some senior managers who prefer seniority as the yardstick for salary and promotion decisions ignore the institutionalized performance-oriented procedures, suggesting that the determination of financial and non-financial rewards, in practice, is not standard throughout the organization. In short, most of the formal PAS that are performance-oriented in Malaysia may be generalized as polycentric at glance but further research reveals that seniority may still be the prominent criteria in compensation practices.

VI. Discussion and Conclusion

Past research on the formation of CJHRMS has provided us with additional insights into the issue of the ailing popularity of its practices. Governmental and academic research in Japan also further highlighted both the popularity and dissatisfaction of white-collars towards
PFPS. This study reveals that the trend towards PFPS in Japan influences incentive systems of those Japanese affiliates operating in Malaysia at a small degree. The reason being that, incentive systems in Malaysian firms have been performance-oriented due to the influence of British colonization. More importantly, the results of this study suggest that there is variation of HRMS among Japanese affiliates, in particular, the compensation scheme that are practiced in accordance to three main elements as factors to the variation in HRM practices in Malaysia: (1) industry characteristics and size (regulated and non-regulated; type of industry); (2) parent company’s policies (choice of MNC management; localization effort and intention; decision making policies); and (3) organizational features (i.e. corporate business strategy; age; and history and type of establishment and ownership).

In concern with organizational size, interviews reveals that SMEs tend to be more ethnocentric oriented in HRM practices where: (1) HRM of SMEs strongly resemble those of parent firms; and (2) HRM tune heavily toward CJHRMs such as SWS, LES and slow internal promotion. Having said this, criteria in PAS are measured with traditional indicators (age, length of service, traits and educational background), indicating the high emphasis of firms on efficiency through accumulation of experience. On the other hand, HRM practices of certain large Japanese affiliates tend to view geocentric orientation as the appropriate approach towards organizational effectiveness as well as to fit into the local environment. This is achievable through the implementation of PFPS, promotion systems and open-policy PAS. Nevertheless, Japanese firms operating in regulated industries such as bank may not necessarily be more polycentric than other industries. It was found that the bank closely resembles CJHRMS while complying local banking laws. Interview reveals that: (1) unproductive staff are not dismissed due to LES; (2) seniority is heavily emphasized in incentive systems; and (3) PAS was only instituted recently.

Some Japanese affiliates adopt practices similar to those of parent firms. The management styles are in accordance to parent firms’ policies. Such decisions are also based on the intention and degree of localization effort of which determine the degree of participation of local top managers in strategic decision-making. Because of the close resemblance of HRM practices, it was found that ethnocentric oriented
Japanese affiliates are facing those similar HR problems in Japan. Briefly, (1) unproductive and less competent senior staff with relatively higher salary than the juniors; (2) slow internal promotion that demotivates ambitious juniors; and (3) ambiguity of PAS and salary determination methods due to absence of PAS or low transparency on information disclosure. All of these consequences result in the difficulty of retaining quality staff.

Besides parent firm policies, this scenario is obvious in large Japanese affiliates with 100% equity ownership although the degree of ethnocentric approach varies. Although all 5 trading houses have formal PAS, the PAS is not within the reach of local staff in two trading houses. Coupled with the fact that three trading houses are seniority-oriented in compensation and promotion practices, it is clear that Japanese affiliates with 100% equity ownership tend to be relatively more similar to home country practices. Age and year of establishment of Japanese affiliates in Malaysia also play significant roles in managing MNC. It is noticed that Japanese affiliates with around 40 years of history in Malaysia tend to face those similar HR problems in Japan. On the other hand, younger Japanese establishments with expansion strategy in Malaysia tend to be more polycentric, both in terms of performance-oriented incentive systems and high degree of open system in PAS.

In general, the interviews also suggest that the current HRM practices employed in Japanese affiliates are more geocentric. In addition to compliance of local laws and regulations, HRM practiced by most of the Japanese affiliates in Malaysia, in particular, in the areas of recruitment and compensation closely resemble local practices by adapting the compensation scheme to a more performance-oriented incentive system as compared to home country practices. Nevertheless, a certain degree of seniority systems are still strongly emphasized by trading houses and bank in compensation and promotion practices. While certain HR practices are geocentrically approached, on the other hand, areas such as control, layoff and strategic decision-making resemble more closely to those of the parent firms. While close similarities of LES and layoff practices are attributed by ethnocentric practices, the similarities in control and decision-making may also be influenced by the degree of localization effort. In addition to the above, issue on fairness of PAS in terms of information transparency and opportunity for negotiation is still at its infancy.

Taking into account of the link between quality HR and organizational performance, it is anticipated that Japanese affiliates may want to consider motivating local HRs with higher degree of localization by managing their Japanese affiliates in Malaysia in polycentric orientation. In addition, it is also foreseen that top Japanese expatriates in Malaysia whose firms are facing similar HR problems those in Japan would play a more active managerial role by suggesting effective HR practices to the parent firms in solving SWS, LES and PAS. Although Malaysians are generally more performance-oriented (refer to page 10), many of them emphasize on seniority in the event where both senior and junior staff have equivalent educational background, experience and skills for salary increment and promotion opportunity. Taking these factors into account, It is also anticipated that the adoption towards PFPS by Japanese affiliates in Malaysia may gradually settle on a more acceptable incentive system that emphasizes performance significantly more than seniority — a well-balanced combination of both elements to attract and retain quality HR. For instance, Matsushita Group introduced cafeteria-style benefit system in 1999 to suit individual preference of

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1 Cafeteria-style benefit system is an approach to best meet individual employees different preferences in the incentive components that make up the total incentive package. Often, standardized one-benefit-package system offered by firms may not be equally attractive to all employees. Cafeteria-style benefit system allows employees to choose benefits according to their preference within a certain framework.
incentive whereby an astonishing 55.3% (Senmatsu, 2000) of the young employees chose deferred payment system, indicating that more than half of the young employees still value SWS, suggesting that compensation and incentive system should strike a balance and not totally abandon SWS. Hence, it is also anticipated that sophisticated cafeteria-style benefit system may be introduced in Japanese affiliates to best-fit individual differences in motivation and desired incentive scheme.

While the findings on HRM practices by Japanese affiliates, in particular, the focus on CJHRMS and PAS are indeed interesting, a critical point is the extent to which the differences in compensation practices and PAS affects Malaysian’s work motivation and organizational commitment, as compared to other non-Japanese MNCs and Malaysian firms operating in Malaysia. In view of the increasing importance of fairness in compensation practices and transparency of PAS, one related area of inquiry would be the extent to which the perception of fairness of Malaysian employees towards their compensation scheme, both financially and procedurally, may significantly affects their work motivation, and organizational commitment that eventually have impact on organizational performance. Knowledge of such research could be useful for firms in the sense that these perceptions ultimately could promote better understanding of Malaysian workers and hopefully, to strategically use the findings to retain quality HRs via a new form of non-financial means — management of fairness perception.

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Abstract

This paper extends recent work on the effect of information technology on productivity in Japan by adjusting existing series on IT capital stock for the period 1975–1995 from “gross” capital stock to “net” capital stock, extending those series to the most recent period 1996–1999, providing a new series for a price index for software investment, and using this deflator to construct a series for the software capital stock. Furthermore, the coverage of the software investment series is extended to include prepackaged and own-account software. Using standard techniques, the basic results of Shinozaki (1998) are confirmed, showing that marginal productivity of investment in IT, as opposed to other forms of capital, is remarkably high. The new data series allow decomposition of the IT capital stock, and analysis reveals that investment in software is even more productive than investment in IT in general. IT maintains high contributions to Japanese economic growth even during the recent recession. This suggests that Japan is far from a balanced growth path, but rather investment should be concentrated on IT and especially software. Finally, estimates of total factor productivity growth average near zero, suggesting that improvements in IT account for a large share of recent productivity growth.
1 Introduction

1.1 Background and Purpose

Information and communication technology (IT) is one of the essential factors for today’s economy in Japan, as well as other countries, especially, the U.S. Japan has also experienced the rapid decline of computer hardware price, rapid development of information processing technologies and the beginning of the use of the Internet for commerce through the 1990s. The number of computer machines in offices is increasing because their introduction as computer hardware price is declining by 7.5 percent per year.1 Most large firms now provide one personal computer for each employee.2 The Internet population in December 2001 in Japan was about 55.9 million (an 18.8 percent increase compared with its population the previous year, 2000). The scale of the electronic commerce market on the Internet was about 1,200 billion yen in 2001. These facts imply that it is difficult to make a business strategy and industrial policy without considering information technologies.

On the other hand, IT investment has been severely restricted since the collapse of the so-called “IT bubble.” It is a popular misunderstanding that IT itself is the cause of the current long-term depression. Some business leaders regard IT investment as “a temporary boom” and decreased or stopped investment. But we must recognize the importance of IT investment and analyze its effects because IT is essential for the economy.

Examining IT investment patterns shows that the share of software against IT investment increases as that of computer hardware (Computers and Computer peripheral equipment) declines gradually. The ratio of software against total IT investment increased from 15 percent in 1995 to 21 percent in 2000 while that of hardware declined from 40 percent in 1995 to 30 percent in 2000.3

One possible reason is the technological trend in computer systems, which is from the centralized system based on a large mainframe computer to decentralized “client-server architectures” made of small computers with powerful processors, and the progress of standardization to connect machines or other hardware provided by different makers in the 1990s. That is, the software to construct system with number of hardware to operate it efficiently becomes more important. One of the most famous examples in the IT industry is IBM, which is the leading IT producer in the world, concentrating its business re-

1Wholesale price index (WPI), Bank of Japan.
sources on software and service divisions more than hardware division after
the crisis of the declining demand for mainframe computers in early 1990s.
NEC, Fujitsu and other producers in Japan are following IBM in changing
their business structures to emphasize software and service products.

Jorgenson and Stiroh (2000) suggest that “firms respond to computer
price declines by investing in complementary inputs like software”, which
seems plausible as a result of rapid accumulation of hardware stock in Japan.
Investment in information technology often means investment in a “system”
composed by some hardware component and software to operate them ef-
ficiently. Complementary investment in software is also increasing as the
accumulation of hardware though the decline of price is far less than that
of hardware. Of course, software price may have also dropped dramatically.
Moreover, it is also thinkable that the role of software within computer sys-
tems, in fact, increases. Because software has the flexibility to update easier
than hardware which tends to lock in to inferior technology, the function
operated by software is enlarging these days.

Unfortunately, there is a statistical problem that data on software in-
vestment are poor, while the importance of software is growing. Software
investment is recognized as an intangible asset in private investments under
the new 1993 System of National Accounts (SNA) although it was classified
as an intermediate input under the old 1968 SNA. In the U.S., three types of
software, prepackaged software, own-account software and custom software,
are included in the National Income and Product Accounts (NIPA) bench-
mark revised in autumn 1999. In Japan, however, only custom software is
included in 93SNA revised in October, 2000 due to the lack of primary data.
This makes international comparison as well as estimation of the effects of
total software investment difficult.

Despite the bursting of the “IT bubble,” the role of software becomes ever
more important, and there is the need to invest more in software. Therefore,
this paper estimates the total software investment with not only custom soft-
ware but also packaged software and own-account software and the estimated
data are added to aggregate information technology investment. Based on
that, this paper measures quantitatively the effect of IT investment and soft-
ware investment itself by using estimated data. Finally based on the result
of analysis some implication of IT policy in Japan will be given.

1.2 Definitions

This paper defines the following terms. “IT” means information process-
ing and communication technologies as a whole, or equipment and products
using information processing and communication technologies as primary
components. “Software” means a written process by languages for comput-
ers. “Hardware” means the computer machine and its peripheral equipment excluding operating system and application software. This paper often uses this term to indicate IT capital goods without software. “Hardware” is not restricted to computers as commonly understood; communication equipment is also included in “hardware”. This is an important point to bear in mind when looking at the effects of hardware investment estimated here.

1.3 Contents

In Section 2, this paper summarizes previous literature related with the effect of information technologies on economy in the U.S. and Japan to explain the role and significance of this study. Section 3 estimates investment in three types of software and software capital stock in Japan and compares them with experience in the U.S. as benchmark. Section 4 describes methodologies and models used in this paper. Here, Cobb-Douglas production functions, Solow’s growth accounting and data applied for analysis are explained. Section 5 presents the result of analysis. Finally, Section 6 provides some implications about the policy of information technology in Japan.

2 Previous Literature

2.1 Overview

The study of the effect of IT investment (originally investment in computers) began in the late 1980s in the U.S. In spite of much investment in information technologies after 1980s, evidence that computing equipment had contributed much to productivity growth was not visible. Robert Solow characterized this as the “Productivity Paradox” that we can see the computer age everywhere except in the productivity statistics (Solow (1987)). Since then many analysts have studied the economic effect of IT investment from firm level to macro level. And these studies had also begun in many other countries after the U.S.

The previous literature can be roughly categorized into two types: the firm level ones and the macro level (including industry level) ones. Brynjolfsson and Hitt (1996, 1998) undertook major studies of the effect of IT investment at the firm level in the U.S. Their 1996 study showed that the return of IT investments is positive and higher with the analysis of cross-sectional data of 367 U.S. companies. And they reported that the firms which invest larger amounts in IT and have more decentralized organization have higher
productivity by dividing the data into four groups based on degrees of both IT investment and decentralization in their 1998’s paper.

In Japan, Matsudaira (1998) and Tanaka (2001) are the previous studies at firm level. Matsudaira (1998) explained that IT investment could increase both products and productivity especially in manufacturing industries using cross-sectional data with 228 firms in Japan. Tanaka (2001) showed it is not due to the labor productivity growth achieved by the increase in efficiency to lower inside transaction costs as generally expected that IT investment in 1990s increased the productivity of the firms using 479 firms’ 1995-1997 data in Japan. They explained that the late 1990s was the beginning of the changing business by IT, so that there can be higher labor productivity with lower inside transaction costs in future if the improvement in business style and its process goes on. As can be seen above, many studies at firm level in both the U.S. and Japan imply that IT investment makes firms more productive if the business style and the process are changed complementarily at the same time.

This paper belongs to another category, which is macro level with time series data. This study, now, explains previous literature at macro level in both the U.S. and Japan in the sections below.

2.2 Macro Level Studies in the U.S.

The previous literature about the economy-wide effect of IT in the U.S. has dealt with the main issue, “Productivity Paradox” in 1980s and early 1990s.

The early 1990s was the period that the effect of IT investment had still been unclear and various hypotheses for this interpretation were built. Oliner and Sichel (1994) showed that the contribution from investment in computers is 0.16 percent of output for the period 1970-1992. While they refer to the reason as the low ratio of computers against total capital stocks, they implied that the contribution of “IT” becomes little higher if including investment in software and service. Jorgenson and Stiroh (1995) showed that the amount of investment in computer service increased on substitution as the price of computers declines. But simultaneously their calculation showed that average total factor productivity growth rate declined from 1.7 percent per year for 1947-1993 period to about 0.5 percent for the 1973-1992 period while OCAM (Office, Computing and Accounting Machinery) capital as a percentage of all producers’ durable equipment (PDE) investment rose from about 0.5 percent in the 1960s to 12 percent in 1993. Brynjolfsson and Yang (1996) noted that this negative relationship given by Jorgenson and Stiroh (1995) between the economy-wide productivity and the investment in computers “drives many arguments proposing that information technology has
not helped U.S. productivity or even that information technology investment has been counter-productive."

Many empirical studies in the late 1990s and 2000, however, find a higher effect by information technologies as the rapid growth of IT investment and improvement of the methodology to capture IT effects and the revision of the NIPA benchmark in autumn 1999. Oliner and Sichel (2000) showed that the contribution from computer hardware alone was more than doubled during 1996-1999 to about 0.6 percent per year while the total contribution from information technology capital nearly doubled to 1.1 percent per year. Jorgenson and Stiroh (2000) also showed a rapid increase in IT investment as the price decline of IT capital (especially on computer hardware) in the late 1990s and higher contribution to economic growth. According to their results, contribution from computer hardware is 0.49 percent per year for the period 1995-1999 although it was 0.08 percent per year for 1959-1970 period. Contribution from software increased from 0.02 to 0.20 percent and communication equipment increased from 0.06 to 0.10 percent in the same period. At the same time they showed that the total factor productivity growth accelerated from 0.34 percent per year for 1973-1995 period to 0.99 percent per year for 1995-1999 in the U.S.

2.3 Macro Level Studies in Japan

The Japanese literature about IT investment and its effect on macro level studies began in the 1990s.

Shinozaki (1998) is one of major studies to examine the effect of information technology on macro level in Japan. He measured the IT investment for 1975-1996 period and estimated Cobb-Douglas production function and the marginal productivities for inputs. He found that the elasticity of general capital stock (which means capital stock except for IT capital stock), IT capital stock and labor input is 0.351, 0.114, and 0.535 respectively and the average marginal productivity for 1975-1996 of general capital stock and IT capital stock are 25.2 percent and 136.0 percent respectively. These results imply that IT capital stock has higher productivity than that of general capital stock in Japan. Nakanishi (1998) showed that the general capital stock and labor input are the least substitutable while the general capital stock and the IT capital stock are the most substitutable by using a trans-log production function with the data estimated by Shinozaki (1998).

Indeed, Shinozaki (1998) pioneered macro level studies on IT investment in Japan, but his estimation had no data about software investment. Mine-

\footnote{Note that this is measured based on gross capital stock concept.}
taki (2000) did the analysis with the investment in custom software using Shinozaki’s estimated IT asset data. In his report, he showed that the elasticity of general capital stock and IT capital stock is 0.375 and 0.157 respectively by Cobb-Douglas production function. He implied that the effect of IT investment becomes higher if software investment is included. The year 2002 edition of the Information and Communication White paper also estimate the production functions with custom software investment under the 93SNA revised in autumn 2000.5

As seen above, the studies about the economy-wide effect of IT began with computer hardware investment, which can be easily captured from existing data, and then enlarged a range of “IT assets” to custom software. But there is no study on the total software investment, own-account software and packaged software as well as custom software. Moreover, the NIPA in the U.S. ceased publishing the data for gross capital stock in the latest revision and only net capital stock data is available. Although Japan still provides only gross capital stock under new 93SNA, it is desirable to use net capital stock for analysis for the comparison with the U.S.6

This paper’s purpose is to measure the total software investment (Custom software, Own-account Software and Packaged software) and construct data for net capital stocks. Then this paper estimates the effect of both IT capital stock including software and software itself, and discusses implications for IT policies in Japan.

3 Measurement of Software

3.1 Software Investments

The 1993 SNA prepared by the United Nations advised that governments should include “intangible assets” as well as “tangible assets” in the national accounts. In particular “Computer software that an enterprise expects to use in production for more than one year is treated as an intangible fixed asset. Such software may be purchased on the market or produced for own use.”7 What is the interpretation of this advice is that software assets that should be taken in the national account are three types: software that is indivisible from computer hardware; software that is purchased on the market (custom

5Mizoguchi and Yamasawa (2001) also estimated the elasticity of software (custom software) stock using quarterly net capital stock series for the period 1980-1998 under new 93SNA. They showed the elasticity is about 0.03-0.06.

6More detail is described in Appendix A. Or see, Miyagawa (1999).

7The System of National Accounts 1993, Chapter X.
software and prepackaged software); and software that is produced for own use (own-account software.)

The national accounts in Japan were revised in October, 2000 to conform to the 1993 SNA of the United Nations, updating old 68SNA.\(^8\) In this revision, custom software is included in fixed assets although software investment (excluding the component indivisible from hardware) had been dealt with as intermediate input under 68SNA. Own-account and prepackaged software, however, are still regarded as intermediate inputs since there is a statistical problem of lack of primary data to estimate these software investment.\(^9\) Therefore formal data series of total software investment without custom software cannot be used in Japan.

How does the previous literature deal with this problem? Minetaki (2000) estimated custom software investment by using the data of “Software development (Order-made software development service)” in the Survey of Selected Service Industries (Information service) by the Ministry of Economy, Trade and Industry (METI). This method basically corresponds to 93SNA. ESRI (2002a) estimated not only custom software but also own-account and prepackaged software with the Survey of Selected Service Industries and another survey.

This paper estimates three types of software investment, custom software, own-account software and prepackaged software referring to these previous studies in the subsections below.

3.1.1 Custom Software

Custom software is software tailored to the specifications of a business enterprise or a government unit. Some early studies had used the data of “Software development (Order-made software development service)” contained in the Survey of Selected Service Industries to reveal the software investment in this category because of the ease to get the primary data.\(^10\) But it is pointed out that the Survey of Selected Service Industries has some statistical problems that the data series may be distorted or underestimated.\(^11\) This study modifies the data of “Software development” based on the methodology proposed by Mizoguchi (1996) to get rid of the effect of distortion or underestimation. The detailed methodology is given in Appendix B.

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\(^8\)We also call our national account SNA in Japan. 68SNA and 93SNA mean the national account correspond to 1968 SNA and 1993 SNA by the United Nations in this paper.

\(^9\)See ESRI (2000b) or other article about the revision in Japan for more detail.

\(^10\)There data must be translated to calendar year.

\(^11\)See Mizoguchi (1996) for more detail.
The estimation result is given in Table 7 in Appendix B. Nominal investment in custom software by firms has grown by 24.7 percentage points per year during 1975-2000 to about 7.7 trillion yen, which is about 59.0 percent of total software investment in 2000, while it shows a negative growth for the period 1993-1996. In the U.S., on the contrary, the growth rate of custom software investment is about 13 percentage points per year and its ratio is about 34 percent. This notable contrast can be consistent with the fact that Japanese firms prefer customized software to standardized or prepackaged software. More likely, it is due to the fact that Japanese firms have not developed unique methods that they tend to lag behind the U.S./European practices by 15 to 20 years.

3.1.2 Own-Account Software

Own-account software consists of in-house expenditures for new or significant code by enhanced software created by business enterprises or government units for their own use. 1993 SNA of the United Nations proposed that in-house software is valued at its estimated basic price or at its costs of production if it is not possible to estimate the basic price. Inclusion of own-account software in new 93SNA in Japan was impossible because of the lack of primary statistics that evaluate the cost to develop in-house software while a lot of countries such as the U.S. measure own-account software investment in their national accounts. This paper estimates own-account software investment in the private sector based on the methodology proposed by ESRI (2002a). See Appendix B. for the detail of this methodology.

Table 7 in Appendix B show the estimated data for own-account software. Investment in own-account software in Japan has grown at the rate of 9.6 percentage points per year during 1975-2000 although this investment dropped from the peak of about 6.7 trillion yen in 1992 to about 4.3 trillion yen, about 32.7 percent of total software investment in 2000. This result is mostly consistent with the data in the U.S., at the 12.4 percent growth per annum and 36.8 percent of total software investment in 1998 allowing for the negative growth trend of recent years in Japan. This can be caused by the behaviors that firms establish their subsidiary dividing information system divisions out of parent companies or the increase of “out-sourcing” to use information service companies. Investment in custom software, on contrast, is increasing.

Anchordoguy (2000) discusses about the relation of this and Japanese catch up system or lifetime employment.
3.1.3 Prepackaged Software

Prepackaged software is software intended not for customized uses and is sold or licensed in standardized form. Similarly with own-account software, this type of software investment is not capitalized and still remains in the intermediate input category for the lack of primary data. This paper also measures the investment in prepackaged software for the period 1975-2000 basically depending on ESRI (2002)’s methodology. See also Appendix B for the methodology.

The result of estimation is also given in and Table 7 in Appendix B. Investment in prepackaged software in Japan has grown at the rate of 22.7 percentage points per year for the period 1975-2000 and became about 1.1 trillion yen, 8.3 percent of total software investment in 2000. This growth rate mostly corresponds to that of the U.S. (about 21 percentage points per year) but its ratio is different (about 28 percent of total software investment in the U.S.) This is because of the fact that investment in standardized software has not been preferred in Japan.

3.1.4 Total Software Investment and Translating to Real Investment

Table 7 in Appendix B also provide the total software investment which is constructed by aggregating three types of software investment. The total amount of software investment in Japan increases at the growth rate of 14.0 percentage points per year for the period 1975-2000 and becomes 13.0 trillion yen in 2000. This result is mostly consistent with the data of the U.S. about 13.8 percentage points per year and became 123.4 billion dollars (about 14.8 trillion yen by the exchange rate of 120 yen to one dollar) in 1998.

Comparing the performance of software investment in Japan with that of the U.S., a revealing fact of a rapid growth of software investment in Japan is found. This reflects that Japan has tried to catch up with the U.S. during 1975-2000 and that software capital stock has accumulated more rapidly in Japan as discussed in the subsection below. Moreover, each ratio of software investment against total machinery and equipment investment in 1998 is about 9.5 percent in Japan and about 8.5 percent in the U.S. This result helps to justify the estimated software investment in this paper if the tendency is taken into account that investment in machinery and equipment is large in Japan.

Next, the estimated software investment is translated to that of a real price (1990 price). Previous studies tend to use “Software development” or “Information services” in Corporate Service Price Index (CSPI) prepared
by Bank of Japan (BOJ). But this index can only be used after 1985 for “information services” and after 1995 for “software development” derived from information services.

In the U.S., they recognize the deflators for each software investment as follows: an indicator series that is equal to 60 percent of the annual change in the NIPA price index for computers and peripherals (before 1985), a BEA hedonic price index (1985-1993) and a BEA matched-model price index (1993-1997) for prepackaged software; an input-cost indexes that are calculated from a weighted average of compensation rates for computer programmers and systems analysts and the intermediate input associated with their work for own-account software; a weighted average of the percentage changes in the price indexes for business own-account software and for prepackage software for custom software.

In this paper, deflators for each software investment are used as follows: Software price index (SPI) estimated in Appendix C. for both custom and prepackaged software; and WPI (1975-2000) for own-account software. Custom software and prepackaged software are both developed by companies in information service industries so SPI can be applied to custom and prepackaged software. WPI is used for own-account software on the assumption that the cost of development is partially transferred to wholesale price.

Here, note that the productivity to develop software during 1975-2000 is supposed to be constant since these indexes don’t include the change of quality. As Jorgenson and Stiroh (2000) pointed out, it is possible to underestimate the change of price in such a case.

3.2 Software Capital Stock

This section estimates a real software capital stock during 1975-2000 in Japan by the perpetual inventory method with real investment data series. First, suppose that a software capital stock at time $t$ is equal to the sum of software investment at time $t$ and geometrically depreciated software capital stock at time $t - 1$ like,

$$K_t = I_t + (1 - \delta)K_{t-1}, \quad (1)$$

where $K_t$ is the quantity of software capital stock at time $t$, $I_t$ is the quantity of software investment at time $t$ and $\delta$ represents geometric depreciation rate of software assets.

Second, suppose that software investment is increasing at constant growth rate of $g$ before time $t - 1$, then the well-known perpetual inventory approx-

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$^{13}$CSPI does not adopt the methodologies considering a change of quality like hedonic approach. WPI adopts a hedonic approach for some goods whose price change is large.
imation is

\[ K_{t-1} \approx \frac{I_t}{(g + \delta)}. \]  

This paper assumes that custom and own-account software assets are geometrically depreciated in 5 years, and prepackaged software assets in three years, as adopted by the U.S. NIPA. That is, \( \delta = 0.369 \) for custom and own-account and \( \delta = 0.539 \) for prepackaged software. The average growth rate of 5 years after 1975 is used to estimate the constant growth rate of \( g \).

Software capital stock is given in Table 8 in Appendix D. The software stock in Japan grew at 12.5 percent per year to be about 31.4 trillion yen in 2000. The composition of software assets in 2000 is: custom software is 16.8 trillion yen and occupies about 53.7 percent; own-account software is valued at 12.6 trillion yen and about 40.0 percent; prepackaged software is 2.0 trillion yen and about 6.3 percent. In the U.S., software grew at 12.1 percent per year and became 320.5 billion dollars (38.5 trillion yen) in 2000. It can be seen that the accumulation of software capital stock in Japan is more rapid than in the U.S. The comparison of the composition of software assets in the U.S., which is 35.4 percent for custom software, 37.6 percent for own-account software and 27 percent for prepackaged software, with Japan is revealing. Custom software is far larger and that of prepackaged is far smaller than that of the U.S. though the ratio of own-account software assets is similar in these two countries.

4 Basic Model

This paper does empirical analysis with Cobb-Douglas production functions and Solow’s growth accounting to examine the effect of IT capital stock, especially software capital stock, on the Japanese economy using the data constructed in Section 3. In this section, the model, methodologies and data are described.

4.1 Cobb-Douglas Production Function

This section explains how to estimate Cobb-Douglas production function and marginal productivity. Since most of previous literature after Shinozaki (1998) used this methodology, a similar specification is adopted to compare results with those of previous studies. First, this paper defines two production functions as:

\[ V = F_1(K_o, K_i, L) \]  
\[ V = F_2(K_o, K_h, K_s, L) \]
where, \( V \) is value added, \( K_o \) is general capital stock excluding IT capital, \( K_i \) is IT capital stock, \( K_h \) is IT capital stock excluding software capital stock, \( K_s \) is software capital stock and \( L \) is labor. Thus \( K_i = K_h + K_s \), and \( K = K_o + K_h + K_s \). \( K \) denotes the total capital stock. We assume Cobb-Douglas production functions, and write them in the logarithmic forms

\[
\ln V = \ln A_1 + \alpha \ln K_o + \beta \ln K_i + \gamma \ln L \tag{5}
\]

\[
\ln V = \ln A_2 + a \ln K_o + b \ln K_h + c \ln K_s + d \ln L \tag{6}
\]

At the same time, suppose constant returns to scale in equation (5) and (6), that is, \( \alpha + \beta + \gamma = 1 \) and \( a + b + c + d = 1 \), then result in production functions for value added per worker,

\[
\ln \frac{V}{L} = \ln A_1 + \alpha \ln \frac{K_o}{L} + \beta \ln \frac{K_i}{L} \tag{7}
\]

\[
\ln \frac{V}{L} = \ln A_2 + a \ln \frac{K_o}{L} + b \ln \frac{K_h}{L} + c \ln \frac{K_s}{L} \tag{8}
\]

This paper estimates equations (5), (6), (7) and (8) in Section 5.

Marginal productivity is measured with estimated coefficients of each variable \( \alpha, \beta, a, b, c \). Differentiating equations (5) and (6) with respect to each capital stock yield the equations of marginal productivity as below. For equations (5) and (7),

\[
\frac{\partial V}{\partial K_o} = \alpha \frac{V}{K_o}, \quad \frac{\partial V}{\partial K_i} = \beta \frac{V}{K_i} \tag{9}
\]

and for equations (6) and (8),

\[
\frac{\partial V}{\partial K_o} = a \frac{V}{K_o}, \quad \frac{\partial V}{\partial K_h} = b \frac{V}{K_h}, \quad \frac{\partial V}{\partial K_s} = c \frac{V}{K_s}. \tag{10}
\]

Marginal productivity comparisons can say something about the convergence of the economy to steady state. Under the general assumption of diminishing returns, larger marginal productivity of a form of capital can imply that accumulation of that factor lags behind other forms of capital compared with a benchmark economy.\(^{14}\)

\(^{14}\)Shinozaki (1998) points out that accumulation of IT stock in Japan is behind that in the U.S. economy by the result of analysis as considering the difference of definitions for IT capital stock in both countries.
4.2 Solow’s Growth Accounting

This section explains the growth of accounting proposed by Solow (1957). This paper measures Total Factor Productivity (TFP) and contribution from IT stock and software stock to analyze the effect of these assets on Japan’s economy.

Here we suppose constant returns to scale in production function, that is, \( \alpha + \beta + \gamma = 1 \) and \( a + b + c + d = 1 \) as in section 4-1. We let the input factors vary with time, and as a proxy for unexplained “technological progress” the constant is allowed to vary with time as well. Differentiating the production functions (5) and (6) with respect to time, and using the marginal productivity equations (9) and (10) to simplify, we have

\[
\frac{\dot{V}}{V} = \frac{\dot{A}_1}{A_1} + \alpha \frac{\dot{K}_o}{K_o} + \beta \frac{\dot{K}_i}{K_i} + (1 - \alpha - \beta) \frac{\dot{L}}{L} \tag{11}
\]

\[
\frac{\dot{V}}{V} = \frac{\dot{A}_2}{A_2} + a \frac{\dot{K}_o}{K_o} + b \frac{\dot{K}_h}{K_h} + c \frac{\dot{K}_s}{K_s} + (1 - a - b - c) \frac{\dot{L}}{L} \tag{12}
\]

The terms \( \frac{\dot{A}_1}{A_1} \) and \( \frac{\dot{A}_2}{A_2} \) are the so-called “Solow residuals”, or TFP growth rates, in equations (11) and (12). Other terms in those equations represent contributions from the growth of capital and labor to the growth of the economy. This paper calculates equations (11) and (12) to estimate TFP growth rate and the contributions from inputs with coefficients, \( \alpha, \beta, a, b, c \), measured in estimation of equations (7) and (8).

An alternative estimate of contribution to growth uses the share of each inputs in national income, as Jorgenson and Stiroh (2000) and others do. It is well-known that in a general competitive equilibrium with the Cobb-Douglas production function that the income share accruing to a factor is equal to its exponent in the production function. Thus we may write

\[
\frac{\dot{V}}{V} = \frac{\dot{A}_1}{A_1} + SHK_o \frac{\dot{K}_o}{K_o} + SHK_i \frac{\dot{K}_i}{K_i} + SHL \frac{\dot{L}}{L} \tag{13}
\]

\[
\frac{\dot{V}}{V} = \frac{\dot{A}_2}{A_2} + SHK_o \frac{\dot{K}_o}{K_o} + SHK_h \frac{\dot{K}_h}{K_h} + SHK_s \frac{\dot{K}_s}{K_s} + SHL \frac{\dot{L}}{L} \tag{14}
\]

using observed income shares instead of estimated elasticities.

4.3 Data

This paper uses value added: \( V \), general stock: \( K_o \), IT capital stock: \( K_i \), IT capital stock excluding software capital: \( K_h \), software capital stock: \( K_s \), and labor: \( L \).
First, Real GDP for the period 1975-2000 under the old 68SNA published by Cabinet Office (CAO) is used for value added, V. That is because the new 93SNA is prepared only after 1980s though target period of this study is after 1975 to compare previous literature. Note that this paper adds real investment in software to real GDP since software investment is dealt with as an intermediate input under the 68SNA.

Second, this paper uses two types of capital stock: software capital stock and hardware stock (IT capital stock excluding software) to compose IT capital stock. Although software capital stock has already been estimated in Section 3, hardware capital stock has not yet been estimated. Most previous literature used the data constructed by Shinozaki (1998) for hardware stock but this data is constructed based on the concept of gross capital stock. Therefore, this paper makes net hardware capital stock data series from nominal hardware investment series and depreciation rates provided by ESRI (2002a). See Appendix E for the details.

Third, “Private firms’ capital stock” provided by CAO, which was often used in most previous literature, cannot be used for general capital stock because this is also gross capital stock series. This paper makes a net capital stock for general capital stock based on the methodology proposed by Miyagawa and Shiraishi (2000). What is desirable of this methodology is that this method adjusts the effect of privatization of two large, and using IT, companies, the old Japan National Railway and Nippon Telegraph and Telephone Public Corporation on the assumption that they have been both private companies after 1975. Moreover, this paper also prepares the data converted to capital utilization from capital stock by adjusting it with “manufactures rate of operation” by METI.

Fourth, in this paper, “Number of regular employees” and annual average of “Total hours worked” in Monthly Labor Survey implemented by the Ministry of Health, Labor and Welfare are used to calculate annual labor hours as well as some previous literature. This value represents quantity of labor services which is actually used in each year.

Finally, the calculation of input shares is explained here. For labor share, this paper divides “Compensation of employees” by “National income” in National Accounts by CAO. To estimate the share of IT capital stock, this paper uses not capital stock but capital service as Jorgenson and Stiroh (2000), Miyagawa and Shiraishi (2000) and other previous literature estimates. First, prices of each capital service are calculated based on Jorgenson’s service price function. In the case that IT capital stock is also adjusted by the rate of operation, production function cannot be estimated significantly. So this paper estimates under the assumption that IT capital stock has been in short during 1975-2000.

\[\text{prices of each capital service = Jorgenson’s service price function} \]
model like,

\[ P_{K_{j,t}} = q_{K_{j,t}}(r_t + \delta_j) \quad (15) \]

where \( P_{K_{j,t}} \) denotes the price of capital service for \( j \)-th good in a period of \( t \), \( q_{K_{j,t}} \) is the price of capital stock for \( j \)-th good in a period of \( t \), \( r_t \) is the long-term interest rate in a period of \( t \), \( \delta \) is the depreciation rate for \( j \)-th good. The deflators and depreciation rates are used for the price and depreciation rate of capital stock in equation (15). “Average Contracted Interest Rates on Loans and Discounts of Long-term Credit Banks” by BOJ is used for long-term interest rate.

Next, suppose that quantity of capital service is proportional to existing capital stock, this paper multiplies price of capital service and capital stock to recognize cost of capital service for each asset as,

\[ C_{K_{j,t}} = p_{K_{j,t}}K_{j,t} \quad (16) \]

Then this paper sums up the cost of capital service for each IT goods and divides total cost of IT capital service by national income. The calculated share of each inputs is given in Table 1.

5 Result of Estimation
This section gives the results of estimation. First the estimates of the parameters of the Cobb-Douglas production functions are provided and the result of Solow’s growth accounting follows.

5.1 Result of Cobb-Douglas Production Function
Tables 2 and 3 show the result of estimation of the Cobb-Douglas production functions accounting for capital utilization given in Section 4. These equations are estimated by AR1 method because serial correlation exists as shown by the D.W. statistics associated with OLS estimates. This paper also implements a test for the null hypothesis of constant returns to scale for the estimated models of equations (5) and (6), and gets the result that the null hypothesis is not rejected.

First, see the estimation of the equation (5), which is the model with aggregate IT capital stock, for comparison with previous research. The elasticity of general capital stock is lower than that of Shinozaki (1998) (see Table 2). This is because the net capital stock used in this paper is smaller than gross capital stock by the amount of depreciation during service period. On the contrary, the elasticity of IT capital stock is larger than that of Shinozaki.
<table>
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<th>$SHK_h$</th>
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<td>0.0637</td>
<td>0.2217</td>
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<tr>
<td>1991</td>
<td>0.6857</td>
<td>0.1082</td>
<td>0.037</td>
<td>0.0712</td>
<td>0.2061</td>
</tr>
<tr>
<td>1992</td>
<td>0.6975</td>
<td>0.1168</td>
<td>0.0388</td>
<td>0.078</td>
<td>0.1857</td>
</tr>
<tr>
<td>1993</td>
<td>0.7086</td>
<td>0.1152</td>
<td>0.0389</td>
<td>0.0763</td>
<td>0.1762</td>
</tr>
<tr>
<td>1994</td>
<td>0.7239</td>
<td>0.11</td>
<td>0.0381</td>
<td>0.0719</td>
<td>0.1661</td>
</tr>
<tr>
<td>1995</td>
<td>0.7315</td>
<td>0.1032</td>
<td>0.0372</td>
<td>0.066</td>
<td>0.1653</td>
</tr>
<tr>
<td>1996</td>
<td>0.7183</td>
<td>0.0965</td>
<td>0.0368</td>
<td>0.0597</td>
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<td>1997</td>
<td>0.7228</td>
<td>0.0994</td>
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<td>0.1778</td>
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<tr>
<td>1998</td>
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<td>0.1119</td>
<td>0.0404</td>
<td>0.0715</td>
<td>0.1452</td>
</tr>
<tr>
<td>1999</td>
<td>0.7301</td>
<td>0.1201</td>
<td>0.0406</td>
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<td>0.1498</td>
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<tr>
<td>2000</td>
<td>0.7359</td>
<td>0.125</td>
<td>0.0417</td>
<td>0.0833</td>
<td>0.1391</td>
</tr>
<tr>
<td>Average</td>
<td>0.6928</td>
<td>0.0745</td>
<td>0.0291</td>
<td>0.0455</td>
<td>0.2326</td>
</tr>
</tbody>
</table>

Table 1: Calculated input-share 1975-2000
As can be seen in the result of equation (6), this is can be caused by the addition of the amount of elasticity of software capital stock. Examining the elasticity of hardware capital stock only, it is lower for the same reason of general stock. Moreover, there is a possibility that greater accumulation of IT capital stock after 1997 forces up the elasticity.

<table>
<thead>
<tr>
<th>Coef.</th>
<th>K_o/L</th>
<th>K_i/L</th>
<th>L</th>
<th>AR1</th>
<th>R2</th>
<th>D.W.</th>
</tr>
</thead>
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<tr>
<td>6.6943</td>
<td>0.1748</td>
<td>0.1701</td>
<td>0.582</td>
<td>0.3817</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2166</td>
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<td>11.1176</td>
<td>5.3967</td>
<td>1.8773</td>
<td>0.999</td>
<td>1.7025</td>
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<table>
<thead>
<tr>
<th>Coef.</th>
<th>K_o/L</th>
<th>K_i/L</th>
<th>L</th>
<th>AR1</th>
<th>R2</th>
<th>D.W.</th>
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<tbody>
<tr>
<td>6.0231</td>
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<td>0.1695</td>
<td>0.6736</td>
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<td></td>
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<tr>
<td>32.1687</td>
<td>4.7659</td>
<td>10.9706</td>
<td>2.0945</td>
<td>0.9975</td>
<td>1.7753</td>
<td></td>
</tr>
</tbody>
</table>

General capital stock, K_o, is adjusted by the capital utilization rate.
AR1 means autocorrelation coefficient.

Table 2: Estimated production function for equation (5) and (7)

Second, examine the result of equation (6), which is the model that IT capital stock is divided into two types of capital stock, software and hardware. It is notable that the elasticity of software is higher than expected. As Miyagawa and Yamazawa (2001) also showed software (custom software) elasticity is 0.03 to 0.06, the estimates in this paper seem reasonable taking into the consideration that this paper uses not only custom but also own-account and prepackaged software.

Table 4 shows the average marginal productivity for the period 1975-2000 calculated by elasticity of each capital stock in equations (5) and (6). The marginal productivity of general capital stock is about 16 percent. This is mostly consistent with the estimation of Shinozaki (1998)’s net rate of return.

Growth rate of IT capital stock accelerated from 3.47 percent per year (1993-1996) to 8.10 percent per year (1997-2000).
17 percent. On the contrary, the marginal productivity of IT capital stock is higher than that of Shinozaki (1998). Considering software capital assets, marginal productivity is 168 percent. This result implies that the accumulation of IT stock falls behind that of the U.S. much more than Shinozaki (1998) pointed out.

This fact will become clearer when examining marginal productivity of each IT capital stock respectively. Marginal productivity of IT stock excluding software assets is lower than that of aggregated IT capital stock, 159 percent. This result is close to Shinozaki (1998)’s estimation, 120 percent of net rate of return. Surprisingly software’s marginal productivity is 224 percent, which is larger than that of the hardware. Since there is no study to show the marginal productivity of software in the U.S., comparison is difficult at this moment but higher marginal productivity of software assets implies that accumulation of software capital stock lags behind other IT capital stock in Japan.

### 5.2 Result of Solow’s Growth Accounting

This section gives the result of growth accounting using estimated elasticity in Section 5-1 and input-share in Section 5-3. Here this paper assumes constant returns to scale and uses the result of equations (7) and (8). This assumption is not rejected significantly as described in the previous section.

Table 5 gives the contributions from each input and the TFP growth rate by estimated elasticity method (equations (11) and (12)) while Table 6 by the calculation of input-share method (equations (13) and (14)). When including software assets, IT capital stock gives high contribution in sampling period in Table 5. The role of IT capital stock can be seen clearly. Although general capital stock also contributed to economic growth during a period 1975-1995, only the growth of IT capital stock leads Japan’s economy during the low growth period after 1996. Results based on the calculated input-share method in Table 6 show a little different tendency from that of estimated elasticity method. In this case, while contribution from IT capital stock is relatively smaller than that of general capital stock, such a ten-
dency remains the same that accumulation of IT capital stock holds current economic growth.

<p>| | | | | | |</p>
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<td></td>
<td>V</td>
<td>K_o</td>
<td>K_i</td>
<td>L</td>
<td>TFP</td>
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<tr>
<td>1975-1999</td>
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<td>0.89</td>
<td>1.66</td>
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<tr>
<td>1975-1980</td>
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<td>1.46</td>
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<td>1986-1990</td>
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<td>1.21</td>
<td>2.62</td>
<td>1.19</td>
<td>0.08</td>
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<tr>
<td>1991-1995</td>
<td>1.49</td>
<td>0.32</td>
<td>0.73</td>
<td>0.15</td>
<td>0.28</td>
</tr>
<tr>
<td>1996-1999</td>
<td>0.40</td>
<td>0.40</td>
<td>1.37</td>
<td>-0.77</td>
<td>-0.66</td>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
<td>K_o</td>
<td>K_h</td>
<td>K_s</td>
<td>L</td>
</tr>
<tr>
<td>1975-1999</td>
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<td>1.18</td>
<td>0.65</td>
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<tr>
<td>1975-1980</td>
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<td>1.24</td>
<td>0.79</td>
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</tr>
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<td>1981-1985</td>
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<td>1.53</td>
<td>0.71</td>
<td>1.06</td>
</tr>
<tr>
<td>1986-1990</td>
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<td>1.71</td>
<td>1.06</td>
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<tr>
<td>1991-1995</td>
<td>1.49</td>
<td>0.27</td>
<td>0.88</td>
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<td>0.15</td>
</tr>
<tr>
<td>1996-1999</td>
<td>0.40</td>
<td>0.34</td>
<td>1.01</td>
<td>0.45</td>
<td>-0.79</td>
</tr>
</tbody>
</table>

General capital stock, K_o, is adjusted by the capital utilization rate.

Table 5: Contribution from inputs (Elasticity method, %)

When seeing the result of the model to divide IT capital stock into hardware and software assets in Table 5, hardware capital stock shows contribution higher while contribution from software capital stock shows negative in the period of 1990-1995. Rapid accumulation of IT assets in 1990s began in hardware capital stock. In that period, software assets were declining because of dividing information system divisions or utilizing “out-sourcing” as described in Section 3. However, accumulation of software assets began again as if it catches up hardware assets. This may be a complementary investment in software caused by hardware accumulation. In the case of input-share in Table 6, contribution from software is higher than that of hardware. This can be because the price of capital service for software assets is relatively higher due to higher depreciation rate.

On the contrary, TFP growth rate is smaller than generally expected. As to the analysis after 1980, this low TFP growth rate can be seen in the year 2002 edition of Information and Communication Whitepaper, which estimates production function like in this study and calculate growth accounting. Miyagawa and Shiraishi (2000) showed lower TFP growth rate in their analysis with net capital stock.\(^{18}\) Moreover, it is pointed out that previous studies on the economic growth in East Asia like Krugman (1994) and

\(^{18}\)Note that their study calculates growth accounting based on input-share calculation.
General capital stock, $K_o$, is adjusted by the capital utilization rate.

Table 6: Contribution from inputs (Input-share method, %)

<table>
<thead>
<tr>
<th></th>
<th>$V$</th>
<th>$K_o$</th>
<th>$K_i$</th>
<th>$L$</th>
<th>TFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-1999</td>
<td>3.09</td>
<td>1.46</td>
<td>0.67</td>
<td>0.63</td>
<td>0.33</td>
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<tr>
<td>1975-1980</td>
<td>4.24</td>
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<td>0.38</td>
<td>1.17</td>
<td>-0.06</td>
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<tr>
<td>1981-1985</td>
<td>3.50</td>
<td>1.43</td>
<td>0.64</td>
<td>1.05</td>
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<td>1986-1990</td>
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<td>1.38</td>
<td>1.19</td>
<td>0.61</td>
</tr>
<tr>
<td>1991-1995</td>
<td>1.49</td>
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<td>1996-1999</td>
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<td>0.40</td>
<td>0.90</td>
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<table>
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<th>$K_h$</th>
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<td>1975-1999</td>
<td>3.09</td>
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<td>0.27</td>
<td>0.40</td>
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<td>1975-1980</td>
<td>4.24</td>
<td>2.78</td>
<td>0.11</td>
<td>0.27</td>
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<tr>
<td>1981-1985</td>
<td>3.50</td>
<td>1.43</td>
<td>0.28</td>
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<td>0.33</td>
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<tr>
<td>1986-1990</td>
<td>5.06</td>
<td>1.92</td>
<td>0.41</td>
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<td>1991-1995</td>
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<td>0.26</td>
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<tr>
<td>1996-1999</td>
<td>0.40</td>
<td>0.40</td>
<td>0.31</td>
<td>0.59</td>
<td>-0.84</td>
<td>-0.11</td>
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</tbody>
</table>

Young (1992) used capital stock based on the concept of net capital stock. This result also suggests that TFP growth rate may be relatively low because Japan also achieved economic growth in part by rapid accumulation of capital stock. In this case, Japan has to make a policy to improve upon its economy-wide productivity to restore the economy.

This paper, at the same time, analyzes the total software assets that previous literature did not. The most important function of software is to operate a system composed from some computers, peripheral equipment, and communication equipment efficiently. Therefore, note that there is a counter possibility that a contribution from software explain some part of TFP growth rate, which would appear if software assets couldn’t be considered.

The TFP growth rate by input-share calculation in Table 6 is higher than that of elasticity method. This is caused by the fact that estimated elasticity is higher than input-share of capital which is calculated based on cost of capital service. Here, it is possible that the marginal productivity is larger than the price of capital service since IT capital stock does not accumulate at appropriate level yet. Comparing the average input-share of IT capital goods in Table 1 with the estimated elasticity supports this explanation. Given that the estimated TFP growth rate in input-share method is closer to true TFP, the average TFP growth is still low, 0.33 percent per year, which cannot deny

$^{19}$Miyagawa (1999).
the low TFP growth rate in Japan.

6 Conclusion and Future Work

This paper estimates own-account and prepackaged software investment as well as custom software and measure net software capital stock by perpetual inventory method to examine the effect of IT capital stock including software and software assets itself. In Japan, as a result, software capital stock grew faster than that of the U.S. and the quantity of custom software is larger and that of prepackage software is smaller.

Next, this paper estimates Cobb-Douglas production functions and the marginal productivity of each capital stock. The elasticity of general capital stock is lower than that of previous studies using gross capital stock while that of IT capital stock is higher by putting in software capital stock. Moreover, comparing the elasticity with input-share calculated by cost of capital service, elasticity of IT capital service is larger than input-share. In addition, marginal productivity of IT capital stock is larger than that of previous literature because of huge marginal productivity of software capital stock. These facts imply that accumulation of IT capital stock is behind the U.S., especially the software capital stock.

Finally, this paper calculates the contributions from inputs and the TFP growth rate by Solow’s growth accounting. In Japan, IT capital stock has contributed to economic growth as well as other inputs and is the only source of economic growth in the period after 1996 (0.4 percent growth per year). On the contrary, the TFP growth rate is lower than the ones that were generally measured. This can imply two probabilities. One is that TFP growth rate may be relatively lower in Japan. The other is that some part of TFP growth rate can be explained by considering software assets.

Implications to the policy of information technology in Japan led by these findings are the following three points. (1) It is desirable to promote investment in software which has the highest marginal productivity among IT capital goods. (2) Although the fact that IT capital stock led Japan’s economy after 1996 was found out, there is still the need to specify and solve the other problems which lower the economic growth these days in Japan. For example, Miyagawa and Shiraishi (2000) pointed out the negative externalities of capital stock. (3) If low TFP implies that Japan has partially achieved economic growth after 1975 by rapid accumulation of capital stock like East Asia countries as Krugman (1994) and Young (1992) described, such a policy to improve economy-wide productivity is needed. Concretely as previous literature also showed, restructuring of business process, organi-
zation and other complementary policies should be implemented along with more investment in IT capital goods.

Finally this paper recommends the following lines for future research. (1) More accurate primary data on the wage and working hours of programmers and system engineers are needed to measure software investment. (2) The rate of operation for IT goods is needed to estimate more precious elasticity for IT capital stock. The rate of operation by METI, which was often used in most of the previous literature, is for manufacturing and not for computers. For example, if the data for running hours of PC, number of installed machines and performance like MIPS and FLOPS are available, the rate of operation can be estimated by both maximum and actual quantity of data processing.

In addition, the growth rate of Japan’s economy remains low and productivity increases cannot be found in spite of rapid accumulation of IT capital stock. This is the very difference between Japan and the U.S., which experience the TFP growth in 1990s. Therefore, (3) it is much important to examine whether Japan lags behind the U.S. and will experience economy restoration by improvement of productivity, or undergo low or zero growth in the future.

Although beyond the scope of this paper, it is also interesting to consider the following issues. (1) Custom software is probably over-valued; (a) Custom production is necessarily less efficient than mass production; (b) Custom production is like a service and Japanese service sector for domestic market is inefficient; (c) While Japanese software development targeting embedded systems is widely considered the world’s best, systems and application software seems to be poor. (2) Own-account and Prepackage software, probably, dramatically undervalued. (3) To examine investments in development of embedded system software (Such as car engine or mobile phone.)

As mentioned in the beginning of this paper, policy and business strategies cannot be made without information and communication technologies. IT is still one of the most important factors to restore Japan’s economy even after the collapse of “IT bubble.”
A  Gross capital stock and net capital stock

There are two concepts of how to measure capital stock. One is gross capital stock and the other is net capital stock. The former measures physical capital stock and the latter indicates an economical value of capital stock (Miyagawa (1999)). That is, a gross capital stock supposes that the performance of production of assets is maintained until the end of service life while most of net capital stock supposes that performance is depreciated year after year by “straight line” or “geometric decay.”

Most of previous literature estimate IT capital stock based on “replacement rate” in “Improved Estimates of Fixed Reproducible Tangible Wealth, 1929-95” published by the U.S. Bureau of Economic Analysis (BEA). And “Private firms’ capital stock” by CAO is applied to general stock. They are estimated by gross capital stock concept. However, to extend IT capital stock estimated by Shinozaki (1998) becomes difficult because publishing of gross capital stock data was ceased after the latest revision of the U.S. NIPA.

In addition, as Miyagawa (1999) pointed out, “Private firms’ capital stock” by CAO has some problems. Therefore, this paper estimates software, hardware and general capital stock by net capital stock concept. The general capital stock is measured by the methodologies provided by Miyagawa and Shiraishi (2000).

B  Estimation of software investment

B.1  Custom software

Custom software investment is measured by the following method. First, “the annual sales of Software development (Order-made software development service) by size” in the Survey of Selected Service Industries by METI is translated to calendar year series. Here, because the data before 1982 includes both custom software and prepackaged software, “Software development” is separated by the ratio of these two types of software in 1983 by each size. Second, translated annual sales by size are divided by “the number of the business establishments by size” in the same survey of METI to make annual sales per office by size. Notice that this average data were about the entire information service industry because of non-availability of time series of the number of business establishments for only software industry in Establishment and Enterprise Census by the Ministry of Public Management, Home Affairs, Posts and Telecommunications.

20“By size” means that data is classified by the number of employees.
Third, the total number of business establishments is captured using Establishment and Enterprise Census. Since this survey is not implemented every year, those periods with no data are filled by both growth rate of offices in Survey of Selected Service Industries and covering rate. And the number of offices of Establishment and Enterprise Census multiplies annual sales per office to get modified annual sales for industry wide. Fourth, import and export are taken into account. This paper uses “Shipment of custom software” in the Survey of Software Import and Export published by JEITIA and other associations. But it is unable to use this data before 1993; this paper estimates before 1993 on the assumption that the ratio of difference between import and export of custom software in 1994 was constant until 1994.

Finally, series modified above is adjusted to be in accordance with reliable benchmark, fixed assets formation of software in 1995 input-output table (Private sector). Then the nominal investment series of custom software is obtained.

B.2 Own-account software

This paper basically depends on the methodology proposed by ESRI (2002a) to measure own-account software investment. First, this paper assumes that personal cost for programmers and system engineers is equal to investment of own-account. Second, personal cost for programmers and system engineers, regardless of whether they are employed or dispatched, is measured by total personal cost of information system division and the ratio of programmers and system engineers against total number of workers using the Current Survey on Data Processing by METI. Note that this study excludes the software development industry and the information service industry to avoid double calculation.

Third, this paper regards sum of “Payments for software development”, “Purchase cost of software”, “Payments for software license” and personal cost measured above as total software investment by firm. However, since the number of sample is not constant in the Current Survey on Data Processing, “in-house ratio” is calculated by dividing personal cost by total software investment. Then in-house ratio is translated to calendar year data. Finally, this paper estimates the series of investment of own-account using “in-house ratio” and estimated custom and prepackaged software data.

21ESRI (2002)’s final estimation seems not to include prepackaged software.
B.3 Prepackaged software

For estimation of prepackaged software, this paper also refers to the methodology done in ESRI (2002a). First, similar to custom software, annual sales of “Software development (Software product)” in the Survey of Selected Service Industries are translated to calendar year. Here “Software development (Software product)” before 1982 was estimated by the ratio of that in 1983 because it is unable to use data. Second, annual sales of software product are modified using Establishment and Enterprise Census because of the similar problem with custom software, which is the distortion of sample. Third, this paper adds import and export of software to modified data above. “Basic Software” and “Application software” in the Survey of Software Import and Export published by JEITIA and other associations are used concretely to measure prepackage software for domestic consumption and investment.

Modified data series includes not only investment by firms but also investment by governments and consumption by household. Therefore, investment by firms must be extracted. So the fourth, consumption by household is eliminated with the ratio of prepackaged software for consumers calculated by ESRI (2002a) with “Shipment of Prepackaged software by type” by Japan Personal computer Software Association (JPSA), “Consumer Confidence Survey” by ESRI and “Shipment of Personal Computers” in Domestic Shipments of Major Consumer Electronic Equipment by JEITA. Finally, modified data series is divided into investment by firm and government using the ratio of fixed assets formation of software in 1995 input output table (private).

C Estimation of price index for software investment (SPI)

This paper makes use of the methodologies below to estimate deflators for software development referring to Miyagawa and Yamasawa (2001) because Corporate Service Price Index began in 1985.

First, suppose that the price of software development depends on both the wage for computer programmers and system engineers and intermediate goods related to their work as Parker and Grimm (2000) assumed in the estimation of software price index in the U.S., then,

\[ CSPI_t = \alpha_0 + \alpha_1 WAGE_t + \alpha_2 WPI_t + \varepsilon_t \] (17)

where, \( CSPI_t \) is the price index of software development in time \( t \), \( WAGE_t \) is the wage for computer programmers and system engineers in time \( t \) and
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Table 7: Estimated software investment in Japan 1975-2000
$WPI_t$ is the price index of intermediate goods related to their work in time $t$. In this paper, equation (B.1) is estimated from February 1995 to September 2002 by AR1, which follows monthly data series; 22 “Software development” in Corporate Service Price Index by Bank of Japan (BOJ); “Scheduled cash earnings index in service industries” in monthly labor survey by Ministry of Health, Labor and Welfare; “Electronic Machinery” in wholesale price index by BOJ. Here since there is no series of “scheduled cash earnings index” for information service industries, this paper uses the data for the whole service industries. Estimated equation here is,

$$CSPI = 45.0835 + 0.3071WAGE + 0.2986WPI + 0.9956 RHO$$

$$\begin{align*}
(2.2454) & \quad (2.3084) R2: 0.9231 \\
(2.1432) & \quad (157.13) \quad \text{D.W.: 1.234}
\end{align*}$$

It is remarkable that the coefficient of AR1 is about 1 in this equation. Considering the residual when series correlations exists, $e_t = \rho e_{t-1} + \epsilon_t$, equation (B.1) can be rewritten as,

$$CSPI_t - CSPI_{t-1} = 0 + 1WAGE_t + 2WPI_t - (0 + 1WAGE_{t-1} + 2WPI_{t-1}) + t$$

(B.2)

Here, 1 by estimation, then,

$$CSPI_t = 1WAGE_t + 2WPI_t + t \quad \text{(B.3)}$$

This paper estimates equation (B.3) with the same data series, and measure price index for software development before 1994. The equation used in measuring is as follows;

$$CSPI_t = 0.1855WAGE_t + 0.3843WPI_t + 0.2186RHO$$

$$\begin{align*}
(2.1231) & \quad \text{R2: 0.1986} \quad (2.1280) \quad \text{D.W.: 2.033} \quad (1.5776)
\end{align*}$$

Now there is another problem whether structural change between the actual experienced data, “software development” and estimated price index exists or not. This paper prepares the production function with nominal software capital stock and price index like this,

$$\ln V_t = \ln A + \mu_1 \ln(K^N_t) - \mu_2D_1 \ln CSPI_t - \mu_3D_2 \ln CSPI_t$$

and does F-test for null hypothesis, $\mu_1 = \mu_2 = \mu_3$. Now $K^N_t$ denotes nominal software capital stock, $D_1$, a dummy variable for the period 1975-1994, $D_2$, a dummy variable after 1995. Measured F-value in this test is, $F = 0.8069 \quad F(2,24,0.05) = 3.40$. As a result, the null hypothesis is not rejected at significance level of 5 percent. This means that the probability

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22This paper doesn’t use “information service” including software development for the period 1985-1994 as the result was not so good. The reason is that “information service” has other large factor, “data processing” and “information providing service.”
that structural change between actual price index and estimated price index exists is not so high. Therefore, this paper uses estimated price index for software for deflator.

D Estimated Software Stocks

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Table 8: Estimated software stock in Japan 1975-2000 (Real million yen)
E Estimation of IT Capital Stock Excluding Software

This paper basically uses the data prepared by ESRI (2002a) to capture total amount of IT capital stock except for software.\textsuperscript{23}

First, prepared data are modified to private investment in each asset multiplied by the ratio of private sector in fixed assets formation of 1995 input-output table because these data include investment by government. Here, this paper makes up the missing data of intermediate years since input-output table is made every five years. Second, it is necessary to translate this data to real investment series of 1990 price. Because the nominal investment data in ESRI (2002a) is available by each asset, the wholesale price index for each commodity can be basically applied. Each nominal data is deflated by the following index; WPI of “General Machinery” for “Photocopy” and “Other office equipment” assets; “Electronic Machinery” for “Computers and Peripherial Equipment”, “Electronic Communication Equipment”, “Video and Applied Electronic Equipment” and “Electrical Measuring Instruments.”

Finally IT capital stock without software is measured by perpetual inventory method similar to software assets. A depreciation rate of each asset given in ESRI (2002a) is used for depreciation. Average growth rate of 5 years after 1970 of each asset is used for a long-term growth rate. Then summing up all of them, IT capital stock excluding software is estimated. It goes without saying that the estimated stock data here is the net capital stock.

\textsuperscript{23}ESRI (2002a) provides time series data from 1970 to 1998. This paper estimates investments in 1999 and 2000 with growth rate of domestic shipment of each assets using “Census of Manufactures” by METI.
References

Industrial relations and corporate restructuring in Japan: 
conceptual and empirical issues of democracy

Draft. Comments Welcome, not for Quotation

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Industrial relations and corporate restructuring in Japan: conceptual and empirical issues of democracy

Introduction
Just as firefighters in Britain went on strike (Nov. 2002 and Jan. 2003) in support of their wage claim, Japan’s major union organisations were deciding to refrain from wage claims in their spring labour offensive (Shunto); instead they agreed to join discussions over a system of pay and personnel management (Nikkei 25/1/2003). Thus ended nearly fifty years of Shunto history, and it is when such things occur in industrial relations that we are led to reflect on labour responses to capital and thus to conceptual issues regarding democracy in Japan.

Questions arise such as - How should we assess current Japanese industrial relations under large-scale restructuring? How do employees feel about it and how are they reacting? How does it all relate to the idea of democracy?

We seek to tackle such issues here by first examining structural changes in Japanese capitalism and their effect on industrial relations. For present purposes we define industrial relations as relations between capital and labour, the key components of capitalism. We look at them as dialectical and contested power relations and as conflict with the initiatives of capital forces. We also assume that such relations/conflicts offer opportunities for democracy - here defined broadly as participation - to develop in dimensions of both scope and quality. We examine democratic values in mainstream industrial relations agencies, and also critical labour responses - such as national organisations, new independent unions, local community resistance and judicial struggles through case studies. These we assess as manifestations of democracy developing dimensionally.

Thus, we are adopting a political economy approach to industrial relations. Specifically, we look at current industrial relations as contingent to the structural change of Japanese capitalism, and investigate corporate strategy and labour response as a dialectical dynamic of Japanese capitalism.
There are numerous studies on recent managerial change and labour from various perspectives, both management and labour (Shimada 1994; Nomura 1994; Kumazawa 1997; Sako and Sato 1997; Hasegawa & Hook 1998; Kinoshita 1999; Makino 1999; Harada, Yasui & Kuroda 2000; Watanabe 2000; Kono and Clegg 2001); but almost nothing aiming to investigate recent changes as manifestations of capital and labour relations and their relationship to issues of democracy. We hope here to shed some more light on the constantly changing power relations between management and labour under the dynamics of globalisation.

This paper is constructed around four sections:
structural change in Japanese capitalism
conceptual issues of labour and democracy
realities of corporate restructuring as a reflection of managerial strategies
the perception and response of labour

We conclude with a message that Japan is now in the midst of a new paradigm of industrial relations which may bring a new scope and quality, a new dimension, to democracy.

Structural change in Japanese capitalism: process and character
The post-war Japanese economy has shown a clear process of capitalist development, characterised by a distinct political framework, technological paradigm and style of industrial relations. In this process we see a clear trend of linear development - a rapid and steep rise, followed by gradual decline. This process and trend consists of three periods, of high, stable and stagnant growth. As shown in Table 1, growth reached 9.3 per cent in the first period, dropping to 3.9 and 0.9 per cent in the following periods.

The post-war Japanese economy has been strongly conditioned by its affiliation with the United States. Within this framework, economic growth of 9.3 per cent was enabled by the technological paradigm of mass production and the governance of labour by inward-looking collective orientation, as represented by ‘life-time employment’, seniority promotion and enterprise unions. The stable-growth period saw an average growth of 3.9 per cent, during which various
internal and external pressures increased, leading to a bubble economy in the late 1980s, which in due course terminated in 1990. So we came to the current period, typified by an enhanced US-Japan security framework (as shown by the conclusion of the Guidelines for Japan-US Defense Cooperation in 1997), an IT-based technological paradigm and the more individualistic governance of labour, as in HRM and flexible use of labour. This trend is not a Japanese innovation, but is common in the USA, UK and other advanced economies, although differences exist from country to country in method and practice. Capitalist development does not proceed in a linear quantitative expansion and this is why shifts in approach are inevitable. Capital accumulation is itself dynamic in scope, method and intensity and at a certain point extends beyond national borders in order to keep up development.

Table 1 Structural change in Japanese capitalism: growth, labour governance, technology

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<th>Model of Technology</th>
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<td>Mass production &lt; Information Technology</td>
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</table>

Source: National Accounts, Economic Planning Agency

How do such macro trends of capitalist development reflect in the contemporary labour market? Table 2 shows the current state of the labour market in a period of stagnant growth. The net increase in employment during this period is 325,000, which means that even in this stagnant growth period, employment has continued to increase. Japan is certainly under-performing in a 1990-2001 GDP comparison with other advanced economies, recording a growth rate of 1.25
against the US at 3.0, Germany 1.6, UK 2.3 and Netherlands 2.7 (Kosei Rodosho 2002: ref. 42). But this laggard performance is nonetheless well within the normal range of today’s economic growth. Furthermore, if we look at unemployment rates in 2000, Japan at 4.7 per cent still rates much lower than most European economies, with France at 9.9 per cent, Germany 8.1, UK 5.5, the US 4.0 and Netherlands 3.0 (Kosei Rodosho 2002: ref.21). These indicators are difficult to square with the negative views and dire economic prognostications put about by the Japanese government, journalists and market analysts (Nikkei 20/7/1999; Shukan Daiamondo 30/06/2001)ii. Japanese capitalism, we suggest, is in a normal condition of development, i.e. rise, maturity and relative decline.

Total working hours have decreased - a positive trend for Japanese employees, although this figure is open to question as it does not include so-called service overworkiii and may only be a temporary phenomenon particular to this recession period. Annual working hours of the Japanese have been reported as 1970 hours (in manufacturing in 2000), in comparison with the US at 1986 hours, UK 1902, Germany 1525 (in 1999) and France 1589 (Kosei Rodosho 2002). It is interesting to note how working hours are much longer in the Anglo-American model of capitalism and Japanese employees appear more exhausted and stressed than Americans and British in spite of their recent apparently shorter working hours.

The overall income of regular employees decreased by 7.6 thousand yen over the decade, but this is not a significant decrease, representing in monthly terms only a fractional fall of 663 yen in a total of 265,500 yen; nonetheless, it may be taken more seriously by an economy which had previously continued to develop at a rhythm of constant increases in nominal wage.

Table 2 Labour Market in Low-growth Period and Globalisation

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour force</td>
<td>6,463 (10 thousand)</td>
<td>6,800 (10 thousand)</td>
<td>+337 (10 thousand)</td>
</tr>
<tr>
<td>Employed</td>
<td>6,326</td>
<td>6,480</td>
<td>+154</td>
</tr>
<tr>
<td>Employees</td>
<td>4,892</td>
<td>5,397</td>
<td>+505</td>
</tr>
<tr>
<td>Unemployed</td>
<td>140</td>
<td>320</td>
<td>+180</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>2.2%</td>
<td>4.7%</td>
<td>+2.5%</td>
</tr>
<tr>
<td>-------------------</td>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Active opening rate</td>
<td>1.43</td>
<td>0.62</td>
<td>-0.81</td>
</tr>
<tr>
<td>Total hours worked</td>
<td>170.1 (hours)</td>
<td>155.3 (hours)</td>
<td>-14.8 (hours)</td>
</tr>
<tr>
<td>Total wages of regular employees</td>
<td>273.1 (yen/thousand)</td>
<td>265.5 (yen/thousand)</td>
<td>-7.6 (yen/thousand)</td>
</tr>
</tbody>
</table>


The above snapshot of the labour situation in the last decade does not contradict the long-term structural trend of Japanese capitalism shown in Table 1. Stagnant growth in GDP corresponds with modest but continued growth in the labour market.

Structural changes in Japanese capitalism have created an internal necessity of contingencies to accommodate the dynamics of globalisation and IT innovation. Managerial response manifests as large-scale restructuring and the creation of flexible labour, thus redefining itself to meet the logic of capital accumulation. This principle appears as corporate effort on two fronts - reforms at legislative and individual corporate level. But before looking more at reforms, we move on to discuss some conceptual issues in industrial relations.

Conceptual issues and realities of labour

When structural change occurs in capitalism, social relationships, in particular industrial relations, are affected (Hasegawa 1993). Post-war Japanese industrial relations can be characterised according to its separate stages of economic development. Harmonious/co-operative industrial relations emerged from high economic growth, in particular in the large-scale manufacturing companies, where enterprise unions became the agencies dealing with managerial strategies and created compromise relations between capital and labour. These unions’ strategy was to push for wage increases through a concerted Shunto, with the rationale that it is only fair to demand their part of any increased profitability.
In the stable-growth period (1974-91), the balance of power shifted greatly to management. This we may characterise as a period of union compliance, in which unions accommodated the logic of capital; this process also witnessed a degradation of democratic values within union organisations. Compliance was pursued even at the sacrifice of employment security, working and living conditions and occasionally human rights. Such compliance was both a cause and consequence of several factors, including transfers and redundancies of radical union members, managerial intervention in union elections, extensive use of informal organisations to exclude critical ideologies, and attenuation of union leaders by promotion to senior managerial positions after their terms of office. It was during this period that certain shortfalls in union democracy developed.

The current period of stagnant growth has shifted compliance towards assimilation, i.e. a point where the idea of the union as a countervailing force has been almost lost, as shown by the renouncement of wage increases in Shunto and the acceptance of employers’ demands on large-scale corporate restructuring as investigated in the next section.

Does such mainstream union behaviour contradict fundamental principles of the union movement? Does it not give rise to dilemmas within the movement? For instance, that the more that union leaders have assimilated with the logic of capital, the more that union density has declined. The more they assimilate, the more they degrade the quality of democracy within themselves, thus creating bigger perception discrepancies between leaders and rank and file. The latter become either indifferent to union activities or critical of union officials, leading to the formation of radical breakaway organisations. Mainstream industrial relations, as represented by Rengo and its constituent enterprise unions, are therefore in a situation where they need to ponder their own role, objectives and meaning - as well as the meaning of democracy.

The logic of industrial relations is contradictory and dialectical. The authority of capital manifests as managerial power seeking the most efficient capital accumulation, while the authority of labour manifests as a collective power to protect the working and living conditions of employees. The contested dynamic manifests as shifting patterns of relations, such as
conflictual, compromise, compliance or assimilation. Assimilation, as seen in recent values and policies of major enterprise unions and their national body, Rengo, has made them more assimilable by the logic of capital as the demands of globalisation have intensified. As initiatives in industrial relations are always taken by management, assimilation induces participation in management, as in issues of HRM, which makes them lose sight of the basic role of unions and gradually transform themselves into agents, rather than checks, of capital.

Such transformation of union character in mainstream industrial relations implies a shift from pluralist to monolithic relations, thus driving union leaders to feel a sense of economic nationalism, which then leads them to regard the current normal economic status as if it were a national crisis. A healthy capitalism, with liberal and yet democratic values, needs a pluralist approach in capital/labour relations. Ideally tension is needed between capital and labour for a dialectical process of development in democratic character.

Data from Kosei Rodosho (2001) shows union density declining from 25.2 per cent in 1990 to 21.5 per cent in 2000, implying a general decline in collective countervailing influences in Japan. This corresponds with the assimilation state of industrial relations and also coincides with a decline in strikes, from 1698 in 1990 to 305 in 2000, with participants also in general decline during this period (though there was a sudden increase in 2000, to 845,000 compared to 699,000 in 1990) (Kosei Rodosho 2001).

In comparison of union density, it is higher for large companies (above 1000 employees), where density stands at 54.2 per cent as compared to 1.4 per cent for small companies (less than 29 employees). We can assume that countervailing power is stronger in larger companies with higher union density. In terms of industry, the density rate is highest in the fuel utility and water industries (54.3 %), followed by finance, insurance and property (41.9 %), transport and telecommunications (40.8 %); it is rather lower in manufacturing (29.3%), the wholesale and retail and catering industry (9.2%), and the service industry (13.3%). The density rate of part-timers across all industries is very low, at 2.6 per cent, suggesting weak countervailing energy in their industrial relations (Kosei Rodosho 1997).

What is interesting to note is that earnings levels correspond to density, and are higher in industries with higher density, i.e. the electric, gas, energy supply and water industry (605,573 yen per month in 1998) followed by finance and insurance (535,058 yen), transport, telecommunication (429,638 yen), manufacturing (407,789 yen) and whole-sale, retail and catering (344,984 yen) (Kosei Rodosho 1999).
Also, earnings levels correspond to company size - in manufacturing companies with 10-99 employees the rate is only 72.2 per cent, and in companies with 100-999 employees 80.1 per cent, of that in companies with over 1000 employees (Kosei Rodosho 1999).

Even worse off are unprotected part-timers who have no countervailing agencies - their hourly rate is only 37.2 per cent that of the regular employees. When we consider that part-timers are most extensively used in the wholesale and retail industry (50.2 per cent), followed by the service industry (25.2 per cent), manufacturing (16.5 per cent), transport and communication (4.8 per cent), finance and insurance (1.8 per cent), we will also notice that these low-earnings industries have the lowest union density (Rodo Undo 2001).

What is then the current state of countervailing power in such a declining situation of union density? Table 3 shows the dominant position of Rengo (63.5 %), followed by other unions, such as Kinzoku Rokyo (19.6%), Zenroren (9.0 %) and Zen Rokyo (2.2 %).

Rengo comprises the majority of enterprise unions (the percentage Rodo Kumiaiho, the Trade Union Law applies is 79.3 per cent) and stands for assimilation with the logic of capital. Zen Roren, which organises a large proportion of national and local civil servants (application of Rodo Kumiaiho 41.6 per cent, Chiho Komuinho, Local Civil Service Law, 40.6 per cent, Kokka Komuinho, National Civil Service Law, 15.0 per cent) keeps its distance from the logic of capital and maintains a critical position. Zen Rokyo, which also organises both local civil servants and employees of private companies (Chiho Komuinho 60.5 per cent, Rodo Kumiaiho 30.4 per cent) maintains a more radical position than Rengo (as of 1996, Kosei Rodosho 1996).

<table>
<thead>
<tr>
<th>Table 3 Membership trends of major national centres of trade unions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Nihon Rodo Kumiai Sorengo (Rengo)</td>
</tr>
<tr>
<td>Zenkoku Rodo Kumiai Sorengo (Zen Roren)</td>
</tr>
<tr>
<td>National Organisation</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Zenkoku Rodo Kumiai Renraku Kyogi Kai (Zen Rokyo)</td>
</tr>
<tr>
<td>Zennihon Kizoku Sangyo Rodokumiai Kyogikai (Kinzoku Rokyo)</td>
</tr>
<tr>
<td>Kagaku Enerugi Kozan Rokyo</td>
</tr>
<tr>
<td>Zen Nihon Kotsu Unyu Sangyo Rodo Kumai Kyogika (Koun Rokyo)</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Non-federation</td>
</tr>
</tbody>
</table>


These varieties of national organisations reflect shades and colours of union organisation and ideology, which can as a whole be taken as a countervailing power, regardless of their awareness of power relations with capital. Logically, the closer a union moves to the logic of capital, like Rengo, the greater the contradiction with their own logic, so that declared slogans and policies may not always be pursued in practise. Other unions and national organisations, however, become more critical as stress and dissatisfaction among workers increases in consequence of large-scale restructuring.

Democracy matters not only within unions but also outside them. Industrial relations occur wherever the logic of capital exists. Therefore, it is possible to see new forms of labour response and resistance in spheres where union influence had not existed previously. One typical example is the unionisation of part-timers and other casual workers by existing enterprise unions and their national organisations such as Zenkoku Union (National Union) and JSD (Service, Distribution Federation), although how far this will go remains to be seen (Nikkei 25/2/03). Other areas of activity involve the unemployed, pensioners, individual workers and the physically challenged,
as well as the emergence of smaller unions in communities and various citizen movements to improve work and living conditions. These movements display a new scope and quality to democratic character.

Corporate restructuring as manifestation of managerial strategies: internal necessity vs. external constraints

We shall now turn to the corporate strategies, large-scale restructuring, and flexible labour policies which give rise to a labour backlash.

A flexible labour market, whether within an enterprise or not, enables management to reduce labour costs. This may be brought into being at two levels. One is the legislative level, which facilitates the rationalisation of corporations. Legislative labour regulation reflects a compromise of interests between capital and labour, i.e. a political compromise of these interests. In addition, it reflects responses to external (foreign) pressures and internal democratic pressures. The successive legislative reforms of the 1980-90s display an interesting conflation of these elements, as explained below, but throughout a strong thread of capital logic overriding that of labour can be recognised.

Of course the desire of management to use labour flexibly is not new. Economic fluctuations, business uncertainty, seasonal change in demand, market competition and technological innovation, etc., are all inherent pressures of capitalism to induce companies to seek flexible labour. Temporary and part-time labour, subcontracting and in-enterprise subcontracting are tried-and-tested methods towards this end of controlling workforce size (Hasegawa 1983). Companies have also brought in various methods to create flexibility, such as job rotation, group production, shift work, overtime work, temporary transfer (tenseki), temporary lay-offs and adjustment of recruitment, etc., not only adjusting workforce size but also using existing labour flexibly (Hasegawa 1996: 90).
However, recent legislative reforms free up labour on further fronts and make it more available for capital in terms of volume, gender, timing, style, location and working hours. Table 4 shows legislative reforms from the mid-1980s to the end of the 1990s.

Table 4 Legislative Reforms towards Creating Flexible (atypical/contingent) Labour Market

<table>
<thead>
<tr>
<th>Date</th>
<th>Legislation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1986</td>
<td>Equal Employment Opportunity Law</td>
<td>Prohibits discrimination in employment opportunity</td>
</tr>
<tr>
<td>1986</td>
<td>Worker Dispatching Law (Haken Ho)</td>
<td>Applicable only to certain industries</td>
</tr>
<tr>
<td>1987</td>
<td>Reform of Labour Standards Law</td>
<td>Introduction of discretionary work System introduced as a means towards flexible working systems in areas of planning, project groups, research staff</td>
</tr>
<tr>
<td>April 1993</td>
<td>Skill Training System for Foreigners</td>
<td>To admit foreign workers from developing countries; after an appropriate period of training they may work in Japan for a maximum of three years</td>
</tr>
<tr>
<td>April 1994</td>
<td>40 Hours Working Legislation</td>
<td>Extension given to small-medium enterprises until April 1997.</td>
</tr>
<tr>
<td>June 1996</td>
<td>Revision of Child and Family Care Leave</td>
<td></td>
</tr>
<tr>
<td>June 1997</td>
<td>Revision of Equal Employment Opportunities Law</td>
<td>To allow women to work overtime, night work, holiday work, etc. from April 1999</td>
</tr>
<tr>
<td>1997</td>
<td>Reform of Job Security Law (Shokuan Ho)</td>
<td>Job liberalisation/deregulation Recruitment services endorsed for specialists and managers.</td>
</tr>
<tr>
<td>Year</td>
<td>Law</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1999</td>
<td>Reform of Labour Dispatching Law</td>
<td>To expand industrial sectors from 26 to almost all industries including manufacturing (not for direct production employees)</td>
</tr>
<tr>
<td>April 1999</td>
<td>Reform of Labour Standards Law</td>
<td>Elimination of restrictions on women working, allowing work at night, overwork and holiday work. Adoption of flexible working system (Sairyo Rodo Sei) and extension of maximum working hours from 9 to 10 hours in a flexible working system. Introduction of fixed-term employment: legalisation for three-year contracts (hitherto, only two categories of work - full-time, or part-time contracted for less than one year) Elimination of capped maximum working hours</td>
</tr>
<tr>
<td>April 1999</td>
<td>Care Leave Law</td>
<td>Both mother and father can apply for a maximum of three months leave during child’s first year.</td>
</tr>
</tbody>
</table>

The *Equal Employment Opportunities Law* of 1986 reflected the pressures of democracy to eliminate sexual inequality in employment, but the areas and degree stipulated as illegal were still very limited, so that in reality there are many cases of inequality even today in recruitment, allocation and promotion. This legislation represented on one hand a positive step for democracy in Japan, but also released women for exploitation by capital, effectively expanding the labour market and enabling the shrewder use of female labour by companies.

The *Manpower Dispatching Business Law* of 1986 aimed to create a flexible labour market by allowing certain businesses to second workers to other companies, so-called dispatch labour. In particular, the 1994 reform included all those over 60 years of age as dispatch workers. Working conditions, however, may be inferior to those of regular employees at the company.
where they work and the dispatch period was also limited to one year. Japanese over 60 are forced to work due to shortfalls in social welfare provision and often end up serving capital up to the end of their life. The number of such flexible workers stood at 610,000 in 1995 (Imidas 1998: 103).

The Revision of Labour Standards Laws of 1987 and 1993 sought to reduce working time to 40 hours per week (previously 46 hours), increase rates for overtime work (to between 25 and 50 per cent), introduce a discretionary working system, and relax conditions for taking annual paid holidays. This reform reflects pressures from outside, in particular from the ILO, to reduce Japan’s long working hours and improve pay and other working conditions, such as annual holidays. Nonetheless, along with such democratic elements there is also an element of capital demand to use labour flexibly by introducing a discretionary working system. Management was able to introduce the discretionary working of employees, which creates flexibility deferred by a year (Rodo Undo 1999).

The Skill Training System for Foreigners was introduced in 1993 to achieve two objectives; to provide skill training to young trainees from abroad, and to allow them to work in Japan for three years, thus contributing to the formation of a flexible labour market.

The Childcare Leave Law was implemented in 1992 and revised in 1995. It now offers a maximum of three months’ leave during a child’s first year, at 25 per cent wage paid from employment insurance. This legislation reflects democratic pressures both within and without, but again contributes to the expansion of the female labour market.

The Revision of Equal Employment Opportunities Law was passed in 1997 and implemented in 1999, providing for enhanced monitoring of unequal employment practices in the recruitment, allocation and promotion of women; but it also eliminated protective restrictions on overtime and holiday work, as well as permitting night work. Thus, equal treatment again means the expansion of flexible female labour.
The Reform of Job Security Law was implemented in 1997 to allow manpower businesses to act on behalf of white-collar labour and relaxed previous restrictions, creating agents linking labour market and companies in the white-collar market.

The Reform of Labour Dispatching Law of 1999 expanded dispatch allowances to all industries except harbour transport, construction and securities, and stipulated that companies which do not keep to the period of dispatch will be fined less than 300,000 yen. This suggests further flexibility for most of industry, allowing the use of white-collar labour on dispatch conditions.

The Revision of Labour Standards Law of 1999 included final abolition of restrictions on female night work, thus fully incorporating women into the scope of flexible labour, and allowed women to work on holidays and do overtime. It also allowed for elaboration of employment contracts and a relaxation of the Sairyo Rodo Sei, to extend maximum working hours to ten. It further included the introduction of fixed-term employment for three years and abolished the capped maximum of working hours. This revision thus created and expanded the scope and depth of flexible labour for the logic of capital. Although a compromise measure stipulates that management requires union agreement for the introduction of Sairyo Rodo Sei, the basic principle was to comply with capital by allowing the more flexible use of white-collar labour and to allow management to assess individual performance and achievement, smoothing the path to individual orientation.

The Family Care Leave Law was implemented in 1999 to allow employees leave to look after ageing parents or other family members needing care. This measure shores up insufficient social welfare and is only possible with a flexible labour system.

We can therefore summarise the above reforms within the following objectives of releasing labour for the logic of capital:

to free up white-collar workers as flexible labour

to free up women as flexible labour

to free up working hours

to free up employment styles
to free up the sourcing of foreign labour

The above legislative reforms contain some elements of democracy and genuine liberation, as in employment equality, childcare or family care leave, but these are overwhelmed by the potential for the arbitrary use of labour and invite degradation of working conditions unless trade unions and individuals resist intensified accommodation of labour by capital, and defend their human rights.

The major objective of the government, as seen above, was to create flexible labour responsive to the logic of capital, by revising earlier legislation. The dominant ideology was neo-liberalism; gaiatsu (external pressure), the US-Japan Structural Impediments Initiative (1989-90), was also used to legitimate the creation of flexible labour.

Large-scale corporate restructuring was also made possible through a series of legislative reforms. But these were planned and prepared by the Federation of Economic Organisations (Keidanren), politicians and bureaucrats who represent big corporations. The termination of the bubble economy and continued recession set the political and economic agenda of the 1990s and the tide of deregulation under the forces of globalisation was indeed a suitable process within which to further the formation of flexible labour.

The need for deregulation already existed at the end of the 1980s as a consequence of the US-Japan Structural Impediments Initiative (1989-90), but intensified in the 1990s with the US-Japan Framework Talks on Bilateral Trade (1994-97) and with the interests of large corporations seeking rationalisation under globalisation. Deregulation superficially appears to have some theoretical and ideological legitimacy of neo-liberalism, but in reality it has nothing to do with genuine liberal ideas but is an ideology promoting rationalisation and the interests of large corporations.

Measures Law for Tax (1999), New Accounting Standard (2000), Civil Reclaim Act (2000) and Reform of Commercial Law (2001). These legislative reforms have promoted mergers, the formation of holding companies, liberalisation of foreign exchange operations, introduction of consolidated financial statements, share exchange/transfer system, restructuring by various means and the introduction of the current price accounting system.

Table 5 provides evidence that those who benefited most from these legislative reforms were large corporations. Between 1995 and 2000, large corporations carried out restructuring measures - such as mergers, closure of unprofitable plants, alliances, rationalisation of subsidiaries, and division of companies - at a far larger scale than smaller companies, accounting for 68.2 per cent of such activities. In other areas, rationalisation for productivity, production redesign, service methods, development of new products and services, reforms in personnel and HRM systems, reforms in organisation and outsourcing, and the rationalisation of establishments or closures of plants were major restructuring measures among large corporations; among smaller companies with fewer than 100 employees, in most of those areas only half or less restructured. This suggests how the legislative reforms were set in train by those representing large corporations and were used mainly by large corporations.

Table 5 Restructuring at Corporate Level, by Content of Restructuring (between 1995-2000) (M.A.) (%)
<table>
<thead>
<tr>
<th>Category</th>
<th>Total companies surveyed</th>
<th>Companies with over 1,000 employees</th>
<th>Companies with 100-999 employees</th>
<th>Companies with 30-99 employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78.4  57.8  57.0  55.3  52.6  50.5  44.2  38.6  35.6  24.4</td>
<td>94.5  61.6  77.8  70.1  64.0  75.6  77.4  77.5  68.2  39.6</td>
<td>86.9  59.4  65.1  60.5  56.9  58.1  51.5  53.9  42.4  23.4</td>
<td>75.0  53.2  53.2  52.8  50.5  46.8  40.4  31.4  31.9  24.3</td>
</tr>
</tbody>
</table>

Note: The survey was made via questionnaire on 21st August 2000, to 4,500 companies with more than 30 employees, in nine industrial sectors: mining, construction, manufacturing, electric/gas/water/energy supply, transport/communication, wholesale/retail, catering, finance/insurance and property, and services.
Some characteristics can be identified from Table 5:
Whatever the company size, rationalisation for productivity was most common
Large companies preferred reforms in organisations and outsourcing, and reforms in personnel and HRM systems
Small and medium companies preferred diversification of customers and redesign of production and service methods
Small companies aimed for cost reductions in materials and distribution

While large companies put their emphasis on restructuring in organisational and human resource management and shifting problems to medium and smaller companies, smaller companies have no such option for similar rationalisation or problem deferment. Their emphasis was on reduction of cost by diversification, cost containment and elimination of all possible wastes in production and distribution.

Perception and response of labour

Perception of employees
In the pursuit of flexible labour there are clear signs that anxiety, worry and stress are increasing among employees. The logic of individual capital is to use labour as flexibly as possible and it becomes easier if labour is abundant, so that unproductive workers can be easily replaced. Labour in itself is flexible in intensity and hours, while working conditions and living standards are historically influenced as well as a social consequence of industrialisation. Even
today, without some countervailing power of labour, deaths and suicides from overwork might be part of everyday life, along with child and slave labour, which yet remain in some parts of the world. As Table 6 shows, a large number of Japanese employees, indeed well over half, report anxiety, worry and/or stress in work and professional life. Causes vary, but such concerns will accumulate and unless relieved may lead to cases of karoshi or suicide.

In fact, karoshi (death from overwork) cases have continued to increase: 18 in 1992, to 31 in 1993, 32 in 1994 and 76 in 1995 are only the officially recognised cases, although recognised figures are estimated to account for only one per cent of the total. The number of suicides from overwork (which can be regarded as part of karoshi) has also increased from the latter half of the 1990s, with nearly 1900 cases per year. However, only twenty of 201 claimants were officially recognised as victims by industrial accident insurance between 1983-99 (http://www.on-tp.net/SNC/karosi2.html: 3/7/2002; Kawahito 1998). Major causes of overwork are simply long working hours, few or no holidays, night work, poor working environment, and mental/spiritual stress factors such as heavy responsibility, excessive individually assigned targets and goals.

Bullying has also risen. Again, there are various reasons for this, but much seems to be related to management tactics to remove unproductive and unnecessary employees by ‘encouraging’ them towards voluntary retirement. Indeed, cases reported to the Tokyo Kanrishoku Union (Tokyo Union for Managers) more often arise from corporate action than from interpersonal friction.

Table 6 Anxiety/Worry/Stress in Work and Professional Life

<table>
<thead>
<tr>
<th>Those who have strong anxiety/worry</th>
<th>Quality of work</th>
<th>Quantity of work</th>
<th>Aptitude to work</th>
<th>Human relation</th>
<th>Promotion, Upgrading</th>
<th>Transfer to other jobs</th>
<th>Transfer to other location</th>
<th>Transfer without family</th>
<th>Stalement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Workers surveyed</td>
<td>Those who feel strong anxiety/worry/stress</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>100.0</td>
<td>62.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1992)</td>
<td>100.0</td>
<td>57.3%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Male Total</td>
<td>100.0</td>
<td>64.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 29 years</td>
<td>100.0</td>
<td>62.8</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>30-39</td>
<td>100.0</td>
<td>64.5</td>
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<tr>
<td>40-49</td>
<td>100.0</td>
<td>69.0</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>50-59</td>
<td>100.0</td>
<td>64.6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Over 60</td>
<td>100.0</td>
<td>41.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Total</td>
<td>100.0</td>
<td>59.9</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>
Table 7 shows a remarkable increase in anxiety/worry/stress over the period 1992-97, suggesting a clear link with large-scale rationalisation and the diffusion of flexible labour. Feelings of distress are felt most intensely by male employees in their forties, while females seem to experience it more in their thirties. We can assume that employees slightly above middle management who have managed to stay in the company suffer most from these syndromes within the closed corporate organisation, and hence in effect work almost as slaves of corporations (i.e. capital). It is however very serious that more than half of employees report such distress in their work, and that in spite of this high rate, no measures are being proposed from either government or major trade unions, not to mention management. Among the victims are managers and even directors. What is ironic is that government officials are unwilling to recognise the existence of karoshi, karo jisatsu or ijime (bullying) in spite of the fact that there are over a hundred suicides a year among government officials (Kawahito 1998), as to grant such recognition might expand demands on social welfare and related issues.

As examined above, globalisation and other factors have encouraged large corporations and the government to promote the expansion of flexible labour both numerically and functionally. As shown above, flexibility under the current situation means for most employees insecurity and an unstable working life. As the level of social security and welfare in Japan is lower than in other developed economies, emotional anxiety and frustration tend to be that much more acute. Recently, Rengo\(^\text{viii}\) agreed to set up jointly with Nikkeiren (Employers Association) a study group on work-share schemes. Rengo compromised by introducing work-share schemes even at the expense of lowering existing wage levels, aiming to reduce unemployment in the hope of alleviating social unrest and emotional frustration. This
may reduce unemployment, but will not displace the source of worker distress. It may even lead to further degradation in working conditions unless trade unions resist and campaign for improvements in this area.

Cases of Labour Response at Work Level

The nature of labour in capitalist economy is reactive in contrast to the active nature of capital. However, a perception of human rights and democracy naturally develops among employees and is transformed into resistance and a proactive response of labour to capital. This may be strong or weak, as shown in the three cases introduced in this section, which show a new kind of democratic activity developing in areas affected by capital logic, but not covered by traditional industrial relations.

The first case is a typical example of labour compliance of the main enterprise union but of resistance by radical regional labour union federation with forces of capital when large-scale restructuring was conducted at a time of ownership change. The second concerns an employee who, with international support, fought a long and successful human rights campaign against his employers. The last case shows how a group of women made their company recognise its unfair sexual discrimination. In all these cases, enterprise unions were of little help, ignoring or even working against the workers’ interests. In particular, we hear of no intervention from Rengo or other major trade unions in such cases. The indifference of the major unions to such basic labour issues indicates a fundamental weakness and problem of the current labour movement and may contribute to the loss of trust in unions, even to the point of questioning their rationale.

The case of Mitsubishi Motors:

In March 2000 Mitsubishi Motors came under control of DaimlerChrysler AG, who held 34 per cent of shares. This case is another typical example of internal globalisation in Japan, following Mazda in 1996 and Nissan in 1999. The impact of the restructuring carried out by the new management was immense. Taking advantage of government legislative reforms, restructuring (including labour rationalisation) proceeded smoothly with virtually no resistance from the enterprise union.

In March 2001, the company under its new ownership announced a far-reaching restructuring plan known as the Turnaround Plan. In outline, it was as follows:

A total of 9500 employees, 14 per cent of the total, were to be rationalised; 4500 employees from Mitsubishi Motors and another 5000 from affiliated companies.
Cost reductions were planned, aiming at 15 per cent savings in cost of materials and parts. A major plant, Ohe, was scheduled for closure at the end of September 2001. As a result of these measures, profits are expected to increase by 4.5 per cent by the year 2004.

The Ohe plant was closed on 28 Sept. 2001, virtually unopposed by labour; 1383 employees applied for early retirement and the remaining 364 accepted transfer to plants in Okayama, Kyoto and Kawasaki by the end of December 2001. At the union election, no-confidence votes rose to 11-19 per cent, showing the dissatisfaction of union members with the compliant attitudes of their union leaders, but nonetheless critical members remained as a minority, and no further resistance developed.

However, the radical regional labour union federation (Aichi Prefecture Trade Union Federation, membership 60,000) did take action, organising a protest symposium and submitting a Reconsideration Proposal to the company. Contact was made with German trade unions and opinions exchanged at a symposium at a German university, while international links were sought with the major trade union in Germany, IG Metal. A letter of protest was sent to the Council Board of DaimlerChrysler, but their reply denied that the parent company bore any direct responsibility in the matter.

For global capital, the restructuring of Mitsubishi was a typical rationalisation measure, helped along by advantageous legislative reforms. An ineffectual enterprise union moreover compliantly followed the DaimlerChrysler strategy, and a large manufacturing centre was lost.

The case of Hitachi Electric Company:
Management aims for harmonious industrial relations are sometimes attempted through the elimination of troublesome employees. Hideyuki Tanaka, who was employed at Hitachi’s Musashi plant in 1960, was dismissed in 1967 for refusing to do overtime. At that time he was 26 years old; for the next 33 years he fought the company for his labour and human rights through local, regional and supreme courts. In November 1991, just after the burst of the bubble
economy, the Supreme Court laid down its decision in support of the company’s claim that the dismissal was not illegal.

Mr. Tanaka then appealed to the United Nations Human Rights Committee and appeal representatives were sent on four occasions, during which the Japanese judiciary system was described as unfair, claiming an infringement of the independence of the judiciary by Saibankan Kaido (Meeting of Judges). News media across the world pilloried Hitachi for its human rights stance. Tanaka’s support in Japan spread nationally among workers, students, citizens and academics, and he even appeared at the annual shareholders meeting to raise his case. In March 1998, Hitachi suggested a compromise to resolve the dispute. In March 1999 Hitachi settled eight disputes at a Central Labour Committee and proposed reconciliation and/or settlement. On 12 September 2000, 73 people involved in disputes with Hitachi agreed to reconciliation. Thus, Mr. Tanaka finally, at 59 years of age, won his battle with Hitachi, to protect his own as well as others human rights.

Although the dismissal occurred in 1967, in the midst of the high growth period, the issue persisted until recently. Two important issues were raised - the unfairness of Japan’s judiciary system, and the vulnerability of Hitachi management to international criticism. In this case, again, the existing enterprise union was not at all supportive and even the judiciary did not stand on the side of human values, rather protecting the company or capital. However, what is noteworthy is the strength of one individual, fighting for his human rights, and the support of journalism, civic movements and international institutions such as the United Nations.

The case of Sumitomo Life Insurance company:
Discrimination against female employees is common in Japan and derives from managerial strategies to use labour most effectively, at the least cost. But a case involving Sumitomo Life Insurance shows that their discriminatory strategy was considered illegal by the local Osaka court on 27 June 2001. Twelve women had claimed that they had experienced discrimination in promotion and other treatment and in being forced to retire upon marriage. The company was ordered to pay them compensation of about 11.5 million yen each after hearing that management had situated pregnant employees in private offices with virtually no work, transferred women
with children to distant locations, increased workloads for women with babies, and exacted a promise to retire on marriage from women recruits (Asahi Shimbun 28/6/2001)

From a management perspective, flexibility implies the effective use of labour in both cost and function, and this is translated into strategies to discriminate against women in their employment. Traditional cultural mores, such as that men should work while women stay at home, or that even if women work, their work is complementary to men’s, provide a cultural backdrop that managements have used to their advantage. The above case shows however that such cultural heritage is being replaced by more universal values of equality and human rights. The court’s decision would have been unlikely ten years previously, or even now if there had not been support from the media and citizens’ movements. It was a salutary lesson for the company to learn that individual employees were prepared to take action against unfair treatment in the workplace. The Nikkei (Nikkei 28/6/2001) reported, however, that this was only the tip of the iceberg and similar practices remain prevalent in many companies. The Ministry of Health, Welfare and Labour reports that in the year 2000 alone, there were 98 such cases reported to local office of Equal Employment Opportunity Office (Koyo Kinto Shitsu). Fifty-three were cases of unfair treatment due to birth and pregnancy and nine involved enforced retirement upon marriage (Nikkei 28/6/2001). In this case again, the major enterprise unions did not offer support.

5. Conclusion

How are industrial relations related to conceptual issues of democracy? With this question in mind, we have first looked at structural change in Japanese capitalism. My understanding, contrary to the accepted pessimism in journalism and academia in Japan of Japan’s current situation is that from a long-term viewpoint of capitalist development it is quite normal.

In our discussion of the concept and reality of labour, our framework to look at industrial relations as contested power relations between capital and labour still remains valid, and in this sense we may consider that capitalism is still capitalism. Management has devised strategies to maximise the flexibility of available labour. The heightened competitive environment requires
such flexible labour among not only blue-collar but also white-collar and administrative employees. Under an ideological banner of neo-liberalism and deregulation, companies emphasise shareholder value and restructure wherever possible in pursuit of cost reduction. Corporate aims have been achieved by successive legislative reforms towards the creation of a flexible labour market and corporate strategies, as discussed in section 3.

The consequence of such strategies has been to expand flexible labour to almost 30 per cent of total employees; most of them lacking union protection. An implication of this is that female labour particularly suffers shoddier working conditions, under the metaphor of market principles.

On the labour side, however, there are two areas to consider in terms of democracy. One is democracy within union organisation and the other is a new democratic scope and quality. Mainstream industrial relations agencies, as represented by Rengo, suffer problems of democratic values as a consequence of their over-accommodation of the logic of capital, and this has raised question-marks over their role and objectives. The new dimensions of democracy are found in various forms of proactive response by labour interests, such as new unions for part-timers, managers, localities, communities, unemployed workers, pensioners, in other individual and civic democratic movements, and in the networking among them. There is of course some logical expectation that some of these movements will also create alliances with some sections of the Rengo federation.

With low levels of social welfare, employee distress in Japan may be more serious than in other advanced economies. The current diffusion of flexible labour would therefore seem to be detrimental for the majority of employees and should be a matter for an organised response from critical labour interests; this would not simply be in the defence of its own interests, but also have implications for the long-term welfare and sustainability of the Japanese economy, and a higher stage of democracy.
Wages of Haier's workers are piece rate wages and determined by the rightly done jobs and the defects in their jobs. The evaluation of workers for wages is individualistic, instantaneous, quantitative, monetary, competitive and open. There is practically no room for discretionary evaluation by supervisors and managers. Engineers who want to become the heads of new product development projects apply for the position with new product development plans (open competitive bidding). The salary of project managers and their subordinate engineers is determined by the market performance of new products. Haier's management is based on the market principles of economics.

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1 Shunto (Spring labour offensive) began in 1956 as a collective form of negotiation to demand wage increase. Unions in each industry demands wage increase in spring each year under guidance and coordination of national centres and industrial union centres. It is interesting to note that in each period there were particular industries which took initiatives in determining the level of wage increase. In the latter half of 1950s, they were chemical, coal and private railway industries, in 1960s it was steel industry, in 1970 they were ship building, electric and automobile industries, in 1980s they were electric and automobile industries, in 1990s they were electric, automobile, electric power and communication industries.

2 See also http://www.kantei.go.jp/jp/koizumispeech/2002/02/04sisei.html: 15/07/02.

3 Overtime work without payment is estimated 369 hours as of 1999 which makes Japanese working hours highest among advanced economies such as the US, Britain, France and Germany (Zenroren/Rodo Soken 2001)

4 This requires more study of stated policies and their actions. So far as policies of Rengo and Zen Roren are concerned they look almost alike. See for example, Rengo s Seisaku/Seido Yokyu to Teigen (Rengo 1999) and 21 seiki o kirihiraku Rengo undo (Rengo movement aiming to create a new frontier in the 21st century), Kiyoshi Sasamori (2000) and Zen Roren s Annual conference materials (Zen Roren 1999).

5 In the Shunto of 2003, these two national centres demanded improvement of working conditions of part-timers. Zenkoku Union organises 3000 part-timers and haken shain (dispatched employees)and they are demanding the minimum level of payment with 1200 yen per hour, while JSD which organises 180 thousand employees in service and distribution industries in which part-timers accounts for more than 20 per cent and female accounts for 53 per
cent demands the improvement of minimum level of part-timers. They also aim to increase their members and improvement of child-care and family care leave (Nikkei 25/2/03).


viii Rengo: Proposed in 1997 to review seniority-based wage systems. They suggested reform of bonus payments be linked to individual performance and achievement, and retirement lump-sum payments be either staggered in monthly payments or paid at the time of retirement. Thus, Rengo itself suggested a shift from a collective- to individual-oriented paradigm.

ix This section owes to the unpublished report by Misakai (2001) for the sixth Japan/German Seminar (3-4/9/2001) held in Germany.

x In May 1996 the share of Ford Motors of Mazda increased from 25 per cent to 33.4 per cent.

xi In March 1999 Renault obtained 36.8 per cent of shares and announced her restructuring plan titled Revival Plan in October 1999.

xii Similar to Nissan, but it was claimed that the DaimlerChrysler approach was different, in that it respected the culture of Mitsubishi and would take a more localised approach (Director/Executive Management Development/Asia: Interview Oct. 2001).

xiii This section owes to the unpublished report by Tanaka (2001) for the sixth Japan/German Seminar (3-4/9/2001) held in Germany.

References:


Misakai, T (20001) The issue of restructuring of Mitsubishi Motors and the closure of Ohe plan by DaimlerChrysler , unpublished paper at the sixth Japan/German Seminar (3-4/9/2001) held in Germany.

Nikkei 20/7/1999
Nikkei 28/6/2001
Nikkei 25/1/2003
Nikkie 25/2/2003


The Political Economy of Japanese corporate governance: corporate governance as a metaphor of capitalist rationalization

Draft. Comments Welcome, not for Quotation

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Abstract
This paper re-examines the concept and actuality of corporate governance, and looks towards redefining it as part of the governance of an enterprise. General discussions of corporate governance refer to the reform of top management in a more shareholder-oriented direction, to improve profit effectiveness. In this paper, however, we adopt a political economy approach and relocate the issue of corporate governance in a relationship between the internal necessity and external constraints of an organization, as manifest in the contemporary circumstances of US-led globalization and continued recession in Japan.

Large-scale corporate restructuring is a necessity in order to deal with such external constraints. Although the corporate governance discourse appeared as a universal dynamic and phenomenon redirecting companies closer towards shareholder interests, the reality was large-scale corporate restructuring where the spirit of so-called corporate governance is being replaced by that of global competition, thus revealing it as a phenomenon of enhanced capitalist accumulation.

Key words: corporate governance, governance of enterprise, globalization, low economic growth, internal necessity, external constraints
Introduction
This work aims to shed light upon corporate governance and its discussion in Japan. To the author, the existing debate misses an important reality of Japanese capitalism in assuming that external monitoring will solve most current corporate problems. This work argues that the current discourse on corporate governance is a metaphor for large-scale corporate restructuring in response to external constraints of globalization. Such restructuring typically manifests as a result of pressure from the United States and the OECD, and as such can be depicted as an internal necessity of Japanese capitalism arising from external constraints.

Thus, in contrast to the functional approach of the existing corporate governance debate (Fukao and Morita 1997; Keizai Kikakucho ed. 1998; Kubo, Suzuki, Takanshi and Sakai 1998; Lorsch 1995/2000; Keidanren 2000), my approach relates to political economy - to examine structural change in Japanese capitalism and redefine the issue of corporate governance as reforms in top management and hence part of a major restructuring of Japanese capitalism. By addressing the issue from this perspective we can go directly to the heart of the problem and locate the discourse of corporate governance in a broader context - that of the governance of an enterprise.

The structure of the paper consists of three main sections. The first considers the meaning of corporate governance and governance in an enterprise. We classify governance into types, actors, objectives, methods and relationships. The second section looks at top management reform experiences, and discusses the issue of corporate governance in relation to internal necessity. Also examined here is the scope and extent of top management reform; we inquire into correlations, if any, between the degree of reforms, industrial sectors and ownership structure. The third section looks at more specific cases of corporate restructuring, and here we explain why so-called corporate governance reforms are part of large-scale corporate restructuring and that varieties of corporate governance may exist, although we can find some common direction of change. The essence of change is however not to emulate the Anglo-American model; rather it is to redefine existing management, namely to take advantage of external constraints and deal with internal necessity, thus pursuing capitalist rationalization.

Meaning of governance and corporate governance

When corporate governance is discussed as an issue of transparency and accountability (Hamada 2002; Nikkei 13,15/Nov.2002; Nikkei 24/Oct. 2002); or responsibility and function of top
management (Osano 2001; Nikkei 23,24/Oct. 2002), two issues tend to be compounded and the real meaning of corporate governance in Japan becomes lost.

The first of these issues is the demand from institutional investors for profitability and market capitalization, which is relevant to the shareholder approach (The Cadbury Report 1995; OECD 1999; Harvard Business Review 2000; Keidanren 2000). The second issue is democracy in general, questioning whether top managements are accommodating the welfare and justice of society in their business operations (Carroll and Buchholtz 2002; Wheeler and Sillanpaa 1997; Rengo 2000; Post, Preston and Sachs 2002; Rahman ed. 2002; Jacoby 2002). This is relevant to the stakeholder approach. These issues overlap in the topic of corporate governance in Japan.

Basic views of companies, however, differ greatly. The shareholder approach sees a company as a means for private profit based upon the private ownership legitimacy of capitalist society, while the stakeholder approach regards a company as a public institution serving the needs of society, and as such this is a socio-democratic perspective. The advocates of the shareholder approach consider external monitoring effective and necessary, and that the internal monitoring unique to Japan can be and should be replaced by an Anglo-American style of external monitoring. We ask here whether this is the case or not; and if there are changes, how should they be understood?

The Nikkei published research results on July 26, 1999, when the debate on corporate governance in Japan was at its peak in journalism and academia. The results indicated a correlation between the scale of corporate reforms, the size of corporations and the increase of their market capitalization. It reports that of the top 24 companies with the largest corporate reforms, 21 recorded an increase in market capitalization in June 1999 compared to the previous year, despite there being virtually no correlation with current profitability or other performance indicators. In effect, the Nikkei message, by demonstrating the higher market capitalization, legitimized large-scale reforms as effective for corporate governance.

The basic logic of this approach is the structure-function-performance hypothesis; more specifically, the ownership-control-performance hypothesis. Under this logic, the assumption is that external monitoring (the Anglo-American model) is more effective than the internal monitoring characteristic to Japanese companies. Reforms are thus necessary to replace Japan’s traditional corporate governance with Anglo-American capitalism. The discussion then proceeds on how and to what extent top management systems should be reformed.
Before we go into the details of current reforms, for the purpose of this paper, I would like to define governance as an order between two parties in an organization. Thus, the issue of who governs whom, and to what end, needs to be clarified. In a capitalist economy, enterprise governance is an issue of order, and thus a control system and a process to achieve capital accumulation. Owners of capital, either directly or indirectly, delegate the authority of capital to govern the whole process of capital accumulation to various categories of employees; first to hired directors, then down to managers, and then down to staff. Employees in business are thus agents working at different levels of governance to optimise capital accumulation. The authority of capital manifests as the power to govern, which is transformed into a control and management system and the subsequent relationships.

Table 1 shows how the authority of capital manifests as power from shareholders to the board/chief executive officer (CEO); from management to employees; from management to trade unions; and from management to community. This hierarchical logic of individual capital is not always compatible with the interests of labour and community, so corporate governance is counterbalanced by the forces of labour and community, i.e. the forces of stakeholders in and around the company. Owners of capital will assert their rights of private ownership, and exert authority to enhance their governance, while interests of labour and society may confront it and seek a more socially oriented governance through the influence of unions, government policies and sometimes direct citizen movements. Such authority of labour and community derives from and legitimised by human rights and a shared value of community.

The authority of capital ramifies into relationships throughout business, as shown by the various levels of business organization. The boardroom and CEO is where shareholder benefit is discussed, while for stakeholders corporate governance is part of the whole governance of an enterprise and includes community relations. Methods of governance, however, differ according to level, such as monitoring, HRM, industrial relations and corporate citizenship.

Table 1 Governance in an enterprise: types, actors, objective, methods and relations

<table>
<thead>
<tr>
<th>Types of governance</th>
<th>Actors</th>
<th>Objective of governance</th>
<th>Methods of governance</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance of board and CEO</td>
<td>Shareholders, governing board and CEO</td>
<td>Profitability, Accountability</td>
<td>External/internal monitoring</td>
<td>Shareholders vs. board and CEO</td>
</tr>
<tr>
<td>Governance of Management</td>
<td>Efficiency</td>
<td>Management</td>
<td>Management vs.</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>employees</th>
<th>governing employees</th>
<th>methods (HRM)</th>
<th>employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance of industrial relations</td>
<td>Management, governing trade unions</td>
<td>Assimilation/compliance</td>
<td>Management vs. labour unions</td>
</tr>
<tr>
<td>Governance of community relations</td>
<td>Management, governing community</td>
<td>Symbiosis</td>
<td>Company as member of the community (corporate citizen)</td>
</tr>
<tr>
<td>Management vs. community</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Governance is thus essentially an issue of order or social relations between capital and labour, which manifests in various types, actors, objectives, methods and relationships. Those who exercise governance for capital in large corporations exercise power via the authority of capital in order to achieve corporate objectives, while those who exercise governance for labour and community exercise power through the authority of labour/human rights and the shared values of communities. Corporate governance can thus be postulated as part of a more holistic function of capitalism, and countervailing dynamics from labour and community also need to be included.

Let us now turn our eyes to the origin of the current corporate governance discussion. It dates back to Berle and Means’ *The Modern Corporation and Private Property* (1932). Their major finding and discussion point was the divorce of ownership from control, which provided the foundation for the current debate - that a company must govern itself in a way that will satisfy shareholders. This discussion sought an ideal relationship between shareholders and board members; the central concerns being efficiency, profitability and market capitalization.

More recently, in the US the 1980s saw attention given to these issues against a backdrop of changes in US capitalism in the 1970s - in particular, the increasing influence of institutional investors (such as pension funds) upon corporate boards and CEOs and their accountability to shareholders. Peter Drucker commented as early as the mid-1970s on this new phenomenon, calling it pension-fund capitalism (Drucker 1993: 74). This phenomenon had profound significance for academic exploration, for it was seen as having important implications for American democracy, reflecting in the pension funds of
ordinary citizens. It also had important academic implications for major issues of corporation regarding ownership, control and governance (Yoshimori 1996; Scott 1997; Uetake and Nakata 1999; Shibuya 1999). Shibuya (1999) investigated the detailed discussions of 1974 in the US Senate committee on governance operation and argued that this structural mechanism has much to do with the issues of corporate governance.

Due to such discussion of corporate governance in the United States, the idea spread and diffused into discussion on how to reform corporations. Mostly this was in order to increase profitability, productivity and market values, thus becoming an effective discourse of corporate reforms towards enhancing shareholder value. It was especially so in Japan, faced with US-led globalization and the long recession of the 1990s (Keizai Kikakucho 1998; Harvard Business Review 2000; Keidanren 2000). These discussions have of course been supported by neo-classical principles (market orientation), while the stakeholder approach, which includes the interests of various shareholders such as employees, suppliers, trade unions, and communities, is supported by those who regard companies as answering social need, in other words those who hold social democratic values (Drucker 1993; Kelly, G., Kelly, D, and Gamble. A. eds. 1997; Scott 1997; Wheeler and Sillanpaa 1997; Korten 1999; Rengo 1999). Although corporate governance as discussed in the US can be also argued as an issue of democracy, in essence this would be sophistry, simply because institutional investors never act with democratic intent, but rather on behalf of a small number of investors in such funds.

When the discussion emerged in Japan as a means of enhancing market capitalization, reforms in top management took place; but more fundamentally the discourse was used to legitimize large-scale restructuring. Various proposals and reports, listed below, were issued in the latter half of the 1990s, spurred on by frequent corporate corruption scandals in Japan and encouraged by various reports issued in the US and Britain:

September 8, 1997: 'Draft plan for a revision of Commercial Law concerning corporate governance', offered by the Sub-committee for Commercial Law, the Committee of Legislation in the Liberal Democratic Party.

September 10, 1997: Urgent Proposal on methods of corporate governance by special committee on corporate governance, Keidanren (Federation of Economic Organizations).


However, if we examine the content of such reports we see differences in emphasis depending on the objectives of the respective institutions (Takahashi 1999). Each report expresses their own role and position. For example, Keidanren and the Liberal Democratic Party put emphasis on the function of auditors and legal procedures to sue directors, while the use of external directors (for transparent and sound business operations), increased independence of external auditors and the adequate provision of an infrastructure for the effective functioning of markets are put forward by the Ministry of Trade and Industry. Comparing Japanese reports to that of the OECD (1999), we can see how the latter acknowledges the necessity of keeping a balance between various stakeholder interests, while the Japanese reports are more shareholder-oriented. Of course to what extent such balance as proclaimed by the OECD can be realised in reality remains to be seen.

**Corporate governance as a metaphor for corporate restructuring**

We have looked at current discussions on corporate governance in the US and Japan, and also defined corporate governance as an issue of relations between capital and labour. We now come to examination and illustration of structural change in Japanese capitalism and a consideration of its relationship to top management reforms, which is an issue of corporate governance.

Table 2 shows that Japanese capitalism has indeed gone through a trajectory of structural change from the high to the stable and the low growth periods. The structural change also implies the shift of capital accumulation from labour-intensive to capital-intensive industry, manufacturing to services, and then from exports to foreign direct investment (FDI).

The trajectory accompanies different models of corporate governance as well as technological paradigms. It changed from an internal/collective/conflictual model in the high-growth period to a redefined internal/individual/accommodation model of corporate governance. Technological paradigms also shifted from mass production to information technology.
Table 2 Economic growth, corporate governance and paradigm of technology

<table>
<thead>
<tr>
<th>Period</th>
<th>Average GDP growth</th>
<th>Pattern of Growth</th>
<th>Model (ethos) of corporate governance</th>
<th>Paradigm of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-73 (18 years)</td>
<td>9.2% (-5.3)</td>
<td>High growth</td>
<td>Top management: internal Employees management: collective Industrial relations: conflictual compromise</td>
<td>Mass production (Fordism)</td>
</tr>
<tr>
<td>1974-91 (18 years)</td>
<td>3.9% (-5.3)</td>
<td>Stable growth</td>
<td>Top management: internal Employees management: collective individual Industrial relations: compromise accommodation</td>
<td>Mass/multi production/ New technology</td>
</tr>
<tr>
<td>1992 - 2001 (10 years)</td>
<td>0.9% (-3.0)</td>
<td>Stagnant growth</td>
<td>Top management: internal redefined internal Employee management: collective individual HRM Industrial relations: accommodation/dissatisfaction</td>
<td>Mass production &lt; Information Technology</td>
</tr>
</tbody>
</table>


Table 2 also shows that governance in an enterprise consists of top management, employee management and industrial relations management. Organizational adjustment is inevitable to accommodate external constraints. Thus, governance at each level has changed. Corporate governance has changed - but not to an external governance model so much as a redefined model of existing internal governance. The governance of employees has undergone a more drastic and real change from a collective to a more individual-oriented model, as shown by case studies. Governance of industrial relations have also changed from a conflictual/compromise model to one of cooperation/accommodation, and then to accommodation/dissatisfaction. Thus, although journalists and academics have discussed corporate
governance, reforms at top management level seems somewhat modest compared to other levels of enterprise governance.

Tables 3 and 4 show a report from the Tokyo Stock Exchange on reforms in top management by listed large companies. Almost 60 per cent claim to have made some reform to their top management system. The breakdown of such reforms is shown in Table 4 and we would point out that the biggest reform is the reduction of board members (contrary to the case studies). In many cases this was achieved by the introduction of *Shikko Yakuin-Sei*. External directors were introduced and reviews of remuneration systems made but such measures were less in evidence than board downsizing. External directors are mostly introduced not for the purpose of external monitoring, but to complement the scope of functions of existing board members. It is therefore difficult to conclude that a large shift is emerging from internal to external corporate governance. Rather the real import of reform at top management is the rationalization of boards, which became too large during the high-growth period. To a certain extent rationalization of directors may lead to speedy and individual decision-making, but this has nothing to do with external-oriented corporate governance.

Table 3 Reforms designed to enhance the function of the board

<table>
<thead>
<tr>
<th></th>
<th>Number of companies</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reforms already made</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Reforms not made</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>No reply</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Total</td>
<td>_____</td>
<td>_____</td>
</tr>
</tbody>
</table>

Note: Total companies surveyed was 785

Table 4 Specific reforms carried out by companies who responded reforms already made
<table>
<thead>
<tr>
<th>Specific reforms</th>
<th>Number of companies</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of external directors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction of board members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction of <em>Shikko yakuin-sei</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review of remuneration system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Total companies surveyed was 785

The Nikkei survey of July 1999 on corporate reforms in 910 major Japanese companies (excluding financial institutions) (*Nikkei* 1999: 26 July) showed that so-called reforms of corporate governance are only a part of general company restructuring. Figure 1 was compiled by the author based upon the Nikkei survey, which shows the degree of reform by industrial sector - it is noteworthy that the most extensively restructured industrial sectors are concentrated in manufacturing, where companies are well known for their proactive stance in global competition.

The criteria for corporate restructuring were degree of M&A activity, reform of organization, reform of employment practices, use of IT, and reform in attitudes and corporate values. Sony, Fujitsu, Honda, Canon, Komatsu, Toshiba, Matsushita Denko, Matsushita Denki Sangyo, Ricoh and Asahigarasu were assessed as having achieved the most corporate restructuring, including top management reforms.

A non-manufacturing exception is the electricity and gas industries; but the electric industry is now facing government pressure to de-regulate and thus faces potential global competition. Conversely, fisheries/agriculture, transport-related, construction, wholesale and retail, services and others, non-bank financials and real estate are among the least reformed areas of industry.

Figure 1 Degree of corporate reforms by industrial sector
We can see from the above that only a handful (about 100-150 companies) of listed companies are pursuing large-scale restructuring. In this context, we cannot say that reforms in corporate governance have been achieved in both scope and depth among all Japanese companies.

Many proposals and reports have been made, as shown in the previous section, and usually the US model is taken as a universal model for corporate governance, but in reality it is a metaphor for large-scale restructuring to deal with the competitive global market. This may imply that corporate restructuring for global companies like Sony has created governance closer to the Anglo-American model, but as we shall see later, even Sony remains a Japanese model in many respects, as, like Matsushita, Honda and others, their restructuring can be seen as a redefined Japanese model.

One strong factor which leads us to consider that institutional convergence towards the Anglo-American model is possible is the change of ownership composition. The internal-oriented corporate governance of Japan was created by mutual/aligned ownership among major keiretsu companies and main banks,
namely the system of Japanese *keiretsu*. To what extent has this been undermined by the forces of globalization? Figure 2 shows the constant decline of individual owners, while financial institutions and corporations remain as the dominant shareholders (41.3 per cent). The relative importance of foreign owners has however increased to 13.4 per cent as a consequence of globalization.

Also, if we compare the composition of major shareholders between Japan and the United States, institutional investors claiming the need for effective corporate governance account for 71.7 per cent in the United States, but only 12.9 per cent in Japan. However, so-called *keiretsu* shareholding (dealing main banks and affiliated corporations) is much smaller for the US, accounting for only 3.8 per cent, as against 66.3 per cent for Japan (Fukao 1999).

A conceptual consideration of ownership-control-governance of capitalist firms suggests that major shareholders have the right to voice, i.e. a monitoring role. In the US it is external institutional investors and in Japan it has been internal *keiretsu* shareowners. This characteristic has not yet changed much, although some say that the increased percentage of foreign shareholders may play the role of increasing external monitoring. It may be true to some extent, as manifest in the reforms shown by Sony and some other corporations, but they are still far off the Anglo-American model.

Figure 2 Composition of share ownership

![Graph showing the composition of share ownership over time in Japan and the United States. The graph displays the decline in the percentage of Japanese individuals and the increase in financial institutions and foreign owners.]
Table 5 Recent changes in ownership of listed companies (per cent)

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1993</th>
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</thead>
<tbody>
<tr>
<td>Corporations</td>
<td>24.6</td>
<td>23.9</td>
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<tr>
<td>Banks</td>
<td>21.8</td>
<td>21.7</td>
</tr>
<tr>
<td>Japanese individuals</td>
<td>19.0</td>
<td>23.7</td>
</tr>
<tr>
<td>Foreigners</td>
<td>13.4</td>
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</tr>
<tr>
<td>Life insurance</td>
<td>10.6</td>
<td>12.7</td>
</tr>
<tr>
<td>Pension Funds</td>
<td>3.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Property insurance</td>
<td>3.5</td>
<td>3.8</td>
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<tr>
<td>Investment Funds</td>
<td>1.6</td>
<td>3.0</td>
</tr>
<tr>
<td>Others</td>
<td>1.6</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Source: T_y_ Keizai (1998) Kigy Keiretsu S ran (Data Bank); Nikkei 1999: 3 June

4. Cases of corporate restructuring

This section investigates individual cases of corporate restructuring in two industrial groups, manufacturing and services. Two groups were chosen in order to compare the scope and extent of corporate restructuring and reforms towards the Anglo-American corporate governance model. Two companies from each of the electro-electric and automobile companies - Sony and Matsushita, and Toyota and Honda - were chosen as typical cases for such comparison. In the service industry, Tokyo Electric, Mitsubishi Estate, Sumitomo Bank and Kinki Nippon Tourist were also deemed representative of their respective service industries. Globalization in the service industry is much less than in manufacturing, suggesting a lower perceived need for restructuring in the Anglo-American direction.
While these specific cases may not necessarily exemplify the typical circumstances of Japanese corporate reform activities overall, they provide information of value in assessing the issue of ‘corporate governance’ and its meaning to Japanese companies, since the selected companies are themselves broadly typical representatives of major industries.

Corporate restructuring in manufacturing: Sony, Matsushita, Honda and Toyota

Sony Corporation
Sony is said to be the most modern of Japanese companies in the sense that it is the closest to Anglo-American corporate governance. Nevertheless, the board remains large; external board members are not there for external monitoring, so stock options are just an additional bonus for top management. HRM is individualized and rationalized, but the hierarchical management structure remains traditional.

At least in appearance, Sony is the Japanese company that has moved closest to the Anglo-American model. The company seeks its own globalization and continues to grow, even while many others are struggling. Sony is unique in that it does not belong to any kigyo-shudan (keiretsu group). Seventy per cent of sales are now overseas and foreigners own as much as 45 per cent of shares. Head office organization has been rationalized and the concept of networking introduced into management. The style of management has shifted towards greater attention to market capitalization. The concept of company is declared to be ’shareholder active investor’ as well as ’stakeholder active agent’. The headquarters acts as a cost center, while companies are profit centers.

Sony’s total workforce increased from 173,000 to 177,000 employees in 1998-99. Affiliated companies have now exceeded 1000, and human resources for top management in the US and Europe are being localized.

As strategies for business, they seek network-oriented business, digitalization and global supply of parts from the most appropriate markets. Parts numbering is now standard all over the world. R&D sections are located in the US, India and Europe, with division of work and functional co-ordination. A sophisticated information architecture is in use for global production and sales, and analysis of global information is available on-line.
In finance, capital is supplied through the US financial market and the procedure of the Securities and Exchange Commission (SEC) is being used. The company seeks to enhance corporate value in the stock market. M&A is not considered as a means to its growth and development.

Employment has shifted towards a more individual and diversified style. There are twice-annual recruitments of new graduates and also mid-term recruitment whenever necessary. An annual salary system is applied to all employees above deputy section chief. Seventy per cent of annual salary is determined by basic pay, the remaining 30 per cent by performance. In-enterprise recruitment/transfer is practised, with about 200 employees changing jobs annually. There are short-term contract employees and also about fifty foreign employees working on a contract basis in Japan. There are however no part-time workers.

They have a stock option scheme for board members and have also introduced Shikko yakuin Sei, a system practised on an annual contract basis. The hierarchy of positions is however very traditional, with position titles such as general manager, deputy general manager, section chief, deputy section chief, assistant section chief, group chief and deputy group chief, staff.

Matsushita Electric Industrial Co., Ltd.
Matsushita is a global company, with certain key differences to Sony, in that it is still traditional, which may derive from its lower dependence upon its ownership and finance structures.

Although there has been no great change in the number of Matsushita employees, there has been fluctuation in organizations within the company. Sales break down into 50 per cent domestic and 50 per cent overseas. Production shifted in 2001 to 70 per cent domestic and 30 per cent overseas. The overseas transfer of labour-intensive work has revealed a relative decline in the numbers of female employees.

The style of management, in particular in decision-making, has shifted to a more individual-oriented style, though keeping in with existing Matsushita custom, and more attention is paid to profitability.

As a business strategy, the evolution of DVD and a shift from analogue to digital products are in process. Thin, related and less energy are concepts being translated into product development. Matsushita also now needs to factor social and environmental costs into product cost, to comply with legislation on recycling industrial products in effect since 2001. In its division of work between Japan and Asia, it has shifted from a vertical mode, in which Japan provided materials and parts and Asia performed
manufacture or assembly, to a horizontal mode, in which each region or locality produces its most appropriate products, representing a shift towards symbiotic development.

In finance, Matsushita does not depend upon capital markets like bonds markets. SEC (Securities and Exchange Commission) is applied and CCM (Capital Cost Management) is used to assess the performance of each business division.

In employment, job-oriented employment has become more popular. Mid-career/term employment has been introduced and employees of managerial positions are all on an annual salary system. In salaries, the percentage determined by seniority is now 30 per cent and the rest is determined by job and other individual-oriented elements, thus creating a pay difference of about 3 million yen p.a. at section chief level and 4-5 million yen at that of general manager. There are contract employees as well as part-time employees. There are still social gatherings, including parties, trips, etc.

The top management organization has not changed in number (32 board members) and there is no Shikko Yakuin Sei, although there is a stock option scheme and some external board members.

Honda Motor Co., Ltd.
Profitability is considered most important and HRM reforms have been made, but Honda’s corporate governance itself remains traditional.

Honda’s business as a whole has made good progress since 1993, but shifted from expansion to profit-orientation with a ROE rate of 18.1 per cent in 1999. Overseas sales exceed domestic and since 1999 production has reflected this.

The style of management is characterized by seniority orientation in the workplace, but other sections have ability, job and performance orientation. The decision-making style has shifted from Wai Gaya culture (Japanese-style collective) to top-down individual orientation. However, meetings remain as numerous as before.

In terms of business strategies, independence, technology and product ability are considered sources of competitiveness. Strategies to enhance the integrated strength of R&D, production and sales, and improvement in cost and design, are held to be vital. Japan is the R & D center and production is made
wherever there is consumer demand. Seventy per cent of materials and parts are now procured from outside the company.

In finance the standard of SEC is applied and the relative importance of funding capital in the US has increased.

Employment style is characterized by individual orientation, in that employees are supposed to work not for the company but for themselves. No internal recruitment system exists and ability and performance determine salary. The volume of dispatched labour has increased. The same wage system is applied to both direct and indirect workers.

There is no *Shikko Yakuin Sei* and board members number as many as forty. External board members exist, but do not represent institutional investors. There are no stock options and no holding company. There is some relationship with Mitsubishi but this is limited to some consultation and an exchange of views.

Toyota Motor Corporation

Toyota is an outstanding company in terms of performance and profitability, but its structure is far from what may be called ideal Anglo-American corporate governance. Strong evidence is given for the existence of various forms of corporate governance.

Toyota as a whole has an overcapacity, car production being scaled back from 4 to 3 million following the collapse of the bubble economy. Competition in both market and R&D has increased since then. There have however been no plant closures or organizational changes in departments and sections. Since the termination of the bubble economy, sales of high-value cars have declined, but there has increased production of low-cost cars.

Management aims to create a global image of the company by strengthening technology alliances and the Toyota group as a whole, rather than increase M&A and capital alliance.

Business strategies are shifting from export orientation to production wherever there exists a market for localization. The company aims at a 10 per cent share of the world market of 60 million cars. In terms of sales, it aims to sell 2.5 million in the domestic market and 3.5 million in overseas markets. R&D is
centred in Japan (10,000 employees), while R&D in the US is focused on areas relevant to marketing (485 employees), and in Europe on design and marketing research (50 employees).

In finance, global funding is pursued, such as the issue of Euro bonds and stock market listing in New York and London. However, the relative emphasis is not on cash collection, but on strengthening corporate power/ability. Toyota has decreased their own stock and is paying more attention to Investor Relations. The ownership of shares by foreigners is around 7-8 per cent and the possibility exists of an increase in institutional investors.

In employment, individual ability is more than ever considered important and there are two types of recruitment, regular and mid-career. Employment still involves entering the company and receiving in-enterprise education and training to become a professional staff member. The use of female workers on production lines has increased, and the emphasis is on the creation of specialist, rather than generalist, staff, and individual ability assessment is applied. An annual salary system has not been introduced. In-enterprise recruitment is not in use, while interviews are used for the assessment of promotion. Position titles have not changed, but two types exist, one for external purposes and the other for internal purposes. Externally, there are general manager, deputy general manager, manager, section chief, deputy section chief and staff, and internally there are general manager, room chief and staff leader.

The company has no affiliation with Kigyo Shudan (keiretsu group), which creates its organizational character. Toyota’s division system is not absolute, as each division tends to share parts and equipment. Parts are commissioned from the most suitable suppliers around the world, but affiliated suppliers are committed to the design of parts. Parts specification is determined by first acquiring a global standard, either in Japan or abroad, as shown in the case of a battery used for electric cars.

The board structure has not changed, but stock options were introduced in 1997. Internal seniority is in principle maintained. There is no system of external board members but there are external advisors. No institutional investors are major shareholders.

**Corporate reforms in non-manufacturing industry:**

Tokyo Electric Power Company, Mitsubishi Estate, Sumitomo Bank and Kinki Nippon Tourist

*The Tokyo Electric Power Company, Inc.*
The company seems to be restructuring without change to the top management structure, its so-called corporate governance. Company objectives are currently to reduce costs and pursue rationalization of organization, establishments and personnel, and to develop new areas of business.

In management style, it pays more attention to shareholders, investors, customers and communities, rather than operate on its own internal logic. Decision-making has shifted from bottom-up to top-down style and individual responsibility has been emphasized.

The company aims to develop overseas business, such as consulting services for electric-related projects, the development of uranium mines and the establishment of finance companies to supply funds for overseas business, in order to deal with domestic economic stagnation and increased competition. Reduction of excess human resources, debts and equipment, while increasing returns to investors, is a particular focus of attention. A typical overseas business project is its participation in optical communications with Softbank and Microsoft.

In finance Tokyo Electric aims to raise funds by issuing bonds overseas. There is a trend of increased foreign ownership and IR (investor relations) is getting more active and there may be a time when some investors may exert their rights at the annual meeting. The percentage of shares owned by banks has tended to decline.

In employment, assessment of individual ability and performance will be enhanced in the area of employment management. The scope of the annual salary scheme will be expanded. Diversified employment schemes, such as part-timers, mid-career recruitment and in-enterprise recruitment (transfer), have now been introduced.

With regard to organization, the company is moving towards the network business paradigm, transferring authority to create autonomous management. In-enterprise accounting, business divisions and in-enterprise companies have been adopted and authority is now delegated to these units. Two external board members and two external auditors have been invited in. A report on environmental issues has been published and was evaluated highly as a good example of the company’s social awareness. Positions in the managerial hierarchy have been reduced to general manager, deputy manager and group manager. The number of board members has not, however, changed, and neither Shikko Yakuin Sei nor a stock option scheme have been introduced.
Mitsubishi Estate Co., Ltd.
In contrary to what is said and what is wished the Mitsubishi reality remains quite conservative and there
seems to have been no change at all. There has been no variation in the number of and seniority order
among board members and external board members, except for the purpose of internal corporate
governance.

With its corruption problems (as manifest by the Sokaiya and Umino Ie incidents) the company has
determined to break with its old practices and culture. The number of establishments and employees has
decreased and the focus of business shifted from land ownership to fee business (management business),
due to the collapse of the so-called land myth.

Management style is also changing from traditional to market-oriented. However, group cohesion is
strong and the maintenance and protection of the Mitsubishi brand is considered very important.
Decision-making is still slow and the bottom-up style remains. There are many meetings and the scope of
individual responsibility is small. As a means to diversify risks, globalization is pursued and overseas
businesses are developed jointly with overseas capital. Management of apartments and outsourcings have
become more important and are becoming the main area of its business.

Financially, the company has not been accustomed to raise capital overseas, but for the last eight years
has had to devise strategies to satisfy the scrutiny of stock market analysts. The percentage of foreign
ownership now accounts for 15 per cent, but the company has not yet adopted global accounting
standards.

In personnel management, performance pay and objective management have been introduced. The
company depends only upon the recruitment of new graduates and they are recruited not by job criteria
but as general staff. Annual salary schemes have not been introduced and promotion is determined by a
combination of the assessment of personnel management and the submission of self-assessment. Part-
timers are used as regular human resources.

The company is considering restructuring towards a company-based division system, but there is no
intention of establishing a holding company. The managerial hierarchy was even previously rather simple,
consisting only of general manager, deputy manager and staff. There are six qualifications for grading
employees. The number of board members has not changed and there is no stock option scheme. Seniority
is maintained among board members and external directors are from companies of the Mitsubishi group, such as Meiji Life Insurance and Mitsubishi Bank.

**The Sumitomo Bank, Ltd.**

Although a necessity for change is felt to exist, the company remains traditional. The need for change has been seriously perceived, but the speed of change has been rather slow. Rationalization of overseas and domestic establishments and human resources has been carried out.

Management style has shifted to market-orientation and individual performance evaluation. The company’s annual athletics meeting was abolished. A review was made of old business practice and awareness of profitability increased. Decision-making remains bottom-up and meetings still involve a large number of people.

Business strategy has shifted to regional strategies. An active approach to IR and the promotion of IT are now considered important. The number of external board members has risen to three and that of monitoring members to two. The *Shikko Yakuin Sei* was adopted and business policies are now more domestic-oriented.

In finance, the accounting system has become more internationalized.

In employment, some change has been made, but the basic principle of seniority promotion has not altered. Competition among those of the same year entry has intensified, but among board members reverse promotion is never seen, and thus the seniority custom remains unchanged. Annual salary and in-enterprise recruitment schemes have not been introduced. Part-timers are recruited from subsidiary companies and more than half of clerical employees are now part-timers.

**Kinki Nippon Tourist**

This company faces the most serious situation of all those interviewed and has undertaken the most radical restructuring, replacing regular employees with contract workers on a large scale. Kinki Nippon recorded a deficit in 1998 and large-scale rationalization is now in progress. Rationalization at head office and in personnel is lowering numbers from 7200 in 1998 to 6878 in 1999. Early retirement for those over 50 is in progress and will be stepped up to those over 45.
Management style needs to cope with increased competition, lower prices, continued recession and a shift from group to individual travel. Internet-based business operations have gained importance. Business performance in consolidated accounting has been pursued and decision-making has speeded up.

As a business strategy emphasis is laid upon the replacement of as many regular employees as possible with less costly contracted employees, for terms of one year, extendable up to five years. The administration of payment accounts has been outsourced and a scrap-and-build policy implemented in all companies in the group. Products are now more individualized and targeted at middle-aged and older customers. The business has become more profit-oriented than before and domestic and overseas sales account for 64 and 33 per cent respectively.

Neither an employee share nor stock option scheme has been introduced and there is no foreign ownership of shares.

In employment, seniority-based pay increments were terminated and the principle of market and individual orientation adopted, with higher rewards going to those generating more profits. Each branch is now considered as a company and the head of the company is a regular full-time employee, while all others are contract employees. For regular employees, seniority promotion applies only for the first three years and then promotion becomes more individualized, with large differentials among those of the same year entry. Objective management has been introduced and those who are in management are paid on an annual salary scheme. Some in-enterprise recruitment has been introduced. Part-timers currently account for one per cent, and contract employees for 16 per cent, of all employees.

The organization was rationalized through scrap-and-build; the number of general managers decreased from 31 to 24 at head office, and section chiefs from 52 to 37. The organization became flatter in shape. A Shikko Yakuin Sei was introduced with a one-year period of service. The merit of this scheme is to make executives exempt from litigation by investors. The number of meetings between sections has increased and seniority among board members is maintained. An external board member is dispatched from the parent company, Kinki Nippon Tetsudo and Japan Railways.

**Summary**

As seen in Table 6 all the above companies agree on three areas of corporate governance; profitability, HRM and external board members. The relative importance of profitability has increased for two reasons, one being corporate governance (market capitalization) and the other the sheer survival of the company.
The latter would seem to have more weight, since companies need to secure profitability in order to survive the increased competition in situations of no macro economic growth. This internal necessity is being achieved by the introduction of individual-oriented HRM, of which the foremost objective is to reduce the total labour cost of non-managerial employees, with an annual salary scheme as its counterpart for managers. External board members were introduced not for external monitoring but to strengthen existing board functions. Some companies have introduced *Shikko Yakuin Sei* in order to reduce board members and deter investors from suing the board. It is however only Sony who reduced the actual number of board members by the introduction of *Shikko Yakuin Sei*.

Table 6 Reforms for corporate governance of major companies

<table>
<thead>
<tr>
<th></th>
<th>Profitability</th>
<th>Smaller Board</th>
<th>Shikko Yakuin-sei</th>
<th>Individual oriented HRM</th>
<th>Annual Salary</th>
<th>Stock Option</th>
<th>External Board Members</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-</td>
<td>-</td>
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<td>K N Tourist</td>
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</table>

Source: Compiled from interview results.

In all other companies interviewed the number of board members and seniority among them remain the same. They may say they are creating a new paradigm of business, but the reality is still traditional in most of the companies, even Sony. We can however recognize that HRM is considered to be the most important area of restructuring, aiming to redefine enterprise governance.
5. Conclusion

The dynamics of capitalist development are uneven, requiring constant corrective measures if a company wishes to maintain or improve its position in global competition. The flux of fortune between countries within that system inevitably leads to emulative activity. The process is one of corrective rationalization in the appropriate sphere, either production systems, corporate governance and/or more dynamic corporate restructuring. Corporate governance discourse is also a phenomenon of, and a metaphor used to improve, the workings of the logic of capitalist accumulation. How far such capital logic tends towards the convergence of different capitalisms remains to be seen.

However, looking at structural change in Japanese capitalism and specific cases of corporate restructuring, good governance for Japanese companies implies the continuous growth of the companies rather than a shift from internal to external corporate governance. The continuous growth of the company is considered evidence of good corporate governance, leading to less corruption, more investment, more employee satisfaction and more contribution to various stakeholders. For example, both Toyota and Honda, or Sony or Matsushita are both in sound governance with different style/structures of corporate governance. In fact, there seems no corporate governance problem in these companies.

Rather, the issue of corporate governance in Japan can be taken as a catalyst and metaphor for large-scale corporate restructuring in the 1990s to the present day in Japan. Indeed the real content of corporate governance was not so much emulation of the Anglo-American model as the re-definition and modification of existing enterprise governance. Corporate governance in Japan also has no relevance to fictitious industrial democracy as has emerged in the United States as an excuse for corporate governance. Indeed, the democratic governance of an enterprise as a reflection of labour and community remains an important consideration for the Japanese people.

REFERENCES


US pressure emerged in the 1970s and 1980s as trade conflict, but thereafter continued in the form of globalization, and is exemplified in the Structural Impediments Initiatives (1989) and the US-Japan Framework Talks on Bilateral Trade (1994-97), as well as the OECD agreement (1994) on labour flexibility. Other aspects of external constraints are global standards for accounting and environmental protection.

This implies that a company is the means of its owners for profit making but more specifically it suggests the essence of what Berle and Means suggested that the two attributes of ownership-risking collective wealth in profit-seeking enterprise and ultimate management of responsibility for that enterprise had become divorced (Berle 1967).

In Britain there were Report from Cadbury Committee (1992), Greenbury Report (1995) and OECD Paper (1997), while in the United States there were a report on principles of corporate governance from American Bar Association (1992) and various statement by Business Roundtable (Robert A. G. Monks and Nell Minow: 2001).

The interview survey was conducted in September 1999 using a method of semi-guided questionnaire interview. Sumitomo Bank was not yet merged with Mitsui Bank in 1999, at the time of writing (2002) it exists as Sumitomo Mitsui Banking Corporation.
Governmental Corruption and Control:  
An Asian Conundrum

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• Japan enjoyed nearly a half century of seemingly constant economic triumph, rising from the ashes of World War II defeat to challenge the victorious U.S. in old industrial strongholds like steel and automobiles, as well as new ones like semiconductors and consumer electronics. Japanese industry had emerged stronger after such crises as the 1970s oil shocks, escalating Yen values, and even earthquakes. Yet for all these strengths, the 1990s saw a continuing downward spiral as the Japanese economy struggled through the decade and on into the new Millennium.

• South Korea challenged Japan, competing for leadership both in older industries like shipbuilding, and in newer ones like microwave ovens and semiconductors. Korea's Real GDP grew by an average 10% between 1986-91, pausing at a "mere" 5% in 1992-93, only to move back up to 8% in 1994 and 9% in 1995, before slowing to about 7% in 1996. But by 1998, Korea showed current accounts losses of over $160 billion, with over $100 billion of bank loan write-offs. A 1998 IMF rescue package of $48 billion — a huge amount — was widely described as inadequate, and the Korean industrial engine appeared to be in complete disarray, while street riots and strikes gave cause for social concern. In April of 2003, some 60 Korean lawmakers were revealed to have taken bribes from a major construction company.

• Thailand, Indonesia and other Asian nations also showed signs of strain in the late 1990s as the so-called “Asian Flu” battered their economies. The Thai Bhatt’s loss of almost 80% of its value precipitated by the collapse of the Bangkok real estate market was identified as the first of the “dominos” initiating the 1990s Asian financial crisis. Meanwhile, successful economic development achievements rapidly unraveled elsewhere. In Indonesia, Suharto’s government of 30 years fell in May of 1998 amidst student riots as common people could no longer afford the rice that was a staple part of their

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diet. A year later, despite widespread intimidation, East Timor voted for independence, while unrest continued to roil Indonesia and its neighbors. Recurrent rumors of Al Quaeda and other terrorist groups’ activities, along with drug corruption, abound.2

**What Went Wrong?**

The Asian miracle seemed based on strong and vibrant long-term economic development plans that worked well — for a time. Yet somehow these plans of Asia’s “best and brightest” minds went awry. How did so many promising beginnings in such diverse economies fall into difficulties? Is this simply a setback? Have those once-triumphant economies simply “caught up” with the West, precluding the spectacular growth of the past? Or, more importantly, is there some systemic problem to be discerned as a root factor that transcends cultural and economic differences to contribute to the malaise? We shall argue that well before Enron and WorldCom demonstrated the corrupt possibilities of obfuscation and central control, a comparable pattern was visible elsewhere, and underlies the financial difficulties that continue to threaten destabilization of developing economies. Today, as terrorists target economic stability, corruption and control are still more tightly linked, just when increasing vigilance is essential for security.

It’s tempting to dismiss the problem as simply the excesses of LDC economies — yet the problem includes one of the world’s largest and hitherto most successful, Japan. Japan’s economic dominance in Asia is quite comparable to that of the U.S. in the context of NAFTA — about 75% of the joint GDP of the region. If Japan is unable to restart its economy, could the “Asian Contagion” spread and Europe or America find themselves in similar dilemmas? The duration and depth of the Japanese economic slide has had serious and spreading consequences throughout Asia and for important Japanese markets like Europe and North America as well. In short, Japan’s difficulties are far too important to be ignored, and Japan’s economy too well-developed to sustain an “LDC diagnosis.” Instead, the financial disorder and industrial chaos that brought regional development in Asia to a standstill after so many years of growth deserves deeper inquiry. We shall argue that the roots of Asian difficulties since the 1990s are to be found within a story of corruption and control that carries implications far beyond Asia, for companies and industries as well as for countries. There are strong parallels to Enron, WorldCom and other North American scandals. Further, we shall present some data to suggest that systemic difficulties are at issue; as a result, systemic remedies are required.

The array of economic development strategies driven by bureaucratic controls and political corruption has failed because they have not yet effectively addressed the underlying flaws, the very same bureaucratic controls and associated opportunities for corruption. These findings enable us to make sense of the dramatic changes of fortune so visible in Asia, as well as to identify consequences and implications for other regions.

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2 The UN Drug Control Program commented on drug corruption’s corrosive impact in developing countries: “In systems where a member of the legislature or judiciary, earning only a modest income, can easily gain the equivalent of some 20 months’ salary from a trafficker by making one “favourable” decision, the dangers of corruption are obvious.” Source: United Nations International Drug Control Program, Technical Series Report #6: Economic and Social Consequences of Drug Abuse and Illicit Trafficking (New York, NY: UNDCP, 1998), p. 39.
Our approach both highlights the peculiar vulnerabilities to corruption that different development strategies carry for public policy makers, and suggests new criteria for evaluating investments abroad. Today's experience reveals limitations of historic Asian development strategies, illuminates the nature of the interface between government policy and economic growth, and suggests why and how business ethics should impact the commitments businesses make in different countries, and thus within different development regimes. How development occurs carries far-reaching implications for the hazards to which it is vulnerable. But the lessons reach into more developed economies as well.

*Control and Corruption: Power corrupts, and absolute power corrupts absolutely*

We can usefully depict the Asian economies in the 1990s, as well as other economies around the world, along two basic dimensions: *corruption* and *control*, as depicted in Figure 1. At one extreme of control are the highly regulated, thoroughly bureaucratic approaches to economic development. While the policy tools may vary, high control approaches to economic development attempt to tightly restrain economic activity and to manage it in detail. Political models can range from wholly authoritarian systems to less repressive or even benevolent regimes. All share a fundamental focus on substantial, pervasive government involvement in economic activities of all sorts, as well as numerous substantive hurdles for individuals seeking to do business legitimately (although exceptions may be made for the well-connected, a natural extension into corruption).
Bureaucracies were originally intended to do away with favoritism, replacing it with rules that applied equally to all, thus assuring fairness in application of government policies. Indeed, Max Weber felt that the choice was "bureaucracy or dilettantism," for their rules and files and hierarchies offer organized, coordinated activity (Weber, 1958). Bureaucratic systems can be relatively corruption free, in which case they enjoy high credibility among investors such as found in Singapore. But such systems can also become corrupt as the complexity of the system increases, or as rules become so Byzantine as to defy comprehension by outsiders. In such cases, bureaucrats may lack accountability for their actions, or there may simply be no one with an overview of the entire system.

An outstanding (but apparently by no means unique) example of such bureaucratic complexity is to be found in the difficulties of regularizing land and real property ownership in less-developed countries, as documented by Hernando DeSoto and his colleagues. In Peru, the first of five necessary stages alone required 207 separate steps; in the Philippines, 168 steps and 13-25 years were needed; in Egypt, 77 steps with 31 different governmental entities, and 6-14 years; in Haiti, 111 steps and 4,112 days (DeSo, 2000). Surely such complexity does not serve the needs of the majority of the population: they remain outside the money economy, subject as a result to systematic economic disenfranchisement and constantly vulnerable to simple seizure of their assets, if not extortion in an effort to keep them.

By contrast, other systems exert far less control over economic activity, favoring individual and corporate entrepreneurial decisions driven by market forces, rather than control by governmental action or decision. While such systems may still be regulated, they typically limit government intervention to setting relatively simple and straightforward rules for exchange to which all parties are subject. Where high control systems aim at extensive surveillance and detailed regulation of economic activity, low control systems move toward less restriction or monitoring, within more or less well-defined boundaries. High control of economic activity often seems associated with high control in other spheres, notably in free expression of opinion and dissent.

Corruption provides the second dimension for our discussion. Corruption can be as simple as individual graft through slight or moderate “taxing” where proceeds do not benefit society (but instead enrich individuals, families or parties). As shown in Table 1, Transparency International has ranked countries according to their levels or corruption. Or it can be a massive and systemic pillaging of a society’s resources. Examples include the expatriation of tens of millions of dollars from central African states by their rulers. Mr. Suharto's surrender of some $532 million in looted funds,3 or the transfer to private

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3 The total was between $30 and $40 billion, according to Resolution 281, 105th CONGRESS, 2d Session by Frank Wolf (R-VA) and Barney Frank (D-MA) May 22, 1998.
Swiss accounts of over $100 million by Raul Salinas de Gotari, brother of the former Mexican president, only begin to suggest the extent of corruption. Not only direct bribes, but also preferential ownership of extensive economic assets, or even whole sectors of a country’s economy create enormous cash drains, and introduce enormous bias into transactions — away from marketplace utility, and toward expenditures directed to maximize payouts to family members or cronies. High control provides significant opportunity for those in power to enrich themselves, thereby inviting corruption. As striking is the frequency of vast distance between the elite “haves,” their palaces and affluence — and the often abject and desperate poverty of the overwhelming majority under regimes in North Korea, Albania, Iraq, or East Germany: corruption disables economic activity and renewal.

Table 1: Transparency International Corruption Index (2002)

<table>
<thead>
<tr>
<th>Country</th>
<th>1995 ranking</th>
<th>2002 ranking</th>
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</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>9.3</td>
<td>9.3</td>
</tr>
<tr>
<td>USA</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>7.1</td>
<td>8.2</td>
</tr>
<tr>
<td>Japan</td>
<td>6.7</td>
<td>7.1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>5.1</td>
<td>5.6</td>
</tr>
<tr>
<td>S. Korea</td>
<td>4.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.2</td>
<td>3.6</td>
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<tr>
<td>China</td>
<td>2.2</td>
<td>3.5</td>
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<tr>
<td>Thailand</td>
<td>2.8</td>
<td>3.2</td>
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<tr>
<td>India</td>
<td>2.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.9</td>
<td>1.9</td>
</tr>
</tbody>
</table>

A perfect score, indicating zero perceived propensity to pay bribes, is 10.0, and thus the ranking starts with companies from countries that are seen to have a low propensity for foreign bribe paying.

Source: [http://www.transparency.org/cpi/index.html#cpi](http://www.transparency.org/cpi/index.html#cpi)

While Figure 1 highlights the tradeoffs that different philosophies of control and economic development imply, Figure 2 illustrates how such approaches have varied in practice. Recasting these tradeoffs into a chart of four quadrants, Figure 2 suggests that some economic development strategies, illustrated by those of Singapore, China and Japan, have historically employed high-control strategies, seeking to carefully direct economic activity within their borders. The range is vast: control can take the form of keeping foreigners out altogether, as in the Japanese Tokugawa Shogunate before Commodore Perry’s arrival in 1853, or of guiding development and capital investments, as MITI did after World War II. As in Singapore, control can be used to select industries

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4 Published accounts have suggested totals as high as $300 million.
and marshal resources such as education and infrastructure to attract companies in the interests of its society. These societies have differed substantially, however, in the kinds of control exerted, and also, most importantly as we shall argue, in the degree of corruption tolerated in the government’s interaction with economic activity. As Figure 2 depicts by arrows and numbers, national positions often change over time.

**Figure 2: The Evolution of Economies in Corruption and Control**

**A Model of Control and Corruption:**

**Quadrant 1: High Control/Low Corruption.** Immediately after World War II, Japan was characterized by “a remarkable cohesiveness of vision and purpose in government and industry”, a cohesiveness in which the bureaucratic elite exercised near total control until the late 1990s (Boulton et al., 1995). The enduring legacy of Japan’s high control approach to industrial development has been systematic deployment of a variety of regulatory protections aimed at keeping imports out of the Japanese market, or significantly disadvantaging them. Attempts to open the Japanese market to U.S.
semiconductors for years had few results, for example (Prestowitz, 1988). More recently, the Japanese banking industry has struggled under the burden of its post-bubble default loans – estimated by the Japanese government to be more than 50% Yakuza-related.\(^5\)

Japan’s bureaucracy has been exceptionally clever at finding ways to disadvantage foreign products. For example, excise taxes were often charged on products that had dimensions slightly different from Japanese products, such as the distance from the dashboard to the rear seat that classified a small car. Small cars with the lowest tax rates in Japan also have width restrictions that cannot meet U.S. regulations for side-impact safety, and engine sizes that would not sell in the U.S. Since the cost of developing a new platform to meet Japanese auto requirements ranges from $1.5 to $2.5 billion,\(^6\) the barrier to non-Japanese firms is substantial: requiring them to sell more heavily-taxed vehicles, even before addressing barriers of distribution access. Japan’s approach to control has changed little over the years, allowing successive bureaucrats to make or change policies to frustrate foreign competitions. Today, Japan's powerful bureaucracy and political system has become more corrupt with the growing wealth of the nation. According to Diana Lee:

> It’s not surprising that corruption breeds in a closed environment where government activities are kept shrouded in secrecy for the sake of diplomatic confidentiality, where discipline is lacking to deal with individual politicians and administrators who had abused their powers, and where an authority figure embodying probity and ethics is fast becoming a fading image of the past. Even the punitive measures for misconduct (tax evasion or bribery) exact only a reprimand, a light fine, or a cut in salary. For a more serious offense, the wrongdoer is allowed to resign and collect his pension. Rarely would one see an offender being dismissed, prosecuted, and thrown into jail, except in the case of embezzlement or scam. The most appalling and unjust point about the punishment is that most of these offenders were men of clout -- chiefs, section heads, mayors, governors -- for their administrative posts had granted them opportunities to exploit politics as a tool of vested interests.\(^7\)

Thus immediately after World War II, for instance (J1), Japan was characterized by a widespread social and political consensus that rebuilding the nation’s economy was of paramount importance — with the U.S. occupying force overseeing initial investments of development funds and assuring fiscal integrity. Japan's governmental intervention in the economy was carefully directed by MITI, ensuring low corruption levels and high social legitimacy and financial credibility.\(^8\) By the 1990s, (J2), Japan had been rocked by a series of high-level scandals that involve politicians, bureaucrats, and corporate leadership, along with unsavory gangster elements. Japan's most powerful ministry, the Ministry of Finance, has been embroiled in scandal while its banking system continues in disarray. There has been no systematic acknowledgement of the banking crisis, nor of its implications for an economy in which banks’ substantial stockholdings have long served to shore up ownership by elites and to protect firms from market forces, especially

\(^5\) The Yakuza are the Japanese organized crime entities, comparable to Mafia crime families in the U.S.
\(^6\) See, for example, “Saturn Corporation in 1998,” HBS case 9-799-021, p. 3.
foreign competitors.

Singapore, another high control practitioner, has taken a different approach from Japan's development strategy. Singapore actively seeks to attract foreign investment by providing high transparency and a responsive administration, but heavily controls imports, like automobiles. Rather than regulating product characteristics, as does Japan, Singapore uses quotas on the number of automobiles allowed for import and auctions the right to purchase a new vehicle, thereby managing traffic congestion. While mass transit is readily available, the purchase rights for a car can easily cost a consumer over $20,000. Singapore's strategy to attract firms has been directed at building globally competitive infrastructures that target specific industries such as petrochemicals and electronics. Special incentives and tax breaks are also provided to firms that establish operations and regional headquarters in Singapore. Thus contemporary Singapore appears to be focused on setting the arena for competition with moderate control and minimal corruption in our terms (despite stringent controls on expression of dissent and some social action, overall bureaucratic transparency is amongst the highest in the world). By contrast, Japan’s corruption appears to be increasing, along with growing and excessive bureaucratic control of its policy making mechanisms.

**Quadrant 2: High Control/High Corruption.** Since the end of the Cold War, a variety of approaches to economic development have emerged. Countries like India, South Korea and China have been notorious for their plutocratic political elites. In South Korea, a handful of chaebol (family controlled conglomerates) have dominated the economy in concert with strong political or military dictators. Only with pressure from the World Trade Organization are restrictive regulations being removed to begin to allow foreign competition. In China, where economic decisions were totally controlled by the Communist Party, China's leadership now stresses the need for continued economic development. President Jiang Zamin was concerned that corruption could discourage foreign investment and slow development. The OECD estimates that corruption has cost China 17% of its GDP, and has raised the cost of government from 10% to 100%.

China in the late Communist era was widely considered as thoroughly corrupt, as were East Germany and Russia at comparable eras (to say nothing of Albania and North Korea). Current efforts to reform China’s banking system and to eliminate the military's involvement in economics are aimed at moving the economy toward greater openness. Reducing the central government’s involvement in local decision-making is underway as China deregulates most industries to meet the World Trade Organization’s requirements. State-owned enterprises are now being forced to compete in a growing market economy. In contrast, India's corruption is so pervasive that every official relies on bribes to survive, and its political system is so fragmented and corrupt that development remains much slower than in China. While corruption modes differ, these countries’ strong government controls extract illicit "rents" from economic activity, while constraining foreign participation and undercutting the potentially salutary effects of economic competition – and providing no protection to ordinary citizens or business activity.

**Quadrant 3: Low Control/High Corruption.** The old American "wild west" was an unregulated, laissez-faire society in which individuals, families, parties or groups acted for their own benefit. Few regulatory or legal controls existed to restrain behaviors, so the strong and the unscrupulous prospered. At the extreme, when government breaks down, societies create gangs and bandits (as in present-day Ethiopia or Columbia,
Rwanda or Russia) who threaten basic social structure. Less extreme cases appear to include Mexico, where police corruption in Mexico City is so rampant that citizens assume that all officers are felons — as widely publicized police arrests suggest. Areas of the former Soviet Union, the former Yugoslavia, and now Afghanistan (outside a small area of order in Kabul) and Iraq continue to experience turmoil as ownership and economic exchange rules are renegotiated. Still, the lack of an effective system of laws to protect property or personal rights of individuals, companies and their investments continues to slow the growth and security in these "wild west" economies.

**Quadrant 4: Low Control/Low Corruption.** Countries based on the rule of law provide the most entrepreneurial societies. Hong Kong, under British rule, and the US are examples, although Hong Kong’s greatest success came after the establishment of its Independent Commission Against Corruption. With the rapid opening of China, Hong Kong’s government finds itself struggling to stay competitive and corruption free. Hong Kong has been long known for its government’s transparency and minimal corruption. The government continues to rely on providing a transparent and level playing field to encourage new business and industry. Recent U.S. moves to deregulate its economy arguably move it toward lower control. Taiwan is also moving toward lower control and lower corruption. Despite Taiwan’s beginning under Chaing Kai-Shek's military control, and that regime's involvement in graft, Taiwan's recent history has been characterized by increased openness to encourage economic development, and an improving level of corruption. Low control appears to favor openness: these societies favor relatively transparent systems, enabling external scrutiny that goes far to discourage corruption. Yet without effective supervision that openness coupled with a rule of law fosters, lack of control can degenerate into chaos.

**The Impact of Economic Development Strategies**

**Exclusionary Regulatory Control:** Economic development in Japan and Korea were based on Cold War strategies of extensive exclusionary regulatory control. Elements of these "restrictive regulatory" strategies were also found across Asia, in countries like Indonesia, India, and China. In such countries, bureaucratic structures were used to impose arbitrary rules, regulations and laws to restrict imports, control investments, and protect local firms from foreign competition. Japan's Ministry of Trade and Industry (MITI) imposed tight control on industries deemed important to national

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9 Corruption caused by the illicit trade in narcotics is especially prevalent in some foreign countries. "In 1998, DEA reported that drug-related corruption existed in all branches of the [Colombian] government, within the prison system, and in the military... In November 1998, U.S. Customs and DEA personnel searched a Colombian Air Force aircraft in Florida and found 415 kilograms of cocaine and 6 kilograms of heroin." *Source:* US General Accounting Office, Drug Control: Narcotics Threat from Colombia Continues to Grow (Washington, DC: USGPO, 1999), p. 15.

10 Rudolph Gulliani, the former New York City mayor hired to consult with Mexico City on combating corruption, stated in January 2003 that reducing police corruption would be a key element in any plan to attack crime.


12 As reported in the *Far East Economic review,* and [http://www.afpc.org/crm/crm480.htm](http://www.afpc.org/crm/crm480.htm).
redevelopment, especially through the 1970s. For example, the Machine Tool Industry Act forced consolidation within that industry to assure competitive strength. Foreign firms, such as Texas Instruments in semiconductors and IBM in computers, were only allowed to invest as minority partners of local firms when they had technologies that could not otherwise be obtained. Japanese control and ownership were typically favored, if not required outright.

Exclusionary policies provided a protected market in which domestic firms could develop competitive capabilities in their local markets, export excess production at low prices, and acquire or develop technologies under government subsidized or managed programs. Cold War policies provided unfettered access to U.S. markets to countries that supported anti-Communist or pro-democratic policies. Such policies proved remarkably effective in developing the Asian Tiger economies. (China, restricted during the Communists' Cultural Revolution, virtually stopped its own economic development through closed-door policies that remained in force through 1978.) Such exclusionary Regulatory Controls demonstrate high control approaches.

Advanced Infrastructure: More recently, Singapore has lead Asia in the development of advanced infrastructure (with additional tax breaks) intended to attract foreign companies to establish their R&D and operational headquarters in Singapore, where transparency of regulations are very attractive. Singapore has also established similar industrial parks in India, Vietnam, and China to expand its economic footprint. Similarly, with its geographic advantage, Taiwan now seeks to become the operational headquarters of Pacific Asia, in direct competition with Singapore and the Philippines. China has also aggressively solicited manufacturing and technology-intensive firms from overseas by means of subsidized infrastructure, located in their industrial parks and economic development zones. The Philippines employed a similar infrastructure strategy by default, since the departure of the U.S. military provided fully-equipped and well-developed military bases, some of the best infrastructure in Asia, for use as industrial parks. Infrastructure-based strategies have been successful in attracting firms seeking to rapidly build their global operations. Asian markets — particularly China — are seen as attractive sources for low-cost labor, and eventually as great growth markets. Global expansion has thus provided local jobs and a rising standard of living across Asia. While these strategies have tended to provide transparent controls and “one stop” shopping for ease of investment in some countries, corruption has continued to restrict expansion in China and the Philippines. Particularly, when infrastructure is being built, construction projects offer significant opportunities for corruption. Corruption in Japanese infrastructure construction was all too evident after the Kobe Earthquake. More generally, corruption limits foreign participation in the Japanese economy, forestalls economic reconfiguration, maintaining select oligopolies and stalling economic growth.

Ease of Doing Business characterizes the business environment in countries like the United States and Hong Kong before Chinese control. Most recently, Singapore and Taiwan have also sought to facilitate the conduct of business. The U.S. led the world in deregulating its telecommunications, airline and financial industries. Deregulation in the U.S. airline industry was aimed specifically at permitting new entry and encouraging market forces as the preferred arbiters of economic exchange, with airline safety
regulations and inspections applied equally to all parties. Similarly, banking deregulation has promoted substantial restructuring in the U.S. financial sector, while utility and telecommunication deregulation continue. Older monopolies and their cross-subsidies have fallen before the joint forces of technological change and deregulation. In each instance, market entry and competition have been encouraged, with technological change and growing markets driving both regulatory withdrawal and industry restructuring.

The U.S. business environment is seen as generally transparent and non-corrupt, insofar as policies and regulations are openly published and equally applied. Methods of recourse exist for redress of bias, unfairness or corruption, while deregulation is generally favored by investors. Such approaches aim to deliberately lessen governmental intervention and impediments to economic exchange, in favor of openness that permits effective oversight by market forces. However, recent substantial reductions in government oversight have allowed a spate of accounting scandals forcing renewed government attention to updating accounting rules. Among the most egregious control failures: Enron's off-book entities, widespread pricing manipulation in the California energy markets, WorldCom's sham transactions, and alleged looting at Tyco and Adelphia. In each case, complexity, obfuscation and lack of transparency have favored corruption.

**Definitions of Corruption:**

Any extra fee, cost, or distorted decision process that benefits a person not involved in the economic transaction, or which unduly favors one party of that transaction, may be said to be corrupt. Examples would include bribes paid to obtain needed permits; "grease" to move inventory into a market; or contracts favoring one family's firm's as a quid pro quo of doing business. Such corruption can be minor or major. Despite older notions that “a little corruption” might be helpful, the meltdown of the Asian financial crisis, like the “dot.bomb” losses in the U.S. stock market, suggest that reactions to corruption increasingly penalize untrustworthy firms and institutions, while dramatically slowing economic activity more broadly.

**When skimming is perceived as excessive and begins to erode or slow economic activity, civil backlash is likely unless strong military actions suppress it,** whether the military action is regular (Army) or irregular (gangsters). While there are many forms of corruption, our concern is corruption that impacts the economic, rather than moral, health of a nation. We emphasize the economic consequences of corruption. Minor corruption through skimming (small bribes) may not be perceived to have a serious impact on a society’s economic engine. Some argue that below some threshold level, bribery may be ignored or accepted; policing it may be more costly than the

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13 The US airline industry’s dramatic decline in the 1990s underlines the importance of genuine restructuring: all of the major legacy airlines have flirted with bankruptcy (American, United, USAir, Delta, Continental) or gone out of business (Braniff, Eastern, PanAm, TWA). Only true discount airlines with radically lower cost structures optimized for efficient operations have survived as profitable, growing entities – despite the impact of 9/11, the Iraq war and SARS (Southwest Air and JetBlue). Similar results are to be seen in Europe, with discounters like RyanAir prospering as national flag carriers succumb.

14 In each of these cases, indictments have been lodged. Several Enron executives have been convicted, and others from each of the companies face trials.
corruption itself (Anechiarico & Jacobs, 1996). Others argue that even small amounts of corruption, if permitted, can create a pervasive atmosphere that favors larger offenses.

Corruption can also be so pervasive and onerous as to seriously impede economic development and legitimate activity. Public funds destined for health, education or infrastructure may be diverted, leaving society significantly the poorer. For example, skimming in India is endemic to society, while lack of clean water and sewers imposes a serious "health tax" upon the poor. Government employees are underpaid and consider bribes as an essential part of their income. The Suharto regime in Indonesia and Saddam Hussein of Iraq extracted tens of millions of dollars from their economies to build luxurious palaces for themselves, leaving substandard healthcare, education and infrastructure for the majority. In the aftermath of the Suharto regime’s collapse, civil unrest in Indonesia continues. Iraq’s chaotic response to the departure of Ba’ath Party repression testifies eloquently to widespread alienation from the regime – and to widespread desperation (although it may also indicate a last extraction by elements of the regime, taking advantage of a power vacuum).

In corrupt regimes, monies that should have been invested to infrastructure, education or economic development have been used for personal enrichment, often being deposited in secret Swiss bank accounts, or supporting extravagant lifestyles. Bribes from drug interests, paid to officials to permit illegal operations are also extracted from the economy. The monies removed from Haiti by the Duvaliers left their nation among the poorest in the hemisphere. Misdirection of the Romanian economy by the Ceausescu family redeployed the country’s resources “to build absurdly giant projects devised by the dictator’s megalomania” and contributing to “a dramatic decline of the population’s living standard.” Nobody yet knows how much money Saddam Hussein and his cronies extracted from the Iraqi economy, even as hundreds of thousands of children were suffering malnutrition, yet the graphic videos of elaborate palaces suggest the amount is enormous.

Corruption eventually leads to a decline in social morale that can result in social breakdown. Gaps between economic expectation and economic reality can force corruption into the public's eye. For example, in East Bloc countries that lauded the espoused egalitarianism of Communist regimes, hard currency luxury stores were typically reserved for political elites, while the majority struggled with shoddy local products. In East Germany, television programs beamed in from the West routinely demonstrated that government economic promises and assertions were fallacious. By contrast, North Korea's regime has totally controlled media and information sources, and forcibly silenced all critics. Such efforts at control eventually set the stage for change, as the greater the gap between regime promises and reality, the greater the necessity to control every aspect of existence — and the worse the economic performance of the country. Japan’s economy, less rigorously controlled by a far less repressive government than Korea’s, and vastly less militarized, has experienced great growth. Yet there too, a general decline in morale has worsened with years of recession and increasingly widespread understanding of economic rigidity and non-response rooted in corruption.

The inability to self-correct in response to changing conditions becomes the central vulnerability of corrupt regimes. This vulnerability rises when decisions are made principally or solely in the interests of maintaining the regime's status quo, rather than addressing economic and societal needs. Ultimately, a government’s legitimacy rests
upon its ability to discharge the duties of assuring public health and welfare. Necessarily, over time, this requires social adaptation in response to changing times. Suppressed dissent and erosion of free information clearly contribute to regime rigidity and miscalculation. Enduring failure to adapt suggests just such a failure of response.

**The Story of Corruption: Consequences of Economic Development Policy**

**Ethics are central to economic development.** Political systems must maintain their legitimacy to maintain a reasonable level of public support. Political regimes that lack public support must expend significant resources to maintain their power and control by force. Such regimes ultimately risk overthrow as public support wanes. The majority of national resources must often be dedicated to support rogue regimes, rather than economic development. China’s leadership now recognizes that continued economic development requires continued changes in political structure and a direct attack on corruption. Japan has given much lip service to reform of its financial sector, but not much has changed, while the political regime has retained enough support among the favored farmer segments of the populace to continue in power so far. Continued economic development of less developed economies requires a willingness of resource-rich individuals and organizations to invest locally. Such investors expect a reasonable profit, and a reasonable level of transparency and safety. If regimes subvert resources from economic development activity to maintain their power base, corruption costs rise, political risk increases and investment becomes less attractive. When systemic corruption becomes pervasive, the expectation of profit from investment rapidly erodes. Consequently, systemic corruption will undermine continued economic development by destroying the attractiveness of the economic environment.  

**A regime’s integrity is essential for continued economic stability.** Economic systems crumble once their credibility erodes. The rapid collapse of East Germany and the former Soviet Union are arguably due to the collapse of their economic systems. Closed societies, like Albania under Hoxha or the present regime in North Korea of Kim Jong Il, the late Kim Il Sung’s son, control beliefs by controlling media and access to information. The economic outcomes of such closed systems have proven disastrous in terms of economic growth and development. No outsider is likely to risk investment; insiders have little interest in economic growth.

**Systemic corruption erodes society’s belief in a political regime.** Excessive bleed-off of needed resources is damaging to both the non-economic and economic functions of society. Genuine development suffers when scarce resources are preferentially allocated to nonproductive activities. When legitimate economic activity is neither protected nor rewarded — and indeed success can result in appropriation — legitimate economic activity slows or disappears as can be seen in North Korea. Focus

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15 Current discussions about “forgiving” the corrupt and abusive debt incurred by Saddam Hussein’s regime in Iraq in its efforts to build weapons of mass destruction illustrate the potential for market controls to systematically disfavor corrupt expenditures: lenders would be discouraged from lending to corrupt regimes by higher risks, and such transactions would carry higher risk premiums.

shifts from rational economic activity policed by market preferences to illicit enrichment or maintenance of political elites.

- **Japan affects Asia's economic stability.** As the second largest economy in the world, Japan dominates the Asian economic sphere on a scale comparable to the American economy's dominance of North America and NAFTA (Abegglen, 1994). It's easy to see why. Japan produces nearly three-quarters of the economic output in Asia, far outdistancing much larger neighbors like China, as well as smaller developing economies. China’s population is ten times that of Japan, yet its per capita output is but one-tenth Japan's. China's lagging development reflects the Cultural Revolution of Mao representing one of lowest periods of development. Cold War isolation slowed development because it restricted access to advanced science, technical developments, and export markets abroad. By contrast, Japan and South Korea took full advantage of their Cold War partnerships with the West, particularly with U.S. officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West. Japan's and South Korea's officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West. Japan's and South Korea's officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West. Japan's and South Korea's officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West. Japan's and South Korea's officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West. Japan's and South Korea's officials, using their geographic position to acquire advanced technologies, build large-scale factories, and export excess capacity to the West.

- **American and European markets and technology remain essential.** Despite Japan's role in regional development, Western capital continues to support "the Asian miracle." Asian economies lack the breadth and depth of technology available in the West, and much of Asian growth has come as a result of Western firms' investments or Western economies' demand, or both. Furthermore, locally available capital required for infrastructure and competitive facilities is insufficient, as the Asian crisis so aptly demonstrates: as Western capital has fled, Asian economic growth has slowed dramatically. American and European markets offer the resources and technologies needed to stimulate continued development. Even Japan, which had targeted the developing Asian markets since the mid-1980s, has refocused its strategies towards European and American markets. The slowdown across Asia would have caused even more severe economic damage had Western markets been closed or tightly controlled – or in serious recession, instead of substantial growth during the 1990s.

- **Structural reforms are key to recovery throughout the region.** Economists continue to debate the wisdom of controlling rapid inflows of "short-term" capital (as Malaysia has done), but there is wide agreement that the many incremental corrections of markets are preferable to the sudden horrendous dislocations caused by the demise of corrupt regimes. The social unrest that continues to plague Indonesia will ultimately force major structural reforms to the basic structure of the economy. The old motto: “There ain’t no such thing as a free lunch,” can be restated slightly for our purposes: “There ain’t no such thing as permanent economic irrationality.” Systemic corruption can only lead to the misallocation of scarce capital, and the ultimate bankruptcy of a financial system. "Crony capitalism", which supports friends and family instead of economic development, can only lead to increased corruption and the eventual collapse of the market. The longer such corruption exists, the steeper and more difficult the eventual correction process is likely to be, on the evidence of numerous fallen regimes.
Yet before the Asian experience is dismissed as wholly irrelevant to Western economies (and before the Enron debacle is dismissed as irrelevant to Asia), it’s well to recall that the Asian economies in such present distress are also the economies that demonstrated the greatest long-sustained growth and development on record to this time. Some of them, Japan especially, appeared to have done most things right, creating both growth and competitive industrial development at a time when it had little competition. One respected observer points out that even in the midst of its current recession, Japan tight controls allow it to enjoy both budget and trade surpluses. An overview of recent experience reveals significant limitations behind the apparent success, however. Japan will be our focal point, although comparisons to other Asian economies will perform be relevant. The heart of the story is this: Japan's centrally-controlled economy worked well to protect its recovery after World War II, but has slid into increasing and enduring difficulty in the 1990s as more transparent and friendly economies emerge. Behind Japan's difficulties are stark corruption and control problems that demand change.

**A Post-War Helping Hand:**

After WWII through the end of the Cold War, U.S. policies to support pro-democratic or anti-Communist allies helped spur rapid industrialization in Asian countries like Japan, Korea, and Taiwan. Partly due to this external support during their early industrialization, these economies grew rapidly, seemingly to become increasingly independent of U.S. support. However, Western markets continue importance, as does Western technology. Exports have accounted for as much as 40% of GNP for Korea and 30% for Taiwan. Japan benefited particularly, enjoying free access to U.S. markets while denying American firms access to Japan, even as the U.S. government encouraged significant technology transfer to the Japanese firms (Johnson, 1995). Encouraged to export to the U.S., Japan was so successful in its development strategies that it eventually posed a serious challenge to the U.S. automobile, steel and consumer electronics industries as the Cold War drew to an end. Japan has enjoyed an historic balance-of-trade surplus for decades, enriched by preferential access to Western markets. Eventually, supports once extended to Japanese industry were withdrawn. Both Europe and the U.S. sought more equal trading arrangements, even negotiating “voluntary” quotas on items like automobiles. Japanese firms responded with direct investment and manufacture in the United States, as in Europe, thereby blurring the distinctions between “Japanese” and “American” or “European” manufacture. Meanwhile, however, despite repeated agreements and subsequent assertions that "trade was free," Japanese markets have remained substantially closed down to the present, with minimal openings even into the recent crisis ("GE Capital to Buy $7 Billion in Japanese Assets -- Company Takes Bold Role," 1999; Prestowitz, 1988).

In the post-Cold War global economy of the 1990s, countries like Singapore and Malaysia revised Japan's approach. Their industrial development strategies reflect the realities a more competitive environment in which the U.S. market is no longer a guaranteed dumping ground for cheap foreign products. Their economic development relies more heavily on cooperative strategies and strategic alliances that target markets within ASEAN, or establish cooperative economic “triangles.” Unlike Japan and Korea, which have heavily regulated their markets to limit foreign participation, Singapore has actively sought to attract foreign enterprises to set up local operations and regional
headquarters. Singapore seeks to provide multinational corporations with tax incentives, subsidized rents, shared investments, and worker training, in addition to subsidies for local R&D and world-class infrastructures. While Singapore's wages are no longer low, its industrial parks in Vietnam, China, and India provide companies with the opportunity to take advantage of low cost labor, but within world-class facilities otherwise unavailable in these countries. China, the Philippines, Indonesia, Thailand, and other developing Asian countries similarly seek to attract the higher technology firms deemed important to future development of emerging industries. Asian governments learned from and directly helped each other in evolving new development strategies. Their success seems assured.

Before the “Asian Flu” hit in 1997, numerous forecasts projected Asia's eventual domination of the world economy. Asian markets offered more than 2.0 billion new customers, a growing number of whom were middle class consumers. In 1995, Business Week forecast Asian's middle-class population at 700 million by the year 2000, a number equal to the populations of NAFTA and the EC combined. With expected average annual economic growth of 7% in a total market size of 3.2 billion people, the Asia Pacific share of world GDP was projected to reach 30% by the turn of the millennium. The United States' 22% share of the world’s $33.7 trillion in GDP in 1996, was projected by the Organization for Economic Cooperation and Development (OECD) to fall to 11% of global GDP by 2020. China alone was forecast to account for 20% of global GDP, if it sustained annual growth at an average of over 7% annually. (For comparison, the average annual growth rate forecast for OECD countries was 2.8%).17 In 2001, China attracts over 80% of foreign direct investments in Asia, and maintains an average growth rate of over 7.5%. It provides numerous investment incentives and continues to deregulate its markets and make investment practices more transparent. The Suzhou Industrial Park is providing the model for such activities, being run by Singaporeans. Representing a land area of 70 square kilometers, the Suzhou Industrial Park is two-thirds the size of Singapore and is already nearly sold out of space.

Japan’s continued control by bureaucrats, and lack of addressing its corruption problem, has made it a less attractive investment alternative. While the bureaucrats watch Japan’s economy continue to degenerate, China sustains and strengthens its attractiveness and economic growth. Industry by industry, China has improved its attractiveness and involved more foreign investors. Now, Japanese firms are also exiting Japan, moving rapidly to take advantage of Chinese incentives and markets. You need only ask why today’s investors are bypassing Japan to get a clear picture. Japan is no longer the most attractive market in Asia, and since they don’t want to give foreigners a level playing field, it makes sense to go elsewhere. Without a dramatic restructuring, it seems unlikely that Japan will be able to substantially redress its corruption and control paradigm, creating a more transparent and friendly environment in which to grow. This has not happened after nearly 15 years of slowdown, and no signs of change exist. This does not bode well for its future.

References:


Changing Paradigms for Japanese Technology Policy: SMEs and Biotechnology

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Abstract

Changing Paradigms for Japanese Technology Policy: SMEs and Biotechnology

In the early 1990s it was widely believed that Japanese firms would soon take the lead in the biotechnology industry. This was seen as following a pattern established in the semiconductor and other industries where large Japanese firms hurdled technological discontinuities, while maintaining their strengths in process development. It soon became clear, however, that the U.S. model, linking universities, venture capital start-ups, and large firms, was outperforming the Japanese model. Reforms were undertaken to make the Japanese system more like the U.S. system. This paper describes these changes and makes a preliminary assessment of their success.

Japan's postwar experience with high technology seemed to challenge both theory and conventional wisdom. It seemed to show that large, established firms such as Hitachi and Toshiba could thrive in the
wake of discontinuous innovations such as the displacement of vacuum tubes by transistors (Lynn, 1998; Lynn, 2000; Tilton, 1971), contrary to theorists such as Anderson and Tushman (1990), Christensen (1997), Henderson and Clark (1990), and Tushman and Anderson (1986) who point to the various difficult-to-surmount advantages new firms have over incumbents when such innovations take place. It seemed to show that central bureaucracies such as Japan’s Ministry of International Trade and Industry (MITI) could successfully guide the commercialization of break-through technologies such as the very large scale integrated circuit (Anchorduguy, 1989), contrary to free market theorists who disparage government activities in promoting industries (e.g. Dick, 1995).

In the late 1980s it was generally believed, both in Japan and elsewhere, that biotechnology was emerging as yet another industry in which large established Japanese firms, often relying on technologies pioneered abroad, would soon emerge dominant. The Japanese government implemented policies supporting the large firms, as they had done in electronics and other industries in the past. By the early 1990s, however, it was less clear that Japan was making progress in this industry. Indeed, it seemed that the American model, which provided an environment that was strongly supportive of university research and new business ventures might be more conducive to strength in biotechnology.

The next section of this paper briefly reviews the Japanese model of high technology commercialization and the sense that existed in the late 1980s that this model was likely to prevail. The third section of the paper describes the emergent sense in Japan and elsewhere that the Japanese model was less effective than the U.S. model in the case of biotechnology. The fourth section of the paper describes the diagnosis of the competitive weaknesses of the Japanese biotechnology industry developed by academics and policymakers. These competitive weaknesses were very analogous to the conventional wisdom about the competitive weaknesses of the biotechnology industries in some of the major European countries. The fifth section describes how Japanese policymakers reacted to this new sense of what was required for a successful biotechnology industry, i.e. an environment that encouraged the formation of small and medium sized enterprises (SMEs) and that additionally encouraged the transfer of technology and skills from universities to these enterprises. The sixth section of the paper gives some early data tentatively suggesting that these policies have enjoyed some success. Finally, a concluding section speculates about the prospects for Japan’s attempt to create a U.S. style biotechnology industry that effectively draws on intellectual inputs from universities and financial resources from venture capital.

II. Early Expectations that the Japanese model would prevail.
Through the 1980s, many observers both in Japan and in the United States concluded that Japan would soon dominate the biotechnology industry, mirroring its earlier successes in the steel, automotive, and consumer electronics industry. Support for this conclusion was provided by two major systematic comparative studies of biotechnology in the U.S. and Japan, one by the U.S. Congress Office of Technology Assessment (OTA) (U.S. Congress Office of Technology Assessment, 1984) and the other by the Japan Technology Evaluation Center (A center operated at Loyola college for the U.S. Federal Government to provide assessments of selected Japanese technologies).

After reviewing several studies JTECH (Holdridge, 1994: 170) summarized the situation as follows: In Japan, biotechnology activities occur primarily in large companies; few if any small biotech start-ups are apparent. Many Japanese companies with major efforts in biotechnology began in other fields of manufacturing. (Holdridge, p. 170). Both the JTECH and OTA studies emphasized the advantages of the Japanese system. Large, highly efficient, Japanese firms with deep financial pockets and unrivalled strength in process development were thought likely to be able to out compete their U.S. and European rivals.

The impression that Japan's prospects in biotechnology were bright was also widely held in Japan. OTA cited a June 1981 survey of the Nikkei Sangyo Shimbun in which 48 percent of 128 Japanese firms responding expressed the view that Japan could catch up with the United States in the commercial development of biotechnology in 5 years — 24% thought it would only take two or three years. (p. 77).

During the 1980s a stream of reports appeared in the U.S. media that seemed, in fact, to show the emergence of Japanese dominance in biotechnology. In 1983, for example, Steve Lohr reported in the New York Times that while Japan still lagged the U.S. in advanced areas of biotechnology, most analysts believed the gap was closing. Lohr describes a mass exodus by Japanese chemical, pharmaceutical and food companies into biotechnology. This activity, he said, had recently increased because the Japanese government had eased restrictions on clinical testing for biotechnology developments. Lohr wrote that a MITI survey showed that Japanese private spending on biotechnology research rose 45% from 1980 to 1982, reaching more than $200 million. Anticipating the JTECH characterization, Lohr said the U.S. and Japan were taking different approaches to biotechnology, with the U.S. relying on startups and Japan relying on transformed established firms. He gave the example of Hayashibara Biochemical Laboratories, Inc., a supplier of corn syrup and glucose to the confectionary industry, that was beginning advanced chemical research. Lohr also mentioned that the Japanese government had given priority to biotechnology, noting that MITI had begun a 10-year 128 million dollar research program. Lohr reported MITI estimates that by the year 2000 biotechnology would add 20-30 billion dollars to the bioindustry, compared to $17 billion in 1983. Lohr also cited a OECD survey...
showing that of some 2,400 bio-industry patents issued between 1977 and 1981, 60% went to Japanese applicants compared to only 10% going to Americans.

In 1985 an article in the prestigious journal *Science* (Dibner, 1985) also portrayed Japan as about to take the lead in the commercialization of biotechnology, including the commercialization of technologies developed in the U.S. This imminent lead was said to be a result of coordinated efforts of Japanese government, companies and universities, backed by an effective use of technologies developed in the U.S. and elsewhere. The author of this article called on the U.S. to borrow aspects of the Japanese approach. Concerns that the Japanese were using foreign technology in a bid to dominate the biotechnology industry surfaced in 1987 when the Japanese Prime Minister proposed the Human Frontiers Science Program at the Venice Summit of industrialized nations. Under this program, Japan was to fund international research projects exploring fundamental biological functions. The foreign response was skeptical. In Europe and the U.S. this was seen as a device to facilitate the ability off the Japanese to draw on foreign technology. Cries of alarm over the Japanese challenge to the U.S. lead in biotechnology were still being raised at the end of the decade. In 1989 *Business Week* concluded that while U.S. firms still had twice as many pharmaceuticals approved for marketing or in clinical testing as Japanese firms, Japanese firms had an impressive number of potential products in early testing and research stages (March 6, 1989).

An article in the *Wall Street Journal* (Naj, 1989) concluded that the early U.S. lead in biotechnology (the century’s third great technological revolution — after atomic fission and computers) was at risk of being lost to the Japanese. Now, the perceived threat was that Japanese would buy and exploit U.S. developed technology. A Monsanto executive claimed that the Japanese could buy the entire U.S. industry for only six billion dollars. The article noted that U.S. firms were seeking capital in Japan in exchange for their technology. In 1990 *Business Week* quoted Mitsuru Miyata, editor of *Nikkei Biotech*, as saying: It’s the typical tale. The front runners are all American, until Japan steps in with improvements.

In an article published March 12, 1990 *Business Week* lamented: With characteristic hubris and drive, the Japanese are charging into biotechnology. Starting from scratch a decade or so ago, they licensed sophisticated techniques from U.S. and Japanese partners. Then, they poured Japan Inc. s resources into building a biotech industry. Japanese/US collaboration in biotechnology was also drawing critical attention from policy researchers (Forrest, 1996; Yoshikawa, 1989). The National Research Council in the Office of International Affairs (1992) identified 200 alliances between small US firms and large Japanese firms during the period of 1981 to 1991.

III. The Failure of the Japanese Model
By the early and mid-1990s, the assessments of Japan's potential strength in biotechnology had changed. In 1995 *Economist* (November 18) noted that even though Japan’s Ministry of International Trade and Industry (MITI) had designated biotechnology as one of three priority industries for Japan’s future, and even though Japan had invested heavily in biotechnology R&D, and despite Japan’s experience in traditional fields related to biology such as brewing and the breeding of rice, Japan had not only failed to develop a competitive industry, but had even become a huge importer of biotechnology products. In 1996 a *Fortune* article concluded: Today the [Japanese biotechnology] dynamo seems like the little engine that couldn’t. Academic researchers were similarly pessimistic about Japan’s strengths and prospects in biotechnology (Bartholomew, 1997; Callan, 1996; Darby and Zucker, 1999; Forrest, 1996).

One indicator of relative strength in the industry is a country’s share of world biotechnology product exports. As table 1 shows, in 1992 Japan was quite competitive with the United States in its share of world exports of advanced technology products, particularly considering that Japan and its economy are only about half the size of the United States. The U.S. had a 25.2% share for all advanced technologies compared to 17.0% for Japan. Japan had a larger share of world exports than the United States in the case of four of the ten advanced technologies. In three of the technologies — weapons, aerospace and nuclear — heavy U.S. defense spending might account for the U.S. lead. In biotechnology, however, the Japanese share of world exports was only 4.3% compared to 37.0% for the United States. The table shows that Japan, while stronger than Germany in its overall share of world exports of advanced technology products (17.0% compared to 11.7%), was substantial weaker in the case of biotechnology (4.3% compared to 19.1%).

Table 1. Share of World Exports of Advanced Technology Products in 1992

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**IV. Diagnosis of the Competitive Weaknesses of the Japanese Model.**

A number of academics and policymakers have pointed to what they think is wrong with the Japanese biotechnology industry. Much of the diagnosis is derived from comparisons with the U.S. environment. Accordingly, much of it is consistent with critiques of the national innovation systems for biotechnology in such European countries as Germany (e.g. Giesecke, 2000; Casper and Kettler, 2001), France (e.g. Lemarie et al., 2001; Mangematin, 2000) and Italy (e.g. Orsenigo, 2001) and to lesser extent the U.K. (e.g. Casper and Kettler, 2001).

Figure 1. Network Structure in Biotechnology
Figure 1 contrasts the U.S. biotechnology commercialization system with that of Japan (a parallel contrast could be made between the U.S. and most of the European systems). The large black circle in the center of the diagram suggests that there is a greater mass of specialized biotech firms in the U.S. These firms are created based on sources of venture capital that are larger and more efficient than those in Japan and academic sources of technology that are more productive and better linked to industry than is true of their Japanese counterparts. Large firms play an important role in both systems, but while in Japan these firms tend to act independently, in the United States, they often work with smaller firms (e.g. commercializing the technology developed by firms backed by venture capital. Further, for the same reasons, the lines connecting the biotech firms with large firms, venture capital and academia are in bold for the U.S. model, but not for the Japanese

There are ample empirical indicators supporting this characterization. Table 2 shows that in 1997 there were far more firms active in the U.S. than in the Japanese biotechnology industry. In the case of biotechnology venture firms the difference was overwhelming (1,274 in the U.S. compared to only 60 in Japan). There was not, however, a large difference in the number of large firms active in the two industries (300 in the U.S. compared to 260 in Japan).

Table 2: Structure of the Japanese and U.S. Biotechnology Industries

Using a different data set that defines biotechnology ventures differently, Darby and Zucker's (1996) find that some 77% of the new biotechnology firms in their U.S. sample were started as biotech firms, while in Japan 88% of the firms were begun as subunits of existing firms. In subsequent research, Darby and Zucker (1999) confirmed this trend. These authors constructed a data base in which they characterize Japanese biotech firms as incumbents or entrants. Defining biotech firms as firms that are actually involved in using breakthrough biotechnology technologies, they identified 751 U.S. firms using biotechnology that were active between 1976 until April 1990. Using a similar definition they identified 368 firms in Japan (1975-1989). Some two-thirds of the U.S. firms were new entrants, compared to fewer than ten per cent of the Japanese firms.

Many of the Japanese biotechnology firms were large firms from other industries that had entered the biotechnology pharmaceutical market. Several of Japan's large beer companies, for example, established pharmaceutical companies/divisions. They set up biotech laboratories, often entering into strategic alliances with U.S. biotech firms and universities, and building marketing capabilities.
Consistent with the depiction in Figure 1, large firms in Japan seem to account, proportionately, for much more of the new biotechnology that is developed than is true of large firms in the U.S. Large firms in Japan, for example, were responsible for 76% of the biotechnology patents filed with the Japan Patent Office between 1990 and 1997. In the United States large firms accounted for only 17% of patents filed over this period. Universities and Public Institutes filed 53% of the patents, and venture firms filed the other 30% (Japan Patent Office, 2001).

In the 1980s, as was noted above, it was widely believed that the large firm domination of the Japanese biotechnology industry was a strength of the Japanese system. It was thought that financially weak U.S. startups that developed interesting technologies could easily be taken over by the large Japanese firms, which would then draw most of the commercial benefits from the technology. In retrospect it seems this view may have based on an incomplete understanding of the integrated roles played by these firms as part of a larger system. Often the startup firms in the United States provided a means for technologies invented in universities to be developed towards commercialization. They had a symbiotic relationship with large firms. Large firms may be less suited to major innovation in biotechnology because their organizational structures impede the freedom and flexibility needed in breakthrough research. Also, large firms are less able to provide the high-powered incentives (such as the chance to become very wealthy) to attract star scientists (see, for example, Audretsch, 2001; Audretsch and Stephan, 1996, 1999; Darby and Zucker, 1996; McMillan, Narin, and Deeds, 2000; Rothaermel and Deeds, 2001; Zucker and Darby, 1996). Thus, in their collaborations with large firms, the startup biotech firms transform new scientific discoveries into commercial products through technological innovation and provide the end results to the large firms. The large firms, in turn, offer biotech firms the ability to withstand the delays and expenses associated with regulatory compliance, as well as production and marketing capabilities.

In performing these functions it may be, as will be discussed below, that the startup firms had to be near other parts of the U.S. system (universities, venture capitalists, large firms) to succeed. Further work examining the experience of large non-U.S. firms in acquiring or entering other forms of alliances with U.S. start-ups might shed more light on this. An interesting issue is why the Japanese beer firms, for example, did not enjoy more success in their strategic alliances with U.S. venture firms and universities.

(Put Figure 2 about here.)

In considering why the number of biotechnology start up firms is so much smaller in Japan than in the U.S., the first point to note is that from the standpoint of firms entering and exiting industry, the Japanese environment has not been very dynamic. As Figure 2 shows, at any given time over the...
past two decades around 14% of all operating firms in the U.S. (in all industries) were new entrants. In Japan the percentage was less than 4%, even during the boom years of the 1980s. The percentage of all firms being closed down was also much higher in the United States than in Japan.

(Put Figure 3 about here.)

As Figure 3 shows, by these measures the Japanese business environment is also much less dynamic than that of the largest European countries (though only a little less so than Italy’s). Aspects of the Japanese environment seem simply to be less conducive to starting new firms than is true in the U.S. and (to a lesser extent) in some of the larger European countries.

The relative prominence of academia in the U.S. biotechnology industry has also been widely noted. Audretsch and Stephan (1996) conclude that university-based scientists play three key functions for biotech firms: facilitating the transfer of knowledge from university laboratories to the firm; signaling the quality of the firm’s research to capital and resource markets (including other scientists), and charting the scientific direction of the firm. Those playing the knowledge transfer function are most likely to be in the same region as the startup. These authors suggest that proximity matters much more for tacit than codeifiable knowledge. Perhaps this explains why the strategy of large Japanese firms seeking to draw on the technologies from U.S. start up firms and universities was not successful. The transfer of knowledge, especially tacit knowledge requires close proximity.

Aside from generating new knowledge, U.S. university scientists have been central in the creation of biotechnology start-up firms. Audretsch and Stephan (1999) found that of 101 founders of biotechnology firms in the early 1990s, nearly half were from universities. Zucker and colleagues (1998) found that areas with disproportionate numbers of biotechnology firms also have disproportionate numbers of university-based biotechnology scientists. This is not only because university faculty members start biotechnology firms, but also because biotechnology firms have clustered around universities, primarily in the Boston and San Francisco areas, to take advantage of the top scientists at prestigious universities (McMillan, Narin, and Deeds, 2000).

In contrast to the relatively strong role played in the U.S. biotechnology industry, Japanese universities were generally weak in developing new research programs, and specifically weak in molecular biology. Moreover, the ties between academia and industry were often blocked by regulatory and other barriers (Bartholomew, 1997; Callan, 1996; Darby and Zucker, 1999; Forrest, 1996). The Deputy Director of the International R&R Cooperation Division of MITI’s Agency for Industry Science and Technology (Fujisue, 1998) points out that in 1994 U.S. universities received 1,862 patents compared to only 129 patents received by Japanese universities. He notes admiringly that from 1980 to 1994 there were more
than 1,000 university high technology spin offs in the U.S. Other researchers (Link and Rees, 1996) have found that small-firms may be more efficient than large firms at commercializing university-based research, suggesting that the lack of a large number of high technology small firms may also have inhibited the transfer of technology to industry in Japan.

Another part of the U.S. system that may have given it some advantages over the Japanese system in biotechnology is the patent system. The postwar Japanese patent system has been described as oriented much towards promoting technology diffusion than towards the protection of intellectual property (e.g. Maskus and McDaniel; Wineberg, 1988). This was well-suited to an environment in which Japan was catching up technologically, but biotechnology is a highly research-intensive industry where new ventures must invest enormous sums in R&D. Intellectual property is often the only asset new ventures can show potential investors. Strong intellectual property protection facilitates R&D spending, open communications between scientists, and collaboration between firms (Chambers, 2002). The U.S. system was not only more oriented towards the protection of intellectual property rights, but since the 1980s was further strengthened in this regard. In 1982 the Court for Appeals of the Federal Circuit (CAFC) was formed and given exclusive jurisdiction over all patent appeals. This dramatically increased the consequences of infringement and the likelihood that patents will be upheld (Shapiro, 1990).

A fairly clear consensus seems to have emerged, then, about why the U.S. biotechnology industry was so successful compared to its counterparts in Japan and Europe. The U.S. system was extraordinarily efficient at creating pools of knowledge and capital and channeling these into the new industry.

V. Reforming the Japanese System.

As was mentioned above, the Japanese government has recognized the importance of biotechnology for some time. In the early 1980s, it designated biotechnology as a core technology essential for Japan’s future economic growth. Several programs were introduced to promote biotechnology R&D (see the detailed discussions in Fransman and Tanaka, 1995 and Yoshikawa, 1989). The thrust of most of these programs was to encourage cooperative R&D among private companies, most often large established companies. MITI, and the Ministry of Health and Welfare (MHW), and the Ministry of Agriculture, Forestry and Fisheries (MAFF) all established cooperative research associations. MITI published a Vision for the Biotechnology Industry in 1988, suggesting an overall architecture for a Japanese biotechnology industry. By this time almost every cabinet-level agency of the Japanese government allocated some funds or cooperated in some biotechnology project, though some of this was just token participation (JEI, 1986, 1990).
Despite the number of these well-publicized government initiatives, Japanese government spending on biotechnology R&D was far lower than that in the U.S. Over a period of approximately ten years, for example, MITI spent about $40 million for its major programs of cooperative R&D. Assuming the other two ministries supporting biotechnology spent similar amounts, total Japanese government spending was only about 120 million dollars over this period. In 1990 alone, the U.S. government spent $3.5 billion on biotechnology R&D (Fransman and Tanaka, 1995). Fransman and Tanaka (1995) conclude that the major role of the government programs in Japan was to facilitate the flow of knowledge between firms and to support R&D in areas involving high uncertainty (Fransman and Tanaka, 1995). But even if government's role was relatively limited, in the early 1990s many Japanese began to believe it was misguided, particularly with regard to the emphasis on large firms. To some degree this dissatisfaction with traditional industrial policies was not confined to biotechnology, but was part of a general sense after the collapse of Japan's economic bubble at the beginning of the decade that the Japanese economic system was faulty. In its 1998 White Paper (Japan, MITI, 1998), MITI suggested that the old system was not suited to an era of slow growth. MITI argued that Japan needed venture capital and angels as risk money suppliers, similar to those in the United States. Facing the slow growth of the biotechnology industry in Japan relative to that of the industry in the U.S., the Japanese government began in the mid 1990s to reorganize its policy for biotechnology to encourage new bio-ventures, strengthen basic research in universities, and facilitate knowledge transfer from universities to industry (Aoyama, 1999; Audretsch, 2001; and Arita, 1990; 1997). The Ministry of Education Science and Culture (MESC) implemented new policies to stimulate cooperative research between universities and industry, and to give university research incentives to work with industry (Collins and Wakoh, 2000).

**Encouraging the development of new ventures.** Japan has long had small and medium sized enterprise (SME) policies. Until recently, however, these have had little to do with encouraging the development of startup firms or strengthening small firms has centers of technological excellence. Japanese small business policies in the early 1930s, for example, were part of an effort to increase productivity for wartime industrial production. Much of the policy at that time was aimed at promoting subcontracting arrangements between large and small firms. It was believed that subcontracting arrangements would allow an increase in production capacity without large capital investment at the core firms, help small firms achieve economies of scale as they produced for a larger number of core firms, and result in better quality than would result from mass production at large firms. In the immediate postwar period, U.S. Occupation authorities in Japan were determined to promote what they regarded as a more democratic economic structure in Japan by dismantling cartels and supporting the growth of new businesses. The
Small and Medium Enterprise Agency was established under the Ministry of International Trade and Industry (MITI) in 1949 to promote this policy. Loan programs were established to help small businesses. The goals, then, were much economic democratization and providing and maintaining employment than economic efficiency.

After the end of the Occupation in 1952 the goal for SME policy changed to one of improving Japan's international competitiveness. SME policy changed from providing relief to the SMEs to, once again, promoting subcontracting arrangements. The Law on the Organization of Small Business Associations of 1957 provided tax and other incentives to encourage small firms to form cooperatives. The National Federation of Small Business Associations was established to encourage closer relationships amongst firms (Aoyama, 1999).

A new set of SME policies were introduced in the mid-1990s to help create a climate for entrepreneurship more like that seen in industries such as biotechnology in the United States (See Table 3). Some policies eliminated barriers that had existed to those trying to start and grow new firms. Japanese regulations, for example, required companies to have been profitable for five years before they could post an IPO on the Tokyo Stock Exchange. Banks in Japan were unwilling to lend to startups. The Japanese government did not offer tax credits to support investment in high technology by small firms (Bartholomew, 1997; Callan, 1996; Darby and Zucker, 1996; 1999; Forrest, 1996).

(Put Table 3 about here).

In 1994 MITI established a New Business Promotion Office to compile a comprehensive package of measures to assist startups in exploring new business opportunities. In 1995, the Law Facilitating Entrepreneurial Activities was enacted and the Small and Medium Enterprise Agency (SMEA) launched the Initiative to Promote and Assist Innovative Small and Medium Enterprises. Various prefectures also established programs. The Law Facilitating the Creation of New Business (New Businesses Law) was passed at an extraordinary session of the Diet in December 1998. This established the Japanese SBIR (SME Technology Innovation System). Activities under the law were started in February 1999. Among other things the Law provides special subsidies for SMEs from the government's R&D budget for the development of new technologies that will lead to the creation of new businesses. The subsidies totaled 13 billion in 2000. One subsidy, for example, provides half the cost of materials, machinery and technical guidance needed for R&D. This subsidy totaled 4.781 billion yen in 2000. The law also provides for tax reductions for testing and research by SMEs.
The Basic Law for SMEs was fundamentally amended in 1999. Other related laws that regulate, for example, stock markets and venture capital funds, have been also revised or newly established to build appropriate infrastructures for venture business. Based on the New Businesses Law, the Japan Association of New Business Incubation Organizations (JANBO) was established in 1999 to serve as incubators for the creation of new businesses and to develop a support system with the establishment of regional platforms. The platforms are supposed to provide one-stop service for those developing new businesses (Janbo, 2002).

**Facilitating flows of technology and personnel from universities to businesses.** Various studies conclude that in Japan, the collaboration between universities and industry is not sufficient to support a strong biotechnology industry (Callan, 1996; Bartholomew, 1996; Darby and Zucker, 1999). The ties between academics and industrial sectors have been weak in part because of regulations governing university professors (Callan, 1996; Bartholomew, 1996; Darby and Zucker, 1999). Further, Japan’s basic science base has been weak because the Japanese government spends far less on basic science than does the U.S. (Callen, 1996). Various indicators have been offered to support the belief that a central problem blocking the development of a strong biotechnology industry in Japan is the flow of technology and people from universities to industry. It has been noted, for example, that while 36% of Japan’s researchers are in academia, universities only contribute 0.04% of Japanese patents (Fujisue, 1998).

(Put Table 4 about here)

As Table 4 shows, corporations accounted most of the patent families filed for human DNA sequences in both Japan and the United States. The percentage accounted for by corporations in Japan, however, was much larger than the percentage in the United States — nearly three quarters compared to a little more than half. Universities accounted for nearly a quarter of the U.S. patent families compared to less than 3% of the filings in Japan. Interestingly, the patterns for Germany and France were more similar to that of Japan than to the U.S., while the UK was closer to the U.S. pattern. Speaking more generally in 1994 U.S. universities were awarded 1,862 patents, compared to only 129 patents awarded to Japanese universities. U.S. universities received royalties of $266 million in 1994, while Japanese universities received royalties of only half a million dollars. From 1980 to 1994 U.S. universities spun off more than a 1,000 high tech spin offs (Fujisue, 1998).

While a number of factors may account for the relatively large role played by U.S. universities in industry, an important role seems to be played by the way intellectual property rights are handled. A distinguishing feature of university-based research is that it is public science. University careers are
based on research publications, and government and some other major sponsors of university research insist that the findings of this research be made public. McMillan et al. (2000) present an extension of an earlier study by Narin et al. (1997) showing that the biotechnology industry draws heavily on public science. One problem, according to some analysts, was that companies had little incentive to invest in the development of technology that is in the public domain. Another problem was that universities lacked incentives to publicize the technologies they developed, so companies often did not know about promising technology available from university laboratories.

The Bayh-Dole Act of 1980 was designed to address these problems in the United States. The Act allowed universities to patent technologies, and then assign the patents to firms which then had the incentive to develop the technologies. Since universities could receive revenues from the sale of technology, they had more incentive systematically to publicize the technologies they had developed. The administration of these functions was generally by technology transfer offices (TTOs).

After the Bayh-Dole Act was implemented in 1980, the number of universities with technology transfer offices increased from 25, to 2,000 in 1990. By the year 2000 nearly every American research university had a technology transfer office. The role of U.S. universities in providing technology has increased sharply since the passage of the Bayh-Dole Act. The number of patents issued to U.S. universities more than doubled from 1979-1984, more than doubled again between 1984-1989, and more than doubled yet again during the 1990s. University revenues from licensing increased from $221 million in 1991 to $698 million in 1997. A large number of startup firms (the exact number is hard to calculate) were established based on university research.

It might be noted, in passing, that not all observers have been enthusiastic about the consequences of Bayh-Dole. Richard Nelson (2001) suggests that much of the increase in patenting activity after the enactment of Bayh-Dole was most likely a result of the development and maturation of new fields of university research, especially biomedical research, computers and software. He also notes that changes in patent law and patent office decisions meant that much more technology in these areas generally became patentable. Nelson concludes that the increase in patents was a broader trend that was inevitable if nothing had happened to stop it, though he believes Bayh-Dole legitimized, accelerated and magnified these trends. But has the increase in patenting increased the diffusion of new technology? Nelson is concerned that it might have had the opposite effect. Often the new university Technology Transfer Offices may do little more than try to collect royalties from firms that would have used the technology anyway. While a few universities have earned a lot of money from patenting and licensing, most cannot do so. Nelson is also concerned that a shift away from fundamental research will occur as university researchers become increasingly dependent on royalty income and research funding from business firms (though he has so far found no evidence of such a shift). He is concerned that the climate of collegiality
at universities will deteriorate as disparities in income increase. He says the new monetary incentives could undermine the commitment professors have to publish in the open domain and contribute to public science. He notes that companies are beginning to complain that they have to pay royalties or license fee to universities for technology that was developed at U.S. government expense. Nelson also suggests that the increased protection of intellectual property rights may curtail research in certain areas. Since research tools, techniques and conceptions of a line of attack are now patentable, other researchers are not as free to use them as in the past. This could hamper the advance of science (Nelson, 2002).

Based in large measure on the desire to replicate the successful role of universities in the U.S. biotechnology industry, the Japanese government introduced a number of new measures in the late 1990s (Fujisue, 1998). Table 7 lists some of the more important of these new measures.

(Put Table 5 about here.)

In April 1995 the Office for the Promotion of Academia-Industry Cooperation was set up in MITI’s Industrial Policy Bureau. A Basic Science and Technology Promotion Plan approved by the cabinet in 1996 called for the reform of the system of cooperation between academia and industry. This was designed as a partial replication of the Bayh-Dole Act (Fujisue, 1998). In 1998 the Japanese Diet adopted a Law Promoting Technology Transfer from Universities to Industry. Subsequent legislation reinforced these policies. Under the new policies universities were asked to develop technology transfer plans to be approved by MITI and the Ministry of Education and Culture. The plans were to include features modeled on those brought about by the U.S. Bayh-Dole Act. Universities were, for example, supposed to establish Technology Licensing Organizations (TLOs) to manage university patents and promote licensing to private companies. Since it was expected that it would take more than 10 years before the TLOs could be self-funding, the government offered a 50% subsidy for the expenses of the TLOs, and agreed to guarantee the debts incurred in establishing them. The TLOs are also exempt from patent registration and maintenance fees. The new policies eased restrictions to make it easy for staff members of national universities to work for TLO (Fujisue, 1998).

The new policies also offered support for collaboration between SMEs and universities through the new SME Support Corporation. Funds were made available from the Industrial Infrastructure Fund to advertise the results of university technology transfer plans from the Industrial Infrastructure Fund. The government has continued to develop new plans designed to promote collaboration among universities, industries, and government agencies. Much of the emphasis in recent years has been on plans to increase the role of universities in the formation of new ventures. The government planned to generate 1,000
university-initiated startups over the years 2002-2005. The number of university-initiated ventures had only total 128 from 1957 to 2000 (News Nikkei, 2001).

More generally government has sought to encourage the development of regional centers of biotechnology strength, including incubators that would foster the development of new biotechnology startups. Two examples of these new clusters are Genome Bay in Chiba and Science Park in Yokohama (led by Riken). Several other regions are also forming their own bio-clusters. In Kansai region (centered on Osaka and Kyoto) nine prefectures have agreed on the development of cluster that link science parks, universities, research institutions, companies labs, and startups.

Finally, the Japanese government seems to have come to recognize that increased protection of intellectual property rights is needed to further encourage innovative research and development. Japanese patent law was amended in 1998 to strengthen patent protection and to accelerate the acquisition of intellectual property rights (Ishimura, 1999).

VI. Results of the new policies.

Given that most of the new policies have been in effect only a short time, it is difficult to give an authoritative assessment of their impact. The number of bio-related new ventures increased from 60 firms in 1998 to more than 200 firms in 2001 (a period of on-going recession in Japan). Descriptions of the histories of some of these ventures suggest that they may have been formed, or have been more successful, because of the new government policies. One example is a 1998 biotech startup, Transgenic Inc. Although the founder is not a scientist himself, the company collaborates with universities. The company is rapidly growing and has obtained various awards, including Entrepreneur of the Year, Japan Bio Venture Award, and Startups and Venture Citizens Forum.

Other anecdotal evidence also suggests that the new policies have had some of their intended effects. Under the new the new National Personnel Authority Regulation 14-18, which allows professors at national universities to serve as director/officers of companies utilizing their research work, professors started such new biotechnology centers as Genticlab, Gene Techno Science and AnGES MG (New Nikkei, 2002). GenenticLab was founded by professors in Hokkaido in 2000 and was able to raise some 425 million yen from venture capitalists and subsidies from METI. AnGes MG had a successful initial public offering in the Mothers Market of the Tokyo Stock Exchange in October 2002 within three years of its founding by a small group including a professor from Osaka University.

Japanese efforts to establish new business incubators have had mixed results. According to a survey conducted in 2000, there was a large increase in the establishment of new incubators in Japan by the public sector in 1999 and by the private sector in 2000, suggesting that the Law Facilitating the Creation
of New Businesses (CNB Law) may be having some impact. The survey identified 203 incubators housing 2,247 residents in Japan. This compared to 850 incubators housing 6,458 firms in the United States. Given the longer history of the incubator programs in the United States, this seems like a respectable showing for Japan. In terms of quality, however, it seems the Japanese incubators may have some problems. The U.S. incubators were characterized as having large numbers of outside staff and support specialists, whereas the Japanese incubators were characterized as having weak service functions due to a lack of staff. The U.S. incubators had strong leadership from universities and strong ties with industry. The Japanese incubators were led by local governments and had weak ties with universities and industry (Japan, METI, 2001).

The measures designed to increase the flow of technology from universities to industry in Japan have also generated early action. Twenty-six Technology Licensing Offices (TLOs) had been established nationwide in Japan as of January 17, 2002. In the first two years after The Law for Facilitating Technology Transfer from Universities was enacted in 1998, more than 700 patent applications were made. The number of joint and commissioned research projects in biotechnology at universities increased six-fold over a decade. More than two thousand researchers were sent by companies to be trained in university laboratories. Centers for Cooperative Research were established at 56 universities. Entrepreneurship education has also been increasing in universities. In 2001, 28 out of 80 national universities offered entrepreneurship courses for graduate students, and 21 universities for undergraduates. The government predicts that those trends will increase.

Finally, the average number of Ph.D./MD holders amongst Japanese biotechnology firms established since 1999 is greater than that in older firms. Using the BIOscan data base (July 2002), Bio Business White Book 2002 (Daiwa Soken, 2002) and company websites, we obtained information about 141 biotechnology firms in Japan. Of these 91 were formed before 1999 and fifty were formed after 1999. The newer firms had an average of 1.2 holders of the Ph.D. or MD amongst their key managers, compared to only .73 for the older firms. This is a possible indicator that the new Japanese policies have allowed more university professors to participate in the new ventures. Further inquiry is needed to identify the relationship, if any, of these advanced degree holders to universities.

VII. Discussion.

Since, as was noted above, many of the efforts to reform the Japanese biotechnology system are new, it would be premature to assess their success at this point. It is also by no means clear what the criteria for success should be. Japan may not seem strong in biotechnology compared to the U.S., but compared to that of other advanced industrial economies, it does not seem unusually weak. Japanese were granted
more patents in biotechnology than the citizens of any European country in both 1990 and 2000. In the years 1986-1998 the U.S. had a huge lead in its share of the world’s publications in biotechnology and applied microbiology, accounting for nearly a quarter of all these publications. Japan was second, however, accounting for 12.1% of all publications in these areas over these years. Amongst the European countries, the UK was first (9.3%), Germany was second (6%), and France was third (5.9%) (Beuzekom, 2001). There are signs, however, that the Japanese biotechnology industry was losing ground in the 1990s. While Japan’s share of world scientific publications on biotechnology remained constant, its share of patents granted in the U.S. dropped between 1990 and 2000 (OECD, 2001). A survey of 151 firms involved in biotechnology in 1999 found that respondents from these firms believed they lagged both the United States and Europe in most areas of biotechnology in terms of technological competitiveness. It could be argued that Japan’s competitiveness in biotechnology should not necessarily be taken as problematic for Japan. The fact that Japan’s success in so many high-technology industries could be taken as suggesting that the Japanese model works fine in general, and that, for whatever reason, biotechnology is an anomaly. One scholar (Jin, 2001) argues that different countries are characterized by different knowledge regimes that encompass very different cultural, social, political and economic systems. He suggests that the Japanese knowledge regime is just not very well suited to the biotechnology, just as the U.S. knowledge regime is not well suited certain other industries. Whatever the merits of this argument, it should be mentioned that many reasons brought out as accounting for the relatively greater U.S. than Japanese success in biotechnology, have not been directly addressed by the policies so far adopted in Japan. One such factor, for example, is the huge amounts of research funding provided by the US government for cancer and other medical research. Perhaps a reason so much university research spills over into start-ups in the U.S. is simply that there is so much new technology being developed because of luxuriant government funding. Recently, there have been some efforts in Japan to close the gap in government spending on biotechnology (the Japanese budget for biotechnology areas increased from 170 billion yen in 1997 to 305 billion yen in 2000 — still far less than U.S. government spending. A second-factor mentioned by some scholars as accounting for the weakness of the Japanese biotechnology industry is that the Japanese socio-cultural system (in their view) inhibits risk-taking (Bartholomew, 1997; Callan, 1996; Darby and Zucker, 1996; 1999; Forrest, 1996). While some of these authors mention cultural factors (such as Japanese norms and values) as inhibiting entrepreneurship in Japan, there are studies indicating that the virtual non-existence of startups in Japan is only a recent phenomena (e.g. Odagiri and Goto, 1997). Goto (1997) reports that the economic growth of Japan before World War II, especially in the Meiji Period (1868-1912), was supported by a number of entrepreneurs.
On the face of it, there seem little reason to assume that Japanese values and norms are less conducive to risk-taking than might have been true two or three generations ago.

Clearly, however, some aspects of the Japanese social system do inhibit certain forms of risk taking. Most notable amongst these is the relative immobility of labor under Japan’s career-long employment system. Further, the Japanese employment system relies much more on seniority in determining wages than does the U.S. system. This greatly reduces the incentives for employees to obtain higher education. Both the Japanese career-long employment and seniority-based wage systems are changing now, as many Japanese firms are forced to carry out large-scale job cuts and other reforms to respond to difficult economic times. These changes may produce more professional people who are willing to be involved in new venture businesses. Another weakness of the Japanese biotech industry has been a lack of scientists. Japan’s education system has traditionally emphasized engineering over pure science (Bartholomew, 1997; Forrest, 1996). This also may be changing as the Japanese government undertakes new reforms to emphasize scientific knowledge.

If Jin is right, however, Japanese efforts to re-form the Japanese innovation system to bolster its strength in biotechnology may be misguided — Japan should concentrate on advanced technologies where it has natural comparative advantage. It massive amounts of funding for medical research or a unique culture are major reasons for the U.S. success, the efforts of Japan and the European countries to create strong biotechnology industry may be misdirected. If the problem is cultural, efforts to encourage entrepreneurism by simply providing funding may be destined to fail. On the other hand, Japanese firms may be able to gain competitive advantage in certain niches, just as did some U.S. semiconductor firms.

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THE NEEDS OF ELDERLY PEOPLE FOR SUPPORTING THEIR INDEPENDENCE BY
UTILISING HEALTH CARE TECHNOLOGY AND
JAPANESE MARKETS FOR HEALTH CARE TECHNOLOGY PRODUCTS

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ABSTRACT

Growth in the population of aging people stresses need for new kind of services both in Japan and Finland. The opportunities for client-centred care services and independent coping at home will be made available by modern technology. Before developing new health care technology products it is important to understand what kind of needs elderly people have related to their independent living. Such modern technology should be integrated to the best working practices and social interaction.

To understand the business of the health and welfare for the elderly in Japan it is necessary to understand the content of health care system and how the health care system was constructed. However, the market structure changes largely along with the coming aging society and the revised long term care insurance system (Kaigo-Hoken).

This article concentrates in the demographic trends in Finland and Japan, and the needs of elderly people related to their independent living. It concentrates also in the theme of how to support the independency of elderly people by using health care technology. The last theme handles new markets in Japan for health care technology companies.

Key words: Elderly people, health care technology, health care technology markets

1. INTRODUCTION

Over the next few years population growth will be very strongly concentrated on the over 55-year-olds. By the year 2010 the post-war baby-boomers will approach the age for old-age pension. This will raise the costs of both pensions and unemployment security and pose a problem of labour shortages. It will also bring up new challenge for the management of elderly care services. And the solutions of supporting active and independent living of elderly people will have the added importance.

Supporting the activity and the independence of the aging people is one of the main aims of the action plan for the social and health care in Finland and in Japan. Information and communication technology (ICT) in health care, which is called later health care technology, will be one solution for activating aging people. It will also offer new possibilities to support health and independent living of elderly people at home. Further, it has an important role when offering new kind of integrated home care and home nursing services for the elderly.

The increasing share of the aging population offers a big challenge for health care technology companies. In the area of elderly care new innovations and new implementations of information and communication technology-based health care technology products are needed. This creates new markets for the companies.

Some results of the Hebuite research project will be presented in this article. Hebuite project is an international and inter-professional research and development project in Finland and Japan. The first phase of the project extended for two years from June 2000 to October 2002. Seinajoki Polytechnic from Finland co-ordinated the project. Other partners from Finland were Wirlab Research Center, Tampere University, Seinajoki Central Hospital and companies, and from Japan Tokyo Medical and Dental University, Chiba University and Jobu University. The project received funding from the Finnish National Technology Agency (TEKES) as part of the iWELL programme. The aim of the research project was to clarify what kind of needs elderly people have in relation to their independent living and activities of daily living, and what kind of attitudes and beliefs they have concerning new ICT applications. The aim was also to find new facilities to utilise the ICT in supporting healthy and independent living as well
as activities of elderly people in their daily living. The sample consisted of elderly people in Finland and in Japan who required constant home nursing and care services at home. The sample involved totally 222 over 60-year-olds. The data were collected through direct interviews by using the questionnaire. (1.)

In the second phase of Hebuite project (October 2002-February 2004) South-Ostrobothnian companies will be developing health care technology products for Japanese markets. One of the main issues in this phase is to identify the major factors of marketing of these products to Japanese markets. To find out those facts related information was gathered in Japan during November and December 2002. The information was collected from the secondary sources and through direct interviews. Based on this research we found information about issues which have to be taken into consideration by those companies planning to enter the market in Japan. During the interviews some interesting business possibilities were also identified and they are explored further in the article.

2. SUPPORTING THE INDEPENDENCE OF THE ELDERLY PEOPLE BASED ON THEIR NEEDS BY UTILISING HEALTH CARE TECHNOLOGY

2.1 Demographic Trends

The WHO (World Health Organization) describes societies with a ratio of persons aged over 65 higher than seven percent as an aging society, over 14 percent as an aged society and over 20 percent as a highly aged society. Japan is faced with the aged society over the Western countries. The number of people aged 65 and over was 18 percent of the population in 2001 and this will increase to 26.9 percent by 2020. Japan is expected to be the first country ever to have one-quarter of its population to be comprised of citizens who are aged 65 and over in 2014. One affect of such phenomenon is the increase of chronic diseases in Japan. (1, 2.) Also the demographic structure of Finland will age more rapidly during the next five years than that of any other EU Member State or the USA. In Finland nine out of ten people of over 75 years of age have some chronic disease or disability to weaken their functional capacity. (3.)

The relative change of aging in 2000-2005 will be in the age group of over 65-year-olds, 6.7 percent in Finland, 6.8 percent in the European Union countries and high 14.3 percent in Japan. In the period of 2000-2010 the relative change in the age group over 65-year-olds will be 18.1 percent in Finland, average of 12.6 percent in the EU—countries and 28.6 percent in Japan. The United States shows less percentage than Finland or Japan. (4.)

Figure 1. Relative Change in Finland, Sweden, the European Union countries and Japan by age group in the period of 2000-2010.

%
2.2 Supporting the Independence of the Elderly as a part of the Policy of Health and Welfare

In Japan nine percent over 60-65-year-olds live alone (5). In Finland, compared to Japan, 86 percent of those at least 75-year-olds live in an ordinary home, since the living alone has been common. More than half of the women and nearly a quarter of the men in this age live on their own. During the 1990s living in service homes has become more widespread. (3.) The independent coping at home and seamless client centred care services will be made available by modern health care technology based on the needs of the users (3, 6, 7, 8, 9).

The aim of the Finnish policy for the old-age is to promote well-being and health of the older people and support their independent living as long as possible whether they live at home or in an institution ( aging in place ). The Finnish National Public Health Programme Health 2015 underlines the importance of the continuous improvement of the average functional capacity among people over 75 years old. The result proves the improvement of their functional capacity during the last 20 years. (7, 10)

In Finland the National Committee for the Strategy for Utilising of ICT in Social Welfare and Health Care proposed a new client-centred care model, seamless services where the client will be an active partner and where the present organisational and information barriers are made invisible. During the last few years the best practices have been disseminated from pilot projects, the new technology has been utilised (such as smart cards, secure web, virtual patient records). As such the national guidelines will now be formulated. In the local development projects there have been high industrial participations, and new technology programmes have been launched to develop innovative products for improving the health processes through ICT solutions. (11). According to the Finnish National Public Health Programme Health 2015 services for old people will be carried out by the municipalities. It was aimed at developing the care services needed in daily life and long term care, which incorporate informal care, voluntary work and commercial services by utilizing the modern technology. (7.)

In Japan the policy of the health and welfare was established with the national health insurance law in 1958. This policy was premised that every citizen would be covered by the health insurance and the medical treatment insurance systems. Owing to the high economic growth of Japan the elderly welfare law was established in 1963, which was the first law for the elderly persons in the world. At the beginning, the problem of care for the elderly person has been understood as a part of the overall social welfare system. The supply system of the fee for medical treatment of elderly person was established in 1973. In this system there was no fee for elderly people over 70 years old. In 1980 s the progress of rapid aging became a problem in Japan and, therefore, the social security system for the aging society became a nation issue. Free medical treatment for elderly persons became a huge financial burden for the medical
insurance system, which led to a new insurance law for elderly people established in 1982. The purpose of this law was to strengthen the health of those people above 40 years old. After 1982 the insurance program for elderly people was revised several times due to financial difficulties. (12.)

The Long-Term Care Insurance law was established in April 2000 (Kaigo-Hoken) in order to solve some of the problems of the rapid aging society in Japan. This law had restructured the care system of the elderly people. The previous care system was divided into two parts of welfare service and medical service. The purpose of the Long-Term Care Insurance System was to actualise the overall care services based on the needs of the client, while utilising the mechanism of social insurance. Japanese government expected that the implementation of the home care will be promoted by this establishment of Long-Term Care Insurance law. The law had three aims; to support independent life of the elderly people by home care, to offer good quality of life to the elderly people, and to promote home care business for supporting efficient social life. The care service was offered to the person who was admitted after the procedure of the authorization for the level of care needed. This degree of the care was divided in six levels. Clients receive services based on the care plan created together with the client and professionals like care managers. The client needed to pay 10 percent of the service expense and also the full amount for the service expenses that exceeded the upper limit level of insurance in each level. The remaining 90 percent of the service expense is covered by the Long-Term Care Insurance. In Japan, all citizens aged over 40 have to pay Long-Term Care Insurance Premiums. (2, 12, 13, 14.)

2.3 Health Care Technology in Supporting the Independence of the Elderly People

Gerontechnology is a new area of research and it has been developed in the early 1990s. It is a combination of gerontology, the scientific study of aging-related phenomena, and technology, the research and development of industrial methods and products for gerontology. Gerontechnology is thus a multidisciplinary and inter-professional science. It involves technological research from the perspective of gerontology and aims at a good living and good working environment and conditions as well as high level of care based on the needs of ageing people. (13.)

The Finnish research of 2001 showed that the development of health care technology product group should be focused on the devices which improve the communication and interaction for elderly people. One example of such products is video telephone and services based on Internet and mobile technology. Through concentrating in the gerontechnology, the independent life of the elderly people can be well maintained and supported. Furthermore, such new products will be highly demanded by various other aging societies of the world. (15, 16.)

The regional ICT based care system can provide the seamless care and service to support the independent living of elderly people and it is the major development line in the area of health care and social welfare in Finland. The integrated architecture of the care system will link the dispersed information systems of regional public and private service providers and at the same time offers the web-based services to health and social welfare professionals, elderly clients, their families and other citizens. (11.) In Japan also there are some efforts to develop the regional ICT care system.

In Finland the most common ICT based devices used at home are physical analysers, security phones or alarm calls. The mobile physical analysers are mainly used in ambulances, home nursing, home care services and home hospitals. There will also be a growing number of clinical analysers to be used by elderly patients themselves at home to support their independent living. Such mobile devices mostly measure the blood glucose, pulse and blood pressure. The results of self-measurement are sent through the telephone line, mobile GSM links or Internet to the family doctor or the home nurse. (6, 11, 17, 18.)

2.4 The Needs of the Elderly People related to their Independence
In the Heubite research project of 2000-2002 it was clarified in Finland and Japan what kind of needs elderly people would have in relation to their independent living and activities of daily living. The sample consisted of Finnish and Japanese elderly people living at home and requiring constant care services at home and home nursing. The Finnish sample involved 100 elderly people over 60-year-olds (mean age of 79.9). The Japanese sample involved 122 elderly people (mean age of 83.0). The data of questionnaire was collected through the direct interviews of the elderly. SPSS statistical programme was used in analysing the data. In Finland most of the elderly (78 %) lived alone at home, while in Japan only one fifth of the respondents lived alone. In earlier studies 86 percent of those at least 75-year-olds live in an ordinary home and more than half of the women and nearly a quarter of the men live alone (3). In Heubite research overall three out of four elderly felt that their health condition was good. (1.)

The results showed that elderly people need assistances and aids for moving indoors and outdoors. In Finland 63 percent of the elderly could move indoors without aids but only 26 percent for outdoors. In Japan 38 percent of respondents could move indoors without aids and 33 percent for outdoors. In Japan two out of three (68 %) elderly felt insecure about themselves, while in Finland much smaller 13 percent felt the same way. The Japanese elderly had more problems with their medication with 54 percent of them than the mere 11 percent of the Finnish counterpart. For grocery shopping 19 percent Finnish elderly and 11 percent Japanese elderly did shopping without assistance. According to the earlier study 90 percent of the elderly in average go shopping at least weekly (3.).

According to the results of Heubite research project, the Japanese elderly have more difficulties contacting relatives and friends than the Finnish elderly. The 98 percent of the Finnish elderly can contact relatives whenever they want, while only half of the Japanese elderly can do so. The similar results showed between Finland and Japan regarding the meeting with medical staff as they want that 93 percent of the Finnish elderly answered yes while only 39 percent of the Japanese elderly did so. Also 84 percent of the Finnish can contact friends whenever they want but mere 30 percent of the Japanese elderly. Two out of three (63 %) Finnish elderly participates in social activities, when mere six percent of the Japanese elderly does so. (1.)

The results of the earlier studies show that the aging people in Finland are interested in many things and most of them lead an active life. Only one in ten Finnish aging people feels bored for lack of things to do. The issues which concerns aging people most are their family and relatives, art and entertainment, environmental issues, travelling and community matters. The half of all older people practice physical exercise once a week. Elderly people participate also in the activities of pensioners’ associations (30 %) and the activities of the local parish (25 %). One out of ten elderly people studies in adult education institutions or university extension courses for the elderly. Among those above 60-year-olds, 85 percent has contacts at least once a week with their immediate families or other close relatives. The relatively smaller percentage of elderly people meets friends at least once a week. (3.) In the earlier studies, however, the loneliness and insecurity are the appreciable problem in Finland. More than one in three people of 60-year-old-above often or sometimes feels themselves lonely. In the age group of over 80-year-olds the corresponding figure is one out of two. (3, 19.)

The results of Heubite research project also show that in Finland 95 percent of the elderly can watch television while in Japan 86 percent of them. In Finland 87 percent can read newspaper and in Japan smaller rate of 49 percent. Three out of four (76 %) in Finland can listen to the radio but one out of four (23 %) in Japan. Some elderly in Japan answered that they do not want or they are not interested in listening to the radio. (1.) According to the results of the earlier studies nearly all of at least 60-year-olds in Finland read newspaper, listen to the radio and watch television (3).
The Hebuite survey asked what kind of technical aids the elderly people would be prepared to use or accept to install at home. The most acceptable technical devices in Finland are wireless safety phones and alarm communicators (90 %), medication controller (71 %), electronic memory aids (63 %), movement detective sensors (61 %) and sensors attached to the person (59 %). Two out of three (38 %) respondents accept a remote camera connected to the care institution but only few connected to their relatives (17 %), friends or neighbours (2 %). In Japan the most accepted technical aids are the wireless safety phone, alarm calling devices and cameras connected to care organizations and their relatives. In Finland 12 percent of the elderly uses mobile phone but in Japan it was only 1.5 percent. (1.)

3. JAPANESE MARKETS FOR HEALTH CARE TECHNOLOGY PRODUCTS — MARKETING FINNISH HEALTH CARE TECHNOLOGY PRODUCTS TO JAPANESE MARKETS

3.1 Japanese Health Care Technology Markets

In Japan the challenges created by rapid increase of elderly people grew enormously. Solutions for this situation need to be implemented urgently, which at the same time will bring new business opportunities fast in many fields of health care technology. In the report of JETRO (Japan External Trade Organization) on Senior Citizen-related Businesses (2000) the size of Medical and Welfare market was expected to grow from · 38 trillion (1997) to · 91 trillion by 2010 (20). MITI (Ministry of International Trade and Industry) reported different growth scenarios for the market of Welfare Equipment Industry to expect the market growth from · 1.1 trillion to varied · 2 to · 6 trillion depending on different future expectations on economy between 1995 and 2005 (21). The surge of elderly care market began in 2000 as the national program of Long-Term Care Insurance System took off (2, 12).

As these estimates show rapid expansion of the market for health care technology products the expected growth rate will be remarkably high during the next decade. In the interviews which we conducted in Japan in November and December 2002, with health care technology companies, industry associations and institutional researchers, it was identified that the market potential of certain health care technology areas show promising potentials for foreign companies.

3.2 Special Characteristics of Japanese Health Care Markets

3.2.1 Human Characteristics

3.2.1.1 Japanese Body Types

One of the main issues which often demand western companies to make certain amount of adaptation and adjustment for products to be better accepted by Japanese people is the physical difference of body size of Japanese elderly people.

Japanese people are generally smaller in size than Europeans or Americans. The average height of adults (people aged 20 or over) is 166.2 centimeter (5 5 ) for males and 153 .0 centimeter (5 0 ) for women. Average height continues to show steady increase, and the average height of the 20s is 171.2 centimeter (5 7 ) for men and 158.2 (5 2 ) for women. However those of 70 years of age and over are roughly 12 centimeter (5 ) shorter with an average height of just 159,4 centimeter (5 3 ) for men and 145.6 for women (4 9 ). (21.)
3.2.1.2 Baby Boomers — New Type of Elderly People

Compared to current elderly people, baby boomers will form a very distinctive group among elderly people as they retire. Where baby boomers are different, they are used to active living and relatively well off financially. They are familiar with technical knowledge (for instance in the area of information and communication technology) more willing to make investments for their future.

In our interviews with various experts diverse assessments were obtained regarding the market potential of care products and services for this customer group. On the other hand relatively high technical capabilities of this age group may open up totally new kind of business potentials for products created for elderly people. On the other hand, however, baby boomers tend to demand particular characteristics than general design which could make the business rather difficult to be developed.

Despite such difference of opinions about the market potential of this customer group, their technical abilities and their willingness to invest on themselves will open up totally new kind of possibilities for health care technology producers. The concept of maintaining the level of healthiness through the usage of health care products and services is called Active Aging. Such new products and services could be promising for this new elderly people.

3.2.1.2.1 Active Aging

Active aging should attract the interest of baby boomers who had been active in their living all along. Health care products and services for maintaining their level of healthiness will allow them to enjoy life thoroughly for a longer time. And being healthier for a longer time will also have huge economical effects for the society in the form of reducing the overall health care costs. They have their need to stay healthy as elderly, because their retirement age will rise and the prices of health care services will also rise continuously into future. This will be also true for the following age group.

There are already products offered in this category such as the market for the powered wheel chair which has increased steadily from 1997 to 2000 (from 4.6 billion to 7.2 billion). However, the new ICT solutions in this product and service group are yet to be developed for user market. Some good potential applications will be the user friendly devices with the use of wireless communication system. (21.)

3.2.2 Living Conditions — Features of Japanese Homes

Majority of Japanese housing units is concentrated in the three major metropolitan areas of Tokyo, Osaka and Nagoya (51.3 %). The housing units of 93.8 percent in these areas have been constructed after the Second World War and 57.6 percent of them, 25 million units, are detached houses. Then the number of apartments increased rapidly to 37.5 percent, 16 million in number, by 1998 in order to accommodate fast grown population. (21.)

Generally Japanese housing units are smaller in floor size than in western countries. This is especially the case with rental housing units. The average area of floor space per dwelling is 90.6 square meter. There is a big difference between the floor space of privately owned houses with 121.1 square meter for 6 rooms and that of rented houses with 44.4 square meter for 2,8 rooms. In the metropolitan areas the housing units are also smaller with 78.2 square meter for 4,3 rooms. (21.)

3.2.2.1 Housing Conditions of Elderly People

In general the Japanese houses have their own designs which are not those of universal design and less suited for caring activities for the elderly. The homes of the elderly people were constructed many years
ago with more traditional Japanese style. Some of its characteristics show the entrance hallway with a foyer to step over when entering the house. Also Japanese homes keeps at least one traditional style of sitting room where the floor is covered with tatami mats. There are also certain specific issues in bathroom and toilet which are different compared to western countries. All these issues set certain prerequisites for products to be applicable in Japanese households. (21.)

3.2.3 Kaigo-Hoken — the Long-Term Care Insurance System

Kaigo-Hoken is the Long-Term Care Insurance System introduced in Japan in 2000. It is the national program which is revised every three years. Today the success of health care products and services very much depend on whether they are officially accepted and included for compensation in this insurance program. The board of Japanese Wellness and Welfare Industry Association plays an important role in this process of selecting the new care products and services. This periodic revision of every three years of Kaigo-Hoken system will have large influences on the compensation list of the insurance program. This signifies the importance of maintaining the up to date information of the care program particularly for exporting companies to Japan.

Interviews in Japan clarified that to achieve the effective approach of penetrating the Japanese market of care products and services, obtaining the advice and support from influential organizations related with the care industry will be critical, such as the Ministry of Health, Labor and Welfare and the Ministry of Economy, Trade and Industry, the industry councils, and local governments.

Many local governments and municipalities are putting efforts to promote care services and the activities of health and welfare industries. Some of such activities are found in the northeast cities of Sendai and Fukushima and also in Tokyo and surrounding areas. Also found in Nagoya and Fukuoka area local enterprises are investing actively in an effort to expand the business opportunities in this new care industry. (20.)

In Japan the user selects the welfare equipment, although the reality is that care managers have great influence in finding and choosing the actual products among listed for subsidies. Those equipments listed are usually rented with minor fee of only ten percent through the authorized service enterprise. Those users who can afford to spend more may purchase and use the health and welfare products freely from the retail market. There are some problems in the process of selecting the health and welfare equipments in the care plan since care mangers have limited source of information and knowledge about the products and they tend to recommend only those products they are aware of. (20.)

3.2.3.1 Proof through Scientific Research

It is impossible to accept new, innovative, products to Kaigo-Hoken insurance system without scientific proof of their function. Research results should be in the form of report and provided to Kaigo-Hoken acceptance procedure in order to make product fully compensated product within Kaigo-Hoken insurance system.

3.3 Assistive and Home Care Product Market in Japan

3.3.1 Products
There is a strong need for hi-tech health care devices in Japan and domestic companies have been very active in this market. This trend may be categorized as the new form of emerging health care industry clusters focused on ICT related care products. Current effort is seen more on individual devices and independent systems for particular purposes.

According to the interviews the shortage in product development in Japan is the system approach to solve the comprehensive health care problem. As the need of integrated care increases significantly, there is a strong demand for a system concept of covering the whole health care system or to be more precise, there is demand for concepts which would cover multiple areas of health care and welfare. Such conceptual system development needs to be applied in the areas of housing health care systems, home care system and seamless integrated care system.

3.3.2 Markets

3.3.2.1 Imported Products

The importance of imported products in Japan varies by product category. One top example is in a product category of assistive and home care products which shows the share of imported goods is over 60%. However, usually the share of successful imported products is around 30%. The exporters are varied in different countries but major contributors are USA, Taiwan, South Korea and Scandinavian countries. Imports from Europe and USA predominate in the product categories using more advanced technologies. (21.) Scandinavian countries, especially Denmark and Sweden, maintain high reputation for their advanced skills in health care technology. Finland is relatively less recognized but Finnish companies can take advantage of positive Scandinavian reputation in their marketing activities.

The areas where imported products have competitive advantages over Japanese products are the designs and the coordination of colors. This will be continuously expected and important for imported products, however, domestic Japanese manufacturers are learning and making good progress in this area. Other important characteristics of imported products where competitive values exist are the ease of use, human interface, high quality and comprehensive functionality.

3.3.3 ICT-Products

The use of ICT-based health care products is rather limited in Japan at the moment, partly due to non-coverage for the new hi-tech care products by the care insurance program. It is an emerging product group and its importance is expected to increase quickly as more support and services are needed while shortage of human hands increases. In this sense the wireless solutions can provide excellent alternatives of care support. In Japan third generation (3G) digital mobile network has been widely used already, which provides totally new type of mobile platform with its high-speed data transfer capacity. Pictures and video images are transferred with voice through this network.

According to the interviews another important ICT-area is the comprehensive ICT-platform creation of the integrated health care system. Some Japanese large companies offer limited applications in this directions, but they are more dedicated applications by the care or medical service area.

3.3.3.1 ICT — Base for Concept Creation for Health Care Technology

Home care and hospitals constitute two totally different worlds in Japanese health care system. The situation looks totally different from different point of view of either clients or information. When a patient is transferred from his or her home to the hospital, ideally the care manager should be able to follow the situation and allocate resources accordingly. When the patient is transferred from hospital to
health care center this information should be available to the care manager as well. The existing system, however, does not support such continuous process of activities.

How such sharing of the information could be possible. This kind of information sharing process is termed as the seamless health care system, where home care and hospitals share the same information and use the same information system in order to allocate their limited service resources in the most efficient manner for the service provider and for the best interest of the client (3, 6, 10).

3.4 Exporting Health Care Products to Japanese Markets

3.4.1 Laws and Regulations

3.4.1.1 Regulation on Importation and Retail Sale

In Japan five product categories are classified as assistive and homecare products and they are regulated as medical devices under the Pharmaceutical Affairs Law. They include hearing aids, vision corrective spectacles, vision corrective lenses, medical aspirators and medical nebulizers. While other regulations apply to specific types of products, there are no regulations on the importation and retail sale of the other type of assistive and homecare products. (21.)

Regulations for electrical equipment are included in Electrical Appliance and Material Control Law. Food products are subject to provisions of the Food Sanitation Law and in some cases the Nutritional Improvement Law. Apparel items are subject to provisions of the Household Goods Quality Labeling Law. In addition all manufactured products are covered by Product Liability Law and assistive and homecare products are no exception to this rule. (21.)

3.4.1.2 Regulation on Quality Evaluation Standards and Labeling

Japan exercises the regulation on quality standards through SG Mark, Silver Mark, JIS and ISO standards, while there is no specific standard for the care category itself, with the exception of five product categories which are classified as medical devices. There are different product categories for each standard system which varies from voluntary to required for commercial offering of products.

SG Mark
SG Mark is an acronym for Safety Goods. The Consumer Product Safety Association operates under auspices of the Consumer Product Safety Law to authorize the display of the SG Mark on products certified as compliant with safety and quality standards. If an injury occurs as a result of a defect in a product bearing the SG Mark, the Association negotiates with the victim and pays compensation in proportion to the degree of harm incurred, upon determination of the cause of the incident. (21.)

Silver Mark
The Elderly Service Providers Association has established quality standards for seven categories of elderly care services. Providers who meet these standards are awarded the Silver Mark, and they are eligible to participate in an indemnification insurance program that pays compensation for any incidents associated with service provision. The national government rescinded its recommendation to municipalities that they give priority to Silver Mark certified providers. (21.)

JIS Mark
Since Japanese Industrial Standards (JIS) are defined in relation to average body size of Japanese people, they depart from ISO standards in many respects. Currently an active effort is under way to revise assistive and homecare product standards in those categories for which JIS standards have been defined, and to make them more consistent with ISO standards. The range of assistive and home care products subject to JIS standards is also being expanded. (21.)

3.4.2 Practical Arrangements

3.4.2.1 Finding a Representative from Japan

The first step for a foreign company who wants to begin business operations in Japan, according to the interviews, is to contact a related industry association which is active in the interested product area. An example of the association in the health care technology devices are the Japan Wellness and Welfare Industrial Association (JWA). More detailed information from the organization can be found in their web site www.jwa.gr.jp. This type of industry association is able to provide useful information about the characteristics of the Japanese markets, the suitability of the product for the markets and potential business partners in Japan.

When thinking about the options concerning the selection of potential cooperation partners such as delivery channel, companies have basically two options of general trading houses or individual importers. Trading houses are a good option when the business is large scale while the opposite case would be a better option for individual importers.

When approaching potential cooperation partners, it is most recommended for the companies to go through a Japanese consultant to effectively manage the negotiation process with possible partner candidates. Usually the case is that the knowledge level and expertise of the visiting foreign firms are not sufficient to take care of this process by themselves.

3.4.2.2 Delivery Channels

The most important distribution channel for assistive and home care products has been specialty stores, commonly known as kaigo shops. There are about 3000 kaigo shops nationwide and they are usually very small businesses with annual sale of around ¥100 million. Most of these companies do business only locally and they deal directly with manufacturers.

It is expected that demand for assistive and home care products such as nursing beds and wheelchairs changes more and more from purchase to rental along with the long term insurance system. This development will influence kaigo shops to increase the rental businesses.

Also more and more general distribution channels have emerged during recent years in department stores and supermarkets, which have been setting up assistive and home care product sections. However these new product corners seem rather modest considering the product range available. In addition a number of consumer electronics retailers and drugstores with nationwide sales networks have set up rental corners of assistive and home care products in their stores.

Providers of assistive and home care product rental services have to meet certain requirements to start business. Providers must be designated by the prefecture governor to be able to provide product rental services to Long-Term Care Insurance Program recipients. Only incorporated organizations are eligible to receive such designation, and they must meet stipulated standards for staffing, facilities and management operations. The emergence of increasing amount of rental services changes both the structure of delivery channels and companies forming these delivery channels (21).
3.4.3 Commitment

One of the key issues for success in Japanese markets is the commitment by management to Japanese markets. The importance and values of relationships in Japanese business makes this requirement understood very well. Usually in business markets foreign companies show their commitment through investments, service networks and people assignments. The most important factor explaining the success of foreign companies in health care technology markets is the arrangement of support and maintenance services. This is the most concerns of Japanese partners and it will increase the credibility of the company as a long-term business partner.

CONCLUSIONS

In Japan developments and diffusion of the welfare devices that support the nursing and caring activities are requested and caused by the aged society and also by the lack of the nurse in the health and welfare of elderly people. The care managers should have sufficient knowledge concerning health care technology and new devices in forming the care plan. By using health care technology the home care staff could utilize more time for the caring and nursing activities and the quality of care will increase, too. Health care technology is important even for the healthy elderly people who are not yet qualified for the Long-Term Care Insurance. With the assistance of health care technology the active aging of the elderly people could be supported.

The know-how about the content and meaning of independent life and about the needs of elderly people should be increased. Only on the bases of such know-how it is possible to plan and develop new innovative health and welfare products for supporting the independent life of the elderly people. Citizens and clients as service users should be included in the innovation and development of ICT based health and welfare products and services so that such products will be more easily accessible also to aging people.

The enterprise that tries to sell a new medical or care service and equipment must receive the examination of the Ministry of Health, Labour and Welfare for individual product. Non-approved product is not eligible for pay back from health insurance or Long-Term Care Insurance. Also, enterprise needs to have friendly relation with the ministries to advance examination and approval process smoothly.

Finally it can be said that there are many challenges and good possibilities for the development and marketing of health care technology products, because the attitudes and beliefs of elderly people concerning information and communication technology are positive. Their opinions, ideas and needs are important when developing new kind of applications of ICT for them.

The results of Hebuite research project added new knowledge about how to support the independent life of the elderly people by utilising health care technology, and what kind of possibilities there are for Finnish companies in Japanese health care technology markets. Although the sample data was not large and the results can not be generalized, the results of the research are very much indicative of general developments.

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Top Management and Headquarters Structure Which Create Innovative New Products

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Abstract

We argue that the small head office and delegation of authority are not appropriate to create successful new products. High performance companies have higher ratio of sales from new products. Ideas of successful new products come out mostly from the strategic planning departments, that is, from the top management and development departments.
There are four types of top management in charge of general management. (a) One man type, (b) a group of three to five executives, (c) the management committee of about ten executives, (d) same members with the board of directors. We have an assumption that the second type is the most appropriate to initiate and make decision on successful new products. Strong head office and centralized research laboratories construct high level of core competence, can create successful new products. Centralization of strategic decisions results in the hybrid structure of departmental organizations. Multi-functional project teams reporting directly to the top management are organized to carry out important projects. When completed projects are transferred to the incubator department.

Unsuccessful models are, (1) low rate of new products creation, (2) ideas of new products are expected to come from operating departments, (3) the top management is organized by members which represents the interest of product divisions, (4) weak head office, laboratories are scattered among the product divisions, (5) product divisions which bear the burden of short range profit responsibilities. “Doers should also be innovators”. (6) Project teams are rarely organized.

**Problem areas and literature review**

Defensive strategies and restructuring practices are too popular at present among Japanese corporations, American and European corporations. However, we assume that positive strategies, particularly new product development are essential for the companies to survive and to grow. Japanese corporations are losing competitiveness with respect to cost of production, but is leading the world at the home country market in the new product development, and this strength has to be reinforced. Relative speed of innovation, speed of new product development are needed. We found that higher financial performance companies have higher ratio of new products. We explore what kind of organizational structure create successful new products. Many companies are reducing the number of personnel in the head office, and try to have small head office. The small head office of ABB drew attention of many managers. We challenge this thought and we maintain that the strong head office creates successful new products.

Delegation of authority tends to be admired, but we find that the centralization of authority on strategy decisions is needed to make innovative changes, although operational decisions can be delegated. The model of the core competencies states that the centralization of resources is necessary to construct strong core competencies (Hamel & Heene, 1994). The theory on mechanistic organization and organic organization deals with the operational activities (Burns & Stalker, 1961).
It is stated by many authors that the Japanese companies are slow to arrive at the final decisions, because of consensus decision style. But Drucker says that after the decision, implementation is fast because many people are sharing the information (Drucker, 1986). We discuss these problems to some extent by investigating the top management structure.

The top management means the trusteeship management level and general management by Holden, Fish & Smith (1941). There are many discussions on the trusteeship management level or the governance structure, but this paper is concerned with the general management level including the functions of head office.

This paper puts more emphasis on empirical study based on an extensive mail questionnaire survey and many case illustrations rather than literature review. However, here is a simple review. A book by Galbraith and Nathanson (1978) is not a new book, but it reviews many books and cases with respect to strategy and organizational structure. Major statements and our opinions are as follows.

(1) As the company grows, the products changes from specialization to diversification, and then to globalization, then the organizational structure changes from functional to product division and then to matrix. We find that when the speed of change of environment is fast, the functional organization (exactly speaking hybrid organization) is more appropriate. (2) When the company has related product diversification, the size of the head office is larger than the one with unrelated product mix. This view does not consider the change of products. Continuous change of product mix by introducing new products needs to have a large head office. (3) When the competition is severe, decentralization is needed. This view focuses on the operation, not on the innovative change of products. (4) When the high skills of experts are needed, the functional organization is appropriate, while the adaptation to change of market is necessary, the product division has a good fit. This view of the first parts is same as our finding, but when the change of market is fast and large, centralization is needed. (5) When growth is carried out by internal development, the size of the head office is large, but when growth is planned by acquisition, the head office is small. We agree this view.

We mean by hybrid organizational structure that (a) it is a mixture of functional and divisional structure, (b) the head office is strong and operates many functions, (c) divisions do not have full functions, product divisions have only production responsibility not sales responsibility, area divisions deal with many products and have sales responsibility, research laboratories report to the head office. We find that this type is popular among successful Japanese corporations.
Growth of sales and profit can be achieved either by increased share in the growth market, by reduction of cost, by the introduction of new products. In the low growth economy, the new product introduction is the most effective approach to improve the corporate performance. Playstation introduced by Sony in 1994 produced more than 600 billion-yen sales and 100 billion profits in 2000. Printers and digital cameras from Canon produced a large sales and profit to Canon. On the other hand, the financial performance of Matsushita, Hitachi and Konica were poor in years around 2000. We carried out a survey on the features of high performers with respect to new products and Table 1 is the results.

Table 1  High performers have higher rate of new products in sales

Organizational sources of ideas of successful new products

In order to explore what are the features of organizational structure to make birth successful new products, we tried to find the organizational sources of ideas of successful new products. Table 2 shows the result.

Table 2 Organizational sources of ideas of successful new products

The survey shows that most of ideas are coming from “strategic planning departments”, that is, from the top management and development departments, although some are coming from the sales department and customers. This survey means that the successful new product development needs to have strong planning departments including sensitive and thoughtful top management.

In typical cases the top management makes decision on the basic strategy or the long-range planning and the planning department, the development department and the research laboratory collect strategic information and provide new product ideas. The top management makes evaluation and makes the final decisions. What is important is that the company needs to have departments, which always explore new opportunities, and aggressive top management, which encourages risk taking and makes speedy final decisions. When Walkman was developed by a project team, many people in the marketing department did not agree to launch, because its price was too high, three times as high as the price of ordinary tape recorders which were in flood among the market with the price of 10,000 yen, but President Morita recognized its value as a portable stereo player, encouraged to complete the development and to launch the product. In the development of Playstation, after the sudden break of contract from the side of Nintendo to produce the machine by Sony in 1991, Sony President Oga wanted to enter into the gaming machine business but all members of management committee opposed this plan excepting Kutaragi. President Oga decided to develop it and organized a development team, Kuragai as a
project leader. Oga judged that the Sony had an enough competence to combine hardware and software, because Sony already had music and movie businesses. These cases show that the development department, product champion and the top management play an important role in development of successful new products.

The top management team of three to five

There are four types of the top management.

(a) One man type, (b) a group of three or five top executives, (c) the management committee, (d) the board of directors as a general management team, not as the legal organization.

These classifications are not a formal organizational type, but is an actual decision-making structure. (a) One man type. At Teijin, President Oya monopolized top management decision, President Okada at Mitsukoshi and President Muto of Kanebo were also strong dictators. They made many aggressive and right decisions, but also many erroneous decisions. For example, President Oya of Teijin (a synthetic fiber manufacturer) tried to enter into the oil-drilling project, to operate a cattle ranch at Brazil; both of them ended with failures. This type has to depend too much on the capability of one person.

(b) A group of three or five senior executive directors who are responsible to broad areas such as to a group of products or to finance or to research. We assume that this is the most appropriate structure of the top management to make quick and aggressive right decisions. The president (CEO) and other two or three top executives meet everyday informally and make discussions and once a week they make formal meetings and make decisions on the corporate strategy. In 1980s and 1990s, Honda and Fujisawa were top leaders of Honda Motor, Morita and Ibuka were top leaders of Sony. They made aggressive and right decisions. Large corporations have two top management teams, Senmukai or a meeting of four or five senior executive directors responsible to broad areas and Jomukai or a management committee of about ten executive directors. Senmukai is engaged to make decisions on only strategic subjects, or make free discussions and final decisions are made at the management committee of ten members. But in other case Senmukai makes decisions on strategic subjects and the management committee makes decisions on operational problems. We think that Senmukai belong to this type.

We understand that this small top group type is a popular type of top management in successful American corporations. For example, at Emerson Electric in St.Louis, four top executives have rooms close by in the head office building, and they meet every morning and make informal discussions on the corporate strategy (This author visited the company in 2002).
Condition of success in this type is that the members can say “no” to the president(CEO) and the members can make free presentation of their opinions. In many cases the president select the directors, promote them to the top position and have a power to oust the executive from the top positions. They tend to say yes to the president, but the result that the decision could be too conservative or too risky.

(c) Management committee of about ten senior directors.
This is the most popular type of the general management level of Japanese corporations. The problem of this type of is that the directors (vice presidents in American terms) may represent some of the divisions, they say nothing on the subject of other departments and they expect members of other departments will agree to the plan of own department. If this is the mode of decision, the decisions could not be very aggressive, particularly it is hard to divest some of the products.

A survey on the top decision making body.
Kobe University and Kansai Productivity Center carried out a survey on the top decisions making body of Japanese large corporations in 2001.

Table 3 Members of top decision making body
This survey shows that in 1996, Jomukai or meeting of executive directors was the most popular type and in 2001, all members of board of directors are the most popular types. This change is surprising. Probably, negative decisions, such as closing the plant, decreasing the number of employees, merging with the other company are increasing, so consensus of many members became important. This Survey includes not only successful companies, but unsuccessful companies, so we cannot say that this is a condition of success. We are investigating the organizational structure which make possible the successful new product development. We should rather pay attention to the meeting of vice-CEO (Fukushacho) and the meeting of senior executive directors. They are a meeting of small group of top executives, this two types account for about twenty percent. We understand that these two types are the models to achieve successful new product development.

The strong head office and centralized research laboratories.
The functions of the head office are as follows. (1) Planning and control. Strategic planning, research management, merger and acquisition, environment protection, subsidiary administration, multinational operation, budgeting. (2) Expert staff service. Personal management, production technology, marketing. (3) Centralized operation. Personnel service, legal, procurement and logistics, information system, corporate communications. Followings are
not included as the functions of the head office. (1) Head office of product divisions. (2) Research laboratories under the head office. (3) Sales offices and branches.

The strong head office means that the strategic planning departments and other functional departments in the head office are filled with competent staffs and the number of the staffs is large. This strong head office enables the company to have a strong core competence. The reasons are as follows:

(a) Larger window. The company can collect more strategic information. It can have technical and market information which is not necessarily related with the present product divisions, but is very hopeful opportunity towards technical and marketing areas which could replace the present products. Canon divested the PC and small electrical typewriters, and developed other growth products, such as the small copier and the bubble jet printer. Information needed for this decision could not be obtained at the PC division.

(b) Deeper knowledge. The company can concentrate resources into strategic projects, rather than the scattered laboratories among the product divisions. In order to create successful drugs, cars, semi-conductors, digital cameras, the company has to spend more than 10 billion yen.

Staff departments in the head office, such as the patent department, marketing, production technology and personnel department can assist the operating department in these functional areas to elevate their knowledge, and can concentrate the jobs of the operating departments to the head office.

(c) The company can have a flat organizational structure. The departmental structure is simplified, distance between the top management and the front line is made closer. This is the same principal with that the staff departments shorten the distance between the upper position and front line positions. According to my observation, American and European companies with small head office have large staff members in the divisions (eg, IC1).

(d) Pool of competent personnel. The company can take quick action to allocate competent personnel into growth areas, such as the project to construct a production base in a foreign country or acquire the other company.

We carried out a survey on the strategic planning departments, as is shown in Table 4.

Table 4

We find that Japanese companies have may centralized strategic planning departments in the head office. The high performers have more development departments which explore new technical opportunities, incubator department, centralized research laboratory and evaluation department. The incubator department means that the new product is brought up in this department. After completion of the new product development, the new product is transferred to
this department, production and selling are carried out there. Existing product divisions have profit responsibility, they do not like to bring up new products which do not produce immediate profit. When the new products become profitable, then they are transferred to product divisions or to a new independent department.

The image of the strong head office is illustrated in figure 1.

Companies with strong core competencies have centralized authority for strategic decisions and centralized resources to be mobilized towards important projects, can have strong trunks and roots. Weak companies have decentralized authority and scattered resources, thus slim trucks and small roots.

The organization charts of Canon and Sony are exhibited in Figure 2 and 3.

We find that these two companies have strong head office and centralized research laboratories. The head office has the strong corporate planning department, technological information collection and integration department, and marketing department (Canon has separate independent sales company) and centralized research laboratories under the head office.

Hybrid operating departments

Centralization of strategic decisions in the head office results in the hybrid organizational structure of operating departments.

Hybrid means that it is a mixture of functional organization and product division system, or an imperfect product division lacking either of marketing or production or development. In Table 5, there is little difference between the low performers and high performers, but we can notice that the product divisions account for only half of the total. There are merits and defects in this type of organizational structure. The merits are the centralization of key resources and possible quick decision for strategic moves. One of the problems is ambiguous profit responsibility.

Project teams and incubator department

Successful companies make frequent use of project teams and the use of incubator department. In such companies several project teams are engaged in development of new products, they are under the direct control of CEO, they are composed of excellent members coming from the development department, production and marketing department. If these departments do not have heavy profit responsibility, they are willing to send excellent members to the project
teams.

Table 6 Success factors of project teams

This survey shows that the support of top management and cooperation of operating departments are the keys for success. Successful project teams are given high prestige; at Sharp Co., the “urgent project teams” wear the golden badges which are the same as the ones worn by the top executives.

The incubator department takes care of bringing up the newly borne products in producing and selling them, Toray, Canon and Sony have these departments, because line departments do not like to take care of newly borne products which do not produce profit in the start-up period.

Discussion

1. The management committee can have more information, if its members are organized by the heads of product divisions. In order to make innovative strategic decisions, top management needs to have information on the change of environment, change of technology and of needs of consumers outside the company, and also information on the future changes, not on the past date. Sony emphasizes in its corporate creed the important of challenging new opportunities.

2. Members of the management committee need not say “no” to CEO in the official meeting, but should say “no” in the planning stage, in the nemawashi process. When the CEO has a power to promote and discharge the executives, as is the case with most of the Japanese corporations, they have difficulty to oppose to the opinion of CEO. Free exchange of opinions among top executives is essential to arrive at the innovative and successful decisions.

3. There are four types of the size of head quarters. 1) large and high performance. 2) small and high performance. 3) large and poor performance. 4) small and poor performance. What are the causes of different performance?

1) Large and high performance companies are such companies as Sony, Canon and Sanyo Electric. The top management has been making aggressive and innovative decisions. 2) Large and low performance companies in around 2000 are Hitachi and Matsushita. They have relatively independent product divisions, thus the change of product mix was slow, declined to divest weak products, divisions did overlapping efforts, developing similar products in different divisions. 3) Small and high performance companies are Teijin and Fuji Film, which have relatively specialized products and have strong core competence on limited number of products. 4) Small and low performance companies are NKK, Sumitomo Metals, Niigata Machinery. These companies have products which have less product differentiation.

4. Product division has more information on the needs of customers than the strategic
In the changing environment, information on the new technology and the new demands in home country and in foreign countries are needed more. Small copy machine developed at Canon in 1985 was developed by cross-functional project teams, not by the camera division. For innovative new products, the development departments and the head office have to play important role. The successful new beer “Hon-nama”, a kind of Happo beer, from Asahi Brewery was developed by a researcher in the research laboratory, it was a kind of bootleg development, when it was recognized by the top management, it became an official project. It was not developed by the marketing department nor the production department.
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   West Publishing, NY
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Holden, P.E., Fish, L.S. & Smith, H.L. (1941) Top Management Organization and Control,
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Kobe University and Kansai Productivity Center (2001) 8th Keiei Jittai Chosa (8th Survey on
   Management Practices), Kansai Productivity Center, Osaka
   Diamond-Sha,
   Tokyo
   2002,
   Pp117-124
Table 1  Corporate performance and ratio of sales of new products

<table>
<thead>
<tr>
<th>Performance</th>
<th>No. of companies</th>
<th>Ratio of sales of new products</th>
</tr>
</thead>
<tbody>
<tr>
<td>High performers</td>
<td>23</td>
<td>33.09%</td>
</tr>
<tr>
<td>(P_0.79)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>30</td>
<td>27.37</td>
</tr>
<tr>
<td>(0.79 P_0.21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low performers</td>
<td>49</td>
<td>18.94</td>
</tr>
<tr>
<td>(0.21 P)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>(102)</td>
<td>24.70</td>
</tr>
</tbody>
</table>

(note)1. Performance is measured by the following model.

\[ P = \text{growth rate} + \text{ROS} + \text{EQ} _{-1/10} \]

Growth rate = growth of sales between 1990-2000(if g_0, g=0)

ROS = ten year average of return on sales

EQ = ten year average of equity ratio

1/10 … utility value

2. Ratio of sales of new product is measured by:

Sales of new product developed in the past
5 years ÷ consolidated total sales in 2000.

3. Usable responses were 161, among them data was available on 102 companies. For details of survey, see Table 7.
Table 2  Sources of ideas of successful new products

“What are the sources of successful new ideas?”

<table>
<thead>
<tr>
<th>Source</th>
<th>Low performers responses,%</th>
<th>High performers responses,%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Planning department</td>
<td>21</td>
<td>37*</td>
</tr>
<tr>
<td>Project team exploring new products</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>Development department in the head office engaged in exploration</td>
<td>17</td>
<td>33*</td>
</tr>
<tr>
<td>Development department in the head office engaged in research management</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>Research laboratory under the head office</td>
<td>63</td>
<td>81*</td>
</tr>
<tr>
<td>Development department in the product division</td>
<td>15</td>
<td>26*</td>
</tr>
<tr>
<td>R&amp;D laboratory in the product division</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Manufacturing and production technology department</td>
<td>58</td>
<td>52</td>
</tr>
<tr>
<td>10. Marketing department</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>11. Salesman</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>12. Sales channel</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>13. Employee in general</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>14. Customers</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>15. Overseas office</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>16. Research laboratory of the university</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>17. Other research organization</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

(note) 1. For measurement of performance, see the footnote of Table 1.

2. For details of survey, see Table 7.

3. _ P<0.1
Table 3 Members of the management committee (the top decision making organization)

<table>
<thead>
<tr>
<th></th>
<th>Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1996</td>
</tr>
<tr>
<td>Higher than vice-CEO</td>
<td>5</td>
</tr>
<tr>
<td>2. Higher than senior executive directors</td>
<td>16</td>
</tr>
<tr>
<td>3. Higher than executive directors</td>
<td>46</td>
</tr>
<tr>
<td>4. All members of board of directors</td>
<td>24</td>
</tr>
<tr>
<td>5. Others</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

2. Responses from 498 companies, including all industries.
3. Numbers in parenthesis are responses from larger companies with employees over 5000.
## Table 4 Departments related to new product development

<table>
<thead>
<tr>
<th>Department</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning department</td>
<td>42</td>
<td>74**</td>
</tr>
<tr>
<td>Development department in the head office (looking for new opportunity)</td>
<td>62</td>
<td>70</td>
</tr>
<tr>
<td>Development department in the head office (planning and controlling research)</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Marketing department in charge of new product development</td>
<td>19</td>
<td>26*</td>
</tr>
<tr>
<td>Incubator department</td>
<td>35</td>
<td>56**</td>
</tr>
<tr>
<td>Research laboratories under the head office</td>
<td>42</td>
<td>67**</td>
</tr>
<tr>
<td>Development department in the division</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>Development department in the division (mostly designing)</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>Research laboratory in the division</td>
<td>15</td>
<td>26*</td>
</tr>
</tbody>
</table>

1. Committee to evaluate technical aspect of new products

11. Committee to evaluate economic aspect of new products

(note) 1. See Table 1 and Table 7 for details of survey.

2. * P _ 0.1, ** P _ 0.05
Table 5  Organization structure of operating departments

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Product division (with research and development, production and marketing)</td>
<td>98</td>
</tr>
<tr>
<td>2. Product division (with production and marketing)</td>
<td>18</td>
</tr>
<tr>
<td>3. Product division (with production or marketing)</td>
<td>22</td>
</tr>
<tr>
<td>4. Area division (with R&amp;D, production and marketing)</td>
<td>3</td>
</tr>
<tr>
<td>5. Area division (with production and marketing)</td>
<td>5</td>
</tr>
<tr>
<td>6. Area division (with production or marketing)</td>
<td>4</td>
</tr>
<tr>
<td>7. Functional for major product, and product division for minor product</td>
<td>6</td>
</tr>
<tr>
<td>8. Functional organization</td>
<td>33</td>
</tr>
<tr>
<td>9.NA</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
</tr>
</tbody>
</table>

(Note) 1. There were no significant difference between low and high performers.
2. See Table 7 for details of survey.

Table 6  Factors of success of project teams for new product development responses, %

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding and encouragement of top management</td>
<td>71.4</td>
</tr>
<tr>
<td>Clear goals, clear subjects and clear responsibility</td>
<td>86.3</td>
</tr>
<tr>
<td>Operation like an inside venture, delegation of authority to the leader</td>
<td>24.8</td>
</tr>
<tr>
<td>Outstanding team leader (aggressive, confident, clear understanding of program, acquisition of resources)</td>
<td>62.7</td>
</tr>
<tr>
<td>Quality of team members</td>
<td>44.7</td>
</tr>
<tr>
<td>Team work of the members, with passion and tenancy</td>
<td>47.8</td>
</tr>
<tr>
<td>Full-time engagement</td>
<td>34.7</td>
</tr>
</tbody>
</table>
Capability and technological knowledge of members . 30.4
Information collection on needs and competitors 48.4
10. Coordination and cooperation with related departments
   (particularly with production and marketing) (concurrent engineering) 49.0
11. Consensus within the company 36.8
12. Enough investment of resources (enough budget) 34.1

(note) 1. For detail of survey, see Table 7.
   2. No significant difference between low and high performers, excluding no 5 item.
Table 7  Survey on new product development in 2001

Survey was carried out in November in 2001. Questionnaires were sent to 1000 large manufacturing companies, and we could get 161 usable responses. (response ratio: 16%)

Distribution by industry is as follows:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>15</td>
</tr>
<tr>
<td>Textile</td>
<td>10</td>
</tr>
<tr>
<td>Pulp &amp; paper</td>
<td>5</td>
</tr>
<tr>
<td>Chemical and drug</td>
<td>26</td>
</tr>
<tr>
<td>Oil and rubber</td>
<td>8</td>
</tr>
<tr>
<td>Ceramics</td>
<td>7</td>
</tr>
<tr>
<td>Steel</td>
<td>1</td>
</tr>
<tr>
<td>Non-ferrous metal, Metal products</td>
<td>8</td>
</tr>
<tr>
<td>Industrial machine</td>
<td>18</td>
</tr>
<tr>
<td>Electrical machine</td>
<td>28</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>19</td>
</tr>
<tr>
<td>Precision machinery</td>
<td>8</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>5</td>
</tr>
<tr>
<td>Service</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
</tr>
</tbody>
</table>

Distribution by consolidated sales (2000)

<table>
<thead>
<tr>
<th>Billion yen</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>_2000</td>
<td>6</td>
</tr>
<tr>
<td>2000 ~ 300</td>
<td>28</td>
</tr>
<tr>
<td>300 ~ 100</td>
<td>33</td>
</tr>
<tr>
<td>Category</td>
<td>Value</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>100 ~ 30</td>
<td>57</td>
</tr>
<tr>
<td>20 ~ 10</td>
<td>30</td>
</tr>
<tr>
<td>10 ~ 3</td>
<td>4</td>
</tr>
<tr>
<td>NA</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
</tr>
</tbody>
</table>

(note) \$1=\$1, in 2000
Figure 1  The head office as a source of core competence

Company with strong competencies

Company with weak competencies

Operating units

Strong headquarters

Research laboratories

Operating units

Weak headquarters

Laboratories
Figure 2  Canon Company organization chart (as of 1 April, 2000)

Board of directors               Statutory Auditors                 (Head office)
President (CEO)
Management committee
4 Functional committees   Planning office   ______Communication system
   (management)        Corporate communications    Quality assurance
   _ new business, global,      General affairs  Patents
   _ environment)       Personnel        Production technology
   Accounting & Finance  R&D planning
   Operations

Camera division
   Image instruments division
   Printer division
   Bubble jet product division
   Chemical products division
   Optical products division

Core technology development
   Platform development
   Display development
   Internet business development
   Business development
   E business development

Canon sales company (domestic sales)
17 Domestic production subsidiaries
7 Overseas development centers
16 Overseas production subsidiaries
54 Overseas sales subsidiaries

1. Consolidated sales --- 2622 billion yen
2. Employment (group total) --- 81000
   Japan _ 47%   USA _ 14%
   Europe __ 16% Others __ 23%
3. Overseas sales _ 71%, Overseas production _ 30%
Figure 3  Sony organization chart (as of 2000)

Board of directors

President

Management Committee

Corporate strategy
R&D strategy
Planning
Planning & control
IS strategy
Finance
Legal
Personnel
Public relation
Communication
Production technology
Information system
Knowledge
Customer satisfaction
Procurement
Logistic
Employee service
Electronics device marketing
B & I marketing
International marketing

Technology

All technologies

Statutory auditors

Optoelectronics

Information Technology

(Head office)

Manufacturing Technologies

Advanced Materials

Aerospace

Weapons Technologies

Nuclear Technologies

Source: DRI/McGraw-Hill, Engineering Indicators 1996
Figure 1: Network Structure in U.S. and Japanese Biotechnology Industries

Table 2: Structure of the Japanese and U.S. Biotechnology Industry

<table>
<thead>
<tr>
<th>Year 1997</th>
<th>Japan</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of biotech ventures</td>
<td>60</td>
<td>1,274</td>
</tr>
<tr>
<td>Number of bio-related major corporations</td>
<td>260 81%</td>
<td>300 19%</td>
</tr>
</tbody>
</table>

Source: Mitsubishi Research Institute, as presented in JETRO Japanese Market Report (2000)
Figure 2. Startup and Closure Rates in Japan and US

Figure 3. Startup Rates Based on Common Definition, 1988 - 1994

Source: 2001 White Paper on Small and Medium Enterprises in Japan
Table 3: Japanese Policies to Facilitate the Creation of New Ventures, 1994-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Policy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>Establishment of New Business Promotion Office by MITI</td>
</tr>
<tr>
<td></td>
<td>Facilitating Creative Activities of SMEs</td>
</tr>
<tr>
<td>1997</td>
<td>Tax Treatment for Angel Investors</td>
</tr>
<tr>
<td>1998</td>
<td>Law facilitating creation of new businesses</td>
</tr>
<tr>
<td></td>
<td>Tax treatment for stock options</td>
</tr>
<tr>
<td>1999</td>
<td>Amendment of law facilitating creation of new businesses</td>
</tr>
<tr>
<td></td>
<td>Amendment of tax treatment for angel investors</td>
</tr>
<tr>
<td></td>
<td>Law to support management innovation for small and medium enterprises</td>
</tr>
<tr>
<td></td>
<td>Law to establish Japanese Small and Medium Enterprise Corporation (JASMEC)</td>
</tr>
<tr>
<td>2000</td>
<td>Amendment of Tax treatment for angel investors.</td>
</tr>
</tbody>
</table>

Sources: Ministry of Economy, Trade and Industry; Small and Medium Enterprise Agency; Venture Enterprise Center

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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</tr>
<tr>
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<td>1.3%</td>
<td>7</td>
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</tr>
<tr>
<td>Individuals</td>
<td>4</td>
<td>5.2%</td>
<td>16</td>
<td>7.4%</td>
</tr>
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<td>88</td>
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<tr>
<td>Individuals</td>
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<td>1</td>
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</tr>
<tr>
<td>Germany</td>
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</tr>
<tr>
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</tr>
<tr>
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<tr>
<td>Universities</td>
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</tr>
<tr>
<td>Government agencies</td>
<td>0</td>
<td>0.0%</td>
<td>3</td>
<td>21.4%</td>
</tr>
</tbody>
</table>
Individuals 0 0.0% 0 0.0% 1 3.8% 0 0.0%

Source: "International Analysis of Human DNA Sequence Patenting," report submitted to the National Science Foundation by Mogee Research and Analysis Associates (Reston, VA, April 10, 2001).


1995  Science and Technology Basic Law
       Office for the Promotion of Academia-Industry Cooperation established in MITI's Industrial Policy Bureau.
       Basic Science and Technology Promotion Plan approved by Japanese cabinet. Called for reform of system of cooperation between industry and academia.
1997  Amendment of Special Law for Education Personnel
1998  Law Promoting Technology Transfer from Universities
       (requires universities to have technology transfer plans approved by MITI and Ministry of Education — see Fujisue for details).
2000  Law to Strengthen Industrial Technical Ability
       National Personnel Authority Regulation 14-18, 14-19

Sources: Ministry of Economy, Trade and Industry
What is happening to Japan's Cross Shareholdings?

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Abstract: What is happening to Japan's Cross Shareholdings?

Japan's prolonged recession has turned many cross-shareholding relationships from benefit to burden. Since 1990, the level of cross-shareholdings of banks and corporations has been halved with the greatest decline occurring during the last five years.

Despite the decade-long decline in cross-shareholding, economic needs and legal requirements are forcing banks to continue to sell shares. The government will buy some of the shares and foreign firms are also buyers. While the large keiretsus will continue much of their relationship-style business, the changes in ownership of Japanese firms will alter many business practices.
INTRODUCTION

Japanese banks are at the center of the cross-shareholding relationships of keiretsus, corporate groups of banks, insurance companies, trading companies, and manufacturing and marketing firms that exchange equity shares in each other. Cross-shareholding, kabushiki mochiae, is a subset of what is known as antei kabunushi (quiescent stable shareholding) in which shares are held in multilateral or other stable arrangements among companies, usually based on group and/or other transactional relationships. Cross-shareholding often takes place within groups of interrelated firms that typically include a bank, the main bank, at its center. There have been extensive studies of cross-shareholding and the role of the main bank and its impact on corporate governance (Scher, 1997; Ito, 1993; and Okumura, 1990).

In the past, firms in need of capital have been able to meet those needs through other members of the keiretsu, starting with the main bank. Today as banks continue to struggle with non-performing loans, they are increasingly unable or unwilling to continue to own low-valued shares of their keiretsu affiliates. The banks themselves are in need of capital to meet international capital adequacy standards. While those standards allow banks to include a part of the market value of the shares they own as their capital, when the value of those shares declines, so does the adequacy of the bank's capital. As a result of all-time low stock prices in Japan, the banks are forced to sell some company shares to lessen their exposure to declining stock prices. However, the selling of cross-shareholdings puts further downward pressure on the value of stock, which then leads to the need for banks to sell even more shares to raise needed capital.

What is the Japanese government doing to assist the firms and banks in need of capital? Will banks and other firms continue to sell shares of their keiretsu members? Which firms are selling such stock and who is buying it? What measures are being taken to stop the downward pressure on stocks that comes from too many sellers and too few buyers? This paper examines the change that is occurring regarding stable and cross-shareholding groups due to the sell-off of shares by the top Japanese banks and commercial firms. While there is an overall decline in cross-shareholding, the changes at banks and at commercial firms differ. The government's recent legal and regulatory changes affecting cross-shareholding are also reviewed. Finally, the paper notes how changes in cross-shareholding are affecting business practices at Japanese firms.

HISTORY AND STRUCTURE OF JAPANESE KEIRETSUS

The Keiretsu

Cross-shareholding is the primary means to tie firms together in the keiretsu system. Keiretsu can be defined as a network of enterprises in a broad sense and there are myriad of keiretsu in Japan. Aoki and Sheard (1992) and Morck and Nakamura (1999) suggest that keiretsu arose primarily as an anti-takeover
Morck and Nakamura (2000) include the following translation from a guidebook for taking firms public:

Large corporations, foreign investors and speculative investment groups holding large amounts of capital can acquire a majority of shares in your newly listed firm, resulting in your losing management control. To avoid such a takeover attempt, it is essential that you take the precautionary measure of locating stable shareholders [such as banks and related companies] (Kato and Matsuno (1991, p. 51).

Although the existence of several different types of keiretsu groups is pointed out in the literature, this research mainly focuses on banking sector dominated keiretsu. The keiretsu system is rooted in Japan's peculiar culture, history, and business system that drive Japanese business strategy in any industry (Aggarwal, 1994 and Lai, 1999). A keiretsu firm usually owns 5% or less of any member firm, but typically it has a stake of that size in every firm in the group. Thus, between 40% and 90% of a keiretsu firm usually is owned by other group members. Keiretsus once owned about 70% of the shares of the publicly traded Japanese corporations (Gup, 1998).

History of the Main Keiretsus

Historically, there were six large keiretsu groups including Mitsui, Mitsubishi, Sumitomo, Fuyo, Sanwa, and Dai-Ichi Kangyo Bank (DKB). Each group had one of the top six city banks at or near their center. Three of the six, Mitsui, Mitsubishi, and Sumitomo groups, were the direct descendants of the pre-war zaibatsu of the same name. Several trace their origin to businesses first found in the sixteenth or seventeenth century.

During the 1950s the Sumitomo, Mitsui, and Mitsubishi groups had regrouped after World War II and re-established their keiretsu. The remaining three keiretsu emerged in the 1950s and 1960s. The Ministry of International Trade and Industry (MITI), the Ministry of Finance (MOF), and the Bank of Japan (BOJ) nurtured these keiretsu groups, steered them, and protected them from outside competition by import restrictions (Miyashita & Russell, 1994). In 1950s and 1960s, MITI used keiretsu banks to supply public funds to Japan's heavy industries that could support the recovery and growth of whole domestic economy that was once totally ruined by World War II.

By the 1970s, the six large keiretsu groups had already built up Japan's heavy industries to internationally competitive levels. When the 1980s bubble economy collapsed, the value of bank capital declined precipitously. Loans made based on growth estimates fell into the non-performing loan (NPL) category. As the NPLs at banks increased, they tightened making new or renewal loans causing problems to corporations heavily dependent on their main bank. Subsequently, the corporations, in need of cash, began to sell off some of their stock holdings, thus beginning the unraveling of the cross-shareholding relationships.

Today's Major Bank-Centered Keiretsus
The Mitsui, Sakura, and Sumitomo banks are now part of the *Sumitomo Mitsui* group while Mitsubishi Bank is the bank at the center of the *Mitsubishi Tokyo Financial* group. These groups had a trading company or original core firm at the group’s center. The remaining three groups, Fuyo or Fuji, Dai-Ichi-Kangyo, and Sanwa, were formed with a bank at the center of the group. Today, both the Fuji Bank and Dai-Ichi-Kangyo Bank are a part of the *Mizuho* group while Sanwa is in the *United Financial of Japan* (UFJ) Group.

Banks play a dominant role in Japanese financial markets. At the end of 2000, they accounted for approximately 60% of total fund-raising and total loans (Bank of Japan, 2001). Banks and insurance companies are the larger investors in the Japanese stock markets. Banks hold approximately 40 trillion yen in equities, primarily to maintain long term relationships (Shiozaki, 2002). In a *keiretsu* group, financial institutions are not only large shareholders, but also large creditors. They act as the lender for non-financial companies that belong to a *keiretsu*, ensuring that funds are appropriately allocated to group companies regardless of temporary, seasonal, or cyclical fluctuations in funds flows.

In 1998, the firms belonging to *keiretsu* groups typically owned from 12% to 26% of outstanding shares of other firms in their *keiretsu* group, and *keiretsu* financial institutions provided from 15% to 20% of bank loans of member firms (Kigyo Keiretsu Soran, 1999). Currently, the four largest bank-centered groups extend 42% of all credit in Japan and hold about 47% of the financial system’s bad loans (Dvorak, November 26, 2002). Financial institutions also conduct monitoring activities and monetary and managerial assistance for firms in financial distress. In other words, most of the financial needs of group members could be fulfilled internally.

Today, four groups from the bank-centered *keiretsu* dominate Japanese financial institutions. These groups have emerged from a series of mergers and alliances that have occurred in the Japanese financial services industry over last several years. As Table 1 depicts, these four groups include Mizuho Holdings, Mitsubishi Tokyo Financial Group, United Financial Group-known as UFJ, and Sumitomo Mitsui Banking Corporation.
Table 1. Recent Tie-ups and Mergers in the Japanese Financial Services Industry

1) Nippon Life, IBM Japan Ltd. and Hitachi Ltd.  
   March 1999  
   To develop comprehensive system for managing two different types of corporate pension plans.

2) Industrial Bank of Japan and Dai-Ichi Mutual Life Insurance Co.  
   April 1999  
   To form a marketing alliance to promote each other’s main financial products.

3) Dai-ichi Kangyo Bank, Fuji Bank, and Industrial Bank of Japan: Mizuho Holdings, Inc.  
   August 1999  
   To ensure the large size of total assets that enables them to provide broader services. Merger closed in 2002. The total assets of $1.5 trillion makes it the world largest financial group.

4) Sumitomo Bank and Sakura Bank: Sumitomo Mitsui Banking Co, Ltd.  
   October 1999  
   To ensure the large size of total assets that enables them to provide broader services. Total assets are $968 billion.

5) Tokai Bank, Asahi Bank, and Sanwa Bank: UFJ Holdings  
   March 2000  
   To ensure the large size of total assets that enables them to provide broader services. Merger enables them to make the most of each bank’s strong regional retail banking. Total assets are $1.0 trillion.

6) Shinsei Bank, the former Long-Term Credit Bank of Japan, owned by US-based Ripplewood Hldgs.  
   March 2000  
   The government nationalized the LTCB in 1998 and sold it to Ripplewood Holdings in 2000.

7) Bank of Tokyo-Mitsubishi and Mitsubishi Trust & Banking: Mitsubishi-Tokyo Financial Group  
   April 2000  
   To provide a wide variety of financial products and to ensure the large size of total assets does not fall behind other world megabanks. The total assets are $834 billion.

8) Softbank acquires Nippon Credit Bank. It is now known as Aozora Bank  
   July 2000  
   The Softbank investor group owns 80% of new shares with other investors owning 20%. The government put 240 billion yen into the bank in exchange for preferred shares. The majority of shares are currently for sale.
Daiwa Bank Holdings, Asahi Bank, and several regional banks merge.

THE DECLINE OF CROSS-SHAREHOLDING IN JAPAN

An Overall Decline

Data complied by NLI Research Institute indicates that at the beginning of the 1990s, a little over eighteen percent (18.2%) by value of all corporate and bank equity was owned by cross-shareholding firms. A decade or so later, the cross-shareholdings represented less than ten percent (8.9%) or only half the level of the previous decade (NLI Research Institute, 1999, 2001). The NLI study illustrates the declining influence of both stable shareholding and cross-shareholding in Japan (See Table 2). From a high of almost 46 per cent in 1987, stable shareholdings declined to barely over 30 per cent by 2001. The 2001 year was the 11th straight year in which cross-shareholding declined. The most significant decline in cross-shareholding has occurred during the last five years. Table 2 depicts the change in the cross-shareholding ratio since 1987.

Table 2. Temporal Change in Stable Shareholding and Cross-Shareholding

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Stable Shareholding</th>
<th>Change Vs Prior Period</th>
<th>Cross-Shareholding</th>
<th>Change Vs Prior Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>45.77%</td>
<td></td>
<td>18.39%</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>44.86%</td>
<td>-0.91%</td>
<td>16.84%</td>
<td>-1.55%</td>
</tr>
<tr>
<td>1991</td>
<td>45.58%</td>
<td>0.72%</td>
<td>17.81%</td>
<td>0.97%</td>
</tr>
<tr>
<td>1993</td>
<td>45.22%</td>
<td>-0.36%</td>
<td>17.51%</td>
<td>-0.30%</td>
</tr>
<tr>
<td>1995</td>
<td>43.42%</td>
<td>-1.80%</td>
<td>16.83%</td>
<td>-0.68%</td>
</tr>
<tr>
<td>1997</td>
<td>40.46%</td>
<td>-2.96%</td>
<td>15.05%</td>
<td>-1.78%</td>
</tr>
<tr>
<td>1999</td>
<td>37.87%</td>
<td>-2.59%</td>
<td>11.06%</td>
<td>-3.99%</td>
</tr>
<tr>
<td>2001</td>
<td>30.20%</td>
<td>-7.67%</td>
<td>8.90%</td>
<td>-2.16%</td>
</tr>
</tbody>
</table>

Source: Survey on Cross-Shareholding in 2001 conducted by NLI Research Institute in 2002.
The bank-firm cross-shareholdings consists of four main subgroups: banks owning banks, firms owning banks, firms owning firms, and banks owning firms. The most dramatic change has occurred with regard to the ownership of bank shares. First, consider the amount of cross-shareholding to the total number of all shareholdings. While the level of bank--bank cross-shareholdings in 1990 was only 0.4 per cent, a decade later it has almost disappeared (0.2 in 2000) (NLI Research Institute, 1999, 2001). As banks merged and reduced their ownership of failed or failing banks, the level of cross-shareholdings among banks completely disappeared.

Firms also sold a significant amount of their bank shares. From a 5.9 percent level of the total of all shareholdings in 1990, the cross-shareholdings of banks by firms declined to a 1.8 percent in 2000 (NLI Research Institute, 1999, 2001). Corporations probably sold bank shares for several reasons. As all the major Japanese banks have significant non-performing loans on their books, the value of bank stocks has diminished and many companies that once held bank stock are now no longer willing to do so. The hesitancy of banks to lend any money due to their own capital needs led companies with limited needs for bank financing to decide it was not worthwhile to tie up their cash with bank stock of questionable value. Finally, corporate investors have begun to sell their bank shares because they fear that the succession of government-led plans for cleaning up the industry will either be unsuccessful or will be tougher than has been anticipated (Dvorak, November 20, 2002).

A clearer picture emerges when the total cross-shareholdings is divided into three groups cross-shareholding of firms by banks, of banks by firms, and of firms by firms (any consideration of bank-bank ownership is omitted here). As of the end of the 2001 fiscal year, the firms cross-shareholdings of banks accounted for 15 % of all cross-shareholdings while banks cross-shareholdings of companies accounted for 51 % of all cross-shareholdings. Firm-firm cross-shareholdings accounts for the balance of 24 %. In other words, shareholdings of bank shares represents only 15 % of overall cross-shareholdings whereas banks holdings of companies constitutes over half of all cross-shareholdings.

Another figure provided by the fiscal 2001 NLI Survey shows that banks and other financial institutions are more dependent on cross-shareholdings by business firms as compared to the firms dependency on the banks. Only 6 % of all business firms shares are cross-holdings of banks, but 18 % of the shares of financial institutions are cross-holdings of business firms (NLI Research Institute, 2002). These figures show that banks are still quite reliant on their cross-shareholders.

*Decline in Cross-Ownership of Corporations*

The level of firm shares owned by cross-shareholders also clearly declined from 1990 to 2000. Bank holdings in 1990 were 7.2 percent compared to 5.0 percent in 2000. Mergers probably caused banks to sell some of their firm cross-shareholdings. If each of the merging banks owned shares in a client firm,
the bank would have to sell off enough shares to bring its shareholding down to a five percent level or below. While the main bank generally owns close to 5% of client firms, secondary or tertiary banks customarily reduce their levels to 4% or 3% or less.

Japan’s 42 life insurance companies are also major investors in Japanese firms both banks and corporations. Their ownership of shares is included in the figures for ownership of and by financial institutions. At the end of March 2002, they owned over $190 billion, about 7.5% of all listed Japanese stocks by value (Dvorak, December 17, 2002). As for cross-shareholdings with banks, insurers own about 5.4 trillion yen in bank equities while banks own about 1.8 trillion in the equity of insurers. These figures suggest that if the viability of banks is threatened, insurance firms will also be in danger.

The decline in cross-shareholdings by banks is affecting almost all of their holdings. In fiscal year 2001, banks sold off shares in approximately 60% of the companies they owned. By comparison, in 1996 that figure was less than 10% and in 1988 it was less than 5%. During the last five years, almost all bank-owned firms (80%) have had some of their shares sold off (NLI Institute, 2002). From 1999-2002, banks are estimated to have sold over 10 trillion yen of their cross-shareholdings (Daiwa Institute, January 2001). While the banks usually are still holding some shares in most of those companies, they no longer represent the stable long-term shareholder they once did.

Firms’ ownership of cross-holdings in other firms changed from 4.8 percent in 1990 to 2.0 percent in 2000 (NLI Research Institute, 1999, 2001). Several forces are working together to decrease the level of cross-shareholdings among firms in Japan. Economic factors are probably the cause for most sales. There has been a weakening of the relationships among companies due to increased competition, foreign pressure, and globalization. Competition in a dismal economic environment has led many firms to cut relationships in favor of lower-cost providers and higher-profit customers.

As the movement of many manufacturing facilities to other parts of Asia increases, transactional suppliers are being replaced with lower cost global providers. The cross-shareholdings locked firms into now outdated business alliances and impeded attempts to form more foresighted ones. In the last decade, Japan’s prolonged recession has turned these cross-shareholding relationships from benefit to burden so holding on to cross-shareholdings can not be justified.

Cross-Shareholding in the Major Keiretsus compared to overall Cross-Shareholding

For the six major keiretsus, the story is somewhat different. During the early nineteen nineties, the level of cross-shareholdings in these groups declined only slightly, from 26.2% in 1990 to 24.9% in 1995. However, by the end of fiscal 2000, that percentage had sharply declined to 16.71% (NLI Research Institute, 2001). Nevertheless, the overall cross-shareholding ratio of the six corporate groups was over fifty percent higher than the overall market ratio (10.10%).
The higher ratio for the top six groups continued in the most recent year. In NLI’s 2001 fiscal year study, the ratio of cross-shareholding among the six major corporate groups remained much higher (14.1%) than for either the overall market average (8.9%) or for companies not in corporate groups (6.8%). (NLI Research Institute, 2002). Thus, cross-shareholding in the six large keiretsu groups has not unwound to the same extent as in other companies.

Cross-Shareholding in the major Keiretsus compared to each other

There are also differences in the decline in cross-shareholding among the large keiretsus. The Fair Trade Commission’s 2001 report notes a significant difference between the zaibatsu-origin keiretsus and the later bank-center groups. The Mitsui, Mitsubishi, and Sumitomo zaibatsu-origin groups still own shares of more than 75% of their group companies. In contrast, the other bank-centered groups now own shares of only 33% of their group companies (Fair Trade Commission, 2001). These findings suggest that in reducing cross-shareholdings, members of these later groups have been selling shares of group as well as non-group members, while the zaibatsu-origin groups are holding onto the shares of their group firms. However, if we look more specifically at the banks that are at the center of the three bank-centered groups, a different story emerges. Those banks continue to own shares of almost all (92%) of the firms in their group (Fair Trade Commission, 2001). Thus, the major sell-off of shares of group members in the six keiretsus has been by firms, not banks, and has occurred predominantly in the firms of the bank-centered keiretsus. This data suggests that the members of the major keiretsus still want to hold onto the shares and relationships developed with other group members.

The Fair Trade data supports this assumption. When asked about priorities when unwinding cross-shareholdings, the responses focused on the shares of non-group firms (64%) and non-group financial institutions (46%) instead of on group firms (14%) or group financial institutions (18%). However, from 1996 to 2000, the sale of cross-shareholdings has increased across the board. While the Mitsubishi and Sumitomo keiretsus continue to have the largest share of cross-shareholdings, (together accounting for 50% of the holdings of the six groups) they too have sold cross-shareholdings during the last decade. For example, Mitsubishi group members held 17.7% of the shares of their group members in 1990; by 2000, that number had declined to 9.15%. Fuji’s cross-ownership of group members during the same period declined from 11.8% in 1990 to 4.31% in 2000 (NLI Research Institute, 1999, 2001).

Although there are significant sales of cross-shareholdings, purchases increasing the level of cross-shareholdings do occur. This author’s examination of the major shareholders of fifty large firms (both banks and corporations) during recent years revealed several instances of increases in the holdings of major shareholders. For example, Dai-Ichi Kangyo increased its ownership of the large Itochu firm.
from 3.7% in 1997 to 4.8% in 2002. Mitsubishi Trust also increased its ownership of Honda from 4.7% to 6.6% during the same period. (Japan Company Handbook, 1997-2002).

Nevertheless, the Japan Company Handbook data revealed many more instances of a decrease in the share held by these cross-shareholders than were the instances of increases. By 2002, Fuji Bank and Yasuda Trust Bank together owned only about half as much stock in the Marubeni trading company as they had owned in 1997. Similarly the share of the stock of Mitsubishi and Sumitomo corporations held by the Bank of Tokyo Mitsubishi declined by over 35% during the 1997 to 2002 period. Both the Japanese government’s Service Bank and foreign firms like State Street Bank and Chase’s London Bank increased their shareholdings in a number of the surveyed firms.

CONSEQUENCES OF DECLINE IN CROSS-SHAREHOLDING

Before more closely examining the consequences of the decline in cross-shareholding, it is important to note that for a number of firms cross-shareholding remains a very important concern. Scher’s 2001 study of this topic concluded: Thus far, there is little evidence of devolution in mutual shareholding arrangements on the part of banks, especially by regional banks whose clientele have very traditional notions of business relationships (emphasis added; Scher, 2001). There are still more than fifty regional banks in Japan and most are very reliant upon a few large regional firms.

Financial Institutions Remain Dominant

Despite the decline in cross-shareholding in Japan, financial institutions and corporations are still dominant shareholders. They continue to account for a far heavier weight in the ownership of common stock in Japan than is true in the United States (Prowse, 1992). In 2001, corporate shareowners in Japan owned 60.2% of the outstanding stocks of all firms and financial institutions owned 36.2% among them. According to the Daiwa Institute of Research, at the end of 1999, banks owned more than 10% of the shares of Denso, Hitachi, Honda, Nintendo, Ricoh, Sharp, and Toyota as well as a number of other firms (Daiwa Institute of Research, June 2001). The shares not owned by financial institutions are owned mostly by business and securities corporations (24%), individuals (25.9%), and foreigners (13.7%) (See Table 3).

Institutions, Individuals and Foreigners Increase Ownership

One of the major changes brought about by the decline in cross-shareholding is the increase in the number of shares owned by foreigners both individuals and corporations--and by individuals. Together they now own almost 40% (39.6%) of all shares in Japanese publicly traded firms. In 1990, foreigners and institutional investors each owned less than 5% of all holdings with individuals owning about 23%. This change likely will have major implications for Japanese firms. These owners do not benefit from transactional relationships as do the Japanese banks and corporations who are the dominant cross-
shareholders. As noted below, their reason for stock ownership differs significantly from those of the traditional cross-shareholder.

**Table 3. Number of Unit Shares by Type of Shareholder in 2001**

<table>
<thead>
<tr>
<th>Type of Shareholder</th>
<th>Units</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Government &amp; Local Government</td>
<td>2,514,943</td>
<td>0.4</td>
</tr>
<tr>
<td>(2) Financial Institutions</td>
<td>253,351,795</td>
<td>36.2</td>
</tr>
<tr>
<td>a. LTCB, City &amp; Regional Banks</td>
<td>66,070,583</td>
<td>09.4</td>
</tr>
<tr>
<td>b. Trust Banks</td>
<td>116,236,611</td>
<td>16.6</td>
</tr>
<tr>
<td>c. Life Insurance Cos.</td>
<td>47,186,878</td>
<td>6.7</td>
</tr>
<tr>
<td>d. Non-life Insurance Cos.</td>
<td>18,744,474</td>
<td>2.7</td>
</tr>
<tr>
<td>e. Other Financial Institutions</td>
<td>5,113,249</td>
<td>0.7</td>
</tr>
<tr>
<td>(3) Business Corporations</td>
<td>162,294,965</td>
<td>23.2</td>
</tr>
<tr>
<td>(4) Securities Companies</td>
<td>5,349,542</td>
<td>0.8</td>
</tr>
<tr>
<td>(5) Individuals</td>
<td>181,264,771</td>
<td>25.9</td>
</tr>
<tr>
<td>(6) Foreigners</td>
<td>95,873,437</td>
<td>13.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>700649453</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: 2001 Share Ownership Survey conducted by The National Conference of Stock Exchange

Foreigner: non-Japanese corporations and individuals.

The number of own shares held by a listed company is included in a type to which such company belongs. Total number of own shares held by listed companies in 2001 survey is 2,018,839 units, accounting for 0.29% of total.

The sale of cross-shareholdings has led to an increase in the share of stock held by institutional investors, individuals, and foreigners. The share of corporate stock in the portfolios of pension funds, investment trusts (somewhat akin to mutual funds), life and casualty insurance companies, and non-Japanese investors reached 30% at the end of the 2000 fiscal year. The role of the institutional investor has increased significantly in the last two decades and the trend appears to be continuing (Nomura Research Institute, 2001).

Unlike the stable-shareholder who could earn profit through the cooperative relationship with other group members if not by a rise in value of stock, the institutional and individual investors own stock in order to profit from the increase in the stock's share price and in dividends flowing to it. The institutional investor
thus closely supervises its investments so as to secure the growth it seeks. However, not all stock is attractive for institutional or individual owners.

Most large institutional investors in Japan want only companies with a high market capitalization (around 100 billion yen or $770 million). Those firms are also the ones most attractive to individual investors and to most of the foreign investors. Thus, many companies of all sizes that are in need of capital, but unable to turn to banks and other financial firms, also find they are not considered as suitable investments by the large institutions (Whitten, 2002).

Foreign investors are now major holders of many Japanese firms. The amount of foreign investment increased dramatically in 1999 and 2000. Approximately $45 billion—an amount equal to the cumulative investment from 1950-1997—from auto companies, suppliers, financial institutions, and telecomms poured into Japan during that period (Bremmer, 2001). Although Nissan’s ownership (61.2%) by Renault is the most publicized of the foreign takeovers, there are many instances of rather dramatic increases in foreign ownership of Japanese firms.

G.E. Capital has bought numerous insurance and consumer-credit firms and Ripplewood Holdings runs the Shinsei Bank. As of 2002, Canon, Hitachi, Honda, Nintendo, Rohm, and Sony each have foreigners owning at least one quarter (25%) of their total shares. An acquirer generally needs to have at least a 34% stake to have legal control of a Japanese firm (Doebele, 2002). Firms like Tokyo Electric, Takeda Chemical, and Nomura Securities also have foreigners as major shareholders.

Foreign investors, who are most likely mutual funds, pension funds, and some corporations, look for investment returns or acquisition opportunities rather than long-term transactional benefits from their holdings. From 1996 to 2000, the proportion of the Japanese pharmaceutical market held by foreign companies increased from around 20% to almost 35%. The growth is likely to continue too as top firms like Merck, Pfizer, Aventis, Eli Lilly and AstraZeneca have made clear their intentions to target Japan for future growth (IMSHealth.com).

JAPANESE LAWS AFFECTING BANK CROSS-SHAREHOLDINGS

The Big Bang Reforms

Japan has made monumental changes in its financial systems over the last six years. It was in November of 1996 when the government announced the implementation of a major reform of its financial system, the so-called Big Bang, which it entitled Structural Reform of the Japanese Financial Market — Toward the Revival of the Tokyo Market by the Year 2001 —. The goal of the Big Bang reform was to evolve Tokyo’s financial market into an efficient international market comparable to the New York and London markets, by the Year 2001. While that goal has not been realized, the primary objectives of the reform have been mostly met.
The three objectives of the Big Bang reform include making Japanese financial markets free, fair, and global. A free market is one where the market mechanism prevails. To make a market free, entry, products, and prices were liberalized. A fair market is one that is transparent and credible. To make a market fair, the rules need to be transparent and the interests of investors protected. A global market, one accepted as advanced throughout the world, needs a legal system, accounting system, and supervisory regime consistent with the global demands.

By any measure, the Big Bang was successful in deregulating Japanese financial markets. Principal measures that have been taken include: deregulation of foreign exchange rules, reform of the securities markets, insurance sector deregulation, removal of the bank holding company ban, legalizing new types of financial products such as asset-backed securities, allowing Japanese pension funds greater investment freedom, and enhancing the disclosure system. As a result of that deregulation and the revision of important legal and accounting standards, the Japanese financial market is now accepted as free, fair and global.

Critics note, however that it is the practices, not the regulatory environment, which must change. Lincoln (1998) argues that the Big Bang reform merely changes the framework of financial industry. He suggests that unless Japanese financial institutions stop relying on personal relationships and keiretsu affiliations to decide on loan requests and stock purchases, the health of the financial services industry will continue to be in question.

**Accounting Reforms**

In July, 2001, a Financial Accounting Standards Foundation (FASF) was established to develop new accounting standards to bring them in line with international standards. In 2005 when the new standards are fully operational, companies and banks will have to revalue their assets, generally at lower levels. Banks will have to value capital at market prices instead of using the old book value or purchase price method.

In addition, companies will be required to write down the value of securities they own other than for trading purposes if their value has declined by more than 50%. The required write-downs have hastened the unwinding of cross-shareholdings. With the market price of most stock at all-time lows, the value of the banks’ stockholdings is worth substantially less than it was in recent years.

Not all standards have been changed. Under Japanese GAAP, land assets are carried at cost. Thus, some companies that have held land since the post-war era have been able to use the proceeds from the sale of land to mask other business losses. Companies that bought land at the high bubble-period prices have assets that today are worth far less than is shown on the books.

**Reforms in Banking Laws and Regulations**
The major reform affecting banks is one that directly affects their shareholdings. Banks are now required to reduce their total shareholdings by September 2004 to a level that does not exceed the bank shareholders’ total equity. The law, which went into effect at the beginning of 2002, seeks to bring banks into compliance with the Bank for International Settlements (BIS) Tier 1 capital requirements. It is also an attempt to limit the market risk of bank shareholdings and ensure the soundness of the banks.

As the total shareholdings of major banks at the end of fiscal 2000 was 160% of total equity, banks will have to carefully select which shares they want to hold while continuing to dispose of many of their holdings. At the end of 2000, the amount of stock held by Japanese banks was listed on their books at a value of about Y43.5 trillion (Foreign Press Center, 2002). Major banks will need to dispose of most of their excess holdings during the 2003 fiscal year. Estimates are that banks have to sell between 7 and 10 trillion yen of their shareholdings to reduce them to a point equal to their core equity capital by the end of September 2004. That represents approximately 30% of all bank-owned shares.

Two other measures were designed by the government to bring some stability to a market that will continue to see a sell-off of shares by financial institutions. First, exchange-traded funds (EFT) were inaugurated in July 2001. Instead of selling individual shares in the market, financial firms could bundle shares of different firms together into a fund and sell the fund. By bundling shares into funds, financial institutions don’t have to worry about market conditions or liquidity problems for that might affect specific shares. The funds can be sold gradually over time and the EFTs are often more attractive to investors than are many of the individual stocks.

In October 2001, the Commercial Code was revised to allow firms greater freedom in repurchasing their stock. If the stock is repurchased from a financial institution and held as treasury stock, the net effect is that the purchases will contribute to further unwinding of cross-shareholdings. Although over 1,000 listed companies had established repurchase programs for their common stock by August 2002, only about one-third of the authorized Y9 trillion had been implemented by the end of September 2002 (NLI Research Institute, 2002).

Another change directly impacting banks relates to the affect of the shareholdings on bank capital. The recently created Financial Supervision Agency has proposed that as of 2006, banks will not be able to count their cross-shareholdings as tier 1 capital in seeking to meet international capital standards. Banks will find too that legal changes have made it easier to offer a variety of related financial services. Two laws enacted in March 1998 legalized the establishment of financial holding companies. Those laws, similar to a recent U.S. law, have spurred the consolidation in the financial industry for banks, securities firms and affiliated real estate, leasing, and other business firms. As a result of the passage of the Gramm-Leach-Billey Act in 2000, most banks in the U.S now operate as financial holding
companies. Sumitomo Mitsui moved into a holding company structure at the end of 2002 and the Mizuho group, which already uses a holding company, formed a new holding company in March 2003 (CNN.com, 2002).

The Emergency Economic Package

There are several parts to the April 2001 emergency economic package the government designed to revitalize the financial and corporate sectors and strengthen the economy. The first part of the package requires banks to finish writing off the balance of their bad loans by March 2003 for existing loans and by March 2004 for new loans. The government has asked banks to change the way they calculate their bad debt by the fiscal year ending March 31, 2002. Instead of using past repayment trends, they are to assess the likelihood of repayment, based on the borrowers' cash flow. The problem with this proposal is that the banks have many loans that are not technically defined as bad loans. Some estimates are that the real figures are three times as high as the 52.4 trillion yen that represents the official estimates (BizAsai.com, 2002). Will they be written off as well?

Realizing that banks need to sell off massive amounts of shares to meet the 2004 overall shareholdings limits, the government has sought to provide a market for the bank-owned shares. The BOJ plans to buy up 2 trillion yen worth of banks' shareholdings by September 2004. Some purchases have already been made. The Bank of Japan began buying shares held by banks at the end of November 2002 when it purchased several billion yen of stock from Mitsui and a group of unidentified banks. Critics suggest that since banks likely will have to sell 5 times that amount, the current infusion by the BOJ will be only the start. If the market won't absorb such sales, the BOJ will buy the rest through the new Bank Shareholdings Purchase Corporation. According to the plan, banks will contribute funds and personnel to run the corporation which will purchase shares at market price that are put up for sale by the banks. Any losses or profits incurred by the corporation when it is dissolved (a period not to exceed ten years) will belong to the bank. The banks will be charged an 8% fee for their sales to the corporation, which was established on January 30, 2002.

Will the banks use the corporation rather than the market or sales to keiretsu partners for sales? Probably some will, because the market for the stock may not exist. All except Sumitomo Trust, which has already met the government's shareholding requirement, have signed up for the stock purchase program. The availability of the EFT and the repurchasing programs likely will make this option less attractive. The Banks shareholdings Purchase Corporation gives bank another vehicle to dispose of their stock. Although its effectiveness is in question, it does signal the willingness of the government to continue to step in and bail out the banks rather than let the market force some banks to close.
A third change affecting bank shareholdings concerns the Anti-Monopoly limitation that restricts banks from owning more than 5% of the shares of a firm, regardless of whether it is a bank or commercial firm. The new law, effective at the beginning of 2002, allows bank holding companies to own up to 15% of a client firm. This measure could stimulate some purchase of shares if a bank feels the transactional or investment returns merit a holding greater than 5% in selected companies. Due to the large number of firms in a keiretsu, and banks’ desire to own some shares of most member firms, banks are unlikely to increase holdings of any one firm except for closely related security or insurance institutions.

A related law sought to limit governmental guarantees of bank deposits. It replaced the full deposit insurance guarantee for bank deposits with a maximum amount of 10 million yen in the event of bank failure. Although the proposal was scheduled to be effective in March 2003, the full governmental guarantee is likely to be extended due to political pressure from depositors. A limit would be more useful as it might encourage depositors to shift deposits from weak banks to stronger ones, but the politicians are hesitant to counter the protests from depositor-constituents.

CONCLUSION

While many Japanese firms still depend on financial institutions for capital, the continuing decline in cross-shareholding is changing the relationship between firms and their financial institutions. The accounting changes have forced firms to evaluate their holdings under current values, thus increasing stockholder risk. Financial institutions, which are being pressed to improve profitability, no longer can hold stock merely for possible transactional benefits.

U.S. and other foreign-based financial institutions and commercial firms have entered the Japanese market and are aggressively pursuing business opportunities with selected firms. The increased foreign ownership of Japanese firms has several consequences. First, it increases the opportunity to raise capital from and do business with current or future foreign investors. Second, the foreign firms are becoming more aggressive in targeting firms through hostile mergers and acquisitions. There is also increasing pressure on firms to change their governance structure. Sony started making such changes almost a decade ago, but changes in the holding company law and pressure from institutional shareholders are forcing many companies to embark on governance reforms (Nomura Research Institute, 2001).

Second, the government remains actively committed to ensuring that the banks have adequate capital to keep afloat and to lend to their client firms. It has made numerous reforms to provide greater flexibility for banks seeking to compete globally. The government not only continues to offer nearly interest-free loans, but it also has agreed to buy some of the banks’ shareholdings. If the banks do sell shares to the government, the government will end up with a portfolio of losers, but the banks will be in a stronger position and more willing to provide needed capital to client firms.
Third, despite the ongoing sale of cross-shareholdings, the stronger keiretsu alliances remain actively involved in providing financial assistance to weaker firms in need of capital. For example, Toyota, clearly one of Japan’s strongest firms, recently agreed to provide $83 million to Tomen Corporation, a money-losing trading house. This represents the second big bailout for Tomen since 2000 (Dawson, 2003). Toyota’s bailout of Tomen also helps the UFJ bank as it is Tomen’s main banker. While the bailout probably will not help Toyota, its investors so far have not objected. Of course, Toyota and other well-capitalized firm will be asked to provide needed capital to rescue other failing firms. The history of business relationships in Japan suggests that more often than not it will do so.

Such experiences likely are repeated in the major keiretsus. While cross-shareholding is unwinding in Japan, it still exists not only for transactional relations, but as a means to provide capital to firms in need. The Japanese government, of course encourages such rescues so that (1) government funds will be saved for other bailouts an (2) the Japanese firms will not go under or be purchased by foreign interests that might shut down many of the money-losing operations.

Thus, as the lawyers say, the jury is still out. On the one hand, there is evidence of a change in relationship business in Japan. Foreigners and institutional investors are holding a greater portion of stock than ever. Banks and commercial firms are being pressured to change their organizational structure and improve their profitability and that pressure is likely to increase. The competitive economic conditions, change in shareholder composition and the greater legal flexibility to change is bringing about noticeable changes in business practices.

While some of the weaker firms and banks will fail, both the government and the leading financial and non-financial firms will continue to provide capital to firms that in the U.S. likely would be allowed to fail. The relationships that have existed for decades will continue to be important for many major transactions, Some of the Japanese firms that are attracting additional capital from foreign lenders will use the capital to assist weaker keiretsu members. Japanese firms in need of capital will continue to rely on their stronger friends, foreign investors, and their government. Despite the rising Japanese government deficit and the ongoing reduction in cross-shareholding, relationship practices will continue to help many firms to muddle through while waiting for better times.

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HRM

Whatever happened to ’the Japanese Model ?

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Whatever happened to ’the Japanese Model’?

Abstract

Japanese institutions no longer enjoy their awesome reputation of the 1980s. Then, Japanese institutions were closely studied for lessons and models to mimic in advanced and less developed economies. In Britain, Japanization became a buzzword for the processes of trying to develop Japanese-style institutions in the UK. Now, the poor performance of Japan’s domestic economy through the 1990s and the vulnerability of Japanese institutions at home and overseas to adverse economic conditions have brought much criticism and calls for reform. Does it mean the end of ’the Japanese model’ of economic organisation and the futility of efforts to learn from Japan? Will Japanese organisations adopt the ’Anglo-Saxon model’?

In answering these questions, this paper will: (1) demonstrate that there was not one but several Japanese models, and that there were a variety of explanations for the emergence of a distinctive Japanese model of organisation from structural to cultural; (2) demonstrate that this variety reflected the variety of purposes and interests of the creators of the model from Japanese and foreign researchers, to journalists, industrialists and government officials; (3) demonstrate how champions of the model overseas reflected differing contexts in host countries; (4) illustrate how accounts of the Japanese model are being revised in the light of current changes; (5) argue that announcements of the ’death of the Japanese distinctiveness’ are premature, that current reforms are unlikely to lead to an adoption of the ’Anglo-Saxon model’ in Japan, and that the variety of Japanese organisational practices are more likely to be seen in terms of a variety of Japanese models rather than a singular model of Japanese organisation.
Whatever happened to ’the Japanese Model’?

1. Introduction: The Japanese Model from Representation to Exemplar

The concept of the Japanese model of organisation achieved textbook status with its entry into English language sociology textbooks in the 1990s (Giddens 1997: 294-5; Macionis and Plummer 1997: 140-1). This was some forty years after social researchers began identifying distinctive forms of organisation in Japan and some twenty years after Japanese organisational forms were widely promoted as patterns of excellence eligible for imitation in the West (McCormick 2002). This journey from research to textbook, from model as representation to model as exemplar, has been quite lengthy and not without irony. The Japanese model has arrived in the textbooks at the time when the current research literature is preoccupied with questions about the future viability of the Japanese organisational forms and whether they could and should be discarded in favour of organisational models more familiar in the West.

Yet the questions of whatever happened to the Japanese model on its journey to the textbook and whether it is likely to appear in their next editions is far from straightforward. The term Japanese model is problematic not simply in relation to the meaning of model, but in several other senses too. First, in what sense is the model Japanese? Is this intended to suggest all organisations in Japan exhibit this distinctive form? Does it mean that the form of organisation is unique to Japan? It is clear in the research accounts that the model is based on large companies and public sector organisations, which cover a minority of organisations and employees in Japan. Moreover, many public sector organisations in other countries have had employment security, generalist roles and much emphasis on seniority in pay scales and promotion. It is a greater critical mass of approximation to the ideal type among large private sector companies in Japan, rather uniqueness, that has justified the label Japanese model. Does Japanese mean that the organisational form is intimately linked to Japanese culture? The link to culture has been one of the most contentious issues about debates on organisations in Japan and their relevance for other countries. Secondly, which organisational relations are selected in the ideal type accounts of the Japanese model? While the sociology textbooks focus on employment relations and decision-making, the Japanese model in the business studies and engineering literature often focuses on work flow and production organisation. Thirdly, there is the problem of the level of organisation under discussion. Much of the early discussion of Japanese distinctiveness concentrated on organisation at the factory level, but in later uses the Japanese model of organisation has been extended to cover the company, inter-company relations, the industry, and even the economy, for example in discussion of alternative models of capitalist organisation. As discussion moved above the factory, the construct of the Japanese model was extended to see distinctiveness in inter-organisational relations. For example, distinctive relations were seen in relations between the company and suppliers of capital (cross-company shareholding and banks), the suppliers of labour (education and labour unions) and the suppliers of materials (suppliers, contractors, and so on), and even between state and industry relations.

The pioneering account of a Japanese model focused on employment relations in a 1950s study of 19 large and 34 small Japanese factories across a spread of industries in Tokyo and Osaka (Abegglen 1958: x). Abegglen laid great stress on the distinctiveness of the lifetime commitment on entry to the company (a commitment which underpinned the demands that employers could make of their workers in employment), the group basis of rewards, the
attributed these features of factory organisation to the strength of cultural continuities with pre-industrial Japan. At this time, Abegglen was writing in the intellectual context of modernisation theory and the political debates of Cold War debates about capitalist and socialist alternatives for development (Abegglen 1958: 1-4).

By the early 1960s, researchers and economic journalists had begun to note the considerable strides made in rebuilding the Japanese economy after the war. In their accounts of the successful development of the Japanese economy and its institutions, writers highlighted what they held to be salient and significant features underlying economic progress. As Clegg noted, the 1970s were a transition period in discussions of the Japanese model. Prior to the 1970s, accounts of Japanese companies tended to record differences between Japan and the USA or Europe, but often attribute these differences to backwardness on the part of Japanese organisations (Clegg 1990: 140).

During the 1970s, many researchers began to relate the relative success of Japanese companies to their distinctive form and the enthusiasm for learning from Japan began to flourish. Distinctiveness was coming to be seen less as a source of backwardness and weakness and more as a source of progress and strength, particularly as Japan coped with its heavy dependence on energy imports, the massive increases in oil prices and inflationary pressures.

By the 1980s, the Japanese model had come to represent not only a distinctive form of organisation found in Japan, but a highly successful pattern of economic organisation that served as a pattern for imitation outside Japan. It had many champions, both in Japan and outside Japan, who praised its merits and recommended its adoption abroad. The model had its critics too, from those who questioned how far the Japanese model adequately described or explained institutions and events in Japan to those who doubted its relevance, efficacy or desirability abroad.

Yet within a decade, the Japanese model was under a cloud. The end of the bubble economy in the early 1990s and the patchy recovery from the ensuing recession prompted doubts about Japan as a source of successful and desirable models for emulation.

Thus, one short answer to our question of whatever happened to the Japanese model is that it evolved in the second half of the twentieth century. Its evolution involved not merely increasing complexity in the specification of its elements, but also a transformation in its character. It had been developed from its early beginnings in the notion of model as representation to the model as a pattern of excellence for imitation.

However, this short answer still begs many further questions. As more elements were added to accounts of Japanese organisation and as the model was promoted for emulation, we should more closely how elements were selected and in what sense the elements singly or in combination were distinctively Japanese (section 2). We should examine the championship of the model, how it was promoted and how it was contested (section 3). The Japanese model did not have a smooth and unopposed passage across the pages of text that have been devoted to it. The facts and their interpretation have been sharply contested too, particularly by workers, unions and the political left in Japan. We should examine claim and counter-claim about the feasibility and desirability of exporting or importing the Japanese model, especially in the light of importance attached to the role of culture in shaping Japanese institutions (section 4). As the very viability of the Japanese model became doubted in the economic
difficulties of the 1990s, we should examine what is happening in the reform debates (section 5). Finally, we should judge whether reform and revision are likely to mean the end of the Japanese model as an account of distinctiveness and exemplary conduct.

2. The Many Versions of the Japanese Model

By looking at some landmark studies, we can examine how several versions of the Japanese model have emerged. Through these studies we can see how added emphasis was given to the model as a template for imitation from the early concern with a representation of Japanese practice and how the boundaries have shifted from the factory to the economic system.

Both the 1990s Sociology textbooks based their accounts of Japanese organisation on Ouchi’s analysis of the late 1970s; therefore it is hardly surprising that the two texts share similarities in their representation and advocacy for the Japanese model (see Table 1). They share a similar enthusiasm for promoting images of Japanese organisation as a vision of a humanised organisation, an alternative to the ever-increasing bureaucratisation of society envisaged by Max Weber. They are largely pre-occupied with the internal relations of the organisation — decision-making, work organisation, and employment relations — although they set these Japanese organisations within a wider cultural context. Thus they claim that Japanese companies diverge from the forms adopted in the West, that these companies have been able to link workers’ interests to corporate goals, and that they have been able to do so through a supportive group-oriented culture.

Ouchi had collaborated with Pascale and Athos, and shared a common view that American companies needed to learn how Japanese managers have adopted Western managerial techniques and blended them with a set of values to elicit greater commitment and productivity in their organisations (Ouchi 1982; Pascale and Athos 1982). Pascale and Athos identified a 7-S model of organisation, based on the three hard aspects of strategy, structure and systems and the four soft aspects of staff, style, skills and the integration of these six elements through super-ordinate goals (Pascale and Athos 1982: 28-57, 80-84, 200-206). Pascale and Athos conceded that the hard aspects would be familiar to American managers, and that the American managers would do well at them. However, they argued that the distinctive contribution of Japanese culture lay in the four soft aspects — staff (understood as the demographic characteristics of organisational members), style (understood as managerial conduct), and skills (understood as distinctive capabilities of the key personnel or the organisation as a whole). While Pascale and Athos emphasised culture, they were not wholly cultural determinists. They argued that just as Japanese companies had learned American organisational techniques so American managers could learn Japanese techniques and adapt them to their own circumstances.

As we saw in the previous section, studies of Japanese organisation at the factory level in the 1950s had identified some distinctive features in expectations of long term employment, the heavy weight attached to seniority in rewards and promotion, and the enterprise basis for labour union organisation. Abegglen had attributed these features to Japanese culture. Yet, although Abegglen had emphasised the significance of Japanese culture and cultural continuity in his description and explanation of the Japanese factory, he did not place much credence on cultural factors in his 1980s explanation of the subsequent success of Japanese companies. On the contrary, he appeared to suggest that Japanese companies became successful in spite of cultural factors and that the factors to be learned from Japan were the hard and not the soft aspects of Japanese management and organisation. His view was
summed up in his sub-title of his 1985 study — How Marketing, Money and Manpower Strategy, Not Management Style, Make the Japanese World Pace Setters (Abegglen and Stalk 1987). Abegglen suggested that if we look at Japanese companies as social organisations then we shall be drawn to cultural uniqueness and the non-transferable character of these corporations and their operations. His conclusion puts culture firmly in its place, the kaisha as competitors are not products of the mysterious East but are economic organisations responding rationally to opportunities and problems. In the process, the best of the kaisha have developed approaches to dealing with competitive problems that can be used to advantage in any economic system (Abegglen 1987: 273).

Abegglen was writing directly against a body of writing that emphasised Japanese management style and cultural factors (Ibid. 4). Abegglen identified Ouchi, Pascale and Athos, Vogel, and Gibney as representatives of a view that saw Japanese competitive success as the product of a benign conspiracy. In this view, Abegglen argued, society gave companies advantageous cultural traits, for example, the relative homogeneity of the society, the non-confrontational style of decision-making, and the national sense of purpose (Ouchi 1982: Pascale and Athos 1981; Vogel 1979; Gibney 1982).

In the early 1970s, Dore’s close comparison of two companies, Hitachi and English Electric (with observations, interviews and questionnaires in four factories in each country), underlined those previously observed distinctive patterned differences in lifetime employment, seniority pay and promotion and enterprise unionism between Japan and Western economies. Yet, instead of linking these differences to cultural continuities, Dore laid stress on the timing of industrialisation. Thus Japan could develop techniques of social organisation with the advantages of late development. For Abegglen in the 1950s, the key issue was whether Japan could maintain its distinctiveness in the face of continuing industrialisation or whether there would be a trend to convergence as Japan became more like the West. By contrast, Dore in the 1970s turned the questions on their head to ask whether Britain would catch up with Japan, what he termed reverse convergence as the leader now had to catch the follower as it had leap-frogged ahead.

Dore’s study set a new research agenda, not only by its ambition in matched comparisons. Prior to 1973, there was a tendency to acknowledge the apparently distinctive features of Japanese companies - lifetime employment, the seniority wage system and enterprise unionism - emerging from field studies by Japanese and Western scholars in the 1950s and to interpret them as legacies from Japan’s feudal past. In the light of the convergence thesis (the argument that societies would become increasingly similar as they strove to adapt their institutional structures to the logic of technological requirements) it seemed that cultural variety would be narrowed and that Japan’s cultural legacy would be eroded. It seemed eminently sensible that the job for life would give way to a world where effort could be rewarded and the incompetent removed, that enhanced pay should not be gained simply for being there but for the application of relevant effort. Yet Dore argued that the much-cited trilogy of features were not a straightforward feudal hangover but a set of devices adopted by Japanese employers in the 1920s to cope with the problems of rapid industrialisation, labour shortages and the need to retain and foster scarce skills. True, the institutional features were consistent with the past, but they were deliberately chosen. In place of sterile debate about economic versus cultural explanation, Dore was arguing that cultural factors could be part of a rational strategy and could be used to legitimate organisational innovations.
In his preface to the second edition, Dore noted the debate about origins, but moved on to tackle the present and future of industrial relations, in particular the fate of his earlier predictions over the intervening sixteen years (Dore 1990). In the 1973 edition, Dore had stressed the timing of industrialisation to explain different organisational forms in Japan. This had meant both constraints on the late developer's ability to do things in the manner of the established industrial countries and opportunities to select among tried and trusted methods. However, in the 1990 edition, Dore acknowledged that he might have understated the role of national culture.

This book does not ignore the part of culture (or national character, or modal personality, or whatever of those nowadays suspect terms one chooses to use) in the origins of the Japanese system, but I came out of the later research wondering whether in the excitement of discovering something new I had not elbowed it aside a bit brusquely in order to roll the late development effect into the centre stage (1990: 453)

His re-evaluation of the role of national culture came with the recognition that culture (or values) plays an important in guiding choices. Where Abegglen had begun looking at Japanese factories in the context of the Cold War and capitalist versus socialist models of development, Dore was revisiting Anglo-Japanese comparisons in the context of debates about the varieties of capitalism. Against the tide of enthusiasm for market oriented solutions in Britain and the USA in the 1980s, Dore urged attention to Japan as an example of a society where employers appeared willing to deal in compromises with their employees and other stakeholders (Dore 1989).

In his revision, Dore had broadened his account beyond employment relations at the factory level to include finance and culture in the company and in the wider economy. Clark’s study of a Japanese company had highlighted the importance of distinctive finance (higher levels of bank finance and cross-shareholding than their British and American counterparts) in underpinning the long-term view and employment relations in Japan (Clark 1979).

For many engineers and business studies researchers, patterns of work organisation were the starting point for their studies of machine layout, fault analysis, and so on. Their reports led to accounts of the Japanese model in terms of technology and work organisation (Schonberger 1982; Schonberger 1986). The work organisation studies had some overlap with the employment studies, for example, in pointing to the relatively broader roles and lower levels of specialisation among Japanese employees. In the consultancy market, there was keen interest in the comparative productivity levels of Japanese manufacturing sector workers which led to interest in the degree of fit between work organisation and employment relations. Shimada’s account of humanware, produced for the MIT International Motor Vehicle Program, emphasised the goodness of fit between the personnel policies and product strategies of Japan’s auto-makers (Shimada and MacDuffie 1986; Dertouzos, R., Lester, R. K. and Solow, R. M. 1989). Companies relied on extensive training (in-house in multiskills), jobs (using rotation and transfer across broad job classifications), rewards (using bonuses and promotion) to develop highly skilled, adaptable and highly motivated employees to meet company needs for low inventory costs, low labour costs and low defect rates.

Low inventory stocks were an important feature of the concept of lean production in the MIT IMVP influential account of Japanese company success in automobiles (Womack, Roos and Jones 1991). They drew together the notions of flexible workers and just-in-time
production within the plant and the contribution of inter-organisational relations with suppliers and the importance of company groups.

Thus the Japanese model had grown in complexity from the pioneering focus on employment relations to look work organisation, and relations with suppliers of capital and materials. Further complexity came from studies of vertical and horizontal links in company groups and from the studies of government-industry relations by political scientists. By the early 1990s, there was a trend to setting Japanese factory in a much wider network of relationships underpinned by a supportive culture.

3. Championing and Contesting the Japanese Model

Through speeches and writing, many industrialists contributed to the production and diffusion of images of Japanese management and organisation in cultural terms (Gordon 1998). Matsushita Konosuke, founder of the huge Matsushita group of companies and often referred to as Godfather of Japanese, even founded the Peace, Happiness and Prosperity Institute to disseminate his management philosophy (Matsushita 1988: Kotter 1997). In the 1930s he had maintained employment as other employers lay off workers. He appeared to prefigure the lifetime employment system of the 1950s. Other Japanese companies played an active part in disseminating interpretations of the contribution of national culture for conduct in organisations too. They prepared handbooks and manuals for their overseas employers (Yoshino 1992: 172-176). For example, Mitsubishi commissioned a Tokyo University professor to write An Introduction to Japan for the American employees of Diamond Star Motors, its joint venture with Chrysler in the USA (Kimura 1987).

As Japanese business prospered in the 1970s and 1980s there was a new self-confidence in Japanese institutions, no longer seen as backward but possibly advanced. There was a ready market for explanations among businessmen, especially international businessmen who felt obliged to explain their place in the world. The Nihonjinron genre of writing met this need through an emphasis on the uniqueness and superiority of Japanese culture in underpinning organisational forms. Writers could point to: the importance of wet rice agriculture in stimulating the development of a society which cultivated co-operative forms of working in irrigation and harvesting; the significance of relatively isolated mountain communities in fostering a sense of group identifications and loyalties; the Confucian heritage in cultivating respect for hierarchy, family loyalty and respect for learning; the merchant house of the pre-modern period that institutionalised the family values in an organisational model; the relative cultural homogeneity which meant that these values were shared across the society. While the relevance of each of these claims to post-war organisational forms and economic success could be challenged, Yoshino’s investigation demonstrated that such writing found a ready market among businessmen (Yoshino 1992). Japanese businessmen came to experience Japanese uniqueness through participation in work practices held to be distinctively Japanese (the employment practices and the decision-making processes), through out-of-office rituals which reaffirmed social solidarity and through the processes of learning company etiquette company socialisation:

The Japanese company is regarded by businessmen and others as the microcosm of uniquely Japanese society, and businessmen (or to be more precise, company men) as the typical bearers of the uniqueness of Japanese social culture.
That the company is an important agency of adult socialisation is endorsed by many respondents who remark to the effect that one should join a Japanese company in order to become full-fledged Japanese with common sense (Yoshino 1992: 184).

Government officials have been at pains to explain how Japanese business organisation work. The EC-Japan Centre (later renamed EU-Japan) was established as joint venture between the EU and the Japanese government, whose mission was interpreted by some Japanese officials as helping Europeans to improve their competitiveness and reduce trade friction by learning best practice from Japan. In other words, trade surpluses and trade friction were the product of foreigners’ competitive failures rather than Japanese restrictions on foreign imports. For a biting critique of the role of some MITI officials in explaining an official view of superior Japanese competitive strength to Europeans see Malcolm Trevor’s account of the delivery of training programmes for European managers and engineers at the EU-Japan Industrial Centre in Tokyo (Trevor 2002).

There have been sharp critiques of Japanese organisation from within Japanese society. From within the labour movement, critics have pointed to the formative periods in which the pre-war governments acted against the labour movement and the post-war assault on the unions led by employers in the early 1950s (Gordon 1993; Kumazawa 1996; Kawanishi 1999. Several major companies co-operated in the establishment of a parallel and more conciliatory union that gradually supplanted the existing radical union. The standard accounts of enterprise unionism often omit discussion of this dual unionism in contemporary companies, where the rump of the original union persists as a source of discomfort for the company.

Accounts of lifetime employment as the bedrock of an exchange of loyalty for benevolence often omit the mix of positive and negative sanctions that companies wield in order to discourage employees settling for the quiet life. Moreover, some of the extremes of pressure on the white-collar workforce became recognised in karoshi or death from overwork (National Defense Counsel for Victims of Karoshi 1990).

The desirability and feasibility of adopting Japanese style work organisation has prompted sharp and sometimes acrimonious debate (Kato and Steven 1993). On one hand, some champions held that Japanese companies in mass production industries were transcending the principles of work design developed by the American engineers, F. W. Taylor and Henry Ford, to offer enriched work opportunities for employees. On the other hand, critics argued that Japanese work organisation was not Post-Fordist, but merely a novel brand of Super-Fordism, novel in its even more ruthless exploitation of workers. It was also a debate that could not be simply resolved to empirical evidence, since much hinged on conceptual issues too. In this debate, the focus of attention was the development of work organisation under capitalism in Japan and less prominence was given to issues of national culture.

5. Hosting the Japanese Model

The concept of Japanization has also entered the British-based sociology textbooks in the 1990s too, particularly in relation to discussion of change in industrial relations in Britain (Fulcher and Scott 1999: 532-3). Debates on the feasibility and desirability of Japanization have set the agenda for books, journals and conferences among British researchers. The central concern has been with the extent to which various versions of the Japanese model were being transplanted to the UK, either by Japanese direct investment or by British emulators of the successful Japanese model.
Some British interest in factory organisation was stimulated alongside the negotiation of a new commercial treaty in 1962 (McCormick 2002). A visit by the President of the Federation of British Industry was undertaken to promote the perception of competent Japanese factories and Japanese companies as competent worthy trading partners.

Even more positive accounts of Japan’s economic development were given in the reports of an Economist magazine staff writer, who confessed himself goggle-eyed and urged readers to Consider Japan, hailing Japan’s example to the developing world in breaking out of the gridlock of poverty (Macrae 1962). Five years after his visit as a staff reporter, Norman Macrae returned to Japan for another series for The Economist. He emerged with a set of lessons from a country which had become the greatest practical research laboratory of economic growth in our time (Macrae 1967). They were based on seven keys to the risen sun, including: economic planning (the most intelligently dirigiste system in the world today) (Ibid. 20); the highly educated society (where a high proportion remained in education until aged eighteen-seventy per cent in Japan compared to less than thirty per cent in Britain) (Ibid. 21); the high levels of investment (where high levels of saving were being translated into productive investment by fiscal incentives); the large scope for productivity increase in a late industrialiser: the unorthodox banking and credit system where heavier reliance on bank rather than equity finance gave banks a more intimate knowledge of company and industry within their group and central government more leverage over the economy; the pattern of group loyalties where the readiness of businessmen to listen to and act on administrative guidance from the bureaucracy has been reinforced by the mutual involvement of workers and businessmen in companies; the quality of the bureaucracy which made administrative guidance worthwhile.

Macrae’s main interest lay in macro-economic management, comparing the apparent sophistication of economic planning in Japan with the fumbling efforts of the Labour Government to establish the National Plan in Britain. He heaped praise on the abilities of the Japanese planners, from the Minister (the 47 year old Kiichi Miyazawa) to the civil servants (some of the most brilliant young men in Japan), to their techniques (more scientific and more numerate analyses of desirable trends than is the economic policy of any other country in the world) (Ibid. 22). While Macrae praised Japan’s economic planning, he was more sceptical about what he termed the more sociological features of the Japanese economy. For example, he suggested that moving resources into more productive areas had been achieved in spite of, rather than because of, the lifetime employment system and he charged that group loyalties often hindered economic advance. If Macrae was sceptical about the some of the alleged benefits of the institutional structures of Japan, he was even more sceptical about the likelihood of emulating or imitating them in Britain.

For many researchers, the prospects for Japanese companies setting up operations overseas (or conversely, the prospects for Western companies setting up operations in Japan) provide a major test of the influence of national culture on organisational form. Although Japanese service organisations, such as banks and trading companies, have a long history of overseas operations, most attention has focused on manufacturing companies and their overseas operations. This was manufacturing companies came to be widely perceived as exemplars of world best practice in manufacturing industry (Schonberger 1982; Schonberger 1986). Although some manufacturing companies moved overseas in the 1970s, the main moves into European countries came with the upward revaluation of the yen after 1985 and the fears that...
the completion of the market from 1992 would exclude Japanese exports (McCormick and McCormick 1996).

In Britain, Japanisation, was coined to focus attention on the processes of establishing manufacturing methods and personnel practices common in Japan into Britain (by direct investment by Japanese companies in greenfield sites, take-overs or joint ventures) or by British companies emulating industrial best practice (Oliver and Wilkinson 1987; Bratton 1992; Elger and Smith 1994). Using surveys and case studies these researchers concluded that Japanisation, the introduction of Japanese methods was occurring. Yet in a later survey, the researchers found lower levels of adoption of Japanese practices and concluded that the cultural resistance was more deeply embedded than they had supposed ((Oliver and Wilkinson 1992).

Hasegawa noted a paradox for British researchers to discuss transplants in terms of Japanisation whereas Japanese researchers saw the processes of overseas direct investment in terms of the internationalisation of Japan and Japanese institutions (Hasegawa 2001). From Japanese perspectives, discussion of hybrid organisations has been more common, suggesting that Japanese companies attempt to adapt their organisations to the various constraints, including cultural differences, which they meet in host countries through selective transfer of practices (Abo 1994). Using Hofstede's characterisation of cultural differences, Tayeb argued that selective transfer and sensitivity to the host culture have aided successful operations in the UK (Tayeb 1988).

More studies by participant observation have questioned the extent to which British workers have enthusiastically adopted Japanese style work commitments (Danford 1998). Fulcher and Scott conclude that industrial relations policies and practices changed in Britain less by the introduction of Japanese institutions and more by the collapse of British institutions under government and employer challenge (Fulcher and Scott 1999: 532-3). However, this seems to understate the role of Japanese inward investors in providing alternative models for work organisation and employment relations (Bratton 1992; Smith and Elger 1997)

5. Reforming Japan and Revising the Japanese Model?

Japan’s extremely disappointing economic performance in the 1990s has provoked many analyses and calls for reform. Economists tend to trace the roots of the problems back to the 1985 G7 finance ministers’ agreement to facilitate the rise in the yen relative to the dollar and subsequent errors in macro-economic management (Krugman 2000: 60-82; Bolto and Corbett 2000). Other analysts go beyond government policy mistakes and identify deep-seated problems in Japan’s institutions. For example, Katz has argued that Japan’s institutions were well suited to the catch-up phase of economic development but are ill suited to the current phase of economic development (Katz 1998). Thus there are many calls for reform in Japanese institutions and revision, or even abandonment, of the Japanese model from the employment system to the supplier relations, the financial links and Government-industry relations. Yet, despite the economic gloom and the vigour of the reform calls, the evidence of change remains limited and some of the core elements of the model remain remarkably robust.

(a) The Lifetime Employment System
Many critics highlight the employment system as prime example of institutional sclerosis at the heart of Japan’s economic problems. The long term security, so much admired in the 1970s and 1980s, has been blamed for limiting the flexibility of company responses to changed circumstances, for curbing rewards to initiative and effort, for discouraging risk-taking and entrepreneurship among managers and workers. These charges appear reminiscent of those early doubts about the viability of Japanese work organisations in the heyday of the convergence debates of the 1950s and 1960s. Therefore it is hardly surprising that current calls for Japan to abandon its distinctive employment system and adopt the practices of the West (or more properly, the Anglo-Saxon version of the West) have led to some re-examination of earlier accounts.

One striking defence of current employment practices has been the argument that the Japanese model, particularly the concept of lifetime employment, popularised in the English language literature has been deeply flawed. In a recent publication from the Japan Institute of Labour (the research arm of the Ministry of Labour), Takanashi argued that the concept of lifetime employment rested on misunderstandings in Abegglen’s work (Takanashi 1999: 14-19). Takanashi acknowledges Abegglen’s introduction of the term based on his research and contact with Ujihara’s Tokyo University group. Abegglen coined the English term lifetime employment to describe what he had seen and heard, but Takanashi argues that this term was then translated back into Japanese (for which there was no such term) and the concept began its flourishing career. Takanishi suggests this misunderstanding owed much to excessive Japanese deference to foreign researchers. However, Takanishi argues that there was much more flexibility in employer and employee conduct than was allowed in the concept of lifetime employment put into the centre of the Japanese model. Thus one defence of Japanese institutions is to put distance between Japanese practices and popular accounts of the Japanese model.

There have many past pronouncements on the end of the lifetime employment system. Equally many researchers have pointed to ways in which the system has been developed and adapted while keeping faith with the underlying expectation of employment for core employees. Sato pointed to one source of redefinition of employment security. Where lifetime employment was once understood employment security for a male regular worker in one company, companies have been increasingly offering employment within a company group, where career moves might involve changes in location and in the terms and conditions of employment (Sato 1997).

Some of the more prominent calls for change are clearly calls for modification of the long term employment system rather than calls for its abandonment. In the 1990s, Nikkeiren (the Japanese Managers Association) proposed revision of employment practice. They have proposed shrinkage of the proportion of the labour force in the long-term employment system and expansion of more short term contracts to reflect employer needs for specialist skills (Nikkeiren 2000a; Nikkeiren 2000b). However, it is shrinkage rather than abandonment and Nikkeiren has joined Rengo in re-affirming a joint commitment to try to restore full employment.

While newspaper headlines proclaim the abandonment of lifetime employment researchers appear more cautious about the degree of change. The two main routes to examine the extent of change in lifetime employment practices have been through case studies of companies and through survey data. In some press reports, Matsushita, often portrayed as a very conservative company and the quintessence of the Japanese model, is alleged to undergoing
dramatic change. Yet Kono and Clegg argue that Matsushita has been introducing increasing variety in its employment and reward practices rather than wholesale change (Kono and Clegg 2001). Other companies, such as Canon, appear strongly committed to the retention of lifetime employment for the core of regular workers, mainly because it is viewed as central to skill formation for the company’s future (Oaklander 1997). Some researchers suggest that companies use announcements of dramatic change as symbolic signals to their workforce of the need for adaptation rather than indicators of substantial changes in themselves (Lincoln and Nakata 1997).

Using case studies and survey data, several researchers have emphasised that there is little evidence of wholesale abandonment of lifetime employment for regular employers, although there is evidence of adaptation to new circumstances. Kurata suggests that there is a broad continuing commitment to the lifetime employment system for regular employees. However, he notes that globalisation has been exposing some of the weaknesses of traditional methods of career development. For example, the reliance on generalist skills among expatriate staff sent to overseas sites has exposed their weaknesses in managing local staff. Therefore some companies are separating out the career paths for local and global staff, introducing some aspects of Western career development and employing foreign nationals in domestic organisations (Kurata 2000). Rebick notes that Japanese men still enjoy relatively high job tenure, although there are some changes in the increase in involuntary job loss among older workers and increasing difficulties to enter the labour market for young workers (Rebick 124-133).

Just as critics have attacked not only lifetime employment practices so the seniority pay system has been re-interpreted and revised. It is now cautioned that seniority always reflected ability and that the more explicit reference to ability wages does not represent a sharp break with the past so much as contemporary adaptation (Holzhausen 2000; Rebick 127-133). However, companies are introducing larger wage differentials in their pay schemes.

Calls for a third opening have resonated with images of the burst of institutional reform that followed earlier openings in the 1886 Meiji Restoration and the post-1945 Occupation. Western companies as inward investors into Japan and competitors for labour are a source of competitive influence for change, particularly because they are seen to offer more attractive employment conditions for female employees. It has been a stimulus towards more differentiated employment conditions for different groups of staff. However, the scale of direct inward investment has limited the scale of this pressure on Japanese companies so far. One area in which foreign companies are important lies in their encouragement for female careers. These were long denied in the lifetime employment system that penalised career breaks. Culture may change slowly. Nevertheless, it does change and the aspirations of young workers add a further pressure for more diversified employment opportunities.

(b) Finance, Shareholder Value and Governance

In much of the post-war period, Japanese companies were more generally more sensitive to employees and less sensitive to shareholders compared to their British and American counterparts given the extensive commitment to lifetime employment for regular employees and the reliance on bank loans cross-shareholding for capital. While the employment system enabled long term skill formation, the indirect method of financing, underpinned by the Ministry of Finance arrangements with commercial banks to channel low cost funds to export-oriented companies, favoured technological development in the mass production
companies of the manufacturing sector (Shimada 2000: 42). However, the system had some disadvantages too, which became more apparent in the conduct in the bubble economy of the late 1980s as they began to rely on the smoke and mirrors systems of accounting to massage financial assets (Ibid. 44). Yet just as companies became caught up in a seeming virtuous spiral of growth, using inflated land prices as collateral to acquire massive funds and project massive financial growth, so the collapse of the bubble led to a vicious spiral of retrenchment. With the shrinking scope for reliance on increasing market share through success in mass production industries, companies are being urged to turn to the creation of more high value added original and creative products. This vision leads to calls for two related paths of company reform in the adoption of personnel policies to foster more creative labour and greater reliance on the capital markets for funds (Ibid. 52).

Calls for greater attention to shareholder value are sometimes interpreted as calls for more Anglo-Saxon style company reform through changes in accounting practice and changes in corporate government. However, it seems that the future direction for development in corporate government is unlikely to be so simple or likely to challenge employment stability as a goal for companies (Berggren and Nomura 1997).

6. Conclusion: The Rise and Fall of the Japanese Model?

Will the next editions of popular introductory sociology textbooks contain the Japanese model? Did the Japanese model make the long journey from the research literature and arrive in the textbooks just as the research literature was posting the obituary notices on the Japanese model? The central argument of this paper has been that such notices would be premature and that a story of rise and fall would be far too simple.

It is inevitable that textbooks simplify, as they pack the Japanese model into just three of their three hundred pages. Yet some simplifications are more, and others are less, justifiable. Where one text creditably retains the qualification that the model is to be found in large corporations, the other refers to all Japanese organisations. The use of a management consultancy source, written as a clarion call for American managers in the early 1980s, adds weight to the positive interpretation of Japanese companies and airbrushes out of the picture some of the more contested aspects and much recent history. Later editions ought to add some qualifications on those points. In contrasting the ideal type Japanese organisation against the Weberian ideal type, the textbook writers concentrate on Weber’s discussion of the internal characteristics of bureaucracy. However, Weber was also interested in the external relations of bureaucracy, the wider social conditions in which bureaucratic forms of organisation emerge.

Comparing the textbooks against the more recent research literature, we can see that many of the internal characteristics of the Japanese model for the large corporation need qualification. Japanese corporations face several pressures on their employment relations from the lower economic growth rate, globalisation, the ageing workforce, and the changing aspirations of workers. These suggest change in several aspects of the employment model:

- **Employment security.** The model never did include all employees and it seems that the proportion is likely to shrink as companies offer a more diverse range of employment. Moreover, it seems that the degree of commitment to the principle of lifetime is likely to vary across sectors and companies as Japanese companies examine their options in more competitive markets and as foreign companies add to the range of employment.
opportunities in Japan. Announcing the end of lifetime employment is premature, but writing of the Japanese model increasingly understates the variety of employment policy and practice in Japan.

- **The degree of specialisation.** This area appears set to need revision as Japanese companies emphasise their need for more variety in employment provision to cope with their increasing need for specialists.

- **Decision-making.** The emphasis on bottom-up decision-making has appealed to observers keen to emphasise the virtues and merits of greater employment in decision-making. However, the lack of formal mechanisms for participation may be seen as a weakness in a period of industrial and company restructuring, while the merits of the system may have lain less in feelings of involvement and more in the processes of information gathering and sharing.

- **Group-oriented production.** Individualism versus collectivism has long been one of the most popular dimensions along which Japanese and other cultures are compared and examined in relation to work practices. Yet current Japanese practice will need to be examined against the rhetoric about on specialisation.

- **Merging of work and private lives.** This has been one of the more controversial aspects of the Japanese model. On the one side, there is the positive interpretation of an employment relations where company benevolence is exchanged for employee loyalty. On the other side, there is an interpretation of intrusive and overbearing control exercised by companies.

In the course of debates about the various versions of the Japanese model, there have been a variety of approaches to the sense of Japanese-ness about the model. From the sociology textbook treatments one might suppose that it is widespread in most Japanese economic organisations. Yet in the specialised research literature it is clear that the implicit expectations of employment security associated with the so-called lifetime employment system were restricted to a minority of companies and to a minority of the labour force. They were the stuff of employment among the regular workers in large companies and the public sector, while the majority of the workforce experienced employment in the small and medium-sized companies that more closely employment relations in other industrial countries.

Why favourable employment conditions were extended to blue collar workers has been the subject of many debates. Cultural explanations, emphasising especially continuities with pre-industrial culture, have featured prominently in some explanations (Abegglen 1958). As we have seen, other explanations have emphasised the timing of economic development and structural factors for the emergence of a distinctive employment system in the 1920s (Dore 1973). Other writers, who have focused on early industrialisation as a formative period of institutionalisation, have stressed state purpose and the emergence of distinctive employment features in state industries. Those who argue that the bulk of the extension occurred after 1945 stress the significance of capital-labour conflict in the late 1940s and the early 1950s leading to the 1955 settlement. Both the cultural choice and the class conflict accounts of the origins of the employment system have drawn attention to the potential costs of change if abandonment of the system is seen as a breach of a moral quid pro quo in society.

The concept of a Japanese model of economic organisation has not only been the product of much research by many researchers over many years; it has been taken up and used for different purposes. This was most evident as Japanese companies and the Japanese economy became more obviously successful in the 1980s and the model was taken up as a template for
reform overseas. Among the early researchers on the Japanese company, there were some remarkable shifts of emphasis. Abegglen, who had emphasised the importance of Japanese culture in shaping factory employment, argued that culture was not important in explaining the success of Japanese companies. Dore, who had emphasised structural factors and the timing of industrialisation, gave more scope to cultural factors as expressions of values and gave more attention to them in explaining the success of the Japanese companies. In the 1980s, Japanese businessmen took more interest in explanations for economic success. The significance of Japanese culture in explanations of both company organisation and company economic success were popular among businessmen (Yoshino 1992).

Many studies have been based on close observation in a single company in Japan, rather than matched comparisons of Japanese and a Western company. A given Japanese company has served as a prototypical company. Examples have included the major electrical manufacturing companies Matsushita, Toshiba, Hitachi, or one of the major auto assembly companies such as Toyota or Nissan. However, this approach is becoming more questionable as company experience within sectors has diverged, for example, the success of Toyota and the difficulties of Nissan, Mazda and Mitsubishi. The latter three companies now have heavy foreign involvement in their operations and the extent to which resolution of their difficulties has involved departures from principles underlying lifetime employment are much debated. In the debate about worker experience under Japanese employment, protagonists contrasted the computer and telecoms giant, Fujitsu, with the auto assembler, Toyota, as truly representative companies of the evolving Japanese style of human resource management. Future analyses of organisations in Japan seem likely to have cope with increasing variety rather than rest on one standard model.

The elements incorporated in the Japanese model have changed over time from the narrow focus on the factory to the wider concern with a distinctive capitalism. Company practices have evolved over time and shown considerable flexibility. Japanese companies learned much from their Western counterparts but adapted elements to their own situation. It seems likely that the future developments will be best seen in terms of path dependent evolution rather than radical departures and the wholesale abandonment of existing institutions.

There has been a general assumption that cultures change slowly, yet they do change. There are many debates in Japan about the changing preferences of younger workers and whether they continue to seek out the employment security highly prized by workers and labour unions in the early post war years.

Japanese champions of Anglo-Saxon style capitalism might be given pause for thought when they look more closely at examples of British practice. British enthusiasm for privatisation has been sharply dented by the experience of delays, accidents, the dismissal of surplus drivers and subsequent skill shortages (Jowit 2002). They might note some continuing British admiration for Japanese approaches to organisation and management and the employment system that underpins their technological strength. The long-term employment system that has fostered engineering careers and put engineers in senior positions in the railway companies has drawn favourable comment from critics of a British approach that has prioritised financial skills and excluded engineers from senior positions in the privatised British companies (Jowitt 2000). Not only is the Japanese model far from extinct, enthusiasm for learning from Japan is far from extinguished too. The enthusiasm may be more muted and selective now, and sceptical about the uncritical hype that offers dated stereotypes, but it still generates interesting material for sociologists of organisation.
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Perspectives on the Downsizing of Japanese Corporations
A Study of Business Press Reporting and Personal Online Diaries

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Abstract

Downsizing has become a major issue for many Japanese companies. Here, early retirement programs have become commonly used. The paper explores this topic in two steps. First, it demonstrates the significance of this measure within the restructuring of companies and critically assesses the relevant discourse in the business press. Then, a new research source, online diaries, is introduced to explore perceptions of employees. The paper concludes that by having to rely on early retirement policies companies have lost control over important aspects of their downsizing efforts. In addition, measures led to substantial anxiety among remaining employees.
Perspectives on the Downsizing of Japanese Corporations - A Study of Business Press Reporting and Personal Online Diaries

1. Introduction
Japanese companies are undergoing a continued period of corporate restructuring. One of the ongoing measures within these efforts has been the reduction of workforces. The reduction of workforces has been linked to a number of factors, a reduction of overcapacities in response to changes in demand, rationalization of production and administrative practices based on the need to become more cost-efficient, mergers and acquisitions in the wake of the reorganization of industries, and finally the relocation of production facilities overseas. While in the past restructuring had mainly become a necessity for companies in stagnating industries or for single mismanaged companies it now seems to have become a necessity across all industries, be it steel, automobiles, pharmaceuticals, retailing, banking, or information services. It has also become an issue across all functions of the company from production to administrative departments. A major issue within the restructuring efforts is the reduction of labor forces and while Japanese companies have been rather reluctant to do so in the past, many companies are now downsizing rapidly.

The current period is not the first for Japanese companies to adjust their capacities to changes in demand. Doing so, companies have in the past mainly resorted to measures such as freezing the hiring of new employees, reduction of overtime, forced vacations, reductions of non-regular workers and transfers of workers between affiliated companies, and finally natural attrition. Being characterized as work-time adaptors and not head-adaptors (Dirks 1999), there was an overall strong resolve not to dismiss employees belonging to the regular workforce. Employers were pressured by governments and unions to sustain the institution of life-long employment. This general disposition towards the protection of the regular workforce was carried well into the initial restructuring measures of the 1990s (Kato 2001, Dirks 1999, Lincoln and Nakata 1997, Usui and Collignon 1996). While the above authors largely argue for a general continuity in regard to the protection of regular labor forces in the process of restructuring, Ahmadjian and Robinson (2001) see a gradually increasing inclination by companies to downsize workforces paired with an increasing acceptance of or rather tolerance by the public concerning these efforts. Coining the term safety in number they argue that with measures of downsizing having become more common, activities of single firms receive less attention, enabling even prominent companies to institute such measures (Ahmadjian and Robinson 2001:632). Arguing that companies have found comfort in numbers, they still point to major legitimacy constraints, a point that they share with the other authors cited above. These still existing legitimacy constraints during the time of their study (1990-1997) might have also led to the difficulty they cite in regard to obtaining detailed numbers about the different methods of downsizing, with firms being reluctant to report on this data publicly (Ahmadjian and Robinson 2001:650).

A quick look at business newspaper reports in the year 2002 reveals quite a different picture, however. Companies have become much more outspoken about their restructuring measures, listing reduction in head counts and detailing costs. It appears that companies do no longer need the comfort of numbers to announce reductions in their workforce and that these measures are no longer only being welcomed by foreign investors. The more detailed overview on this reporting later in the paper will show that at least in the business press the need to create
legitimacy has been reduced to large extent and might even have been turned into the opposite, the resolve to downsize labor forces becoming symbolic of a management dedicated to change.

The more detailed reporting also provides an opportunity to look closer at certain measures, and this is what this article attempts by looking at one measure, early retirement programs, that has gained prominence lately. For example, in the year 2002 Matsushita ran an early retirement program that covered more than 13000 employees, Hitachi initiated a similar program and received 9000 applications instead of the initially targeted 4000. In the past, early retirement programs focused on people that were relatively close to the regular retirement age, however, current programs include workers in their 40s or even younger.

While the practice of tapping an older worker on the shoulder (katatataki) and asking him to retire a few years before time has been quite a common in Japanese companies (Lincoln 1997:40), the release of workers of a relatively young age in large numbers raise some questions, since human resources and the way they are being managed have been repeatedly described as the main asset or comparative example of Japanese companies (Nonaka and Takeuchi 1995, Cole 1994) and companies have gone to great lengths in the past to keep them (Dirks 1999).

Kidd and Richter (2001:7) take up the hollowing out of organizations and point out that if it is especially the middle management in Japanese corporations that is hit by the current restructuring, this might have serious effects on the competitiveness of Japanese organizations in regard to creativity and innovativeness. Another issue concerns the effects of downsizing measures on those employees remaining in the organization. Appelbaum, Close and Klasa (1999), note — not talking about Japan - that many organizations offer supporting measures for those employees that are being dismissed, but do not really assess the effects these measures might have on those who remain. They summarize and describe the variety of reactions of workers remaining in the company, these often being heavily demoralized, under the term of survivor syndrome.

Based on these observations, the current early retirement practices within the downsizing efforts of Japanese companies seem to be a rich and relevant theme to be explored. To do so, this paper takes an unusual approach. In a first step, a large number of newspaper articles are analyzed that refer to early retirement. The analysis of these articles will not only show the significance of these measures, but will also look at the way these measures are reported on in the newspaper, most business press articles mainly being concerned with the initial costs of these measures and eventual cost savings. In a second step, results are contrasted with quite a different information source, personal diaries published on the Internet. The number of online diaries available on the Internet has been increasing rapidly with the growth of the Internet, and Japan, where the writing of diaries has a long tradition, is no exception here. While there are certain limitations in regard to the objectivity to this approach, it will be shown that the use of these sources can still contribute substantially to the understanding of downsizing activities in Japanese companies by giving first hand accounts of activities within companies and their effects. By using online diaries, this paper serves a double purpose, not only exploring the topic of early retirement in Japanese companies but also exploring the usefulness of a new possible resource for research.

2. Early Retirement within the Downsizing Efforts of Japanese Companies as Seen in the Business Press
While Japanese companies are currently changing their business practices rapidly, most companies have not changed one major policy, the avoidance of direct retrenchment of
employees, at least were regular employees are concerned. Instead, companies are resorting to other measures such as the reduction of non-regular employment, a freeze on hiring, natural attrition, the temporary transfer of employees and early retirement. Among these measures, especially the last measure stands out. To gain further insights into the early retirement issue a search of the newspaper article databank of Nikkei Shimbun was conducted. For the period from January 2002 to January 2003, the term early retirement appeared in 322 articles. Articles mainly covered restructuring measures of single companies, sometimes several articles focusing on the same company. In total, the newspaper articles reported on 138 companies that offered early retirement to their workers. Details for these companies were recorded in a databank.

The results allow drawing quite a detailed picture of early retirement programs in regard to their size, employees targeted and the amount of allowances being provided. For 100 of the companies numbers of employees involved in early retirement measures are provided with the total number of persons involved reaching approximately 100,000. Workforce reductions, not only through early retirement but also through other measures such as natural attrition and transfers, target 10 to 25 % of the total workforce of companies with quite a high percentage of companies aiming to reduce their personnel by more than 15 %.

Numbers are substantial for certain companies. While the most prominent case, Matsushita with over 13,000 employees, will be outlined in more detail later, numbers for some other prominent companies are as follows: Isuzu — 4,266 employees (NKS 1 November 2002), Komatsu — 1,100 employees (NKS 15 April 2002), Hitachi — 9,000 employees, (NKS 8 April 2002), NEC — 5,000 employees, (NKS August 2002), Takeda Chemical — 2,000 employees (NKS 29 July 2002). The programs are, however, not only limited to the manufacturing sector as the following selection of companies from other sector shows: Dentsu - 200 employees (NKS 27 June 2002), UFJ Tsubasa - 749 employees (NKS 4 December 2002), or Mitsukoshi — 1,100 employees (NKS 23 January 2002).

As has already been pointed out, the programs do not just focus on employees who are close to the normal retirement age as has been the case in the past, but some of them cover employees from nearly all age groups. Examples are the program of TDK or Hitachi that targeted workers aged between 40 and 58 years of age (NKS 3 February 2002, NKS 1 February 2002), the one by Omron for employees between 30 and 58 years that have been for more than 10 years with the company (NKS 25 July 2002) or the plan for Seibu employees between 35 and 58 years (NKS 7 June 2002). Companies not only offered these programs to relatively young employees, but also got responses from these employees as the average age of 42 of the 412 employees that made use of Nisshin Fire’s early retirement program demonstrates (NKS 30 January 2002).

Companies provide employees with substantial retirement packages that normally equal 20 to 25 monthly salaries added onto regular retirement benefits. For example, the program by Nihon Unisys that targeted mainframe engineers and was accepted by nearly 650 employees, provided workers over 50 years with a maximum allowance of 30 million yen, lower amounts being paid to younger employees. Combined with regular retirement benefits, it was calculated that employees received an average of 45 million yen (as of January 2003 approximately 370,000 US$) (NKS 12 April 2002). Amounts varied, however, with the 912 employees that applied for early retirement with troubled dairy product manufacturer Snow Brand only receiving a severance payment of between 1 and 10 monthly salaries (NKS 22 August 2002).

Thereby, costs for these programs are substantial and usually force companies to report extraordinary losses for business years when programs were executed. Costs vary by the number of employees. They range from 260 million yen for a relatively small program with just 23
employees at Nippon Shindo to 166 billion yen for the large program at Matsushita that covered 13,000 employees. Companies expect reductions in labor costs, Nippon Shindo about 190 million yen and Matsushita about 227 billion yen (partly also due to a consolidation of production bases and changes to the employees' investment program).

Having outlined the measures, one can take a look at the way these measures are being reported on in the business press. Overall, newspaper reports show a strong resemblance. Articles usually abstain from any evaluation of these measures and simply state the number of people involved, some basic rational such as the closure of a plant, a merger or the general need to reduce capacities and costs. In addition, the cost of these measures are given, usually these costs being described as forcing companies to report extraordinary losses for the fiscal year under scrutiny. Most articles see measures as overall positive though, reporting on substantial cost savings that are being expected for the future due to these measures.

Within the articles analyzed there are only very few that include critical points in regard to the introduction of early retirement programs. The two cases that received the most attention were those of Matsushita and Mazda.

In 2001, Matsushita conducted a massive early retirement exercise covering 13,000 employees, 5,000 more than the 8,000 the company had originally expected. This was about 13 % of the 100,000 workers eligible and about 4.4 per cent of the overall workforce of Matsushita. The program has been described as one of Japan’s largest-ever staff reductions via early retirement (NKS 21 February 2002). The program targeted workers across functions and among the employees who retired 13% were administrative workers, 14 % sales workers, and 60 % manufacturing workers. The rest were technological development workers, among them 2% involved in pure development. In April 2002, Matsushita made heavy use of early retirement measures again when it reorganized its sales organization and reduced its sales staff by 5000 people (Nikkei Weekly 15 July 2002).

The cost cutting measure by Matsushita also allowed further insights into the character of the retirement benefits some Japanese companies provide. In June 2001 the company created some friction among its former employees, especially among those who left the company through the early retirement program in 2001. In 1966 the company had set up a scheme under which retired employees could deposit part of their retirement allowance with the company, employees receiving guaranteed preferential interest rates of about 7.5 to 10 %. This scheme cost Matsushita about 10 billion yen per year. However, in 2002 Matsushita asked its retirees to accept interest rate cuts between 2 and 3.5 % and 80 % of the beneficiaries agreed to this request, individual pensioners reportedly foregoing about 100,000 yen per year (NKS 21 June 2002, NKS 1 August 2002).

Within the detailed reporting on Matsushita, some critical points were raised. As the following citations show, these refer to the efficiency of its sales efforts as well as to possible damages to its human resources base and future competitiveness:

The major cause of the firm’s declining performance, however, was the structural reforms that eroded its sales efforts. The group began reforming its domestic sales and distribution system for consumer appliances last April. It integrated or closed down sales and distribution firms nationwide, and let go almost 5,000 sales staff, mainly experienced workers, through early retirement and other measures. The drastic organizational overhaul and deep staff cuts had an appreciable impact on the sales floor (Nikkei Weekly 15 July 2002).
The firm also says the work force reductions will not lead to a decline in technological development capabilities, but an official at a rival electrical machinery manufacturer says Matsushita Electric is losing a great deal of talent that will be more than welcomed by competitors. (NKS 22 February 2002)

The other case where an early retirement program received considerable attention and garnered some comments beyond the usual focus on costs and returns was the program initiated by Mazda in spring 2001. As for the program of Matsushita, more workers applied than originally expected, but while in the case of Matsushita the motives of workers applying were not further scrutinized, this was done in the case of Mazda where the readiness of workers to depart was mainly seen in the dissatisfaction of workers with the course management was taking in reforming the company:

The greatest damage to Mazda’s image came last spring when the company introduced its volunteer early-retirement scheme. Far more people than expected jumped at the opportunity -- some 2,200 employees or 10% of the payroll -- creating the impression that workers were trying to flee the company. Many of the early retirees were skilled engineers and designers. In addition, the presidents of eight important sales affiliates also quit. (NKS 20 May 2002)

Another case where at least some of the effects apart from cost-savings were reported is the case of struggling retailer Daiei.

The company implemented voluntary-retirement schemes in 1999 and 2000, though on a relatively limited scale. The voluntary retirement of 1,000 employees last March left some stores short-staffed and pushed down sales further. Despite this experience, the latest round of retirements, if accepted by the union, will be the largest ever at the company. (NKS 11 February 2002)

This statement contrasts nicely, however, with a statement from a president of another retailer, Takashimaya, a company that has so far refused to introduce an early retirement program.

I am against encouraging early retirement. Older employees are vital to our customer services since Takashimaya takes clients over 40 very seriously. (NKS 25 June 2002).

The accounts given above based on the reporting in the business press provide only one perspective on downsizing in Japan and the topic demands some further exploration. In the following, this will be done by looking at accounts of early retirements that can be found in personal diaries available on the Internet. In doing so, it has to be acknowledged that this is certainly not the only one way of exploring this topic further. For example, looking at the press, a more detailed view could have been gained by widening the perspective to other newspapers and especially the weekly and monthly magazines — some of them being of questionable reputation, but still being regarded as a necessary supplement to the relatively tame mainstream press (Sugimoto 1997:224) — for which downsizing has also become a rich field of reporting, readers being interested in possible consequences for themselves as well as the various stories of human hardship resulting from the downsizing measures, e.g. Having to retire, real accounts of what happened to salary men who retired (Sh kan Ekonomisuto 11 February 2003); or The sweet trap of early retirement, (Aera 20 May 2002).

3. Accounts of Downsizing as Seen in Online Diaries

Writing diaries has a long tradition in Japan with one of Japan’s earliest pieces of literature being written in the form of a diary more than 1000 years ago (Varley 2000:67). The Internet has quickly become a popular place for publishing and keeping diaries, these more and more becoming known under the name of weblogs or in an even shorter version as blogs. Helping
internet users to administer their diaries by providing easy to use templates and web space has become a business in itself, and the largest site in the US targeting writers of online diaries, Blogger.com, has reportedly attracted more than 750,000 users (Cobbs 2002, Jenkins 2002, Levy 2002).

For Japan, diaries appear in a variety of shapes, some in improvised homepages designed by authors themselves, others are as in the US being published with the help of specialized providers. For example, Saru Saru Nikki at diary.ne.jp lists more than 105,000 online diaries as of the middle of February 2003 with the most popular diaries being accessed by more than 4000 people per day. Yahoo Japan lists 26 other providers that support writers of online diaries.

Web diaries have so far been largely overlooked by academia and what has been published on the topic has been published in technology related magazines and journals. Here, some attempts have been made to analyze and categories the new phenomena. Dvorak (2002) lists five reasons, people have to publish their diaries on the Internet. Ego gratification: people want to share their lives and thoughts with the world, antidepersonalization: within a largely anonymous society people try to portray themselves as different, elimination of frustration: providing people with an opportunity to complain, the social need to share, and wanna-be writers.

Interestingly, as early as 1998 a more scientific approach has been introduced by a group of Japanese academics (Kawaura, Kawakami and Yamashita 1998). They base their analysis on the assumption that diaries can be largely categorized along two dimensions: 1) Inward versus reader-conscious outward diaries and 2) diaries that record sentiments versus diaries that record facts. Based on a writer and user survey on motives for writing and reading web diaries and also asking about details on activities to update and publicize diaries, they categorize web diaries into four groups: Memoirs, diaries, journals and open diaries. Not wanting to go deeper into the topic of online diaries in general here, it still has to be kept in mind that web diaries are written with different purposes. The main difference to the conventional private diary is, that writers publishing their thoughts, experiences, and feelings in the form of an online diary quite often have a reader in mind.

Diving into or rather fishing the Japanese Internet for online accounts of restructuring and downsizing leads to a variety of catches — among them interesting finds such as the adventures of a *risutorari-men*\(^1\) (a play of words on the *sarari-men*) who is cycling Japan after having lost his job —, and it is easy to get lost in the search. To systemize the approach, the Google search engine was employed with two terms being entered, early retirement (*ski taishoku*) and diary (*nikki*). Of course this leads to the risk of not taking into account pages where different terms were used, however, entering just those two terms already resulted in the considerable number of 1,250 links to pages. The Google search engine reduced this number by filtering out similar pages and in the end provided 630 links.

Alternative searches would lead to higher numbers, for example, just retirement (*taishoku*) and diary (*nikki*) alone resulted in 58,700 linked pages and restructuring (*risitora*), retirement (*taishoku*) and diary (*nikki*) returned 5,010 links. For practical reasons, the first option, early retirement and diary, was selected since this allowed to access all linked pages.

Among the sites accessed, not all pages were personal diaries, though. Some were just accounts of news published in newspapers, others online discussion forums, some just contained the two search terms by coincidence. After assessing all 630 diaries, the number of those that

\(^1\) [http://www.geocities.co.jp/Outdoors-Mountain/5528/mag2/](http://www.geocities.co.jp/Outdoors-Mountain/5528/mag2/)
could really be identified as diaries and contained some information on early retirement was 230 diaries. Among the diaries found, only a very small number dealt exclusively with matters of restructuring or happenings at work places, and it is believed that this increases the credibility of the obtained information and statements. While some diaries exist under titles like Restructuring and Myself\(^2\) (risutora to watashi) or A True Diary of Restructuring\(^3\) (hont no risutora nikki), in style and content these appear to be written for a larger audience. In contrast, most of the other diaries accessed only dealt with matters of restructuring on the side, sometimes even only in one short paragraph. Exactly, this fact makes online diaries an interesting research source, however. What is being expressed is quite often of no real significance at first sight, for example, if someone had lunch with an early retiree, where the only reference to the situation given might be that the person appeared to be in a fine mood (genki), but accumulated the accounts provided, can contribute quite significantly to a better understanding of the topic.

With all these limitations in mind, in the following, citations from online diaries will be used to further explore the topic of early retirement in Japan. These will create a narrative that provides alternative or complementary views to those provided in reports of the business press.

The first point that should be taken up here is the way in which early retirement programs are being conducted. While participation in these programs is in principle voluntarily, it has already been pointed out that there is a certain tradition in Japan of tapping people on the shoulder to signal to them that it is time to retire. Based on this tradition some writers are skeptical about the current programs and the accounts provided by other writers confirm their doubts to a certain degree. The first writer gives a detailed report of his own encounter with company representatives trying to convince him to retire early:

> Today, directors came for interviews to outline the early retirement measures. Of course, I am not thinking of leaving the company at the moment. Since about last year all companies of the group are in a very severe situation, and, as in many other companies around, this led to invitations for early retirement. Interviews are conducted individually, employee by employee, to find out whether they are willing or not.

> By the way, I was told that if I retired right now I would receive 3.8 million in retirement allowances and unemployment insurance would amount to an additional 1 million yen in case I made use of the maximum period of half a year. What is this? For such an amount, how could one at the current time give up his work so carelessly?

> I am not thinking about early retirement at all, I answered. As long as one cannot be forcefully terminated, I will stick to my job as long as I want to stick to it. All the more, since my child will be born. Since this interview has taken one and a half hours, today s work day was already well advanced.\(^4\)

The next writer largely confirms the notion of companies actively recruiting people for early retirement.

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\(^2\) http://dokushin.tdiary.net/200208.html

\(^3\) http://sapporo.cool.ne.jp/sapporo/ris.html

\(^4\) [internal number], 6 June 2002, no more information available, cached at http://www.google.co.jp/search?q=cache:PqRkkFJu7EkC:www.asahi-net.or.jp/~xw8t-ysmk/Foolpapa/2002/0206.html+%E6%97%A9%E6%81%B7+%E6%97%A5%E8%A8%98&hl=ja&ie=UTF-8
The recruitment activities for the early retirement system have been finished today. Said so, the personnel department had decided to conduct individual interviews earlier, and therefore the deadline had no real meaning. Somehow or other, men and women aged 50 years or older seem to have responded. If one considers retirement allowances and payment of pensions, it might have been just the right time.

Another writer gives a more detailed account of the pressures that might be involved.

While company N [name provided in the diary] has announced a large restructuring program recently, this time they seem in contrast to previous times really want to reduce personnel. They even want to sell their headquarter building. Since I worked for a N related company before I was somewhat interested in the restructuring program and contacted a few acquaintances and got several replies.

With the introduction of the early retirement system, people who retire early will receive a higher retirement allowance (money for about one year). However, if one does not retire on one’s own decision, or if it is judged that one is not helpful, this time round one will be retired forcefully by the company (previously, by whatever means one retired it was self-resignation). Naturally, in this case one will receive no more retirement money than a tear of a sparrow.

Writers are also quite skeptical about the names that companies use to describe their early retirement programs.

A leading manufacturer, that in the past did not use the practice to invite people for early retirement by tapping them on the shoulder, has made a bolt move towards the following. It has not introduced dismissals by a so-called favorable early retirement program, but instead calls it development of the next career. While it is given a name that implies more, it is certainly to reduce personnel by a tap on the shoulder. It targets people 45 years and older, and a 50 year old employee will receive more than 30 months of salary.

In the past companies often preferred to transfer employees that could no longer be employed in the main company. Indeed, these transfers seem to have become something of a right or minimal expectation for employees but this seems to be no longer always possible.

On my way home I had my dinner at a fried meat restaurant near my house. There, by chance I met a junior colleague of mine who had recently left the company. The current situation does not take care of every person. He could not receive an order for transfer, and, as a result, had to retire early. Now, he seems to have returned to a work skills training school. It is rather terrible.

Another writer has a similar notion, but at the same time outlines his own involvement. Under the title of A System That Delivers Happiness he gives an account where he regards himself partly responsible for the need to initiate an early retirement program.

Today we had a farewell party after work. Someone from the same department, someone who has done me a lot of good, has, without reason, invited me to his farewell party. This person has used the currently popular early retirement system at our H company and has retired 5 years before regular retirement age, meaning he had to retire earlier. No! He could not have not retired.
The main reason has been me, myself. Because, I have over the last year participated in the introduction of the A system of administrative reform, it has happened that people have lost their occupations. In short, this A system has shown results to a degree, where the number of people having to leave the company increased.

While in the past, however, these excess people would have yielded results by investing them into the development of new products, in times of economic crisis they have all become the focus of restructuring.

I, myself, think the computer should normally be a tool to help mankind. In the future peoples work should focus on their strongest point, communication, and it is good if computers do work of 3D occupations [dirty, difficult, dangerous], or where memory and knowledge are needed. However, if computers unexpectedly take away the happiness of people this cannot be agreed with.

In the course of the speeches, the problem of the A system was brought up. Because of the introduction of the A system If the A system had not been there, a little longer. I sat straight through these speeches and have taken them firmly word by word into my heart. Then I have pledged by my heart: I will create systems that bring happiness. I will never forget today’s farewell party.9

A major theme frequently found in the diaries is the notion of what sorts of people are leaving the company and how this will affect companies in the long run. Here quite a few writers share the assumption that mostly capable people leave while the incapable or those without initiative stay behind.

That in a certain company an early retirement program for 35 year old people was instituted does largely show the critical state of the Japanese economy. Here, good people resign on their own from the company and work for foreign-owned companies or study abroad. The remaining people become people with low profitability, and the business situation gets even worse.10

A very similar statement is made by another writer who fears for his own company:

In the company, from where I was originally transferred from, many people of the rank of department head and section head are retiring. They are going to be paid a retirement allowance, plus a premium? Income for two years is going to be paid. If one calculates on a low basis, one person will receive 10 million yen, and because there are 30 people it will cost 300 million yen for the company. Because many people up to section head will retire, I think, that it will be much more. The normal way of thinking is (at least my point of view) that the people, the company needs, leave, and the people, the company does not need, will stay. So said, if this is the truth, our company is in real danger.11

And yet another two comments:

Because business is bad our company, too, has introduced an early retirement system. In short, while it has been regarded as pathetic to finish just like that after a knock on the shoulder, it says let’s raise the retirement sum a bit. I suppose, it is the same story in every company, where such an evil practice has been come up with. Unfortunately, not only people who one really wants to retire, but also excellent people are flowing out. One after another it

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10 125, 1 October 1999, 46 years old male, self-employed. http://home.catv.ne.jp/dd/t_kambe/diary.html
11 190, 17 April 2002, 32 years old male employee in software development, http://www.tomyzoo.com/diary/old/200204.html
happens that people first receive a sizable sum of retirement money, then continue to progress in their careers. In our department too, many people like this are around.  

In addition, there are many early retirees. People, who receive an increased retirement allowance and resign. While the system is for middle-age employees who work badly, many middle-aged employees who work well are also leaving. In addition, there are younger people who resign outside of the system.

Within this notion of capable people leaving the company, the question frequently comes up why companies do let these people go and one of the writers gives his own explanation.

At Hitachi 4000 people were recruited for early retirement. While they have received interest from 9000 people, how can it be, that they seem to send all interested into early retirement. Uuuh, how can this be a good decision? Among them, there have to be excellent people. However, it is a next to impossible to restore a mind that has already broken away from the company back to the basics. Even if one had restrained them, I sense that there would be no mutual relationship any longer. For good or for bad, my company was not in this position. If it had been, what would have happened?

However, not all writers draw such a positive picture of early retirees and chances of new employment, however.

Our company has from last year on, or even earlier, a so-called early retirement system, and the somewhat older men have received the tap on the shoulder: Don't you want to retire quietly, since there is an extra retirement allowance? Such an older man was also in our section, and at the end of this month he will retire. Nowadays, it is really the merit principle, so it cannot be helped, nonetheless. This older man is between 50 and 55, I believe, and saying so, he is a single. On this occasion, maybe several problems will occur.

Another writer, however, contradicts the perception that companies just get rid of workers who are not much use to them anyway:

Yesterday was the farewell party for my very first supervisor. From the people who were around when I joined the company one by one is leaving and I feel somewhat lonely after all. Well, some have harshly labeled them as awful window sitters. Our workplace, though, is in contrast to the financial sector an expert field where one carefully matures.

Finally someone creates a somewhat tragic picture of the fate of early retirees:

In the library, where, when I was a student myself the study room was used by students cramming for entrance exam and university students, recently many restructured, early-retired older men, not being wanted at home, find shelter. But, while they think that there they will find another new hobby, or develop a new interest, it just becomes a place for napping (big laugher).
The high retirement allowances offered in Japanese companies have obviously led to some confusion among employees remaining in the company. They ask themselves whether they made the right decision by not applying, whether the company will recover or whether the same benefits will still be available by the time they will want to retire.

Today, I was handed a letter that stating: if you retire early “your retirement payment….., and also calculated a gratitude. I am concerned whether I will receive the same amount when I reach retirement age or a revised amount. At the moment, I cannot imagine a life without work; maybe it is a thing for other people.\(^{18}\)

Another writer states:

*Early retirement system interview: While I am not in the targeted age group and therefore not involved, this is a scheme where you can comfortably retire in a fairly advantageous way. The talk is, with anxiety over the future increasing further, this is good for people who have no aspirations. At, the same time it comes to ones mind, however, that at a later stage someone might say with a big laugh: That K had a lot of foresight, hahaha! Gloomy feelings!* \(^{19}\)

And yet another:

*Let this be as it is, I was amazed about a mail I received today. A 46 year old men, nonetheless. It said: Because it has come to my mind to change the course of my life for once, I will take the risk. Without having secured new employment he retired; he seems to retire first and then look for new work. With countless company results being bad, one has to say farewell to the calm life where one enters a company listed on the first section of the stock exchange and mounts upon a career course. Still, the decision to throw all this away, to enter into a totally unknown world, moreover, to step forward into a situation one does not understand, is amazing.* \(^{20}\)

Someone working in a smaller company has similar thoughts.

*Restructuring: Start of the second round of recruiting for early retirement. Again we are looking for 20 persons or more; if we cannot find enough persons, we will nominate people for dismissal. This time we have, different from last time, no age restrictions.

Well, if I look at the last business results, will it be like that again? I calculated the medium- term results arbitrarily on my own. I do not know about deductions and taxes, but they appear to be like last year s. Whatever one does, the dismissed people who received extra retirement allowance might be better off. My salary is too low, and there is overtime etc.* \(^{21}\)

Finally, another writer is deeply concerned but does not want to make the decision himself:

*After work was finished we had a farewell party for early retirees. Because the results of our company are in a slump, wages and bonuses have been cut, the purse is in a desolate state. Within all this, a favorable early retirement program was being carried out. When the company recruited retirees, quite a number of people raised their arms. Today was the farewell party for two of them. If such a number of people raise their hands, the future prospects of the company are surely bleak. But, if I retired, I would not have the confidence to feed myself, I cannot retire.* \(^{22}\)

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\(^{18}\) 11, 22 April 2002, male, [http://village.infoweb.ne.jp/~fwie8707/sub6-0204.htm](http://village.infoweb.ne.jp/~fwie8707/sub6-0204.htm)

\(^{19}\) 100, 4 March 2002, male, [http://dac.lolipop.jp/diary/200203.html](http://dac.lolipop.jp/diary/200203.html)


Early retirement programs are targeting workers in their forties and fifties and, as many writers report, interfere into the networks of human relationships built up in companies.

On the 31 of July, the announcement concerning the changes of personnel was made public. In addition to the usual transfers, we had a column on early retirements. There were also people included who at the time when I joined the company had kindly taught me several things on the preparedness needed to be a business man. If society has to be in such a condition, the satisfaction of being a salary-men will probably come to an end. I feel sorry.23

Not all people are so positive, however:

Today was the farewell party for the chief clerk. His is just in his forties after all. I wonder what sort of business he will start. For me, he was an aggressive person who could not behave. The drinking session after work was not attractive at all (In the previous position it had always been enjoyable, though). Because all others had confirmed their participation, it was impossible for just me not to come. Uh, 3000 yen, it hurts.24

The direct consequences on the workplace itself, apart from the break-up of relationships and the perception that some good people are leaving, is only discussed in a few accounts.

Lately, at my workplace there were quite a number of early retirees, and I have some feelings of loneliness. Within all this, it is not as if the remaining people are blessed with happiness, the amount of work has increased. It can be called restructuring share; while one cannot say twice, we now have to work 1.2 to 1.5 times as much. Suddenly, I had to think about all this at work today. 25

Another writer is also concerned about the increasing workload, but even more how to interact with affected people.

All over Japan, no, worldwide, the influence of the IT recession has in various branches created fears, and a lot of companies have really experienced the influence... Unfortunately it has also arrived in our company. Yesterday, there was an announcement that said that a total of 20 % of the employees would be cut by means of an early retirement program. How many people might become retired employees. Simply said, 1 person within 5 persons. If it becomes a situation like this, the work apart from the work I am already doing will increase and naturally it will become a burden. However, what I cannot even think of now, is how one should deal with those people (32)26.

A few days later the same author writes:

While I have written about it previously, the applications for this program (called restructuring in short), have come together by yesterday, all together 62 people. Because the expected number of 60 was reached, the recruitment has been closed. It is said, that within the process, many human patterns have unfolded. People who have persistently received demands and advice from superiors to retire early, people who have retired really unexpectedly, various things seem to have happened. While many people will retire by the end of November, most people will be send on vacations earlier through paid vacations, flex time and other measures. From my workplace 2 people will be on holiday from around the

tenth. For those two people, I have been just a lot of trouble and I am indebted to them in a way that I cannot pile up enough words of gratitude. I am feeling extremely sad.  

There are only very few accounts by people who retire themselves, but one of the few that is around expresses his feelings very clearly:

_I will finally retire in 39 days. Under this recession, I thought I would bring the date for retirement a little forward. Just a little. But, if I had continued to work another year, next year about this time, I think I would have had the same feeling. Europeans have a retirement party and it feels that they celebrate retirement. If Japanese retire, they seem to shed tears as they have lost their work. What about these differences? I who has early retired am like a person without a nationality Oh dear!_  

The final statement should be by a worker who has recognized the hardship the process puts on organizations and is looking forward.

_It seems that the training session, called meeting to explain the early retirement system is coming closer. Targeted are X thousand workers and it seems that interviews will also be conducted if needed. While this happens at every company and is no rarity at all, if our organization becomes such an environment, it will be absolutely hard. What sprouts for recovery will we have to create? So, that this will not happen again. Well, all what we can do is to strain ourselves to improve the short-term and medium term figures._  

4. Discussion and Conclusion

Overall, the pictures painted in the business press and those in the online diaries seem to complement each other. Business press articles state the necessity of the downsizing of workforces, but at the same time, by the way they are written, portray downsizing of the labor force — a measure highly visible to the outside —, as being symbolic for the resolve of management to break with traditions. Mainly concerned with short-term costs and savings, they do with few exceptions not mention the possible problems the implementation of these programs causes within companies. While now being portrayed as a legitimate measure in the business press, with companies no longer hiding their activities, the accounts on the personal web pages — with all their subjectivity — point to the fact that this legitimacy has not been established sufficiently within the companies yet. This seems to be especially due to the characteristics of these programs and the way they are implemented.

Japanese companies, not being able to dismiss employees directly (Genda and Rebick 2000:90 Usui and Colignon 1996:50), have to use so-called preferential early retirement programs to reduce their workforces and this is not unproblematic. First, companies have to offer substantial monetary incentives to induce employees to leave the company and also to establish legitimacy of these programs with their remaining employees. Secondly, this leads to the fact that companies seem to have lost some control over their programs by not being able to manage the selection of employees, companies clearly trying to push certain employees into retirement, but at the same time having to release capable employees that take the decision out of the hands of the companies. Thirdly, because of the substantial sums offered and the voluntary character of many of the programs, employees that stay behind remain in a state of uncertainty whether they made the right decision and how the programs will affect the future of their companies. The fact

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that many companies institute additional measures to reduce costs such as reduction in salaries and bonuses and overtime payments or the spin-off of whole functions into separate companies, certainly does not help to reduce this uncertainty. With many senior employees having left the company, some employees also seem to have lost important relationships to share experiences with and to seek guidance.

Overall, various symptoms of what has been described as survivor syndrome seem to exist within the workforce of Japanese companies. With some companies having taken considerable measures to assist early retirees, a major task for Japanese companies seems to be to restore confidence of remaining employees. The best medicine to cure the survivor syndrome may be positive business results, but these are not guaranteed any time soon and it is believed these have to be strived for based on more substantial and forward looking measures than just the reduction of workforces.

Usui and Colignon (1996:554) have proposed a step model concerning the restructuring of Japanese firms: in the aggregate, Japanese firms tend to move cumulatively and incrementally through a sequence of employment strategies as recessionary pressures dictate, suggesting a national pattern. They list seven measures with reduction of overtime being the first step and early retirement being the last. This paper has shown that obviously many companies have reached this last step and the question is what lies beyond. Here, it has been shown that in some cases the difference between early retirement and direct retrenchments is becoming less pronounced, especially for corporations that are faced with bankruptcy. What has not been discussed in this paper, but what is evident in many of the diaries that have been studied, is that early retirement is only one among the many changes Japanese employees currently face in their workplaces. Changes are no longer of an adaptive nature in regard to a recessionary pressure but companies are making structural changes to their workforces and employment systems. The threat of being retired early certainly makes employees more responsive to these changes.

Finally, this paper has not only explored early retirement in Japan, but also the usefulness of online diaries as a research source. Hoping that online diaries will stay around for some time and not just fade away into oblivion as so many other Internet related phenomena it is believed that this paper has shown that within all certain limitations, they can be a useful tool for research, especially if contrasted with other sources.

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Title: Building Participative HRM Style in South Asia: A Comparative Case Study Between a Japanese Subsidiary and a Domestic Company in Bangladesh.

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Abstract:  
Using the qualitative and quantitative data of two firms in South Asia, a Japanese subsidiary (JS) and a domestic company in Bangladesh (BC), the present study attempted to document how the Bangladesh-based Japanese subsidiary can build its unique HRM style by integrating national culture in Bangladesh with strong corporate culture of its Japanese parent company. For the quantitative analysis, the data was collected from both managerial and non-managerial employees working for one JS and one BC sampled in the study. The findings of the empirical study indicate that BC managers and employees tend to have high work avoidance beliefs, and to perceive...
their company HRM style to be more autocratic. On the contrary, self-motivation (as opposed to work avoidance) beliefs were highly supported among JS managers and employees, who tend to perceive their company HRM style to be more participative.

In addition, an interview study with various managers and employees between the two companies were conducted to obtain more detailed information as to how the JS adopted unique HRM policies and practices that can enhance the sense of participation among Bangladeshi employees of the firm. Findings from our field interview surveys for both the JS and the Bangladeshi company revealed that the HRM policies and practices of a JS were more strongly influenced from those of its Japanese parent company than those of other Bangladeshi local companies. Based on the findings of qualitative and quantitative data, a hypothesized model of building a participative HRM style in Japanese subsidiaries was proposed.
Abstract

This paper investigates how the competencies of suppliers could be strengthened through the sedulous manipulation of network relationships. Using the data of 49 Taiwanese firms, we explore that the possession of strategic network organizations would be the valuable associates of competitiveness. In particular, supplier performance benefit from the network
functions of technology development and strategic marketing. Our findings confirm that suppliers which have more collaborations with other firms perform better than otherwise comparable firms that have fewer cooperations. The result also suggest that suppliers retain a more proactive behavior in managing networks than that of buyers within the supplier-buyer relationship.

INTRODUCTION

The development of clusters in the manufacturing sector revealed the importance of the strategic network linkages. Recent studies suggest that organizational networks could facilitate organizational learning and broad distribution of knowledge (Powell and Brantley, 1992; Uzzi, 1996 &2002). Networks could also improve the economic performance of firms (Sacks, Ventresca, and Uzzi, 2001), especially their R&D innovativeness (Baum, Calabrese, and Silverman 2000). Lipnack and Stamps (1994) further commented that networks involve both the hierarchy and the lower-archy, which facilitate effective decision-making and are important in the information age. 

Network organization could benefit from organizational learning because networks offer more
adaptive flexibility in the development of business practices. Achrol & Kotler (1999) defined a network organization is an interdependent coalition of task- or skill-specialized economic entities (independent firms or autonomous organizational units) that operate without hierarchical control but is embedded, by dense lateral connections, mutuality, and reciprocity, in a shared value system that defines membership roles and responsibilities. In identifying the dyadic business relationships in networks, Anderson, H kansson, & Johanson (1994) described that a business network can be defined as a set of two or more connected business relationships, in which each exchange relation is between business firms that are conceptualized as collective actors.

Organizational networks are widely studied in many developed countries, and in particular the emerging markets in Asia along with their prominent economic development in the last few decades. Past studies presented a great variation of networks in different nations (Forsgren & Johanson; Axelsson, Johanson & Sundberg; Hadjikani 1992; Gerlach and Lincoln 1992), especially Asian countries (Kim; Kuo; Okumura; Orr; Ueda; Wong; 1996). Such heterogeneity of networks indicates that network dynamics fit into different cultural norms in different nations. Though there are many differences, Redding (1996) considered that different business systems form with different cultural norms and business strategies; and network ties are the fundamental source of strategic effectiveness. In addition, Hamilton (1996) stated that the Asian business network is an institutional medium of economic activity. In all these societies, Chen and Hamilton (1996) concluded that the business networks have structured the rapid economic development that has occurred throughout the region.

However, there were studies providing different views on organization growth of East Asian
firms which did not discuss the importance of organizational networks in their economic development. In an analysis of the electronics industry, Hobday (1995) argued that the mechanism for overcoming barriers in export markets and technology acquisition is subcontracting arrangements with OEMs (Original Equipment Manufacturers). The Original Equipment Manufacturing System permits Asian suppliers to produce finished products for foreign firms resulting in production cost reduction and profit maximization. These products are sold under foreign brand names in the end-user market which has led to sophisticated and demanding pressure (Porter 1990) being imposed on the production plant and a shift from product-intensive to process-intensive competition. (Kolter 1976; Utterback and Abernathy 1975)

The mechanism behind the Original Equipment Manufacturing System could plausibly explain the accelerated organizational growth of some Asian manufacturing firms; yet it is surprising if OEMs were willing to adopt a system that could possibly nurture more competitors against themselves and that such a system further brought about the internationally competitive performance of an industry. Previous research seldom explored the possibility that a mechanism beyond the inter-firm network of connections could have actually contributed positively to the competitiveness of these Asian suppliers and instead discussed the benefits that could be generated from the network organization. How these benefits in the mechanism of networks are closely connected with supplier performance and how they can further spill over across the industry remains vague. In this paper the Taiwan bicycle industry is selected to study how its network of connections could have interlocked inter-firm relationships and sharpened its competitive edge in the international market, and especially how organizational networks that promote product development and process innovation could affect the growth performance of firms.
The aim is to analyze the networks that integrate organizational learning and diverse resources accession in the manipulation of marketing and technological synergies that could be conducive to the growth of suppliers in the bicycle industry of Taiwan. The economic performance of Taiwan was particularly distinctive in 1980s and 1990s. In contrast to the general economic theories of organization, some studies discussed the idea that business practices in Taiwan are predicated on the embeddedness of networks relationships. Chen & Chen (1998) commented that network linkage is the determinant of location choice in foreign direct investment of Taiwan firms. Kao (1996) found the role of personal trust, as a kind of embedded institutionalized social order, vital in large businesses of Taiwan, and that business operation is not based upon following legal rules.

OVERVIEW OF THE TAIWAN BICYCLE INDUSTRY

Taiwan has been the top bicycle supplier (in terms of export value) in the world market since the 1980s (Table 1). Due to the relatively limited domestic market and a search for survival on the part of many firms in the industry, the Taiwan government shifted its policy from protectionism to export-orientation which initiated technological sophistication in bicycle production. In view of the fact that more than 95% of the manufacturing sectors of Taiwan are occupied by SMEs (Small and medium sized enterprises), most of the firms in the industry are also SMEs. It is quite difficult to imagine how SMEs are able to compete in the international market when they inexorably have various constraints in sustaining their development.

From 1971 to 1986, the export of bicycles expanded from 270 thousand units, with an export value US$4.2million to more than 9.5 million units, with an export value of US$982million. The outstanding performance of the industry continued in the 1990s and the export value of
bicycles and bicycle parts reached US$1.06 billion and US$438 million in 1995 respectively. The change of export value can be shown in the figures below (Table 2).

In the Bicycle industry, the export of bicycle parts is also involved in addition to the export of bicycles. The main components exported in 1995 and 1996 are shown in Table 3. The export value in 1995 and 1996 was US$438 million and US$368 million respectively. From January to July of 1998, the export value was more than US$200 million, and this led to the export value of bicycle-related products, including bicycles, reaching US$1.6 billion out of the total industrial export value of US$110 billion.

CONCEPTUAL FRAMEWORK
This paper adopts an inter-organization behavioral approach to explore how the networks that foster organizational learning and information exchange in the context of marketing and technological development could influence organizational growth positively. Achrol & Kotler (1999) mentioned that successful network are those that can leverage marketing and technological synergies. Drawing on this and other similar work (e.g. Stuart 2000), this paper focus on the functions of technology development and strategic marketing that exists within networks. In the development of cross-cultural supply linkages, many complex networks are being built across different industries though our study narrows the focal relationships to firms in the bicycle industry. Relatively better firm performance thus could possibly benefit from several supportive relationships with firms from many different industries rather than
solely the bicycle industry.

Generally a network involves at least two parties and emanates from the continuous two-way interaction in which the bilateral parties are motivated to search for reciprocal ground with the expectation that it can support the possible accomplishment of particular business objectives. Redding (1996) stated that the main forces nourishing the strength of the networking are the ethic of trust and the relatively greater power of the key actors. Long-term establishment of trust, credibility and reciprocal and obligatory norms are indeed the determinants of the governance structure of networks. With the existence of connections between relationships Anderson, H kansson, & Johanson (1994) suggested that network functions performing chains of activities, constellations of resources and shared network perceptions among them would be elicited. These chains of activities further strengthen the core competence of firms in the manner that the value chain solidifies the competitiveness of firms in the industry cluster. (Porter & Fuller 1986)

The nature of the networking is based on the principle of equal footing in the power arrangement between these two parties. The focus of the focal relationships composes of two interfaces. Viewed from the position of a manufacturing firm, it has linkages with buyers, possibly the foreign OEMs; and with the local supporting firms. The horizontal relationship between the supplier and sub-supplier, particularly, is neither one of the keiretsu-type nor the keyul-type. As far as the three parties involved in the focal relationships and two-way interface of networking are concerned, there are in total four different flows of relationship embedded in the network: (1) Network direction from buyers towards suppliers; (2) from supplier towards sub-supplier; (3) from supplier towards buyers; & (4) from sub-suppliers towards supplier.
Organizations can leverage their competencies through benefit from inter-firm networks including organizational learning, market access and diverse information exchange. Helper (1990) found that thick information exchanges of know-how are frequent in the supplier-manufacturer relationships of the auto industry. Moreover, coordination device that facilitate knowledge transfer and learning could be common in successful business networks (Larson 1992 & Lazerson 1995). These network benefits increase with time because network functions would likely develop certain mechanisms in the long run. The inertia of collaboration would heighten the propensity of joint effort of firms in the same network of ties that could further increase the density of the networks and deepen the network functions. Therefore in studying the relationship between network ties and firm performance, our main focus is the network functions of technological development and strategic marketing that are brought along with the embedded network ties, as they are likely to be the critical components for the competitiveness of most SMEs.

The technological development function is two-fold in nature in that the supplier can either acquire new technologies and manufacturing know-how from foreign buyers or rely on the indigenous R&D of the firm. Firms could sometimes have attained technological advancement through the cooperative focal relationship with their suppliers rather than through in-house R&D. Meanwhile, the strategic marketing function is another crucial network function for the supplier to promote products. Marketable products and economic efficiency in sales channels and brand management, as well as strategic marketing and speed in launching into the markets, can possibly create a dominant supplier in the overseas market. If the network that provides the upgrading of marketing capability and complexity of sales efficiency in the organization, it can have a great impact on the growth performance of a firm. Each entity, including the buyer, the focal firm and the sub-supplier cognitively shares the
same goal in the network; however their interest beyond the network of connection could be different. Hence the content within each network functions are different along with different network directions in the network linkages.

PROPOSITIONS

Technological development can be exogenous- and endogenous-driven. Both external acquisition of foreign technology and the indigenous R&D advancement are fundamentals for sustaining the improvement of technological advantage. Such a long-term objective may benefit from the utilization of network functions and hence the first hypothesis is proposed as:

\textit{Hypothesis 1: The greater the network function of technological development and innovation provided within the network organization, the higher the growth performance of the supplier.}

Many suppliers contemplate a strategic marketing approach to strengthen their sophisticated sales channel and enlarge sales volume and very often they directly appeal to buyers for purchase orders. Collaborations are important factors for fulfilling their marketing strategies as Achrol & Kotler (1999) found marketing outcomes are increasingly decided by competition between networks of firms rather than by competition among firms. Hence the second hypothesis is:

\textit{Hypothesis 2: The greater the network function of strategic marketing provided within the network organization, the higher the growth performance of the supplier.}

Supplier-buyer relationships are complex as each entity has their own motives in the collaboration arena. OEMs could focus on the reduction in production cost and profit maximization when building their vendor system. Suppliers may be likely to behave much more opportunistically to benefit from the network functions including organizational learning, generalized reputations and transfer of knowledge and technology know-how.
Meanwhile they are willing to share their experiences and cultivate long-term cooperative relationships with their sub-suppliers as they could benefit from risk sharing and investment together (Uzzi 1996). Firms in the Taiwan bicycle industry are almost SMEs, sometimes it is not easy for them to breakthrough social boundaries and consolidate network relationships, therefore we predict that they are more proactive in initiating closer collaboration heuristically compared with their counterpart buyers. Thus the third hypothesis is:

_Hypothesis 3: Suppliers behave more heuristically than their counterpart buyers in the inter-firm network in order to improve their growth performance through stronger collaborative activities and benefit more from network functions._

**METHODS**

For the purpose of generalizing how companies access benefits through the inter-firm linkages in real business practices, a mail survey was carried out in Taiwan in September 1998. The survey questionnaire was sent to 300 Taiwan-based bicycle manufacturers; 52 companies returned the questionnaire. The response rate was 16.7% and there were only 49 cases of complete data available for analysis. The respondents were mostly from the top (N=23) or middle (N=24) management level, leaving only two respondents belonging to the low management level. In addition, about 80% of these companies engage in production for both foreign and domestic customers (N=39) and the remaining 20% are companies which solely serve foreign customers (N=10). The foreign customers involved are mainly from the US, Europe, and Japan, and other countries such as Latin America and East Asian countries. Most of them produce a wide range of products as identified in Table 4.

The majority of these companies were established in the 1970s and 1980s. In order to distinguish the similarity of the nature of inter-firm linkages of each focal firm, the types of
ownerships in our sample are important. Over 50% of them were 100% owned (N=33), 15 of them were owned in the form of a partnership and only one was a joint venture. Most of the companies in the sample conform to the definition of SME offered by the Ministry of Economic Affairs of Taiwan, having less than 200 employees.

==== Insert Table 4 around here ====

**Variable Constructs**

The respondents of the questionnaire are identified as *supplier* in this study. Each function is composed of four network directions and every network direction consists of similar composites measured on a 5-point scale of Strongly agree=5; Agree=4; Neither agree nor disagree=3; Disagree=2; Strongly disagree=1.

Network benefits including learning and information exchange could be incorporated into the network functions within the focal relationships. Six areas which serve in the function of technological development are focused upon: (a) new product knowledge and information; (b) new technological knowledge and information; (c) proposal of new products, including product design and specifications (d) transfer of hardware technology resources; (e) manufacturing know-how and expertise exchange, the software of technology resources; and (f) exchange of R&D or production personnel.

Firms can also promote speedy market access through the network function of strategic marketing; however our focus is limited to industrial purchases from the OEMs. Three areas which are studied include (a) new marketing know-how; (b) information about foreign market and economic trends and (c) information about new customers.
Sales growth rate is the direct measure for the supplier performance. The average sales growth rate of every respondent for fifteen years, from 1985-1999, was collected. The correlation between the network functions and the average sales growth rate will be assumed to be the result of the respondent's activities. Considering the dramatic growth of the Taiwan bicycle industry starting in the 1970s, and that nearly 50% (N=24) of the samples are companies established after the 1980s, the control for the network functions that vary over time are required in the manner that the growth rate is adjusted by the addition of the expected average sales growth rate for the future five years as:

\[
GS = GS_{1985-1999} + GS_{2000-2004}
\]

where \(GS\) is the growth rate

\(GS_{1985-1999}\) is the average sales growth rate from 1985-1999

\(GS_{2000-2004}\) is the expected average sales growth rate from 2000-2004

The expected average sales growth rate for the next five years is important also because it balances the general high growth rate of the industry in the preceding fifteen years. Especially in the late 1990s, many manufacturers in the industry were pessimistic about the future because the production cost in Taiwan has drastically increased and the emerging competitors in China also compete for technological innovations. Many of them shifted their production plants and started the marketing and sales in the Chinese market.

The growth rate is divided into three groups. Considering the lowest growth rate in the sample was —50%, companies with a growth rate below 0% formed Group 1; those between 0-50% formed Group 2; and those above 50% formed Group 3. Group 1 represents the low growth rate group, Group 2 is the high growth rate group. Using a change management...
the ratio of the number of companies in these groups is 7:24:18. The analysis is primarily based on the statistical data which describes the relationships between the organization growth and functions embedded in the mechanism beyond the network relationships.

**RESULTS**

Every fundamental network function in the model of network ties is derived from the summation of the function in these four focal relationships while the respective function in each network direction is formed by a specific set of composite items. Hence these three functions can be presented as the following:

Technological development function (T) = \[ \sum_{i=1}^{6} \frac{ft_i}{6} + \sum_{i=1}^{6} \frac{st_i}{6} + \sum_{i=1}^{6} \frac{bt_i}{6} + \sum_{i=1}^{4} \frac{dt_i}{4} \]

Marketing strategic function (M) = \[ \sum_{i=1}^{3} \frac{fm_i}{3} + \sum_{i=1}^{3} \frac{sm_i}{3} + bm + \sum_{i=1}^{3} \frac{dm_i}{3} \]

**Technology Development**

*Network Direction of Buyer towards the Supplier*

The results indicated that the high growth rate group received significantly higher technological development functions (F=3.917, P<0.05) provided by the buyer (Table 5). The differences in the provision of technological development function from buyer to supplier can be indicated clearly from the composite items of the receipt of new product knowledge and information, technological information and manufacturing know-how.

*Network Direction of Supplier towards Sub-supplier*

The higher growth rate group tended to provide a higher technological development function (F=2.68, P<0.1) to the sub-supplier as shown in the statistical results. The differences in the provision of technological development function by supplier to sub-suppliers can be seen
more clearly from the composite items of providing new knowledge and information of product and technology as well as offering the transfer of foreign technologies to suppliers. The function of the supplier providing new product proposals to the sub-supplier tended to be different for the high growth rate group. This indicates that the supplier not only forwards the new product design and production specifications, but also implicitly introduces the product feature preference of their customers to them.

Network Direction of the Supplier towards Buyer

The statistical results indicate that the higher growth rate group provided a significantly higher technological development function (F=3.33, P<0.05) to the buyer (Table 3). The composite item of manufacturing know-how offered to the OEMs is shown to have significant difference across the growth rate groups. This reveals that Taiwan manufacturers disclose the manufacturing process to the OEMs without any reserve upon the acquisition of new manufacturing know-how and knowledge from them. This is understandable because the OEMs visit the production plant, during which time they can collect information about the production system and also record all the details of the plant in evaluating the production capability of the firm.

In addition, the composite item of transfer of local technology to the OEMs tended to be different in the high growth rate group. It seems difficult to explain, but the result may be attributed to the fact that many of the bicycle manufacturers in Taiwan have already evolved to Own-Design Manufacture (ODM) or Own-Brand Manufacture (OBM) instead of adhering to production solely for OEMs. Still, it should be noted that the mean of this composite item indicates that the low growth rate group tended to disagree with this statement while the high rate growth rate group appears to agree but only weakly.
Network Direction of Sub-supplier towards Supplier

The statistical results show that the higher growth rate group received higher technological development function ($F=4.26, P<0.05$) provided by sub-supplier to supplier. The significant differences across the growth rate groups can be identified from the composite items of technological and product information offering.

In summarizing the technological development function, the high growth rate group received and provided a significantly higher network function of technological development in dealing with both buyer and sub-supplier relationships. The high growth rate group is associated with a significantly higher technological development function ($F=5.70, P<0.05$). The result is consistent with hypothesis 1 that the greater the network function of technological development and innovation provided within the network organization, the higher the growth performance of the supplier.

The correlation results (Table 6) show that the technological development function has a conspicuous positive correlation with the growth rate groups. In addition, all functions in different network directions are highly correlated with each other showing the strong need for a two-way exchange of technological development attributes. Hypothesis 1, therefore, is supported and suggesting that a higher network function of technological development and innovation provided within the network organization could be conducive to higher organization growth.
**Strategic Marketing**

*Network Direction of Buyer towards Supplier*

The variance of the mean differences in the provision of strategic marketing function by buyer to supplier among growth rate groups is not large enough to show significant difference. Still the result signified that marketing know-how, information about foreign market trends as well as some information about new buyers could be widely obtained from the buyer.

*Network Direction of Supplier towards Sub-suppliers*

It appears that the high growth rate group tended to provide a higher strategic marketing function \( (F=2.58, P<0.1) \) to the sub-supplier (Table 7). The difference can be shown more clearly from the composite item of providing foreign market information to the sub-supplier. Since some of the suppliers have partially evolved to ODM or OBM, their knowledge about foreign trends is important in their close collaboration.

*Network Direction of Supplier towards Buyer*

The statistical data shows that the high growth rate group tends to provide higher strategic marketing function to buyers (Table 7). This suggested that suppliers sometimes introduce other local manufacturers and give information regarding the Taiwanese market, particularly the industrial market, to the OEMs.

*Network Direction of Sub-supplier towards Supplier*

The small variation of the mean differences (Table 7) in the provision of strategic marketing function by sub-supplier to supplier among growth rate groups led to the difficulty in finding significant differences across the growth rate groups. In searching out every chance for
business growth, sub-suppliers are eager to provide any supportive means to suppliers, for instance, reporting product knowledge which is produced by their new machinery and equipment regardless of the growth of these suppliers.

To summarize the results of the strategic marketing functions of different network directions, the high growth rate group tends to provide higher strategic marketing functions to both sub-suppliers and buyers (Table 7). The result is consistent with Hypothesis 2 that the high growth rate group is associated with a significantly higher strategic marketing function (F=3.76, P<0.05).

In addition, the correlation analysis (Table 8) indicates that the strategic marketing function in different network directions are highly correlated with each other. The strategic marketing function is correlated with the different growth rate groups; therefore, Hypothesis 2 is supported that the higher the network function of strategic marketing provided within the network organization, the higher the growth performance of the supplier.

The Relationship between Organization Network & Growth Performance

The correlation analysis shows that the network function furnished within the network relationships and organization growth is correlated to a certain degree (Table 9). Both technological development function and strategic marketing function are positively correlated with the growth rate groups. Furthermore, it indicates that the technological development
function and strategic marketing function are highly correlated.

Supplier-Buyer relationships in the Organizational Network

Hypothesis 3 predicted that suppliers behave more heuristically than their counterpart buyers in the inter-firm network in order to improve their growth performance through stronger collaborative activities and benefit more from the network functions. In this respect, we derive the scale for each focal relationship by using the network functions of technological development and strategic marketing.

\[
\text{Network direction of buyer towards supplier (} N_{s,s} \text{)} = \sum_{i=1}^{6} f_{t_i}/6 + \sum_{i=1}^{3} f_{m_i}/3^{\sqrt{2}}/2
\]

\[
\text{Network direction of supplier towards sub-supplier (} N_{s,\text{Sub}} \text{)} = \sum_{i=1}^{6} s_{t_i}/6 + \sum_{i=1}^{3} s_{m_i}/3^{\sqrt{2}}/2
\]

\[
\text{Network direction of supplier towards buyer (} N_{s,s} \text{)} = \sum_{i=1}^{6} b_{t_i}/6 + b_{m}/3^{\sqrt{2}}/2
\]

\[
\text{Network direction of sub-supplier towards supplier (} N_{\text{Sub},s} \text{)} = \sum_{i=1}^{6} d_{t_i}/4 + \sum_{i=1}^{3} d_{m_i}/3^{\sqrt{2}}/2
\]

The correlation analysis shown in Table 10 indicates that the network direction of supplier towards buyer; and sub-supplier towards supplier are positively correlated with the growth rate groups. In other words, since the sub-supplier-supplier relationship is tacitly the same as the supplier-buyer relationships, this signifies that the suppliers behave more heuristically...
than their counterpart buyers in the initiation of closer collaboration in the inter-firm network.

The regression analysis on the growth rate in the four network directions shown in Table 11 reinforces the idea that the network directions of supplier-buyer and sub-supplier-supplier may be useful ($R^2 = 0.20$, $P<0.05$) in predicting the growth rate if each network direction is examined independently. Furthermore, both network directions of supplier towards buyer ($T=2.22$, $P<0.05$); and sub-supplier towards supplier ($T=1.88$, $P<0.1$) are so strongly related with each other that this even rules out the influence generated from the other two network directions on growth rate (Table 11). Hence it is reasonable to predict that the domestic internal configuration of manufacturers in Taiwan is very important in facilitating concerted effort in propelling organization growth through combining with the external network relationships ($F=2.79$, $P<0.05$)

DISCUSSION

This study examines the external and internal drive for organization competitiveness in the supply-chain development through the benefit of inter-firm networks. From the analysis of relationships between buyer, supplier & sub-supplier, how the network functions could project a positive influence over organizational growth of manufacturers in the bicycle industry of Taiwan is illustrated. Networks invoked the dynamics of information and knowledge exchange, reciprocal learning, resources and risk sharing. Inter-organizational networks operating as the networks of learning and locus of innovation (Powell, Koput and
Laurel 1996) bring along much valuable benefit.

The result showing the close relationship between the technological development function and the growth rate not only reinforced the notion that organizational networks serve as a felicitous conduit for technology development, but further indicated that the network providing higher network functions could be critical to the issue for sustaining organizational development. The technological development involved here is both exogenously and endogenously driven. In particular, the frequent exchange of knowledge and information on new product and technologies along with proposals for new products allow a firm to rationally assess the ways in which continuous innovation can hone its competitive edge. Though the actual technologies involved are oriented to those of a software nature, this has already resulted in the effective production of standardized products in the supply-chain.

Relationships between the buyer and supplier were shown to be complex and never easy to manipulate. OEMs dwell on whether the organizational capability, including the factory infrastructure, technology level, manufacturing process and financial background of potential suppliers, is compatible with the product strategy in the market. They focus on whether the supplier (1) possesses the desired knowledge and resources for production; (2) provides immediate complementary contribution and assistance; (3) can be a rival. In such pattern of development of the supply-chain, the originally exogenous influences could possibly be the important drive that has animated the passive process innovation and increased the technology level of Taiwan bicycle manufacturers.

Nonetheless, one should not ignore the innate internal drive for technology development featuring horizontal relationships with coalition-like characteristics among the local
manufacturing firms. Other than simply offering product or technology knowledge and information, they form a strong collaborative base in the area of acquiring foreign technology as well as manufacturing know-how. Reciprocity in product development and sharing of both process and product R&D are exhibited in industry manufacturers’ pursuit of their technological adaptation of foreign technology.

In the past decades some manufacturers in continually developing their own R&D have already become ODMs or OBM. It is possible that concerted effort of internal and external forces formulated by this strong mechanism in the network ties have been effective in optimizing competitiveness in the bicycle industry by providing firms with responsiveness and flexibility in production, resoluteness in a changing environment, and learning capability.

Both the external and internal drive in the mechanism beyond the network relationships have also strengthened their marketing capability. The relationships between the strategic marketing function and organization growth revealed that marketing know-how, knowledge of the foreign market and economic trends as well as the word-of-mouth effect were crucial in organizational development. Marketing know-how has led to improvement in product features, product quality, market communication and customer services. The external networks with foreign customers have enabled manufacturers to shape their own set of constructs in dealing with different foreign markets. Meanwhile, the local internal networks among manufacturing firms have facilitated the extensive exchange of marketing tactics for competing in the sophisticated global markets.

**IMPLICATIONS FOR JAPANESE BUYERS**

The understanding of the management of inter-firm collaboration provides additional insight
to the understanding of the international competitiveness. Specially, the result revealed that more than 50% of the respondents which have experiences of foreign technology acquisition, collaboration with their buyers in the areas of both technology and product development. This may have suggested how Taiwan could become the top bicycle supplier in the world in the past two decades. In order to preserve the international competitiveness, many manufacturers, including suppliers and sub-suppliers, shifted their low-end product manufacturing to the Mainland China in the late 1990s while retaining most of the high-end product manufacturing, especially the R&D in the island. Integrating the international supply linkage beyond the sub-suppliers in Mainland China, the development of organizational networks and their operations have growing importance because their activities are not solely confined to production but also the management of marketing and sales channels locally. Further, these network structures facilitate organizational learning and adaptive flexibility that are akin to the economic performance and sustainability of development.

The importance of the inter-organizational collaboration in the dimension of supplier-buyer relationships gives further implications for buyers in the industry. From the survey result, the number of suppliers that have both technological collaboration and technology acquisition from Japanese buyers are much more than that from the US. Besides, in discussing the feasibility of the Japan-Taiwan Free Trade Area in January 2003, Japan and Taiwan agreed to work in partnership on issues of economic and industrial development. This implies that the tighter network relationships would emerge between Taiwanese suppliers and Japanese buyers. Activities of technological collaboration, especially the technology diffusion and technical exchange would likely to be increased along with the already concrete network organization. The cooperation could extend to the complementary technology inputs for the purpose of risk sharing and reduction of costs on R&D. As a result, information and knowledge of managing strategy, production know-how and expertise are expected to flow
from Japan to Taiwan, and further into China in the clockwise direction.

Besides of the technological development perspective, it also implies that Japanese buyers would ponder the possibility of allying with Taiwanese suppliers in accessing into the Chinese market. Since Taiwanese and Mainland Chinese shares similar cultural values and language communication system, the participation of Taiwanese firms in the collaborations would help the efficient process of information into productive knowledge, sharing of market intelligence and economic trends, the speed of local market entry as well as solving problems of coordination and adaptations.

In summary, the growth of supplier performance is expected to bring about the complex network relationships across Japan-Taiwan-China. Though the partnership consensus would encourage Taiwanese suppliers to initiate closer inter-firm collaboration, the equal footing characteristic of such relationships implies that Japanese buyers may be more conscious of its manipulation. Especially the business practices of the Japanese keiretsu system are very different from that of the network organization; it is difficult to conclude that Japanese buyers would behave similarly towards the networking approach. Network comprises competitors (Thorelli 1986). Therefore, whether horizontal network structures or vertical relationships are appropriate, would largely depend on how Japanese firms envision the technical influence of particular suppliers and the development of the cross-national supply chain.

Dynamics in inter-organizational networks do not demonstrate any homogenous pattern but revealed the importance of networking at the inter-firm level. The role of business networks lies in the underlying mechanism which encompasses technological development and marketing strategy. There may be more varieties of functions in the mechanism beyond the
network relationships; but this paper narrowed its focus to these two fundamental areas. This has already given us the understanding of the importance of network relationships in the context of international competitiveness. The development of such cross-cultural supply-chains in this globalized world meets the needs for industrial development of developing nations, while signaling that the growing global competition between the networks of firms at the inter-firm level will be intensified.

References


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G.G. (eds), *Asian Business Networks*, Berlin: de Gruyter, pp.210-227


Table 1: Exports of world’s major bicycle countries 1986-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Japan</th>
<th>US</th>
<th>UK</th>
<th>Germany</th>
<th>France</th>
<th>Italy</th>
<th>Netherlands</th>
<th>Taiwan</th>
<th>China*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>682</td>
<td>19</td>
<td>174</td>
<td>857</td>
<td>433</td>
<td>1,473</td>
<td>247</td>
<td>10,239</td>
<td>NA</td>
</tr>
<tr>
<td>1987</td>
<td>416</td>
<td>31</td>
<td>199</td>
<td>731</td>
<td>492</td>
<td>1,513</td>
<td>240</td>
<td>9,685</td>
<td>820</td>
</tr>
<tr>
<td>1988</td>
<td>325</td>
<td>114</td>
<td>180</td>
<td>736</td>
<td>559</td>
<td>1,500</td>
<td>239</td>
<td>7,151</td>
<td>1,510</td>
</tr>
<tr>
<td>1989</td>
<td>200</td>
<td>250</td>
<td>170</td>
<td>731</td>
<td>537</td>
<td>2,537</td>
<td>344</td>
<td>8,300</td>
<td>2,450</td>
</tr>
<tr>
<td>1990</td>
<td>226</td>
<td>395</td>
<td>246</td>
<td>762</td>
<td>583</td>
<td>1,764</td>
<td>482</td>
<td>8,942</td>
<td>3,770</td>
</tr>
<tr>
<td>1991</td>
<td>203</td>
<td>389</td>
<td>198</td>
<td>567</td>
<td>389</td>
<td>2,196</td>
<td>573</td>
<td>9,831</td>
<td>7,290</td>
</tr>
<tr>
<td>1992</td>
<td>111</td>
<td>403</td>
<td>228</td>
<td>446</td>
<td>326</td>
<td>2,835</td>
<td>669</td>
<td>8,427</td>
<td>10,300</td>
</tr>
<tr>
<td>1993</td>
<td>111</td>
<td>934</td>
<td>412</td>
<td>377</td>
<td>361</td>
<td>4,542</td>
<td>777</td>
<td>8,621</td>
<td>9,000</td>
</tr>
<tr>
<td>1994</td>
<td>112</td>
<td>640</td>
<td>311</td>
<td>308</td>
<td>547</td>
<td>3,777</td>
<td>667</td>
<td>8,751</td>
<td>10,500</td>
</tr>
<tr>
<td>1995</td>
<td>102</td>
<td>605</td>
<td>295</td>
<td>300</td>
<td>517</td>
<td>358</td>
<td>411</td>
<td>9,064</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: Taiwan Bicycle Exporters’ Association 97 March

* Data of China is quoted from the source of Biknet report 1997, Chinese Taipei Cycling Association

Table 2: Taiwan Bicycle Exports 1970-1996

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit of Production</th>
<th>Value (NT$1000)</th>
<th>Export (Unit)</th>
<th>Export Value (NT$1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>N/A</td>
<td>N/A</td>
<td>107,141</td>
<td>72,199</td>
</tr>
<tr>
<td>1971</td>
<td>173,000</td>
<td>N/A</td>
<td>270,237</td>
<td>168,808</td>
</tr>
<tr>
<td>1972</td>
<td>1,184,000</td>
<td>N/A</td>
<td>1,055,392</td>
<td>985,007</td>
</tr>
<tr>
<td>1973</td>
<td>1,542,000</td>
<td>N/A</td>
<td>1,318,112</td>
<td>1,392,108</td>
</tr>
</tbody>
</table>
1974  1,084,000  N/A  867,545  1,029,003
1975  957,000  N/A  815,752  873,499
1976  1,673,000  N/A  1,523,849  1,707,578
1977  2,002,000  N/A  1,745,000  2,103,594
1978  2,289,000  N/A  1,849,418  2,371,964
1979  2,483,000  N/A  2,204,000  3,784,521
1980  3,101,000  N/A  3,003,045  5,032,201
1981  3,476,000  N/A  3,338,035  6,184,981
1982  3,213,000  6,756,000  3,146,000  5,505,136
1983  5,266,000  11,363,000  5,058,291  8,964,246
1984  6,539,000  12,625,000  6,328,278  11,143,197
1985  7,715,000  14,889,000  7,442,063  11,952,162
1986  9,768,000  18,467,000  10,239,473  16,688,755
1987  10,227,000  20,713,000  9,685,344  17,511,384
1988  7,717,000  17,625,000  7,151,626  13,613,924
1989  7,573,000  21,284,000  8,200,883  17,704,898
1990  7,794,000  27,143,000  8,942,518  24,388,273
1991  8,361,000  29,753,000  9,831,048  24,067,006
1992  7,689,000  25,850,000  8,427,073  24,503,020
1993  7,867,000  30,076,000  8,621,237  27,450,278
1994  7,537,000  27,891,000  8,751,660  26,065,229
1995  7,656,000  29,319,000  9,064,129  28,200,000
1996  7,385,000  26,975,000  9,485,000  26,910,000

Table 3: Taiwan Bicycle Parts Exports by items 1995-1996

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>438,139,200</td>
<td>246,056,800</td>
<td>368,147,900</td>
<td>186,690,900</td>
</tr>
<tr>
<td>Electrical lighting equipment</td>
<td>3,332,600</td>
<td>1,420,400</td>
<td>3,172,300</td>
<td>1,489,100</td>
</tr>
<tr>
<td>Electrical visual signaling</td>
<td>532,700</td>
<td>290,800</td>
<td>505,829</td>
<td>8,964,246</td>
</tr>
<tr>
<td>Other frames and forks</td>
<td>91,876,600</td>
<td>29,554,400</td>
<td>89,687,300</td>
<td>35,105,100</td>
</tr>
<tr>
<td>Wheel rims &amp; Spoke</td>
<td>19,073,100</td>
<td>27,349,700</td>
<td>24,437,600</td>
<td>16,188,500</td>
</tr>
<tr>
<td>Hubs, other than coaster</td>
<td>25,061,800</td>
<td>16,212,600</td>
<td>22,644,500</td>
<td>14,184,200</td>
</tr>
<tr>
<td>Free-wheel sprocket-wheels</td>
<td>20,826,000</td>
<td>14,432,900</td>
<td>17,573,200</td>
<td>7,785,100</td>
</tr>
<tr>
<td>Caliper brakes &amp; parts</td>
<td>35,725,800</td>
<td>6,291,900</td>
<td>24,276,000</td>
<td>5,715,300</td>
</tr>
<tr>
<td>Other brakes &amp; parts</td>
<td>18,759,800</td>
<td>86,542,700</td>
<td>17,576,200</td>
<td>40,222,400</td>
</tr>
<tr>
<td>Saddles of cycles</td>
<td>14,993,500</td>
<td>4,563,500</td>
<td>11,707,900</td>
<td>4,304,900</td>
</tr>
<tr>
<td>Pedals and parts thereof</td>
<td>30,166,500</td>
<td>971,500</td>
<td>24,683,100</td>
<td>930,800</td>
</tr>
<tr>
<td>Crank-gear &amp; parts</td>
<td>6,098,100</td>
<td>12,144,100</td>
<td>5,145,400</td>
<td>7,953,600</td>
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<tr>
<td>Chain of bicycle</td>
<td>13,541,400</td>
<td>3,507,400</td>
<td>8,038,500</td>
<td>5,213,000</td>
</tr>
<tr>
<td>Derailleur of bicycle</td>
<td>20,165,000</td>
<td>31,482,800</td>
<td>11,133,800</td>
<td>32,601,800</td>
</tr>
<tr>
<td>Free wheel</td>
<td>16,155,400</td>
<td>6,084,000</td>
<td>8,507,300</td>
<td>6,452,200</td>
</tr>
<tr>
<td>Axle</td>
<td>674,200</td>
<td>152,700</td>
<td>1,372,300</td>
<td>336,500</td>
</tr>
<tr>
<td>Handlebar stem</td>
<td>9,123,100</td>
<td>1,312,600</td>
<td>7,507,600</td>
<td>2,766,200</td>
</tr>
<tr>
<td>Seat post</td>
<td>2,960,800</td>
<td>859,600</td>
<td>2,333,100</td>
<td>1,092,600</td>
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<tr>
<td>Handlebar stem</td>
<td>11,077,700</td>
<td>1,051,900</td>
<td>7,498,000</td>
<td>1,742,100</td>
</tr>
<tr>
<td>New pneumatic tires of rubber</td>
<td>62,263,100</td>
<td>1,778,100</td>
<td>50,305,600</td>
<td>2,429,000</td>
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<tr>
<td>Inner tubes</td>
<td>35,732,000</td>
<td>53,200</td>
<td>30,141,300</td>
<td>22,400</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
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<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>Source: Chinese Taipei Cycling Association 1997</td>
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<td></td>
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<td></td>
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</table>

Table 4: Background of the sample

<table>
<thead>
<tr>
<th>Main products of the company samples</th>
<th>Exporting market</th>
<th>US</th>
<th>Europe</th>
<th>Japan</th>
<th>Other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products</td>
<td>Number of company</td>
<td>0%</td>
<td>8</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Bike</td>
<td>16</td>
<td>1%</td>
<td>20</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>Frame</td>
<td>13</td>
<td>21%</td>
<td>16</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Tyre</td>
<td>8</td>
<td>40%</td>
<td>5</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Fork</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rim</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saddle</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grip</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handle</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflector</td>
<td>1</td>
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<tr>
<td>Spoke</td>
<td>1</td>
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<td>Nipple</td>
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<tr>
<td>Chain</td>
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<tr>
<td>Bag</td>
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<tr>
<td>Locks</td>
<td>1</td>
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</tr>
<tr>
<td>Other parts</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Establishment date</th>
<th>Number of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930s</td>
<td>1</td>
</tr>
<tr>
<td>1960s</td>
<td>6</td>
</tr>
<tr>
<td>1970s</td>
<td>18</td>
</tr>
<tr>
<td>1980s</td>
<td>15</td>
</tr>
<tr>
<td>1990s</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 5: Mean differences in the provision of technological development function among the three growth rate groups

<table>
<thead>
<tr>
<th>Flow from buyer towards the supplier</th>
<th>1 (N=7) Low</th>
<th>2 (N=24) Medium</th>
<th>3 (N=18) High</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>New product knowledge &amp; information (ft1)</td>
<td>3.71 (0.95)</td>
<td>4.04 (0.75)</td>
<td>4.61 (0.61)</td>
<td>4.94**</td>
</tr>
<tr>
<td>New technological knowledge &amp; information (ft2)</td>
<td>3.29 (1.25)</td>
<td>3.96 (0.86)</td>
<td>4.33 (0.77)</td>
<td>3.55*</td>
</tr>
<tr>
<td>Proposal of new products (ft3)</td>
<td>3.29 (0.95)</td>
<td>3.88 (0.90)</td>
<td>4.11 (0.96)</td>
<td>1.98</td>
</tr>
<tr>
<td>Offer of foreign technology for transferring (ft4)</td>
<td>2.86 (1.46)</td>
<td>3.63 (0.92)</td>
<td>3.90 (1.18)</td>
<td>2.20</td>
</tr>
<tr>
<td>New manufacturing know-how &amp; expertise (ft5)</td>
<td>3.14 (0.90)</td>
<td>3.71 (1.04)</td>
<td>4.22 (0.88)</td>
<td>3.44*</td>
</tr>
<tr>
<td>Trainers sent from their company (ft6)</td>
<td>2.71 (0.95)</td>
<td>3.29 (0.96)</td>
<td>3.33 (1.03)</td>
<td>1.11</td>
</tr>
</tbody>
</table>

\[
\sum_{i=1}^{6} ft_{ij}/6
\]

<table>
<thead>
<tr>
<th>Flow from the supplier towards sub-supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>New product knowledge &amp; information (st1)</td>
</tr>
<tr>
<td>New technological knowledge &amp; information (st2)</td>
</tr>
<tr>
<td>Proposal of new products (st3)</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Offer of foreign technology for transferring (st4)</td>
</tr>
<tr>
<td>Invitation of engineers of supporting firms to the suppliers’ plant for training in foreign technology (st5)</td>
</tr>
<tr>
<td>New manufacturing know-how &amp; expertise (st6)</td>
</tr>
</tbody>
</table>

\[ \sum_{i=1}^{6} st_i / 6 \]

Flow from the supplier towards buyer

| New product knowledge & information (bt1) | 4.14 (0.69) | 4.25 (0.68) | 4.50 (0.62) | 1.06 |
| New technological knowledge & information (bt2) | 3.57 (0.98) | 3.96 (0.81) | 4.17 (0.86) | 1.25 |
| Proposal of new products (bt3) | 3.57 (0.98) | 4.17 (0.64) | 4.11 (0.76) | 1.85 |
| Offer of transferring local technology to them (bt4) | 2.71 (0.76) | 3.38 (1.14) | 3.72 (0.90) | 2.55<sup>†</sup> |
| Sending engineers to buyers’ plant for transferring the local technology (bt5) | 2.71 (0.95) | 3.17 (1.05) | 3.44 (1.10) | 1.24 |
| New manufacturing know-how & expertise (bt6) | 2.71 (0.95) | 3.33 (1.05) | 3.78 (0.88) | 3.13<sup>*</sup> |

\[ \sum_{i=1}^{6} bt_i / 6 \]

Flow from sub-supplier towards the supplier

| New product knowledge & information (dt1) | 3.71 (0.76) | 4.17 (0.70) | 4.56 (0.51) | 4.62<sup>*</sup> |
| New technological knowledge & information (dt2) | 3.71 (0.76) | 4.13 (0.74) | 4.50 (0.62) | 3.47<sup>*</sup> |
| Proposal of new products (dt3) | 3.43 (0.98) | 3.88 (0.85) | 4.22 (0.94) | 2.07 |
| New manufacturing know-how & expertise (dt4) | 3.57 (0.79) | 3.96 (0.75) | 4.28 (0.90) | 2.05 |

\[ \sum_{i=1}^{4} dt_i / 4 \]

\[ T = 13.42 \quad 1.83 \quad 15.43 \quad 2.26 \quad 16.41 \quad 1.63 \quad 5.70** \]

Note: <sup>†</sup> p <0.10, <sup>*</sup> p <0.05, <sup>**</sup> p <0.01, <sup>***</sup> p <0.001

Table 6: Correlation coefficients between technological development functions and growth rate groups
### Table 7: Mean differences in the provision of strategic marketing function among the three growth rate groups

<table>
<thead>
<tr>
<th>Growth Rate</th>
<th>Flow from the buyer towards the supplier</th>
<th>Flow from the supplier towards sub-supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1 (N=7) Low</td>
<td>3.57 (0.79)</td>
<td></td>
</tr>
<tr>
<td>2 (N=24) Medium</td>
<td>3.57 (1.27)</td>
<td></td>
</tr>
<tr>
<td>3 (N=18) High</td>
<td>3.43 (1.13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.52 (0.98)</td>
<td></td>
</tr>
<tr>
<td>New marketing know-how (fm1)</td>
<td>3.29 (0.76)</td>
<td></td>
</tr>
<tr>
<td>Information on foreign market &amp; economic trends (fm2)</td>
<td>3.29 (0.76)</td>
<td></td>
</tr>
<tr>
<td>Information on new buyers (fm3)</td>
<td>3.14 (0.69)</td>
<td></td>
</tr>
</tbody>
</table>
Flow from the supplier towards buyer

Information on Taiwan Market: 3.429, 3.792, 4.167, 2.58

Flow from sub-supplier towards supplier

New marketing know-how (dm1): 3.571, 3.917, 4.000, 0.687
Information on foreign market & economic trends (dm2): 3.571, 3.833, 4.056, 0.697
Information on new customers (dm3): 3.429, 4.083, 4.167, 1.684

Table 8: Correlation coefficients between strategic marketing functions and growth rate groups

<table>
<thead>
<tr>
<th></th>
<th>$^{3}\text{f}_{i}/3$</th>
<th>$^{3}\text{s}_{i}/3$</th>
<th>$^{3}\text{bm}$</th>
<th>$^{3}\text{d}_{i}/3$</th>
<th>M</th>
<th>GS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$^{3}\text{f}_{i}/3$</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{3}\text{s}_{i}/3$</td>
<td>0.42**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{3}\text{bm}$</td>
<td>0.57***</td>
<td>0.32*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{3}\text{d}_{i}/3$</td>
<td>0.49***</td>
<td>0.46**</td>
<td>0.27†</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>0.83***</td>
<td>0.72***</td>
<td>0.73***</td>
<td>0.73***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>GS</td>
<td>0.28*</td>
<td>0.22</td>
<td>0.33*</td>
<td>0.23</td>
<td>0.35*</td>
<td></td>
</tr>
</tbody>
</table>

Note: † p <0.10, * p <0.05, ** p <0.01, *** p <0.001

Table 9: Correlation coefficients between the network functions and the growth rate groups

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>M</th>
<th>GS</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>0.81***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>GS</td>
<td>0.43**</td>
<td>0.35*</td>
<td></td>
</tr>
</tbody>
</table>

Note: † p <0.10, * p <0.05, ** p <0.01, *** p <0.001
Table 10: Correlation coefficient between the network directions and growth rate groups

<table>
<thead>
<tr>
<th></th>
<th>$N_{S\cdot S}$</th>
<th>$N_{S\cdot Sub}$</th>
<th>$N_{S\cdot B}$</th>
<th>$N_{Sub\cdot S}$</th>
<th>GS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N_{S\cdot S}$</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$N_{S\cdot Sub}$</td>
<td>0.43**</td>
<td></td>
<td></td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td>$N_{S\cdot B}$</td>
<td>0.52***</td>
<td>0.41**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$N_{Sub\cdot S}$</td>
<td>0.55***</td>
<td>0.46***</td>
<td>0.37**</td>
<td></td>
<td>0.36*</td>
</tr>
<tr>
<td>GS</td>
<td>0.17</td>
<td>0.17</td>
<td>0.37**</td>
<td>0.36*</td>
<td></td>
</tr>
</tbody>
</table>

Note: † p <0.10, * p <0.05, ** p <0.01, *** p <0.001

Table 11: Result of regressing the growth rate groups on the four network directions

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>Std. Error</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N_{S\cdot S}$</td>
<td>-0.17</td>
<td>0.18</td>
<td>-0.94</td>
</tr>
<tr>
<td>$N_{S\cdot Sub}$</td>
<td>-0.06</td>
<td>0.17</td>
<td>-0.34</td>
</tr>
<tr>
<td>$N_{S\cdot B}$</td>
<td>0.36</td>
<td>0.17</td>
<td>2.22*</td>
</tr>
<tr>
<td>$N_{Sub\cdot S}$</td>
<td>0.32</td>
<td>0.18</td>
<td>1.88†</td>
</tr>
</tbody>
</table>

R Square 0.20
Adjusted R Square 0.13
Std. Error of the Estimate 0.64
F 2.79*

Note: † p <0.10, * p <0.05, ** p <0.01, *** p <0.001
Collapse of Japanese Style Management

The decisions of numerous Japanese companies such as Matsushita (Nikkei 2001a), Fujitsu (Nikkei 2001b), Toshiba (Nikkei.2001c), and Kyosera (Nikkei. 2001d) to cut their labor force of over 10,000 put an end to one of the vital elements in so called Japanese-style management practice:
life-time employment. Before this incident, many people, practitioners as well as scholars, had been speculating the end of this system (i.e. Nishida, 1987). However, the announcement from some of the largest Japanese Multi National Corporations (hereafter simply refer to JMNCs) to officially cut labor force gave a final blow to this speculation. Thus, the legend of so-called Japanese style-management has come to the end.

Along with life-time employment, a seniority based compensation system and corporate unionism have long been considered as the core elements of Japanese practices (Abbeglen, 1958). However, after the economic bubble burst, many Japanese corporations, seeing the impasse of Japanese economic growth, eventually reformed their compensation system from seniority based one to a system, which places more emphasis on performance (Porter, Takeuchi and Sakakibara, 2000). Moreover, the side effect of implementing life-time employment system became most evident in the 90s. During this time, death from overwork (Karoushi) and in-company bullying (Kigyonaiijime) had been raised as major social problems in Japan (Okamura and Kawahito, 1990; Shitara, 1999).

**Ever Increasing Importance of Effective Management of Subsidiaries in China**

While the observation had been made on shocking phenomena as collapse of Japanese-style management, the current tendencies observed in cases studies such as First Retailing Corporations (Weekly Toyo Kezai, 2001) or Funai Electronics Co., Ltd (Nikkei Business 2000a) seem to indicate that the key to the survival of JMNCs in the global competition is to take advantage of global scale intra-firm collaboration within subsidiaries and affiliated companies. In other words, examining some of the efficient and/or effective ways of managing production sites overseas becomes ever important for the survival of JMNCs as the strategic importance of these sites had been foretold by numerous scholars studying this field (i.e. Abo, 1996). Currently, more researchers have been paying attention to operations in the People’s Republic of China (hereafter simply refer to the PRC) than any other regions. With the close location to the headquarters in Japan, and the existence of a highly-skilled inexpensive labor force, competent and customer-oriented parts suppliers, and political stability, the PRC has become a strategically vital locale for Japanese companies (Seki, 2002). The number of JMNCs, which have established production facilities in the PRC, is continually increasing. The survey conducted by Nikkei indicates that over 50 % of Japanese manufacturing firms will have main plants in a foreign country by 2003. Among these respondents, 70 % of them answered that the subjected country to establish the main plant will be in China (Nikkei, 2001e). Furthermore, among those who already had production facilities in ASEAN countries, many of them decided to close the facilities in order to relocated them to the PRC (Nikkei, 2002). These reports indicate that for many companies, the production facilities in the PRC have become one of the strategically vital productions sites in their global operations. Despite such importance, determining the ways to properly manage Chinese employees has not been discussed in details. For the present paper, the attempt will be made to fill such gaps. Assuming that active
participations in knowledge management implies more effectiveness in overall production management, the present study focus on how employees can actively participate in such actives. First, the past studies on knowledge management must be further explored.

**Importance of Knowledge Management in Establishing Effective Production Facilities**

Using Polanyi's categorization of knowledge, as tacit or explicit (Polanyi, 1962), some scholars begun to insist that effectiveness of the firm may be determined by its effectiveness in managing both tacit and explicit knowledge (Kay; 1993; Suchman, 1987), insisting that organizations do not merely process information or series of data, but manage a pool of knowledge on both macro and micro scales of organizational structure. On a macro scale, crucial strategies regarding business plans, quality management as well as operational management are determined; on a micro scale, continuous improvement efforts and self-initiated work team can be used more effectively, making full use of knowledge acquired on an individual level. While there is disagreement among scholars regarding whether or not tacit knowledge is transferable to explicit knowledge (Toukas, 2000), it is generally agreed that knowledge can be defined as a group of information, which is re-ordered and/or re-arranged_based on the particular context (Bell, 1999)

**From Individual Knowledge to Collective Knowledge**

Nonaka expands the focus of study to include how new ideas, thinking, and knowledge can be conceived, nurtured, maintained and improved within existing organizations. He argues that knowledge creation is accomplished through evolutilional steps, starting from individual level knowledge creation, proceeding to group level knowledge creation and eventually to organizational level knowledge creation. The creation of knowledge begins with the accumulation of tacit knowledge by the individual. Tacit knowledge, acquired by the individual through cognitive and technical skills, is selected and judged based on certain standards (Nonaka, 1990). Such standards may include cognitive skills acquired by each individual, which control integration, interpretation and selection of tacit knowledge. If the individual believes that the knowledge should be shared by others as formal knowledge, the tacit knowledge will be transformed into articulate-able knowledge by means of metaphors, pictures, and /or particular words and phrases. In cases where such tacit knowledge is seen as impossible to articulate but still necessary to share with others, it will be shared by others through organizational socialization in which intangible resources such as expected attitudes and behavior in business practices are
shared through informal process among employees and managers (Yamada, 1982; Van Maanen, and Schein, 1972). Their findings imply that employees' abilities in analyzing information, collecting and sorting out knowledge, and determining whether or not such knowledge is necessary for the team or organization may become vital in establishing knowledge creation processes within organizations.

**Function of Corporate Values in Knowledge Integration**

Nonaka further argues that the standards by which tacit knowledge be judged and deemed to be retained or removed from the collective knowledge may largely depend on shared values within corporations. According to Nonaka, knowledge cannot be created from complete blank sheet knowledge can be created through values embraced within organizations and is processed through biased perspective which are inherited ‘among members within organizations’ (Nonaka, 1990, 86). His statement implies that newly collected pools of knowledge are checked for consistency with shared values, and that only knowledge which seems to have appropriate fit remains within organization. While Nonaka focused on Research and Development processes for innovation and creation of new commercial products, Ito (2000) expanded the definition to the factory site, insisting that similar knowledge creation takes place on lines with different focus: endeavors in maintaining quality excellence, cost reduction and punctual delivery of products.
According to Ito, integration of knowledge creation process as the factory lines is mandatory as manufacturing implies increase in the standard of QCD (Ito, 2000, 201). QCD is an acronym used in Japanese as well as various Asian manufacturing sites referring to quality excellence, cost reduction, and punctual delivery of products (Ishikawa, 1981). Ito insists that the knowledge creation process at the factory level occurs during various activities such as *genbaism* (____), which stresses close observation of actual sites and actual products in resolving issues, Management by Walking Around, and total participation processes such as the 5S movement, and Quality circles (Ito, 2000). For the present study, any activities which involve all ranks of employees in meeting company objectives, particularly in meeting quality improvement, cost reduction and punctual delivery of final products, will be termed as **self-initiated work team efforts**.

**Theoretical Framework and Hypotheses**

While the importance of knowledge management has been discussed extensively in the past, little have been argued regarding the effectiveness of such organizational system in international production management. This may be due to the existence of cross-cultural conflict (Adler, 1990). This necessitates the building of theoretical framework from various cases studies which has been done in foreign productions subsidiaries of the MNCs. The past case studies seem to suggest that there exist some degree of relationships between the strong presence of corporate values and the activeness of self-initiated work team efforts in an organization. Deal and Kennedy (1980) and Collins and Porras (1995), for example, report the consistency of certain values embraced by employees and similar behavioral patterns in their work practices in some of the MNCs. In this regard, Bartlett and Ghoshal also observed that the MNCs originating from Europe implement a strategy to select cadre of company expatriates to transfer knowledge and to develop operations abroad that were consistent with the parent company s values (Bartlett and Ghoshal, 2000; p 189). Japanese MNCs are no exception. The case studies done by Nikkei Business on the Toyota group, for example, report that key to the successful operations of foreign productions lines at Toyota groups lies in the fact that regardless of where the production sites are located, there seems to be a certain consistency in some of the values embraced by employees...
working for Toyota’s group (Nikkei Business, 2000). Bowen and Spear’s findings are consistent with such claims as they analyze that Toyota Production System implemented in various overseas production sites imply that there exists a certain set of values or DNA strands of the firms as they put it. These must be kept alive in order to maintain effectiveness in the organization regardless of the various location in which they are established (Bowen and Spear, 2001). Thus, the following hypotheses were considered for the present studies, having Japanese productions subsidiaries in the PRC as subjects. If the Nonaka’s and other case studies mentioned above are valid, it can be assumed that having well-established corporate values may be particularly important in cross-cultural work environments. Therefore,

**H1A:** If employees believe that the corporate values have strong influence on their decision making processes, they are also likely to feel that they have more opportunities to utilize various skills essential to implementing self-initiated improvement efforts.

**H1B:** If employees believe that the corporate values have strong influence on their decision making processes, they may also feel that performance on self-initiated improvement efforts has progressed over time.

**Systematic Rules and Regulations within the Organization**

In terms of other possible explanation to activation of knowledge management, systematic approaches are tested for the present studies. Several scholars argue that establishing well documented production system is a key to successful implementation of knowledge management. In other words, the following hypothesis is considered for verification,

**H2A:** Where there are detailed regulations at companies in the form of ISO and/or similar regulations, employees are likely to feel that they have more opportunities to utilize various skills essential to implementing self-initiative work team efforts.

**H2B:** Where there are detailed regulations at companies in the form of ISO and/or similar regulations, employees are likely to feel that the performance on self-initiated work team efforts will show progressed over time.

**A Qualitative Analysis on Roles of Corporate Values in Knowledge Management Process**

For the present studies, semi-structured interviews were conducted to find supportive evidence which may sustain the results of hypotheses testing. In order to accomplish this objectives, the self-initiated work team efforts, specifically the 5S movement, formation of Total Quality Circle, and other self-initiated work team efforts are compared between the two groups of companies with strong emphasis on corporate values and those of counterparts. Based on the present hypotheses, the following findings are expected.

**Expected Findings 1-a):** At companies with strong corporate values, there is an evidence of active involvement of local managers as well as lower ranking employees in production improvement processes. Moreover, the companies embrace suggestions based on shared values, regardless of who provided such suggestions.

**Variables in the Model**

The present studies investigate the relationship between the effectiveness of knowledge creation process of the firms and the degree of direction and/or influence of the corporate values on employees’ decision-making process.

**Dependent Variables: Effectiveness of Knowledge Creation Process**

In attempting to quantify the effectiveness of the knowledge creation process, two variables are considered. 1) The employees’ use of skills essential to knowledge creation process at production facilities, 2) the employees’ perceived performance over self-initiated work team efforts.

**Utilization of Skills Essential to the Process of Knowledge Management**

Among 22 categories in the Managerial Skills Utilization Scale, which is developed by Chen and Wakabayashi, some skills are known to be essential in the knowledge creation and management process, particularly in productions sites. The present studies assume that at companies where creating, sharing, maintaining and managing of knowledge is encouraged, more people tend to use these skills, regardless of differences in individual background or managerial ranks. While this process may not clarify
knowledge managing and integrating systems, the data may infer how actively employees are involved in various decision making processes. This may be vital to knowledge creation since it will measure employees' perception of the extent of authority designated to employees (Von Gerog, Ichijo, and Nonaka, 2000). By determining the relationship between the frequency in the use of the skills essential to knowledge management and the degree of influence that corporate values have in managerial skills utilization processes, the roles of corporate values will be further clarified.

**Performance through Self-Initiated Work Team Efforts**

It is expected that if activities with self-initiated work team are at the high level, the level of team effectiveness — namely, improvement on meeting delivery time, improvement on quality level, and improvement on line efficiency — are also high. For the present studies, it is assumed that those working in environments where knowledge creation and management process are being implemented effectively, overall achievement is made across these dimensions. It is presumed that at such companies, there are efficient systems of converting tacit knowledge to articulated knowledge.

**Independent Variables:**

**Influence of Corporate Value on Employees Decision Making Process**

Since this examination evaluates roles of corporate values in knowledge creation process in Japanese subsidiaries in the PRC, the influence and/or directions these values have on the employees' various decision making processes are considered as main determinants in relation to the knowledge creation process. In other words, those who believe that the perceived corporate values actually influence various decision making processes are likely to have articulated and well defined shared values with other employees, including those of different nationality. Therefore, they would tend to understand clearly what others are trying to convey, and those who present new suggestions may be able to explain their ideas with conviction, because they can confidently utilize shared values to explain their knowledge.

**Other Variables**
Just as in determining roles of corporate values in relation to conflict resolution, this portion of the present studies is also exploratory in nature. Therefore, it also tests other variables, such as both individual and organizational backgrounds of each employee. As for individual background, the following variables are placed, nationality, age, gender, and communication skills and cultural understanding. As far as organizational background is concerned, globalization level, managerial level and job type are subjected for the present studies.

Methodology
Quantitative Approaches
In conducting quantitative analysis, the survey samples are taken for the present studies. The respondents of the present studies consist of Japanese and Chinese. In order to make the comparison consistent in terms of the characteristics of a particular industry, all of the companies selected were from the manufacturing sector of electronic products, parts and small components. Prior to administering the questionnaire surveys in these companies, objectives of the study was explained with to top managers of the sample corporations in order to win their interests. Sets of questionnaires were given to top managers who took responsibilities for the research task. All of the respondents were randomly selected either by the top managers or managers of the General Affairs. A total of 252 employees at 22 companies returned the questionnaire (response rate 72%) among whom 220 responses were usable with 156 being from the Chinese and 64 from Japanese. Since the test was to determine the degree of observation made on various conflicts at actual and cognitive level, the questionnaire was distributed to all ranks of employees, which were categorized into four ranks. Among them, there were 8 top managers, 75 middle managers, 55 lower ranking managers and 18 regular employees for Chinese samples. As for Japanese employees, there were 22 top managers, 21 middle managers, 11 lower ranking managers, and 10 expatriate employees. It must be noted that although ten of the Japanese employees had no official managerial positions, most of their tasks require assisting Japanese managers, and delegating various tasks to Chinese employees. In other words, although they are regular employees in name, most of them have considerable decision-making authority and managerial responsibilities. In terms of gender distribution, 25 respondents in the Chinese samples were female and 130 were male (1 missing). There were no female respondents among Japanese samples. The distribution of the samples for the present study is shown in Table _.

Measuring Influence of Corporate Values in Decision Making Process Categorized by Managerial Skills
The purpose of the present studies is to determine the functions of corporate values within organizational activities in the cross-cultural work environment. As such, it is important to measure how such values produce outcomes. Unlike variables such as system, strategies and other business practices which are directly related to output, values in and of themselves produce nothing. Only when such values influence behaviors and/or attitudes of the employees, would they have significance. Therefore, the present studies measured the degree of influence that the perceived corporate values had in terms of how strongly such values provide directions and/or visions in employees’ decision making process at various situations. In measuring such situations, the managerial skill practice questionnaires which are constructed by Chen Ziguang and Wakabayashi were adapted, following the studies by Chen, Wakabayashi, Takeuchi, and others (Chen, 1996; Chen and Wakabayashi 1997a, 1997b; Wakabayashi and Chen, 1999; Wakabayashi, Chen and Huang).

Table 4.2 Distribution of Individual and Organizational Background of the Samples Being Studied

<table>
<thead>
<tr>
<th>Variable</th>
<th>Chinese N=156</th>
<th>Japanese N=64</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-50</td>
<td>94</td>
<td>8</td>
</tr>
<tr>
<td>51-</td>
<td>53</td>
<td>44</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>130</td>
<td>64</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Educational Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>90</td>
<td>34</td>
</tr>
<tr>
<td>Non-College</td>
<td>63</td>
<td>30</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Managerial Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>Middle</td>
<td>75</td>
<td>21</td>
</tr>
<tr>
<td>Low</td>
<td>55</td>
<td>11</td>
</tr>
<tr>
<td>Regular</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Missing</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Job Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>76</td>
<td>12</td>
</tr>
<tr>
<td>Engineering</td>
<td>38</td>
<td>27</td>
</tr>
<tr>
<td>Marketing</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Administrative</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>–</td>
</tr>
</tbody>
</table>
Globalization Level | Global MNCs | Non-Global | Missing |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>76</td>
<td>–</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

1999, Wakabayashi, Chen and Kondo, 2000; Wakabayashi, Kondo and Chen, 2000, Wakabayashi, Chen and Takeuchi, 2001). A Scale was originally created to measure skill practices of managers in managing delegated responsibilities. The scale’s 22 items cover a range from skills necessary to improve individual skills such as technical expertise, abilities to manage quantitative data, system development, to those which essential for inspiring surrounding members for quality excellence, such as problem identification, and team work, to skills particularly required for middle and top managers such as strategic thinking, delegation of authority and proper use of personnel. Thus, the 22 items cover a variety of managerial activities ranging from skills in the early career, such as being regular employees and lower ranking managers, to those required for top managers. Chen asserts that starting from the early career, particular sets of managerial skills listed in the questionnaire should be mastered in order to become effective employees, subordinates and/or managers by fully utilizing skills required for the following phase: the staff specialist stage, the team builder stage, the middle administrator stage and the entrepreneur stage (Chen, 1998, 192-3). This implies that among 22 categories, certain skills are always required at some point in the career path of every employee and the effective use of these skills will be determined by employees’ opportunities to use more of these skills mentioned, following the learning by doing principle (Argyris and Schon 1978). Therefore, while the Managerial Skills Practice Scale was created to measure the abilities of managers by determining the frequency of use of each skill, it is also expedient to use the same categories in assessing behavioral patterns of each subject in measuring the influence of corporate values. In the present studies, therefore, the respondents were asked to assume how strongly that corporate values may provide vision and/or direction when they came into make certain decision as they are exercising each skill. The 5 points Likert scale was used in measuring the degree of directions that corporate values provide in the employees’ decision-making processes ranging from providing strong sense of directions (5), providing certain sense of direction (4), providing direction somewhat (3), not providing much directions (2) and no direction at all (1). In determining the
functions of corporate values, all 22 categories were combined into one scale. An estimate of reliability coefficients is at __.95, which is adequate for using the data as a composite scale. This total composite variable will be used as independent variable in assessing the role of corporate values.

**Company System Scale**

As for the company system and regulations, the respondents were asked to rate the degree of extensiveness of the firms’ rules and regulations. Since the majority of companies understand rules and regulations required for getting certificate at ISO, such rules were compared to having such a standard as ISO or any other similar rules for that matter. In the question, the respondents were asked whether or not the company installed rules and regulations to most of tasks required for operations in such a manner close to ISO or equivalent. They are to be answered from the following choice: very strongly agree (5), agree (4), somewhat agree (3), disagree (2), completely disagree (1).

The respondents were asked how well all tasks and work responsibilities within the organization were regulated by ISO or any similar standard, with 1 being the least degree of regulation and 5 being the highest degree of regulation. Other variables used in the present analyses include the respondents’ experiences, educational levels, age, gender and their language abilities.

**Frequency of Skills Utilization Essential to Self Initiated Work Team Efforts**

Another central theme of the present analysis is the role of corporate values in knowledge creation and management process. Based on Nonaka’s assumption that it may be necessary for people within the company to refer to corporate values as central standards for selecting created knowledge, it can also be assumed that those who tend to emphasize corporate values by perceiving their influence in various managerial skill utilization processes may also tend to utilize the various skills necessary for knowledge management. In order to assess this aspect of roles of corporate values, variables on managerial skills questionnaires were re-evaluated for the following criteria, 1) skills should be attributed to the betterment of individual knowledge for future managerial roles and 2) skills which may be helpful in managing team-works and team building as an essential part of knowledge management process at the factory level, and formation of quality circle and the 5S movement in particular. Thus, the following skills were selected for the investigation: 1) Identifying problems, 2) Innovative thinking, 3) Planned actions, 4) System development, 5) Providing structure, 6) Teamwork,
7) Technical expertise, 8) Managing by quantitative data, 9) Quality control, 10) Sensitivity to customer needs and 11) Group membership skills. A total of 11 items were selected for the present studies.

These eleven items were loaded into factor analysis and two factors were identified as a result. One, a composite of eight items, were named Team Building as these skills seem to be vital for maintaining and developing better teams within the organizations. The other factor is named Quality Management as various skills associated with quantifying data, such as managing by quantitative data, quality control and sensitivity to customer needs are sorted into this category. The use of these factors is also supported by reliability coefficients at \( \alpha = .80 \) for team building and \( \alpha = .730 \) for quality management skills respectively. Combining these factors explains 39.5% of total variance. The overall composite of 11 categories is set at \( \alpha = .84 \), which is also adequate.

**Measure of Performance Improvement Related to Self-Initiated Work Team Efforts**

With their best knowledge, the respondents were asked to evaluate the following items into one of the 5 ranks. As the other scale before it, the past performance of the company’s performance in each respected field was evaluated, using 5 scales ranging significant improvement (5), improvement (4), relative improvement (3), not much improvement (2), and no improvement at all (1). The categories ranked for the improvement rank were: a) profitability, b) cost reduction, c) punctuality on meeting the delivery time, d) quality improvement, e) production line efficiency, f) customer satisfaction improvement rate, g) employee satisfaction improvement rate, h) growth rate, i) regional recognition, and j) shipping volume.

Among these 10 items, those to which teamwork can give direct impact were selected as independent variables in assessing the role of corporate values in the betterment of knowledge management, including improvement on quality, punctuality on delivery time and line efficiency. These three variables were combined into one scale. The overall composite of these three categories had a reliability coefficient at \( \alpha = .70 \), which was sufficient to be considered as a

**TABLE 2: Brief Background on the Companies Being Investigated During the Initial Studies**

<table>
<thead>
<tr>
<th>Main Products</th>
<th>Consolidated Sales Revenue (as of 2001) in Yen</th>
<th>Years of operation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Color Cathode-Ray Tube Plasma Display</td>
<td>6.8 Trillion</td>
<td>10 Years</td>
<td>Has been one of the most benchmarked subsidiaries of JMNCs in the PRC</td>
</tr>
<tr>
<td>B Small LCD monitor</td>
<td>1.2 Trillion</td>
<td>6 Years</td>
<td>Group subsidiary has been operating in</td>
</tr>
</tbody>
</table>
Shenzhen for over 10 years

C Micro-motors 120 Billion 7 Years Group subsidary has been operating in Guandong area for over 10 years

D Floppy Disk Drives and Micro-Motors 1.7 Trillion 5 Years Group subsidary has been operating in Guandong area for over 10 years

E Micro-motors DC Brushless motors 75 Billion 6 Years Hong Kong Office has been dealing with manufacturer in Guandong area for over 10 years

F Pick-up heads for CD/DVD-rom drives 120 Billion 5 Years Group subsidary has been operating in Guandong area for over 10 years

G Small and Standard Screws 1.2 Billion 7 Years This is the only production subsidiary

H Parts and components for electronic razors 20 Billion 6 Years Hong Kong Office has been dealing with manufacturer in Guandong area for over 10 years. Hong Kong natives as General Manager

Qualitative Approaches
In determining supportive evidence from qualitative analyses, a comparative case study method was taken. Eight companies were selected as subjects for the survey. In order to determine how corporate values are instilled in the lowest ranking employees four foci of analysis were chosen as follows, 1) Company corporate values, 2) Problems among Japanese managers and expatriate employees, and among Chinese local managers and employees, 3) company s employee training and development on the 5S movement, and 4) Company s employee training on Total Quality circle or any other programs related to self-initiative quality control programs. Just as in the initial study, all eight companies selected were Japanese subsidiaries belonging to the manufacturing sector. Due to the pledge of confidentiality, only a brief background on these companies is given (see Table 4.3 ). For convenience, these companies are called Company A, B, C, D, E, F, G, and H. From the Japanese side, those who are in top management positions, such as the general manager, factory managers, and/or deputy general managers responded to the interviews. For those companies which have many Japanese expatriate employees, several people from administration, manufacturing and engineering (quality assurance and manufacturing engineering ) divisions were selected as interviewees. As for Chinese employees, cross-functional interviews were conducted
for persons from all managerial ranks from regular employees to those in top management position next to Japanese counterparts. As a result, the total 51 people were interviewed with Japanese personnel being 19 and Chinese 32. After the analyses on the interview content as well as other artifacts observed in primal data, the companies are then separated into two categories: Companies with strong present of corporate values and companies with weaker presence of corporate values. Those which are selected as the former type include Company A, B, and C, while the latter being Company D, E, F and G. The content analyses were made from the semi-structured interview as well as the factory observations, and the data were re-examined specifically for the present analyses.

**Research Results**

**Examination of the Influence of Perceived Corporate Values on Employees Decision Making Process in the Knowledge Management**

As far as the emphasis on corporate values in the process of employees decision-making was concerned, both Japanese and Chinese samples were classified into two groups, high and low in terms of the degree of direction respondents feel from corporate values in various decision-making situations.

The results of t-tests shown in Table 1 indicated significant influence of the emphasis on perceived corporate values on the utilization of skills essential to knowledge management. All variables, namely overall utilization, team building skills and quality management skills, were positively associated with emphasis on the perceived values in Chinese employees decision making process, all at significance level of p<.001. Furthermore, the perceived improvement on self initiated work team efforts also was positively associated with the emphasis on corporate values at a significance level of P<.01.

**Table 1 t-Test Results on Utilization of Skills Related to Knowledge Management by the Degree of Emphasis on Corporate Values (High and Low) in Skill utilization process among Chinese**

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese samples</td>
<td></td>
<td>n=156</td>
<td>n=74</td>
<td>n=82</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Knowledge Skills</td>
<td>M/SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.77</td>
<td>3.46</td>
<td>4.06</td>
<td></td>
<td>7.57***</td>
</tr>
<tr>
<td>SD</td>
<td>.56</td>
<td>.57</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Building Improvement Skills</td>
<td>M/SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.76</td>
<td>3.45</td>
<td>4.04</td>
<td></td>
<td>7.22***</td>
</tr>
<tr>
<td>SD</td>
<td>.58</td>
<td>.60</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Management Skills</td>
<td>M/SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.90</td>
<td>3.57</td>
<td>4.20</td>
<td></td>
<td>5.55***</td>
</tr>
<tr>
<td>SD</td>
<td>.76</td>
<td>.82</td>
<td>.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Related to</td>
<td>M/SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.80</td>
<td>3.68</td>
<td>3.91</td>
<td></td>
<td>3.55**</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results from Japanese samples exhibited identical results. All of the variables, except for quality management skills, were positively associated with the dependent variable at P<.001, including the perceived level of improvement on performance. As for quality management skills, it still had significant positive correlations with the emphasis on corporate values at P<.01 level. Because of these results, it was concluded that hypothesis H4A-i as well as H4B were supported.

In other words, those who emphasized the perceived corporate values in their decision-making process utilized skills essential for self-initiated work team efforts, such as team building skills and quality management skills.

In order to further clarify whether these skills were utilized not only by those in higher managerial positions but also in lower ranking positions, an additional series of t-tests was conducted, limiting the samples only to Chinese regular employees and Chinese employees in lower managerial positions. Japanese samples, regardless of their managerial rank were intentionally excluded from this analysis as Japanese expatriates, regardless of their managerial level, were assigned various tasks and responsibilities equivalent to those found in managerial positions.

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>SD</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese samples</td>
<td></td>
<td>n=64</td>
<td></td>
<td>n=32</td>
<td>n=32</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Knowledge Management Skills</td>
<td>M</td>
<td>3.64</td>
<td>.54</td>
<td>3.40</td>
<td>3.88</td>
<td>3.94***</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td></td>
<td>.48</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>Team Building Improvement Skills</td>
<td>M</td>
<td>3.67</td>
<td>.57</td>
<td>3.41</td>
<td>3.94</td>
<td>4.17***</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td></td>
<td>.54</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>Quality Management Skills</td>
<td>M</td>
<td>3.57</td>
<td>.77</td>
<td>3.34</td>
<td>3.79</td>
<td>2.40**</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td></td>
<td>.71</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td>Performance Related to Knowledge Management</td>
<td>M</td>
<td>3.54</td>
<td>.68</td>
<td>3.21</td>
<td>3.88</td>
<td>4.44***</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td></td>
<td>.57</td>
<td>.63</td>
<td></td>
</tr>
</tbody>
</table>

Note: *P<.05, **P<.01, *** P<.001

The results were mostly consistent with the findings determined in other tests. Among Chinese lower ranking employees, those who emphasized the perceived corporate values in their various decision making process tended to use both team building skills and quality management skills.

As far as performance is concerned, there were no differences between these two groups as means for the two groups were 3.94 for low and 3.95 for high, respectively. To clarify these unexpected results, an additional series of t-tests were conducted, this time among higher ranking Chinese employees. The results indicated that for all variables, both utilization and performance were positively associated with the emphasis on the perceived corporate values in their decision making process. Combined with the fact that the results were consistent with those found for Japanese samples, it can be assumed that those in managerial positions at companies with strong corporate
values are likely observe positive outcomes in self-initiated work team efforts. Since the means of lower ranking Chinese employees on perceived performance were higher than other samples, lack of significance in the way they perceived the performance

Table 3 t-Test Results on Utilization of Skills Related to Knowledge Management by the Degree of Emphasis of the Perceived Corporate Values in Chinese Lower Ranking Employees Decision Making Process

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese samples</td>
<td></td>
<td>n=74</td>
<td>n=31</td>
<td>n=43</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Knowledge Management Skills</td>
<td>M .58</td>
<td>.63</td>
<td>.36</td>
<td></td>
<td>4.98***</td>
</tr>
<tr>
<td>Team Building Improvement Skills</td>
<td>M .62</td>
<td>.65</td>
<td>.42</td>
<td></td>
<td>4.83***</td>
</tr>
<tr>
<td>Quality Management Skills</td>
<td>M .75</td>
<td>.82</td>
<td>.57</td>
<td></td>
<td>3.71***</td>
</tr>
<tr>
<td>Performance Related to Knowledge Management</td>
<td>M .55</td>
<td>.62</td>
<td>.51</td>
<td></td>
<td>.16</td>
</tr>
</tbody>
</table>

Note: *P<.05, **P<.01, *** P<.001

Table 4 t-Test Results on Utilization of Skills Related to Knowledge Management by the Degree of Emphasis of the Perceived Corporate Values in Chinese Higher Ranking Employees Managerial Skills Utilization Process

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese samples</td>
<td></td>
<td>n=82</td>
<td>n=42</td>
<td>n=40</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Knowledge Management Skills</td>
<td>M .54</td>
<td>.52</td>
<td>.36</td>
<td></td>
<td>6.24***</td>
</tr>
<tr>
<td>Team Building Improvement Skills</td>
<td>M .54</td>
<td>.53</td>
<td>.36</td>
<td></td>
<td>5.80***</td>
</tr>
<tr>
<td>Quality Management Skills</td>
<td>M .77</td>
<td>.78</td>
<td>.54</td>
<td></td>
<td>5.00***</td>
</tr>
<tr>
<td>Performance Related to Knowledge Management</td>
<td>M .63</td>
<td>.65</td>
<td>.56</td>
<td></td>
<td>2.66**</td>
</tr>
</tbody>
</table>

Note: *P<.05, **P<.01, *** P<.001
was probably due to their subjective and optimistic perspective on outcomes. In comparison, the results of those in higher management ranks more likely scored to judge from objective observation and therefore reflected the actual outcome of their efforts.

In sum, analysis of the survey results indicated the following: 1) those who considered that perceived corporate values provided direction to guide their decision making process tended to utilize skills essential for self initiated work team efforts (i.e., team building skills and quality management skills), and 2) Chinese lower ranking employees, Chinese employees in higher managerial positions as well as Japanese employees perceptions on the performance were positively affected by the degree of direction they received from corporate values in their decision-making process.

The data from semi-structured interviews were re-analyzed to further explore this aspect of tendency existing in the present findings in an attempt to grasp how and why such tendency emerged.

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese samples</td>
<td></td>
<td>n=156</td>
<td>n=87</td>
<td>n=69</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Skills Related to KM</td>
<td>M</td>
<td>3.77</td>
<td>3.76</td>
<td>3.79</td>
<td>.23</td>
</tr>
<tr>
<td>Skills</td>
<td>SD</td>
<td>.56</td>
<td>.59</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>Team Building Skills</td>
<td>M</td>
<td>3.76</td>
<td>3.74</td>
<td>3.78</td>
<td>.47</td>
</tr>
<tr>
<td>Skills</td>
<td>SD</td>
<td>.58</td>
<td>.60</td>
<td>.56</td>
<td></td>
</tr>
<tr>
<td>Quality Management</td>
<td>M</td>
<td>3.90</td>
<td>3.92</td>
<td>3.88</td>
<td>-.26</td>
</tr>
</tbody>
</table>
Table 7.6 t-Test Results for Chinese Employees on Utilization of Skills Related to Knowledge Management and Performance by the Degree of the Perceived Emphasis on Regulation and Control such as ISO standard and Equivalent

<table>
<thead>
<tr>
<th>Variable Type</th>
<th>M/SD</th>
<th>Total</th>
<th>Low</th>
<th>High</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese samples</td>
<td></td>
<td>n=64</td>
<td>n=23</td>
<td>n=41</td>
<td></td>
</tr>
<tr>
<td>Overall Utilization of Skills</td>
<td>M</td>
<td>3.64</td>
<td>3.60</td>
<td>3.66</td>
<td>.44</td>
</tr>
<tr>
<td>Related to KM</td>
<td>SD</td>
<td>.54</td>
<td>.54</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>Team Building Skills</td>
<td>M</td>
<td>3.67</td>
<td>3.64</td>
<td>3.69</td>
<td>.33</td>
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<td>.68</td>
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</tbody>
</table>

Note: *P<.05, **P<.01, ***P<.001

Supportive Evidence from Qualitative Analyses

These findings were consistent with the findings discovered by the quantitative analysis; those who consider corporate values in their decision making process are more likely to utilize skills essential to knowledge creation and management process at the factory level. This does not imply that employees at companies with weaker corporate values did not exercise such practices as 5S movement or total quality circle team. In terms of total quality circle team or other team based improvement programs, they were implemented in one way or another at all companies except for Company F and Company H. The issues, then, lie not in whether or not the company implements these types of programs or whether or not the competency of Chinese employees was different among these two types of companies, but rather, how well Japanese managers could accept the suggestions given by Chinese employees and to what extent the Japanese managers took initiative to ensure that the Chinese employees would be able to apply these suggestions in the production process.

Further explanations can be made, using models described as Figure 1. At companies with strong presence of corporate values, employees who identified the corporate values of their companies as values mutually shared among a majority of employees, regardless of national origin, were actively involved in basic activities such as the 5S movement and more sophisticated quality circle team efforts. The employees
ability to verify and take advantage of having clear standards of judgment must not be neglected in these cases. Having such standards seemed to increase the scope for Chinese employees to express their perspectives as well as creative ideas derived directly from their experience at the manufacturing line, sufficiently to convince Japanese managers to take on such ideas.

At companies with strong corporate values, Japanese managers’ tendency to tolerate differences also contributed highly to positive outcomes of such efforts by Chinese employees. With the standard of judgment clearly presented, Japanese managers at companies with strong corporate values had more confidence to allow autonomy of Chinese employees than those Japanese managers working for companies with weaker corporate values. Overall findings from the semi-structured interviews showed that with corporate values being presented upfront, the role of Japanese managers tended to be more focused on coaching and guiding their local subordinates, rather than controlling the teams in the operations within the Japanese subsidiaries.

In contrast, Japanese managers at companies with weaker corporate values tended to take the past experience in Japan as their reference, as discussed in the previous chapter. As their reference was merely what they remembered from the past (some memories were quite accurate, while others were quite ambiguous and thus difficult to authenticate), the level of suggestions or creativity they met at their present work place never seemed to match what they remembered as the work cohesiveness, creativity and unity in Japan in the 70s and 80s. Under such circumstances, they felt
obliged to take control of decision making, believing that their Chinese coworkers' abilities had not reached the desired standard. Such stereotyping of Chinese employees led Japanese managers to implement top-down approaches in production improvement efforts. All these factors seemed to negatively influence the degree of active participation by Chinese employees and managers in knowledge creation, sharing and management processes. Chinese employees at the companies with weaker corporate values had ability to identify problems and come up with creative solutions, as cases at Company D demonstrated. Thus, it is not the matter of capabilities of individuals, but rather, a matter of how much Japanese managers are willing to accept and implement suggestions from Chinese employees. Without a clear evaluation process, Chinese employees in many cases seemed to lose the motivation to contribute to their company by providing suggestions, lack of which would further hinder the process of knowledge creation and management at the factory production level.

In one way or another, those Chinese employees whose creative ideas were rejected would tend to lose the motivation to provide suggestions to improve their working conditions or processes, not knowing the standard by which Japanese managers were judging their efforts. However, even at companies with weaker presence of corporate values, in some cases, management may be able to clearly convey its standards of judgment and thus stimulate motivation to participate. The deputy general manager at Company G, for example, was able to state what he wanted Chinese employees to do and reward those successfully implementing improvement by giving bonuses and/or
raises. By displaying the results through open-evaluation, more Chinese employees became enthusiastic about implementing various changes. Japanese managers at Company G seemed to be the only people working at companies with weaker presence of corporate values, who managed to implement a self-initiated team work effort at the level of the three companies with stronger presence of corporate values. This situation seemed to be closely tied to the trend of Japanese leadership; Japanese managers working at companies with strong presence of corporate values seemed more able to accept core values of Chinese employees than in companies with weaker presence of corporate values, leading them to widen the feeling of distrust between Japanese and Chinese counterparts. In the end, at companies with weaker corporate values, only those managers able to offer financial rewards on the basis of specific evaluation were able to promote active participation on self-initiated work team efforts. An overall model of the phenomenon explained in this section is found in Figure 2.

**Examination on the Influence of the Detailed Regulations on Knowledge Management**

This section reports on tests to evaluate hypothesis H5A and H5B, regarding the effect of detailed regulations on the utilization of skills essential to self-initiated work team effort and the perceived improvement on performance related to these efforts. The variables were used to create two groups, high and low in emphasizing regulations and control. The results of t-tests (see Table 5 and 6) indicated that the level of details that the existing regulations provided on various operations at companies had no significant influence on both Japanese and Chinese employees utilization on team building skills and quality management skills, validating the recent works of Mertins, Heisig and Vordeck (2001), however, the employees' perception on having detailed regulations was positively correlated with their perceived performance on self-initiated work team efforts. For the present studies, Japanese and Chinese samples were found to be valid in this regard with the significance level at p<.01. In order to test H5Ai, then, only lower ranking Chinese employees were selected as testing samples. The results were not significant for any of the variables, including performance. On the other hand, when higher ranking Chinese employees were selected to test the same relationships, the result was consistent with the tendency found in all of the Chinese samples, showing positive association with the perceived performance (P<.05). Thus, of the hypotheses concerning influence of detailed regulations on the utilization of skills essential to knowledge management process, only H2B seemed to be sustained. In other words, employees who believed that the firms were operated with detailed regulations were more likely to believe that overall improvement had been made on performance related to self-initiated work team efforts. This tendency seemed to imply that while the establishment of detailed regulations
in various tasks may result in improvement of quality management, line efficiency, and on punctuality in meeting delivery dates, it does not necessarily imply that such improvement comes into place as a contribution from lower ranking employees.

**Supportive Evidence from Qualitative Analyses**

For the present studies, those companies with strong corporate values were firmly weaved into the intricate global knowledge creation, sharing and management system, which allow the improvement on particular production line being made to be utilized in other parts of the world by having these information going through the headquarter, then, modified and passed down to those manufacturing sites required of these improvements. On the other hand, knowledge creation, sharing and management system often seemed to be stagnating at companies with weaker presence of corporate values. These situations were observed at Company D, E, and F. An important point which had been confirmed through the present studies was that those companies which facilitated the global knowledge creation, sharing and management network seemed to have more means to enhance efficiency as well as effectiveness of production line through close communication with other facilities around the globe as well as with the headquarter. On the other hand, companies which tended not to take advantage of these network ended up causing stagnation and frustration in the relationship with the parent company and themselves as virtually no network was created among other production sites. Since there was few research that explains the mechanism between the establishment of extensive global knowledge management system and the degree of shared values within groups of corporation, it is difficult to assume that the tendency described as predictable outcome or a series of mere coincident events. However, it is possible to assume that these tendencies might be a key to further confirm Nonaka’s assumption that the existence of the shared corporate values may foster knowledge creation and management process (Nonaka, 1990), even at the globally intricate network of multi-national corporations. Therefore, these aspects of unexpected findings must be worthy of further scrutiny in conjunction with confirmed correlations between the degree of corporate values being shared among employees and the frequency of utilization on skills essential for self-initiative work team efforts.

**Conclusion**

The overall evaluation on the utilization of skills essential for self-initiated work team efforts as
well as the evaluation on the perceived improvement on performance related to such activities were conducted using multiple regression analyses. The results found in multiple regression seem to confirm a majority of findings, which is described as the following,

Table 7 Multiple Regression Analysis on Knowledge Management and Performance

<table>
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<td>.41</td>
<td>.26</td>
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Note: *P<.05, **P<.01, *** P<.001

Table 7.8 \_Test on Performance Related to Knowledge Managed Categorized by the Degree of Emphasis no Corporate Value among Chinese Samples Working for Non- Global Who Perceive Low Degree of Emphasis on Rules and Regulations

<table>
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<tr>
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<td>-------</td>
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Note: *P<.05, **P<.01, *** P<.001

1) emphasis on perceived corporate values in decision making process had significant positive correlation with the utilization of all types of skills essential for self-initiated work team efforts as well as perceived performance; 2) the regulations variable showed positive association with perceived performance associated with self-initiative work team efforts, confirming the findings of other studies regarding knowledge management (see Mertins et al, 2001); 3) As for the organizational background variables, managerial level showed positive association with the utilization of all types of skills, confirming the findings of the original creators of the managerial skills questionnaires (i.e., Chen, 1997; Chen and Wakabayashi, 1997); 4) As an organizational background variable, the cross-cultural training variable also exhibited positive influence on each independent variable investigated and 5) corporate globalization level as well as cross cultural training seemed to have substantial influence on perceived performance. While findings 1) through 3) confirmed hypotheses, the other findings, 4) and 5) suggest additional insights and further inquiries. Finding 4) implied that although cross-cultural training programs do not directly lead the organizations to conflict resolution, having such a program may boost the effectiveness of knowledge management related programs at the factory level. The results are consistent with an earlier study regarding US-Japan joint ventures, which found that both Japanese and American sides seem to understand the work flow better after thorough communication on each other’s conventional work practices (Wakabayashi and Graen, 1991). Due to the unexpected influence discovered in the finding 5), t-test on the perceived outcome on the performance was conducted controlling for Global factor and Regulation factor by conducting the same test only with sample among employees working for non-global companies, who have low degree of the perceived
emphasis on regulations and controls. The results were still consistent with findings determined in previous section. Specifically, those who showed more emphasis on corporate values also perceived stronger improvement in performance associating with self-initiated work team efforts (at P<.001 for Chinese samples and P<.05 level for Japanese samples).

The finding 5) imply at the globalization level, the degree of emphasizing regulations and cross-cultural training were crucial variables for performance outcome. This suggests that companies with more globalize operations, have accumulated knowledge and experience dealing with people from multiple countries, leading them to have better and more solid regulations enabling employees to implement various ideas. This would naturally contribute to overall improvement of performance at the factory level. The companies with considerable size and longer history are inevitably blessed with better systems, which may promote business globalization. It must also be stated, however, that controlling for all of these variables, the relationship between the emphasis on corporate values in employees decision making process and perceived performance was still consistent, confirming the role of corporate values without additional factors such as globalization and high degree of detailed regulations.

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2000

1990

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2000b__v1092

2000c__“”__v 1050_17__pp35

2000d__v 1048_4_10__pp26-47


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2002
JAPANESE CONVENIENCE STORES
Telematic Approach to Gaining an E-Commerce Advantage

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ABSTRACT
Japanese Convenience Stores
Telematic Approach to Gaining an E-Commerce Advantage

Analyzes Japanese Convenience Stores organization to exploit e- and m-commerce via in-store services, telematic links to car navigation/communication systems and Internet connected phones. Three big CVS: Seven Eleven Japan, Lawson and FamilyMart are exploiting Japanese consumers' interest in e-commerce but reluctance to pay by credit card telephonically. Their B2C approach has leveraged heavy IT investment and third party payment services to increase store traffic. This e-commerce model differs from most US types. It uses IT-based alliances to offer a range of services and products while smart cell phones and telematically sophisticated in-car systems replace PCs. An alternative to US paradigms there are indications Seven Eleven is introducing it to the US.
Introduction

Retailing worldwide entered a new era when in 1995 Jeffrey Bezos opened a website to sell books. Naming this online store after the mighty Amazon River, it was the first serious pioneering effort to sell products directly to consumers using the Internet. This e-commerce business model is often referred to as Business to Consumer or B2C.

It began as an electronic emulation of catalogue retailing, where consumers order standard products from producers or retailers. An Internet website substitutes for the traditional paper catalogue. Because the US retail catalogue segment was well developed, consumers readily understood substituting the Internet for the paper catalogue. The perceived advantages to the consumer of B2C included the convenience of twenty-four hour shopping without having to make a phone call and real-time availability to freely browse information related to promotional sale prices or out-of-stock items.

A number of online start-ups followed Amazon, offering a range of products and services. Companies like e-Toys, Pet.com, JourneyEd.com, Priceline.com and E-Bay.com emerged, some with viable business models, but many organized primarily to respond to the rapidly inflated demand for Internet-related IPOs that encouraged Internet entrepreneurs to raise hundreds of millions of dollars. Yet, most of these B2C online sellers (e-tailers) could not break-even. To compete effectively with traditional retailers and get buyers to change traditional purchasing habits, many used their cash hoards to attract customers by offering products at steep discounts. In several cases they had to compensate consumers for the additional expense of shipping. Moreover, they spent large amounts on advertising to develop brand recognition and make consumers aware of their websites.

These factors along with the large initial investment required for computer hardware and systems development usually generated negative cash flows or burn-rates their operations could not support. So they quickly used the billions of dollars raised from venture capitalists and IPO investors. That is, it was due to the extreme optimism of venture capitalists (VCs) and investment bankers about these new business models that enormous amounts were invested in so many e-commerce start-ups. After initial funding by the VCs, investment banks then used the capital markets to raise even larger amounts for them through IPOs. Unfortunately, many failed. Yet, the B2C e-tailing approach remains an important e-commerce business model we will term the Amazon or A model.

Furthermore, the phenomenal growth of the B2C e-tailing start-ups combined with Wall Street and media hype shook the retail industry. Under pressure to be part of the new economy traditional retailers often undertook seemingly desperate moves to aggressively enter into e-tailing. Several created websites and many established tracking stocks for these activities so they could also raise capital quickly and cheaply or make acquisitions for stock on a comparable basis to the e-tailing start-ups. Barnes & Noble, a hundred year old book retailer with large stores across the US, opened its barnesandnoble.com website in 1997 and
later established a separate tracking stock. (It subsequently collapsed this back into the parent in 2001 given the large losses in its e-tailing activities and the collapse of the dot.com mania.) Other retailers such as Toys "R Us, L. L. Bean and Wal-Mart followed similar e-tailing entry strategies. This type of e-commerce B2C e-tailing model is popularly known as bricks-and-clicks due to these firms existing physical retailing infrastructures. We term this kind of B2C e-tailing business as the B&N model.

Over time, the B&N business model seemed to have some obvious advantages over the A model. First, these firms often had existing capital and cash flow to invest in their e-tailing ventures. This made them less dependent on the VCs, gave them better control over their business operations, and meant they were not totally dependent on online sales and their website to generate cash flow. Moreover, most of these companies effectively managed to leverage their existing brands and name recognition, permitting them to spend less on advertising compared to A-type e-tailers. A related advantage was greater consumer confidence since the stores' physical presence meant consumers had the option of picking-up or returning merchandise at those locations. This meant customers could order online but take delivery at a nearby store, saving shipping charges. Similarly, clients were not totally dependent on trips to the post office or calls to UPS for returns, especially when some e-tailers forced customers to pay for return shipping. In addition, complaints could be handled in person if necessary, not always remotely online. B&N e-tailers also accepted payment for online purchases in their retail establishments, reassuring customers that were reluctant to give away credit card information online. All these options made delivery, payment and returns faster, less expensive, and more convenient for customers living close to the e-tailer's retail stores.

Yet, customers could still benefit from the convenience of 24-hour access or the ability to conveniently browse for information in their own homes. To emulate these advantages of the B&N e-tailers, the A type businesses started to build their own physical infrastructures such as automated warehouses and selling booths in shopping malls.

Further, some A-type e-tailers used their inflated stock values prior to the dot.com collapse to acquire existing retailers in their markets. Thus there has been some convergence between the e-tailing start-ups that have survived and the traditional retailers that entered the online retailing business, with each trying to achieve some optimal competitive combination of web and bricks-and-mortar based sales. This is because the bricks and clicks or B&N model seems to have emerged during the 1998-2001 period as the e-tailing approach most likely to succeed in the new economy or even the new, new economy. This is especially true when one recognizes another key competitive advantage for traditional firms - management's existing knowledge of their customers and their industry's particular economics.

Amazingly, many new A-type retailers had no previous experience in their industries or markets.

**Emerging E-tailing Difficulties**
This is why the hype and promise of the new economy did not last long and a more rational e-commerce business model has emerged. In this model e-tailing has become another channel to reach the customer but not the only channel. Further it must be combined with various support facilities. This reality has been reflected in the collapse of the NASDAQ, where most e-commerce stocks and their hi-tech suppliers have been listed. Beginning in April 2000, it fell 37% below its historical (hysterical) high. Over the next several months almost all e-commerce stocks deflated and many e-tailing firms such as e-Toys went bankrupt. Amazon did not register a profit in 2000 or 2001, though it did manage to reduce its net loss to 567 million dollars from 1.4 billion dollars. Only in 2002 has it become marginally profitable. As of the end of 2002, the NASDAQ was hovering below 1500, or more than 70% below the March 2000 high.

This collapse in stock values along with retrenchment by even the relatively successful B&N e-tailers hit the providers of technology very hard. Systems and networking suppliers such as Cisco, Lucent, Hewlett-Packard, Sun Microsystems and even IBM lost potential sales. Importantly several firms such as HP, Lucent and Cisco had made sales on suppliers credit that included stock options or warrants in the purchasing company too. Having booked profits on both their sales and the related securities portfolios, the dot.com bankruptcies forced them to take major write-offs and restate earnings, resulting in enormous reported losses that heavily impacted their own stock values and future sales. Many could not recover their loans to the e-tailing companies. For example, Cisco wrote off $1.2 billion in 2001 and registered a net loss of $1 billion compared to a net profit of $2.6 and $2.0 billion respectively the previous two years. Only IBM, which had stricter credit policies and had not used easy credit to buy sales, appeared relatively unscathed. Indeed, other suppliers often met their own recently installed equipment and systems selling in the market at substantial discounts as other creditors dumped these assets in forced bankruptcy sales.

Concurrently with the demise of the dot.com competition and the e-commerce hype, the B&N e-tailers that had already invested furiously pulled back sharply on new investments as they too were facing losses. Clearly, there were problems with the initial e-tailing business models since in retrospect even most B&N firms lost money.

Three related issues seem especially important. First, these e-tailing businesses did not really add significant value within the total retail value chain. Almost all e-tailers have depended on third party shippers such as FedEx, DHL or UPS for merchandise delivery. These delivery services are expensive and e-tailers were unable to economically compensate customers for shipping charges given their overall margins and the cost of building, operating and advertising their sites. Secondly, while sales growth was certainly impressive, consumers did not flock to online purchasing to the extent or with the rapidity the industry expected. Though it is often easier to order online and get delivery at home rather than go to a store, many customers continued to go to stores for the final sale to kick the tires or to see and feel a dress
prior to purchase. Finally, e-tailers had no proprietary interest in the products they were selling and given
consideration number two were not able to achieve volume purchases that would give them any
advantage over the large B&N sellers in their category. These three factors when combined with
potentially insecure payment mechanisms, limited Internet access, and higher than expected advertising
costs have made many B2C e-commerce business models unprofitable even for the B&N retailers. The
question is whether there is another approach that could overcome some of these drawbacks and help
realize the potential of e-tailing, especially in countries that do not have the US’s extensive PC/Internet
infrastructure.

**Alternative E-tailing Business Model — Japanese Convenience Store (CVS) and Telematics**

This B2C model is developing very rapidly in Japan, though it is based on many traditional aspects of
Japanese business and consumer retailing. Two considerations appear particularly important. One is most
consumers still pay cash for purchases and two, firms are used to forming cooperative alliances to take
advantage of new business opportunities with each delivering its own expertise. The latter occurs because
Japan’s long-term employment system makes it difficult to quickly recruit new expertise in the way the
US e-tailing start-ups could rapidly attract new personnel at all levels by offering stock incentives and
other perks. The new IT-based alliances, however, are different than traditional horizontal or vertical
Keiretsu (company groupings) common in certain Japanese industries. The horizontal groupings of firms
in different industries, often historically based in family controlled zaibatsu with pre-World War II
origins, generally have a large bank at their center. Among the best known are Mitsubishi, Mitsui and
Sumitomo. Conversely, the vertical keiretsu are usually headed by a large industrial concern such as a
Toyota, Matsushita or Hitachi and are composed of the lead firm, its subsidiaries, and their suppliers. In
both cases, there has generally been extensive inter-firm ownership as well as exchange of personnel over
years. In the new IT based alliances, however, which we term e-rets, there is often no previous alliance
relationship, either vertical or horizontal, and no cross shareholdings. Common shareholding is only in the
e-rets company.

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1 Telematics during the 1980s referred to interactive computer mediated communications. But more
recently it has come to cover the intersection of informatics (the processing and application of data with
specific goals and objectives) and telecommunications, especially wireless communications in a mobile
environment. It thus refers to applied telecommunications in a data rich environment and can incorporate
businesses and services where ubiquitous or pervasive computing intersects with e- and m-commerce as
well as intelligent transportation systems that enable the linking of mobile and wired solutions to achieve
a multi-media result. Toyota estimates these activities and their related goods and services will grow to a
60 trillion yen market by 2015 just in Japan (Toyota 1999). This explains why Toyota, Japanese CVS and
Japanese consumer electronics companies such as Sony, Matsushita, and NEC along with mobile phone
companies (NTT DoCoMo and KDDI) and leading systems houses (NTT Data and NRI) are heavily
involved. The following business and analytical assessments of the initiatives by the leading Japanese
CVS in e- and m-commerce illustrate and explain the powerful economics and competitive advantages
Rather the firms motivation in forming a corporate alliance is to pool their expertise in a new venture where all parties hold shares. The common objective is to cooperatively use their expertise and shared personnel to exploit what they jointly see as an e- and/or m-commerce business opportunity. In addition to quickly raising capital and pooling the principals business and technical expertise, this structure also substitutes for the relative scarcity of venture capital in Japan while leveraging the investors R&D and consumer brand recognition. Further, because each partner is providing its own products, services and expertise to the venture, these B2C e-tailing activities cover a much larger part of the value added chain than either the A or B&N models. From an e-tailing perspective the most interesting of these e-retsus are those based on the convenience store (CVS), which as explained below can capture a larger part of the payment and delivery aspects of the value chain. The remaining sections will focus on these CVS, especially the strategies of three leading firms; how they and their partners view each e-tailing venture s value chain; and how they use telematic solutions to achieve their objectives and create competitive barriers.

**CVS in Japan**

To understand this e-tailing model, however, one should grasp certain fundamentals about CVS in Japan and how they differ from such stores in the US. These differences are found especially in the strategies of the leading firms driving its development, particularly Ito-Yokado and its 7/11 subsidiary, Seven-Eleven Japan (SEJ). Despite Japan s extended economic malaise, large CVS in Japan have enjoyed relatively better performance than general merchandise stores (GMS) in the 1990s with sales rising from 3.89 trillion in fiscal 1993 to 6.18 trillion in fiscal 1998. Sales then fell slightly in fiscal 1999 to 6.13 trillion and remained at that level through fiscal 2001(6.14) despite general deflation. This situation contrasts with the GMS that did experience declining sales due to increased competition, Japan s economic downturn and widespread deflation.

However, competition among CVS and against other retail sectors has been increasing, and the time is past when the whole sector could enjoy good growth. Now, only the large better managed CVS have a chance to grow faster given their better merchandising strategy, including more services; greater use of IT; superior strategic site selection; and finally better owner development. Given these advantages deregulation increasing the kinds of merchandise and services CVS can offer will further favor the leading chains. For example, increased financial services will require more sophisticated training of storeowners and their employees as well as good field support. Only, the leading chains have this capability. This is because the bigger chains, and especially 7/11, can offer a larger number of seasonal and promotional items, geographical variations in what is carried, and extensive and constantly changing fast-food offerings.

that can flow from the systematic use and application of integrated telematic solutions.
In deed, it is generally agreed that SEJ has achieved its leading position through flexibly supplying its stores with a wide variety of goods and services, especially with different food items during the day. Having sales per store and per square meter at least 50 percent higher than its major competitors became an even more important advantage as Japan’s CVS market saturated during the 1990s with a surge in the number of stores. During this period the population per store fell below the 3,000 usually regarded as the critical level for viability. In major urban areas the situation became even more unfavorable: in Tokyo around 2,000 and in Osaka, even less. However, it was during this period that the major chains became able to distinguish between their high-quality stores and the lower-quality ones called CVS just because they are open 24 hours. In 1996 for example, the total number of CVS in Japan (48,567) included every type satisfying the minimum definition. But of those, only about 32,000 actually provided the other usual CVS services such as postage stamps, copiers, fax machines, video games, utility bill payment, and package delivery. Therefore, the population per high-quality store at that time may actually have been around 4,000. This is why for quality operations there was a chance during the late 1990s to add as many as 10,000 stores. However, the marginal stores could not survive this increased competition, so the number of CVS actually declined by 9,000 to 39,627 in early 2001. After this shakeout the feeling now is that saturation has been reached even for higher-quality stores and the number of marginal stores has been substantially reduced. Therefore the recently announced strategy for even the leading firms has been to not expand the total number of stores but rather to replace the existing stores operating less successfully with new stores in different locations that have better market potential and can sell alcohol. For example, SEJ’s percentage of stores selling alcohol has risen from about 35% in 1991 to about 63% in 2001 (SEJ Outline 2001). At the same time this approach is being combined with an expanded range of services at all stores. It is the second part of this two-prong strategy that is the key motivator behind their e-retsu e-tailing initiatives. The competitive pressures in this direction are indicated by the fact low-quality stores that do not belong to a franchise have been closing or converting to become part of a larger chain for some time. In 1996 there were 1,486 such closures, equal to 45% of the 3,218 newly opened stores, while the new stores were virtually all either franchisees or owned by a CVS chain. That these smaller stores were the first to leave the industry is also indicated by the fact the major CVS companies during this period were only doing a little scrap-and-build of existing stores. The number of scrapped stores per listed CVS was only some 100 per year, or about 20% of new openings, compared to the current rough equality. For this reason the share of stores of the 8 major CVS companies rose from 21% in 1985, to 30% in 1990, to 40% in 1995 and 43% in 1996. Thus by 1996 their share was almost twice 1985. Then in the 1990s even larger chains came under pressure so that by 2000 the top six (now top 5) had 65% of the stores and over 80% of total CVS sales. This is why even leading stores are now reining in their rapid expansion,
with Lawson and FamilyMart in early 2001 announcing closures and relocations of hundreds of lower-performing stores with planned openings in more-promising locations and/or those having liquor licenses. For example, FamilyMart’s stores with liquor licenses increased from 1901 in FY 2000 to 2279 in 2001, with little net change in the total number of stores in the chain.

Similarly, Lawson’s Executive Vice President, Koji Wada, noted in Lawson’s 2001 Annual Report that in fiscal 2001 they expect to open 650 stores, a roughly 10% decline compared to openings in fiscal 2000. Thereafter, we will adhere to our policy of not overextending ourselves by opening new stores where the numbers don’t justify it. For the same reason, SEJ currently evaluates some 135 factors in deciding whether to open a new store. But despite this increasingly competitive environment, SEJ appears to be using its greater efficiency to further increase its market share. That is, since 1993 SEJ has opened about 400-500 stores per year and during 2001 had a backlog of about 500 waiting to be opened while publicly stating its intention to steadily increase its number of stores and location dominance. The apparent success of this strategy is reflected in its average daily sales for new stores since 1995 of over 520,000 yen, which is greater than the average for even existing stores among its competitors. Further, most of these new openings seem to have a license to sell liquor since the number of such SEJ stores increased from 5115 in FY 2000 to 5427 in FY 2001. This may also be why average daily visits per store are up about 20% since 1982 while the average sale per customer has risen from 600 yen to over 800 yen and the average gross margin has gone from a little over 26% to over 30%. This compares with FamilyMart’s sales per customer of about 600 yen in 2001. Due to the availability of liquor, logically SEJ’s sales to those over 20 have increased steadily.

CVS Merchandising Strategy

As noted above, a key strategy for the leading Japanese CVS has been to continually add services to attract traffic, even if these services do not contribute directly to profits. Thus, many have long offered copiers, fax services, and video games. Beginning in 1987 they became payment points for electricity, gas, and water bills. (SEJ was the first and reports having 3% of the total Japanese payments market in 2000, which includes payments made through banks and the postal system.) In February 1989 SEJ also became a payment-point for Daiichi Seimei (life insurance). As deregulation has allowed, CVS stores have added sales of money orders and postage stamps. Sale of rice was allowed in 1996. Foreign exchange services started in April 1998, package shipping in the mid-1990s. SEJ works primarily with Yamato Unyu (Black Cat), Japan’s largest package-delivery firm. During FY 2001, SEJ handled over 13.5 million packages. In November 1999 SEJ began accepting payment for purchases made over the Internet as part of its e-retsu strategy. Reservation services for travel packages became available beginning in late 2000. With these new offerings, sales of existing CVS began rising again. Looking ahead, stores even
may be able to sell some prescription pharmaceutical products, perhaps acting as pick-up and payment points for on-line pharmacies. The success of these activities reflects that Japan is still a cash using society, as even those with credit cards are reluctant to give the number over the phone or Internet. As a result in the year ending February 2001 SEJ had handled over ¥800 billion in third-party payments on behalf of 245 companies involving over 100 million transactions. Furthermore, over 75% of Internet purchases are currently paid for in CVS. More recently banking and financial services are being offered as deregulation continues. Working couples needing financial services outside normal banking hours already have been targeted. Several CVS have initiated their plans to act as automated bank branches with ATMs. While IY has established its own bank, as discussed later, Lawson, FamilyMart and other CVS have entered into alliances with banks that install and service the ATMs in their stores. Other IT alliances are focused on games, entertainment and other services as detailed in the case studies that follow.

Yet it is clear that handling this wide range of services requires thought, support, and staff training. When CVS started selling game software in 1996, makers selected stores based on distribution power. This relates to how extensive the franchise network is and how well the distribution system works to supply stores. The implication is that although a CVS can add items and services, not all chains can do it equally well and profitably. Further, many of the new products and services, especially financial ones, are very IT intensive. The store ideally wants a customer to buy lunch, a snack and magazine for later, and a toiletry, while checking bank balances, making payments, or trading stocks. This goal favors the leading CVS firms with the most sophisticated and wealthy partners.

This also means that selecting franchisees and good sites remain key aspects of a successful CVS strategy including its e-tailing component. This is because the competition among CVS firms for new stores in promising areas has reduced the average quality of franchisees and CVS stores. At some CVS chains the staff responsible for developing new stores and advising new franchise owners are not very competent. But competence is very important when more complex services are added. SEJ’s store-support staff of 1500 is therefore critical to its competitive strength. Since franchise-closing costs are much higher than opening costs, CVS firms have to pay careful attention to their relations, support, and contracts with franchisees. Since sophisticated partners want to optimize their chances for e-commerce success they tend to align themselves with the more successful better managed CVS, which contributes to the potential success of the e-tailing venture and the CVS, a beneficial loop.

Important Strategic Differences in CVS E-tailing Business Model

As already explained, one difficulty that emerged in widely applying the A-type e-tailing business model has been the relatively small part of the value chain it occupies between the production of a good or service and the customer. In the case of Amazon, for example, it does not produce the books, CDs and
other items that it sells, and actual delivery (UPS or Fed-Ex) and payment (credit card) are provided by third parties too. So to amortize the high fixed cost of its hardware and software systems, Amazon has needed to generate economies of scope by dramatically expanding the goods and services it offers. E-bay particularly shows how economies of scope can be effectively employed to achieve a successful e-tailing venture using the A model.

The failure of ventures with more limited markets such as E-toy that were not able to generate economies of scope shows the strategic risks involved in the using the A model to penetrate an e-tailing market segment. This is especially true if it is occupied or can be occupied by a B&N type competitor such as Toys R Us and where the interaction between returns and customer satisfaction are important. The B&N model has generally proved superior because it is able to capture a larger part of the value added stream including some parts of delivery and payment as well as a lower cost of returns with better customer satisfaction. This is why K&B Toys, the number two store based toy seller, could buy E-toy. However, the B&N model is less well positioned to develop economies of scope since the bricks part of the business is generally specialized, e.g. K&B Toys, Barnes & Noble or Charles Schwab. But as will be seen in the following case studies for Seven-Eleven Japan, Lawson and FamilyMart, the Japanese CVS model appears to address the potential e-tailing limitations of both the A and B&N business models. That is, through their websites and catalogues, they can generate economies of scope. Further by using their convenience stores as payment and pick-up centers they can also achieve the greater value added and better handling of returns of the B&N model. In addition, through their e-retsu partnerships they can create and/or capture some of the product value as well while extending their activities into telematic relationships with a wide variety customers and suppliers.

By including content providers as shareholders in their e-tailing ventures, they gain some of this part of the value added income stream, which neither of the two US type e-tailing models can do. In addition, via their multimedia kiosks, they are increasing store traffic using telematic means that also improves the revenue stream of their basic retailing business, an externality to the e-tailing venture. To the extent they already use sophisticated data gathering systems to track and deliver customers purchases by store,\(^2\) item,

\(^2\) In IY's Form 20-F filing for fiscal 2002, it briefly explains its approach to using IT to gain an advantage in its CVS. This is covered in more detail in Rapp (2002). An item-by-item inventory control method has been at the core of the Company's merchandising strategy. This method involves distinguishing fast-moving items from slow-moving ones, examining these differences, taking due care of the main features (for example, color, design, size, taste, durability, sales methods and price) between them and making hypotheses for the business plans. The item-by-item inventory control is made more precise by the processing of a computerized point of sales system, POS. Based on the data, fast-moving items are stocked sufficiently and slow-moving items are reduced immediately. Further, this method ensures that the products customers want to purchase are always in stock thereby reducing lost sale opportunities due to items being out-of-stock. This concept is fundamental in merchandising. Through the continuation of the item-by-item inventory control, Ito-Yokado believes that its operation has succeeded in maintaining a higher level of efficiency, a lower level of inventory while at the same time meeting customers needs.
time of day, weather, and special events, e- and m-commerce become extensions of their supplier relationships and telematic approach (Rapp 2002). For these reasons, these cases bear close study both now and in the future as an possible approach to capturing e-tailing s emergence as a growth market in various countries and as one expression of the effect of Telematics on e- and m-commerce. SEJ and Sony, for example, have an agreement to offer high-speed downloading of games for PlayStation 2 using a centralized server containing all current game selections. This means an SEJ store can offer a total selection of games, but only has to inventory blank CDs. Players in turn will have a convenient alternative to downloading over a slow (and expensive) residential telephone line. In addition, upgrades will be easy to provide for a small fee. The pressure on video game rental stores and software shops is enormous.

**Seven Eleven Japan (SEJ)**

Such e-commerce has been taking strong hold in Japan, but it has been evolving differently than the US, and changing Japanese retailers’ strategies. With Nomura Research Institute’s (NRI) help, IY and SEJ are moving quickly and decisively to have an impact on this e-commerce development, using a customer-driven strategy in which the concept of convenience goes well beyond the types of items normally associated with a CVS. An important area in making this approach to e-commerce work is developing a convenient and secure payment mechanism with which customers feel comfortable. As just explained, many Japanese do not trust giving a credit card number over the Internet or telephone, while others just prefer to pay cash. So combining e-commerce websites with a large CVS chain allows people to pay at conveniently located stores, as well as to take product or service delivery. This process facilitates returns as well, since they can be done on the spot. This is analogous to the perceived advantage of the B&N model. In addition it is an evolutionary extension of SEJ’s third-party payment service, which did over 126 million transactions in FY 2002 up from 105 million transactions in FY 2001 and 86 million in 2000 consistently. In addition, various merchandising strategies of Ito-Yokado have been based on this item-by-item inventory control.

While this method requires Ito-Yokado to forecast adequate levels of inventory precisely, Ito-Yokado’s item-by-item inventory control allows Ito-Yokado to maintain inventory based on data reflecting current consumer trends. By relieving Ito-Yokado’s suppliers from having to take back unsold merchandise, Ito-Yokado keeps costs down and retains a right to decide appropriate production volume to meet product sales trends. The merchandise in Ito-Yokado’s stores must be ones which customers want, be in stock regularly and be reasonably priced. Team merchandising is Ito-Yokado’s method of satisfying these requirements. By working closely with manufacturers and suppliers to select materials and specify manufacturing processes, and by sharing sales data from Ito-Yokado’s stores, Ito-Yokado has established a highly efficient system for developing and manufacturing merchandise that meets consumer requirements. By limiting the number of firms, companies and entities with which Ito-Yokado does business, production and distribution processes have become more efficient. Ito-Yokado has further lowered wholesale costs and added extra values to its products by fostering strong relationships with suppliers through the Complete Purchase System. Team merchandising also makes the production process more flexible, enabling Ito-Yokado to increase or decrease production in response to changes in the market. Ito-Yokado can cut the time it takes to fill orders or fast-moving merchandise and avoid running out of extremely popular items. These team-ups consist of not only domestic suppliers but also overseas partners.
with a value of 813 billion yen in 2001 compared to 641 billion in FY2000. It also fits with its parcel delivery service that handled 13.8 million parcels in FY 2002.

In Japan it is now common to order items such as books, video games, and CDs through the Internet using the CVS for payment and delivery. In fact IY and SEJ have led this change. In 1999 SEJ established joint ventures such as e-Shopping!Books with Softbank, Tohan, and Yahoo!Japan, and CarPoint Japan for car sales with Softbank, Microsoft, and Yahoo!Japan. In addition, the 3 million customers of Japan’s largest virtual mall, Rakuten Ichiba (rakuten.co.jp), can use SEJ stores to make their payments and pick-up packages if they do not want them delivered. IY reports that about 75% of shoppers on its websites pick-up and pay at the store. Further, SEJ and NRI have jointly started providing clearing services for purchasing through the Internet. There is also Seven-Meal Service for customers who find daily meal preparation inconvenient; they place orders through telephone, fax, the Internet and at stores and choose whether to receive the products at home or at a nearby Seven-Eleven store. (SEJ Corporate Outline)

7dream.com

More directly, in January 2000, SEJ and NRI announced the formation of a new B2C e-retsu (a company based on IT relationships) with capital of ¥5 billion. Called 7dream.com, SEJ intends it to be one of the largest EC [e-commerce] businesses in Japan and operate at the forefront of its field. 7dream provides a range of services on its website, all of which eventually will be accessible from the multimedia kiosks installed in SEJ stores. In keeping with NRI’s recommendations that any e-commerce access strategy should be ubiquitous, 7dream can also be accessed directly over the Internet and other networks, including those open to mobile phones and direct TV, or by using catalogues available in all SEJ stores. As seen in Table 1, through its e-retsu members the new firm is offering a range of services. These relate to travel, music, gifts, mobile phones, event tickets (tie-up with PIA Corp, Japan’s largest ticket agency), books (arrangement with e-Shopping!Books Corp), car-related services (sales via CarPoint and, later, arranging auto inspections, repairs, driving lessons, and rental cars), and information services related to

3 As reported in IY’s Form 20-F filing with the US SEC, Kabushiki Kaisha 7dream.com, which Seven-Eleven Japan established jointly with seven other companies in February 2000, launched an Internet shopping site. Through this site, Seven-Eleven Japan is developing an e-commerce business based on convenience store, distribution and information networks. 7dream.com has offered various services for customers including order, pick-up, and pay for such transactions as shopping, buying books, downloading music, printing digital photos, applying for cellular phones, and requesting same day hotel reservations. The installation of multimedia terminals, which enable customers to order the above-services from 7-Eleven stores, began in November 2000. Net sales in fiscal years 2001 and 2002 were 617 million yen and 1,170 million yen ($8,731 thousand), respectively. The Seven-Meal Service was jointly established in August 2000 with three other companies, Seven-Meal Service Co., Ltd. (Seven-Meal Service), uses Seven-Eleven Japan’s production, distribution, and information networks to operate a meal delivery service. At the end of February 2002, the services were available in areas covering approximately 3,000 7-Eleven stores. Customers can select from a menu of various items, including fully prepared meals and packages of cooking ingredients. Items can be ordered by telephone, facsimile, and Internet or at 7-Eleven stores. Delivery is made using special vehicles that can keep the food at required temperatures or the food may be picked up at 7-Eleven stores. Net sales in fiscal years 2001 and 2002 were 17 million yen and 478 million yen ($3,567 thousand), respectively.
entertainment, digital photographs, and special examinations in partnership with firms such as Toppan Printing and JMA Management Center. Table 1 lists the ownership and what expertise and services each brings to the venture.

As of August 2001 there were about 1,200 7dream terminals in 7-Eleven stores in the Tokyo area, with a rollout elsewhere planned over the next few years. This plan has been tracking with 3500 kiosks installed as of February 2003. Meanwhile, anyone can order from the web site, by phoning the call center, or in the store using a monthly catalog available at all 9300 stores. The offerings in the catalog are non-bulky because the stores have limited storage space for holding items until they are picked up. The catalog contains items not offered via the kiosks, which currently focus on tickets, CDs, and games. (This is true of the kiosks at all CVS chains.)

SEJ expected start-up costs to be around ¥40 billion and projected annual sales of about ¥150 billion for 2002 and ¥300 billion for 2004. Results so far have been somewhat short of expectations as 7Dream, the IY Bank, the IY Card, and Seven Meal Service together generated revenues for IY on an equity basis of 14.5 billion yen during Fiscal 2002 and losses of 13 billion. Still the project offers IY tremendous opportunities to enlarge the goods and services available at SEJ stores throughout Japan, including banking and financial services (see footnotes 2, 3 and 4). And while ultimately SEJ's objective is to operate in all 47 Japanese ken currently its focus is on the ones in which it is already dominant. SEJ estimates that it has about 9 million customers in its service areas and it is supporting its sales to those clients via an ISDN based network that was jointly developed with NRI and NEC. Similarly they work together to operate and update this system.

Table 1

<table>
<thead>
<tr>
<th>7dream.com Owners/e-retsu Members</th>
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<tbody>
<tr>
<td>Ownership (percentage) Expertise and services provided------------------------------</td>
</tr>
<tr>
<td>SEJ (51%) - Principal organizer; provides places for kiosks to access the web site.</td>
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<tr>
<td>NRI (13%) - Advises on structuring business; develops and operates e-commerce system.</td>
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<tr>
<td>NEC (13%) - Built and operates 7.dream website. Designed/developed multimedia terminals, all connected via dedicated lines.</td>
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<tr>
<td>Sony (6.5%) - Supplies technological support for its MD (mini-disk) and IC card technologies.</td>
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<tr>
<td>Sony Marketing (6.5%) - see Sony, includes online packaged music and games</td>
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<tr>
<td>Mitsui &amp; Co (6%) - Trading company provides information, merchandising support, distribution.</td>
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<tr>
<td>JTB (2%) - A travel agency (formerly Japan Travel Bureau)</td>
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<tr>
<td>KINOTROPE (2%) - Software firm consulting Internet business design, systems development.</td>
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In 2001 7Dream had 250,000 members and its biggest selling items were books, CDs (Sony), travel services (trips via JTB) and tickets to various entertainment and sporting events via PIA (Japan's largest
ticket agent). SEJ provides a monthly catalogue to all stores. It lists items covering travel, events and items for sale. But since then SEJ emulating Family Mart and Lawson (see below) has introduced a point card that as of February 2002 had 5 million members and also a combination point and IY Bank credit card. (As of the summer of 2001, FamilyMart had 500,000 members and had a more extensive list of items for sale.) SEJ sees the number of system users expanding as PC and 3-G phone use of the Internet expands since it can then show more about its services. Customers still want some way to view the product or service first for review and comparative shopping prior to purchase. But even then they will come to the store to pay and pick-up just as they do for many of their other bills. So this is an evolutionary process where SEJ is positioning itself to eventually provide full B2C e-commerce nationwide but for now it is doing more via its stores.

Even the multimedia kiosk (MMK) has limited functions such as buying tickets and downloading CDs and games. It does not give access to the Internet or the full catalogue of products that can be purchased via phone or at the store using SEJ’s proprietary online system or the catalogue. This is one reason that sales have not grown as rapidly as expected. Further, prices are still a bit high as one is paying for convenience. But SEJ expects prices will drop with experience, use and the number of goods or services sold. So they see this as early in the competitive game. This is true for the IY-Bank too, as IY’s and SEJ’s approach is very different than other CVS since it owns its ATMs with 3600 installed as of March 2002. Yet, IY feels it is fulfilling a definite customer need since the firm’s market research indicates that its customers are dissatisfied with traditional banks that are far from residential areas, have limited operating hours, and do not offer financial products and services that really meet customer needs. (IY Bank 2001)

IY Bank

Because many customers want the convenience of paying for e-Commerce purchases at CVS stores in cash, most have combined their multimedia e-commerce strategy with 24-hour ATMs in addition to the multimedia kiosks (MMKs). However, as under Japanese law, only banks can have ATMs, the CVS other than SEJ have invited one or more banks to locate ATMs in their stores. Thus the bank controls the ATM.

4 In its 2002 20-F filing IY reported the following on the bank: IYBank was established as a consolidated subsidiary, with the investment of Ito-Yokado and Seven-Eleven Japan on April 10, 2001. Upon receiving a banking license on April 25, 2001, IYBank began operations on May 7, 2001. ATM installations are progressing steadily, and IYBank continues to bolster its operational foundation. The bank has aggressively pursued online connection alliances with banks and securities companies to increase customer convenience, and from December 2001 all savings accounts have included network banking functions, which are available over the Internet, cellular phone i-mode service, and push-button telephones. The bank will build on these strengths as it continues installing ATMs in IY Group stores. As the bank expands into new areas, it will utilize tie-ups with regional banks as well as ATM usage agreements with life insurance companies and consumer companies. Total Income for year ended March 31, 2002 was 1,906 million yen ($14,224 thousand). By the end of March 2002, the bank had installed 3,657 ATMs and approximately 68,000 accounts had been opened. So in less than a year it expanded six fold in terms of customers.
So because IY and SEJ want to control the services available through the ATMs in their stores (footnote 4), they decided to have their own bank to serve their 9-10 million customers per day plus their 200,000 employees. This is despite the greater capital and systems reporting required. The IY Bank began in May 2001 with 130 employees and initial capital of Y20.2 billion, though the heavy initial investment caused it to report a loss for FY 2001 and 2002 as noted above.

IY was in fact the first non-bank to apply for an on-line banking license and was joined in this e-venture by Bank of Tokyo-Mitsubishi, Sanwa Bank (UFJ Group), NEC, and NRI as shareholders. Nomura Securities, Nikko Securities, and Sony have joined the venture too and three other banks (regional banks - Asahi Bank, Shizuoka Bank, and Bank of Yokohama) have become affiliated. The shareholding and affiliated banks have provided staff, as has SEJ, while the bank’s president is a former Bank of Japan official. The participation of two securities firms reflects IY and SEJ’s expectation that on-line brokerage services will eventually be provided. Further, Sony has affiliates that offer life and auto insurance, while it is also planning an e-bank. The participating banks expect to be able to close branches without sacrificing customer service since, depending on store locations, the ATMs accept different affiliated bankcards besides IY’s. By the end of December 2001 there were about 2,200 ATMs installed, by March 2002 3600 and by August 2002 4200 primarily in metropolitan Tokyo and adjacent areas. By the spring of 2006 there will be over 7,100 throughout Japan.

Services offered will eventually include bank accounts, remittances, money transfers, a debit card within the IY group, credit cards, purchase point cards, loans, Internet banking, and settlement services with member firms such as 7dream.com or Seven-Meal Service. There will be services such as brokerage, insurance and credit cards offered through affiliated firms too. Bank accounts, cards and 7.dream have been the main services initially being offered. As of March 2002, the bank’s paid-in capital was yen 61 billion and 700,000 credit cards had been issued by the end of August. Installation costs have been about ¥2.5 million per ATM, and because an ATM is a bank branch under Japanese banking rules, accounts can be opened only at a bank branch, i.e. a store having an ATM, or by mail. In the first two months of operation (June and July 2001) about 10,000 accounts were opened. By the spring of 2002 this had risen to 68,000 (footnote 4). Not surprisingly, ATM use has been primarily on weekends and after 8PM.

Besides SEJ’s CVS, ATMs will be in IY’s other operations such as Denny’s restaurants and IY’s general-merchandise stores. Because IY and SEJ control the bank, they control the services offered and the ATMs’ functions. So they can target services important to clients and can leverage advances in technology since the very first ATMs were introduced in Japan.

Thus, these CVS ATMs are electronically sophisticated and can be programmed to handle a variety of functions over time as services evolve while being very compact, which is important for the storeowners. However, so far SEJ has not trained store personnel in these functions. So from a store’s perspective the
ATMs are currently being used to generate traffic with the bank partners handling the actual service. (SEJ has admitted that it was tougher getting the ATMs up and operating than it expected.) Nevertheless its bank customers can currently access and manage their accounts via i-mode phone, the Internet, or PC. In this way IY and SEJ’s e-commerce support system is an extension of its already very sophisticated IT system that is largely independent of the Internet. This reflects the fact it was in place by the time the potential of the Internet was widely recognized (Rapp 2002). But the company feels that in contrast with Lawson the advantages of a proprietary network are such that it would not have made the system Internet-based even if that had been an option. This is not to say SEJ’s management is ignoring the Internet in areas where they feel it is appropriate, such as connections to their own system or using their CVS for Internet payment, delivery and pick-up. Furthermore, they are closely monitoring its use by others since Lawson and Mitsubishi Corp, Japan’s largest trading company, are constructing an Internet-based system intended to emulate SEJ’s proprietary system. But for the time being SEJ prefers the direct control and competitive barriers their current proprietary IT approach creates.

It is on this basis that the company is extending its telematic strategy to the US. As reported in the **FREE E-NEWSLETTER** in January 2003, **7-Eleven(R) Launches National Vcom(TM) Rollout in Orlando; 49 Stores Equipped With Kiosks Offering 24/7 Financial Services**. In this pilot project 7-Eleven, Inc. its US subsidiary will rollout its Vcom combination ATM & kiosk by initially installing them in 1,000 stores in the US beginning with 49 in the Orlando, Fla. The self-service machines will offer touch-screen ATM capabilities to provide customers financial and other services 24 hours a day, every day. Customers will be able to conduct American Express ATM transactions, purchase Western Union money orders and money transfers, pay bills through Western Union’s Quick Collect(TM) payment service and cash checks through Certegy Check Services(SM), a division of Certegy, Inc. Customers can pay by cash at Vcom by inserting as many as 30 bills at a time into a bunch-note acceptor on the machine.

The plans are to install about 1000 kiosks across the US through the first half of 2003. As the firm’s research indicates customers want to do multiple financial and personal tasks at one time, have 24-hour access to cash and a choice of convenient locations. 7-Eleven anticipates that Vcom will offer additional services, such as touch-screen access to online shopping and telecommunications by early 2003. The e-commerce offerings will be provided by Cyphermint, Inc. through its patented Pay Cash System(TM) that allows customers to pay at the kiosk with cash, as well as with a check, money order, or credit card. Telecommunications services will be available through Verizon, Inc. 7-Eleven recognized several years ago that it was in the financial services business because its U. S. stores sell $4.3 billion worth of money orders, and their customers conduct 105 million ATM transactions annually. The company wanted to make these and other financial transactions more customer-friendly, convenient and
fast. Based on the performance of the 1,000 units, the company could install an additional 2,500 Vcom kiosks starting late 2003, and 7-Eleven is negotiating with other premier companies in their respective industries to secure national contracts for services consumers will want. The company anticipates Vcom will later offer loan and credit services, car insurance, deposit capability, event ticketing, travel directions and road maps.  

Thus IY and its 7-Eleven subsidiary are emulating what had already been launched on a larger scale in Japan with a similar IT partnering and telematic based strategy. This has interesting implications for the development of e- and m-commerce in the US.

Basic Financial Data SEJ FY1996-2002 (February) - not including Hawaii

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Source: SEJ Corporate Outline; Brief Summary Results FY2001, Semiannual Report 2003 6 months ended 8/31/2002

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5 An example of their strategic telematic partnering is 7-Eleven's 5-year linking with Verizon that was announced in the Fall of 2001. Under the agreement, Verizon pays part of the cost of placing the kiosks, while becoming the exclusive distributor of certain services through them. That is, at the Vcom kiosks, customers can access Verizon’s e-commerce platform, Verizon.com, where they can order long distance, add a phone line, contract for new services, view or pay bills, and request repairs. Verizon sees this as a way to serve clients with busy lifestyles where they shop.
Lawson

Japan's second largest CVS, Lawson, was established in 1975 as a subsidiary of Daiei, Japan's largest GMS, but it only became listed on the Tokyo Stock Exchange in July 2000. As of May 2002, Lawson had 7,555 stores in Japan plus 69 in Shanghai and 3,548 total employees. Reflecting the effects of the recession and intense competition among the leading CVS in Japan this had increased only slightly by December 2002 to 7614 stores in Japan plus 96 in Shanghai. Annual sales for FY2001-2002 were yen 1,282.3 billion. In May 2002 average daily visits and sales per store were around 790 customers and yen 478,000 respectively, and this did not change much throughout the year as monthly results fluctuated between 780 and 860 customers and yen 470 to 520 thousand per store per day. Still, responding to SEJ's e-commerce challenge, Lawson has developed its own multi-channel e-commerce system based on the Internet, mobile phones and multimedia kiosks (MMK). It calls this B2C e-commerce activity @Lawson, and its website is: www.at-Lawson.com, launched in December 1999.

An affiliated company, ECONTEXT, handles product delivery, agency transaction settlements and other @Lawson agency activities. Because this is an open platform Internet based service, their strategy is to add other convenience stores, gas stations, etc, to their system as payment and pick-up points giving Lawson's system greater economies of scope. Lawson stores for example are featured on the maps in most Japanese in-car navigation systems. In May 2001, about the same time that IY was launching IY Bank, Lawson and a consolidated subsidiary, i-Convenience, initiated i-Lawson, a mobile e-kiosk system that allows customers to shop using their mobile phones if they are among NTT DoCoMo's 30 plus million customers using i-mode (footnote 5). They can order products for delivery at Lawson stores, make payments at Lawson cash registers using a special connection, and access Lawson's various entertainment services.

This m-commerce activity thus allows customers to use their mobile phones to order various products and services as well as to connect their mobile phones to a store register to settle bill payments and receive products ordered over the Internet. Established in October 2000 and capitalized at about $20 million, i-Convenience is an e-retsu between NTT DoCoMo Inc., Matsushita Electric Industrial Co., Ltd. (Panasonic), Lawson Inc. and Mitsubishi Corporation, which is currently Lawson's largest shareholder. Further to competitively respond to SEJ's e-retsu relationship with Sony, Lawson has entered into its own game software alliance relationship with Nintendo along with a second alliance that includes Dentsu, Japan's largest advertising agency. The goal of the first alliance is to sell video games through Lawson's online market, and of the second to develop game software for portable machines and mobile phones. Nintendo signed the agreements to counter similar moves made by Sony with SEJ.

Loppi Multimedia Kiosks (MMK)
Having begun installing Loppi (stands for Lawson Online Shopping Print and Pay Information) kiosks in its stores as early as 1998, Lawson is currently the CVS leader in installed multimedia kiosks. These kiosks which Lawson sources in terms of development and manufacture from IBM are currently found in all Lawson stores, around 7700. This contrasts with SEJ and FamilyMart, which are not yet Nationwide and where the respective totals as of the summer of 2001 were only about 1000-1200 each, though a cited above they have grown rapidly since then, with over 4000 for SEJ by August 2002. Loppi sales, mostly entertainment related, increased 16.5% in fiscal 2000 (end 2/2001) to yen 39.6 billion and the company expected them to rise another 21.2% during fiscal 2001 (end 2/2002). The have leveled off, however, during the first part 2002. 

Lawson is the leading CVS in installing multimedia kiosks in its stores. It

Loppi offers many different products and services while providing popular information such as the appearance of a certain band. Loppi has two specific features: an entertainment element for purchasing concert tickets or downloading game software and an information platform element to support payments by customers, such as to loan repayments to financial institutions, or to obtain public information on such things as cultural events or the weather. Tickets for concerts, sporting events, and movies are sold in collaboration with Lawson Tickets Co., Ltd. (LTCL), a consolidated subsidiary. Other LTCL channels are the Lawson and Daiei stores or by phone. In addition, it now handles airline tickets and tickets to Disneyland and Universal Studios.

Further, in 2001 Loppi launched a hotel booking service in conjunction with JTB, indicating that not all e-retsu alliances are exclusive. (See Table 1.) Sales through its Loppi multimedia terminals climbed 92.8% to ¥75,054 million during FY 2001 (end 2/2002), reflecting a continuation of steadily increasing sales of concert tickets via its subsidiary Lawson Tickets. Also boosting sales were a dramatic increase in demand for billing settlement services, spurred by the use of Loppi to apply for university entrance exams and Kanji certification tests as well as round-the-clock repayment of loans to consumer finance companies. Over time it will integrate its nationwide Loppi network with the ATMs and related financial services it is now installing.

E-commerce Strategy

Using their own combination of clicks and bricks Lawson believes its can effectively counter and even surpass SEJ and IY in becoming Japan's leading B2C e-commerce company. One reason they believe this is that Lawson recognized early that their entrance into e-commerce began with the development of 3rd party bill settlement services in 1995-96. Thus their e-commerce initiatives are a direct outgrowth of this activity and still incorporate it as an essential feature. In turn these payment services have grown at a rate

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6 NTT DoCoMo, Japan's largest mobile phone operator, in 6/02 had a 59% market share and 33 million i-mode subscribers.
of about 20% per year since then. During FY 2000 (ending February 2001) Lawson processed 82 million transactions for a total of 650 billion yen. Those 82 million transactions of course represent store traffic in addition to the small fee made on each transaction. In fiscal 2001, the total value of transactions handled by Lawson, mainly consisting of public utility bills rose 13.9% to ¥743,482 million. Handling commissions were ¥5,689 million, up 7.9% year on year.

So their storeowners have an incentive to make it work especially when the franchisee owns both the land and store, as in these cases Lawson’s margin is only 34%. This compares to Lawson’s margin of 45% and 50% respectively when Lawson owns the land and the owner the store but leases the land or when Lawson owns both and the franchisee leases them. The scanner records all sales electronically so the margin calculations are all done automatically even though the customer pays cash. This is also true for sales through the new MMKs (Loppis), which were installed in all Lawson stores by October 1998.

What happens is that when a customer makes a travel reservation through the kiosk, buys the right to download music, or purchases as concert ticket, the customer gets a bar coded coupon from the machine. The bar-coded coupon has information on the type of purchase, the amount, and delivery (pick-up at Lawson, mail, or parcel service). He or she then takes the coupon to the counter where it is recorded like any other sale, and the customer pays (cash or credit card) along with any other purchases. This procedure enables Lawson easily and efficiently to handle payments to their 150 partners (actually 500 if one includes credit card companies) by electronically using the banking system as an intermediary.

As part of its e-commerce strategy Lawson does not deal directly with the service and goods providers since this would cost them printing and mailing charges. So they try to be non-paper as much as possible in using the kiosks, though they do have the physical bill record from the bar-coded coupon. Eventually they hope even this will be eliminated and everything can be electronic and connected, but right now each area operates independently in terms of supply and service. Strategically Lawson is thus working with e-tailers so the customer can just click and route the order and the payment, and Lawson does not have to issue the bar-coded bills at all. In terms of downloading games (Nintendo) and music (Sony), these are handled in the store. Stores are not connected to a central server but rather each store has the Mother software for the games in the store and then downloads the game selected onto a blank game cartridge or rewrites an existing one. In the case of music, the songs are also available in the store and what one purchases is the right to download the music onto a cassette that one brings or buys. Eventually though Lawson hopes to have this done online from a central MIDI server the same way that much Karaoke in Japan is currently done.

Similar to the arrangement with Nintendo and Sony Music is a recent contract with HMV, a large international retailer that sells a wide range of CDs through mega-stores and that is now opening in Japan. Through this arrangement, Lawson customers via Loppi have access to HMV’s large catalogue of titles.
Selecting from this catalogue, customers can order a CD through a Loppi, pay for it, and then pick it up at the store the next day. The payment part is quite easy but the physical delivery is tougher to do efficiently when a given store may only be receiving one or two CDs a day. But it is a way for HMV to extend its e-commerce reach beyond its mega-stores while Lawson can extend the titles it can offer beyond Sony Music downloads. As a transition it began payment for the CDs at Lawson stores with the CDs being mailed rather than picked-up at a store, but the latter is coming. There will also be potential for downloading directly onto a CD or cassette at each store as stores become connected via satellite. The new LETSS IT system explained below will hopefully facilitate these developments. In this manner the Loppi will ultimately serve two e-commerce functions. One will be as an electronic multimedia platform and telematic support for third party providers such as HMV and Sony. The second will be for Lawson’s own business merchandising. For instance it has its own concert and event ticket company (like Ticketmaster in the US) that competes with PIA, Japan’s largest such company. (PIA uses SEJ and FamilyMart as its convenience store outlets.) Until the first part of 2002 this business has been growing about 20% per year and now amounts to 32 billion yen per year and is second in Japan to PIA’s 50 billion yen. Lawson’s profit on this business after only three years was 52 million yen, not including increases in sales due to greater store traffic. Further, its business model is simpler than PIA’s, which sells tickets for a wider range of events. Lawson instead targets customers in their 20s and 30s who like music. Lawson then promotes in its stores and on its delivery trucks special Glory concerts that will attract perhaps 300,000 fans and for which Lawson controls the ticket sales. The idea seems to be working, though Lawson ticket sales stagnated the first part of 2002, as revenues of 19 billion yen were down 11% from the previous year and operating income was down 4%. Furthermore, by buying 3% of Nintendo, which now also owns stock in Lawson, it has converted this part of their business from a third party activity to part of their own business merchandising, while from Nintendo’s standpoint they have gained a strong e-commerce ally against the Sony PlayStation-SEJ combination. In addition Lawson has joined with JTB to offer last minute or Quick travel packages that are unique to Lawson. So while JTB sells travel services through SEJ and FamilyMart, these particular Quick packages can only be purchased via Lawson and its Loppis. They offer such things as flowers for birthdays and personalized golf balls too. Yet among these varied e-commerce initiatives, currently entertainment accounts for about 80% of their total Loppi related sales. Their ECONTEXT affiliate handles delivery and agency related settlements.

Bricks and Clicks
As part of their e-commerce strategy they have leveraged their physical stores and distribution network by developing an online catalogue, which is connected to the Internet so customers can access it via i-Mode phones or PC. They advertise items in newspapers or their stores using posters and paper catalogues as
well. The latter are in the form of various guides that are broken into Shopping for products such as flowers, toys and golf merchandise, Travel, Schools for learning everything from the tea ceremony and flower arranging to using computers, and finally services such as motorcycle insurance or airline reservations. The ads and guides explain about how to access the products or services on-line along with delivery information and the lead-time for every product or service.

Ultimately these will all be combined electronically, but it will take until the summer of 2003 or 2004 to accomplish this. Lawson launched a new TV advertising campaign in January 2002, the Weekly Lawson series that runs a new TV commercial every week. The concept of a weekly cycle of new TV ads derives from the fact that more than 80% of Lawson's customers visit stores at least once a week. Lawson thus hopes to stimulate customers' interest and even introduce an element of surprise to its stores and online site by renewing its attractions on a weekly basis and directly linking these initiatives to the TV commercials. Given that in FY2000 Lawson sold about yen 40 billion yen worth of products and services through Loppis with 32 billion yen of this amount entertainment related, its e-commerce activities are growing but are not exploding. Lawson thinks they might have to wait for broadband and 3-G phones for this to happen. DoCoMo and J-Phone introduced this service at the end of 2002.

This is one reason why they entered into the site access joint venture with NTT DoCoMo, Japan's largest mobile phone company and the leader in introducing Internet access by mobile phone (i-Mode) and 3-G. It is called i-Lawson and had a membership of 65,000, the largest among convenience stores in Japan in 2001. They hoped to establish the standard for the Internet connections between convenience stores and i-Mode in terms of how to arrange purchase, payment, and delivery. Once the system is fully created and is working they hope to license it to other stores and to collect a royalty. (SEJ's proprietary system is of course a different strategy.) Their partners in this effort are Matsushita (technical partner) and Mitsubishi Corp. (content partner). This compares with C. Itoh and Toyota/NTT Data for FamilyMart and Mitsui and NEC/NRI for SEJ. So all large CVS seem to be pursuing somewhat parallel strategies, though Lawson has believed it is in the lead, especially regarding using the Internet. However, as we saw above SEJ already has 5 million members in its point program compared to 800,000 to a million for Lawson.

The members of i-Lawson get an IC card and accumulate points for their purchases, which they can then use for discounts on other Lawson purchases including breakfast at a Lawson store. Management believes this concept has led to an increase in store traffic, one of their key strategic aims. Some other related e-ressu companies include i-Convenience, which offers a Lawson m-commerce site and is 52% owned by Lawson and 18% by Mitsubishi and e-Context that provides connections to the Internet, 3rd party payments, and Lawson's in-store ATMs. Mitsubishi owns 10% of this firm. The ATM operating company is 65% owned by Lawson, 5% Mitsubishi, and 5% each for the banks that actually own the ATMs. These are UFJ, Mitsui-Sumitomo, Tokyo Mitsubishi, and Mizuho. They also have connections with regional
banks depending on the area each store serves such as in Aomori, Nagasaki, and Nagoya. As of April 2002 there were 2,103 ATMs in their stores, mostly in the Tokyo and Osaka areas. Further, by having the local or regional banks provide the actual ATMs they save capital. It was during fiscal 2001 that Lawson enhanced this ability to attract customers by in May jointly establishing LAWSON ATM Networks, Inc. with 4-major banking groups and several major regional banks. This company is responsible for installing the ATMs. By February 28, 2002, ATMs had been installed at 1,922 stores and by the end of May 2002, it had installed ATMs in approximately 2,150 stores. These can be linked with the Loppi multimedia terminals to provide a variety of financial services, improving Lawson's appeal as a convenient, immediate source of financial services and keeping it competitive with SEJ and its plans to introduce financial services. Lawson's plans call for 3,000 stores to have ATMs by the end of fiscal 2002 (2/2003) with eventually all Lawson stores throughout the country having them. This development was complemented in February 2002 by creating LAWSON CS Card, INC. with Mitsubishi Corporation and Credit Saison Co., Ltd. to promote a new Lawson credit card, LAWSON PASS, that could compete with IY's joint card with JCB. According to Lawson, this card business has two main business objectives. One is to provide financial services to customers, a new business model through which it can receive interest revenues by providing small cash withdrawal services to Lawson customers. Secondly, it is an integral part of its customer loyalty program, again similar to SEJ's approach. LAWSON PASS cardholders will also receive points for their purchases as well as special giveaways. The expectation is this will build customer loyalty, encouraging more visits to its stores. Thus it feels cards are strategically important for raising customer satisfaction, the center of its actions. It will also facilitate its e-commerce initiatives by facilitating purchase and payment while building a mineable telematic database. 800,000 Lawson cards had been issued by September 2002 with 1 million expected by February 2003. This compares to over 5 million for SEJ even though Lawson started the membership and points concept first. Further, similar to SEJ, during 2002, i-Convenience, ATM, and ECONTEXT continued in their start-up phases generating operating losses of 211 million, 155 million and 179 million yen respectively on revenues of yen 90 million, 3.1 billion, and 160 million. According to Lawson, IY Bank's ATMs along with those of Lawson, FamilyMart, Sunkus, and Circle K are all supported by something called e-net, involving IBM and NTT. Currently Lawson has divided the Kanto area into 4 areas for managing the ATMs and supplying yen currency. Bank partners supply the latter on a 24-hour basis and charge customers fees to use bankcards from outside the bank support group for that area. Lawson bears the risk and cost associated with each ATM up to some amount but above that level the banks bear these costs. Lawson management feels their approach is more convenient for their customers at least so far than IY's and SEJ's as Lawson has more machines (if one combines both kiosks
and ATMs) in place. But they admit they do not have the same control over the system and are thus not
sure when they can add additional financial services such as loans, insurance, or brokerage. So while
Lawson seems to have a lead in some e-commerce areas, the winner of the race is not yet clear. What is
clear is the CVS-based e-commerce model is working and growing supported by large firms with real
resources. How many US firms can say that?
Therefore it is not surprising that Lawson’s 2001 and 2002 Annual Reports view e-retailing as both
currently and prospectively important. In e-commerce and mobile commerce, which include the Internet
and NTT DoCoMo’s i-mode mobile service, our store network facilitates Lawson’s existing services-
settlement services and product pick-up at stores. We aim to provide these services for a fee to retailers
and service providers that sell online. The key element differentiating Lawson from other chains is our
nationwide presence. Clients using Lawson services will thus have access to consumers throughout Japan,
unlocking a host of new Net business opportunities. Leading companies have already honed in on our
strengths. We have, for example, launched joint ventures with NTT DoCoMo, Inc., Matsushita Electric
Industrial Co., Ltd. and Mitsubishi Corp. Indeed, Lawson’s competitive advantage also lies in being able
to tap into these companies’ wealth of resources. (Lawson 2001) However, given the similar initiatives
of its major competitors, SEJ and FamilyMart, it is less clear whether they will be able to meet the
objective to improve customer convenience and set ourselves apart from other industry chains by
promoting e-commerce and financial services.
LETSS
Yet during 2002 they worked in this direction while at the same time reflecting the competitive impact of
SEJ’s IT and telematic strategy on them and the rest of the Japanese CVS industry. That is, in fiscal 2002,
Lawson finally completed a switch over to LETSS (Lawson’s Epoch-making Total Strategic System).
This is a next-generation online information system that finally begins to deliver some of the functional
and strategic benefits that SEJ has been gaining for many years. (Rapp 2002 notes IY first initiated its
POS data collection and processing system in the late 1970s and is now in its fifth generation upgrade.)
In the first half of fiscal 2002, Lawson’s POS registers, store computers and other hardware were
replaced, followed by all the software. The introduction of new machines and software is expected to
improve efficiency in store operations and the speed at which data is processed. Loppi multimedia
terminals will operate faster and store management systems should be easier to use. System components
have been designed to help raise sales by forecasting demand and better managing the order process. The
idea behind LETSS is to pinpoint customer needs and to use a sophisticated program to forecast demand
in order to prevent lost sales opportunities. (See earlier statement by SEJ.) LETSS is supposed to
accomplish this by creating planograms tailored to each store, as well as by offering more appealing
products and services that have high value added. The competitive test and challenge now will be the
integration of this new system with the stores and Lawson supply structure to achieve organizational evolutionary learning and improvement. In this regard, SEJ has over 20 years of experience and success.

**Basic Financial Data Lawson FY1996-2002 (February)**

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Source: SEJ Company Outline; Lawson 2001 and 2002 Annual Reports; does not include stores in Shanghai

FamilyMart (FM)

FM's CEO, Michio Tanabe, foresees FM's E-retail business as having boundless potential and expect operations in the field to become a pillar of our efforts to build FamilyMart into a Super CVS. Even with additional investment, we expect that fiscal 2002 will be an incubation period for our E-Retail business. However, we anticipate related operations will begin to achieve significant growth from fiscal 2000. (See FamilyMart 2001 Annual Report.) In turn, FamilyMart's e-retsu for developing its e-retailing business is composed of FamilyMart (50.5%), C. Itoh (14.5%), Toyota (10%), NTT Data (10%), Dai Nippon Printing (5%), JTB (5%), PIA (5%). Though some of the e-retsu partners and their motivation are different, FamilyMart's e-commerce strategy shares some common elements with SEJ's and Lawson's in that in cooperation with Sharp (a major electronics company) it is deploying Famiport kiosks in stores to allow downloading of game software and e-books.

Kiosks were in over 20% of FamilyMarts by May 2001. The service is aimed at users of Sharp's Zaurus, a PDA with almost a quarter of the Japanese market. The kiosks are being made by e-plat, a joint venture of Toyota and NTT Data, Japan's largest IT systems integrator and an affiliate of Japan’s dominant telecom carrier. The ordering and payment system connects to a communications and computer center run by Toyota. NTT Data handles the actual settlement in conjunction with IBM and the Japanese bank clearing system, e-net, as explained above. FamilyMart is cooperating with Toyota too in order to promote the latter’s gazoo.com web site that is now being incorporated into Toyota's G-Book and ITS telematic strategy. (See Toyota 1999 and 2002)
FamilyMart.com as a B2C business was organized in October 2000 and started its operation in May 2001 including an Internet shopping site with about 30,000 items. It projects that Japan’s B2C e-tailing business will grow in 3 phases to 7.1 trillion yen by 2005 as it penetrates older and older households. This compares with Accenture’s estimate of yen 13.3 trillion and Toyota’s estimate for the entire Telematics/ITS related market of 60 trillion yen by 2015. NTT Data is a partner, and supplies and manages the system. The content providers are the other shareholders, including Toyota and C. Itoh. FM is also collaborating with firms other than the e-retsu shareholders.

FM’s spokesman noted all CVS particularly recognize the special advantages to them of e-Commerce and Internet-based services. This is because the leading CVS already have systems and logistics in place plus informatic databases and thus represent the ideal mix of ‘bricks and clicks’ with good penetration of the younger part of the population most disposed to e-related activities such as Lawson’s concert ticket and CD sales. Large Japanese CVS are therefore well placed to facilitate payment by cash or credit card and because of their tie-ups with delivery services as well as having their own logistics systems they can support these aspects of B2C e-commerce too. (For example, FM often uses Yamato on a non-exclusive basis. So Yamato is not completely in IY’s and SEJ’s e-retsu pocket.)

The fact they have house brands available in their stores and over the net FM sees as an advantage as well. The Internet service they now offer allows for an i-Mode connection, which puts them in contact with a huge customer base, especially among younger customers favoring the convenience store. Furthermore, like SEJ they have segmented the market by starting a service for the older people rapidly becoming a very large part of the population. Statistics indicate that persons over 65 will account for over 25% of the population by 2015. Called ‘home car’, it will provide older people with meal services, general merchandise and all daily necessities.

For both the Internet based service and the home support service FM is encouraging each franchise store to establish their own on-site virtual on—line store at which their own local customers will shop. FM calls this their electronic franchise system. That is, under their business model each franchised store handles and accepts famima club membership registrations from customers. When a customer subsequently purchases an item on the famima.com site, the franchised store that handled the registration is credited with the sale. (See FM 2001.) That is, the franchisee gets a benefit when one of their customers shops on-line through that franchisee’s virtual shop. By combining virtual shopping with physical stores, franchised stores can significantly upgrade their store management capabilities. FamilyMart’s e-commerce approach therefore differs a bit from those pursued by Lawson and SEJ and it has submitted a patent application for this innovative business model. In the case of Lawson and SEJ, the parent companies get the e-commerce related sales. In the case of FM it flows to the local franchisee. In this FM seems the first to extend the franchise system to e- and m-commerce.
Added to this business are the in-store multimedia kiosks, called Famiports. Toyota and Fujitsu manufacture these with the system platform developed by a joint venture between Toyota and NTT Data call e-plat. C. Itoh is part of e-plat as a provider of financial services content. Famiport is FM's own name for e-plat. Toyota in turn is integrating this with their G-Book system (Toyota 2002). FM plans to announce in 2002 a broadband service for its multi-media kiosks that will be tied to Toyota's navigation system, allowing people to do things like order tickets while driving and to then pick them up and pay for them at the next FamilyMart store on their route. This is apparently one of the reasons that Toyota has become a shareholder in FamilyMart.com and has invested in the joint venture with NTT Data. It is a natural extension of Toyota's ITS (Intelligent Transportation System) concept (Rapp 2002). Another Toyota connection is that while the Internet service is available via i—Mode, connection via J-phone in which Toyota is an investor is possible too.

Like SEJ and Lawson FM noted currently their B2C activity was a direct extension of their third party payment business, which in 2000 amounted to 430 billion yen, or about one-half of SEJ's. Like Lawson they have also signed up members for their service and like Lawson and SDEJ have introduced a point system so the customer gets 1.4 points for each 100 yen worth of purchases. After a customer has accumulated 1000 points, they can use the points to buy items at FM stores. By 2001 they had 500,000 people sign up for the membership since to actually shop on-line and submit an order via Internet phone, PC or kiosk a customer must be a member. A customer can explore offerings on-line or via the kiosks without being a member, but to order membership is required. For this customers get a magazine that offers them opportunities to buy various goods and services on-line.

FM and PIA produce the magazine and distribute 700,000 copies each month. The major items they offer just as SEJ and Lawson do include CDs, video and computer games, books, tickets (PIA), and travel packages (JTB). According to FM, 480,000 items were available to the 400,000 famima club members throughout Japan by April 2001. They aim for an increase to 2 million members by 2003, greatly expanding FM's reach to its CVS customers as well as their potential customer base. This e-Commerce payment and delivery scheme in combination with a catalogue available on-line and in its stores seems quite similar to SEJ's and Lawson's. In fact it is not really clear what the fundamental difference is between FM's catalogue and those offered by the latter, except FM claims they offer many more items and credit goes to its franchisees virtual stores. Another similarity is that the magazine and Internet sales rely on roughly the same payment infrastructure such as the e-net group, in which IBM is a shareholder and the systems integrator, and which supports Internet shopping and the CVS ATMs. Similarly in emulation of SEJ, FM is offering an m-commerce food delivery service to seniors in a tie-up with a company that already provides such services to seniors but without current on-line capability. The tie-up
reflects FamilyMart’s determination to make inroads into the highly promising senior citizen market. (FM 2001)

So far strategic differences appear more at the margin. For example, FM’s ATM strategy seems a bit more reliant on regional banks. As of the summer of 2001, 2000 of all Japanese CVS had ATMs using regional banks that were members of e-net and of these 70% were in FM shops. (The banks working with FM include: Tokyo-Mitsubishi, Chiba Bank, Dai-ichi Kangyo, Mitsui Sumitomo, Mitsubishi Trust, Nagoya Bank, Michinoku Bank, Suruga Bank, 105th Bank, and Sumitomo Trust.) This was about the same number as they had installed multi-media kiosks in their stores, about 1500. Unlike Lawson, however, which is nationwide, or SEJ, which is focused in Osaka and Tokyo, FM is focused in Tokyo and Nagoya, Japan’s third largest city. This may be one reason for Toyota’s interest since Toyota’s main plant operations and headquarters are concentrated in the Nagoya area too. By the end of 2002, though, the MMKs and ATMs were in almost all FM stores. This is therefore a faster roll-out than SEJ’s and should allow FM to challenge Lawson more quickly. Presumably SEJ’s more measured approach is because it has had to fund its own ATM expansion and has about twice as many stores. The internal accounting system and data center (or Computer Resource Center) is located in Yokohama. The MMKs use a Toyota operated central system, which exchanges data with FM’s central computer system.

In terms of Toyota’s car navigation system communicating with FM’s e-commerce system it works through NTT, which uses the transportation (ITS) linked satellite system. In the future this may be based on Bluetooth, a short-range remote-wireless data communication system. The navigation system will then communicate directly with the kiosk in the nearest FM store and the printer function in that kiosk will print out a coupon that will provide a method for connecting and completing the settlement at the CVS. As a logical extension of this payment concept FM explored the idea of issuing its own credit card, again similar to SEJ and Lawson. They started this as an IC card in 2002 with five other companies, Itochu Corp., JCB Co., Ltd., Toyota Finance Corp., PIA Corp. and NTT Data Corp. The IC in the card gives the card both point-awarding and credit-card functions, and it can be used not only for Net shopping, but for gaining reward points for purchases at FamilyMart stores and JCB member merchants.

Another area is car rental and sales through Toyota. Presently only a new car sales catalogue is available at FM’s shops but Toyota is considering the idea of rentals through some FM locations. In FM’s catalogue Toyota is promoting its Gazoo website and quizzes about the new Will car aimed at younger drivers with the car as first prize. This is related to Toyota’s G-Book initiative (2002). In addition, customers can use the MMKs to apply for auto and home insurance from Tokyo Fire and Marine, Japan’s largest casualty insurance company and a part of the Mitsubishi group.

Similar to Lawson, FM’s sales in 2001 through its kiosks were not soaring, averaging only about 10,000 yen per day per kiosk as of July 2001. However, sales began growing faster once FM introduced travel
services. So like Lawson and SEJ, FM is still in an early stage of seeing where the opportunities are and what works. However, they are committed to the CVS e-commerce model and business opportunity while using the expertise and strength of their e-retsu partners to develop some proprietary initiatives (gazoo.com and G-Book). So they are meeting SEJ’s and Lawson’s competition in form (kiosks, catalogues and ATMs) while looking for their own geographical and service advantage. Also like Lawson they are trying to counter SEJ’s sophisticated ordering procedures using new handheld Store Activation Terminals within their stores and sharing the ordering burden with store managers and store staff. Quoting their 2002 Annual Report again tracks SEJ’s historical strategy and shows nothing succeeds like success, More accurate monitoring of individual products FamilyMart is placing emphasis on the establishment of a highly accurate product-ordering system that will help to bolster sales and profits. If merchandise that people want to buy is not laid out on the shelves, sales opportunities are lost, and customer confidence is damaged. By increasing the precision of its product-ordering capabilities in this way, FamilyMart aims to minimize the risk of losing business opportunities. In June 2001, the company radically over-hauled the previous ordering system and introduced its New Store System in all stores, through which constantly changing customer needs are identified swiftly and accurately on a product-by-product basis, and the merchandise that customers want is assured of being stocked. The system is a device for ascertaining sales trends for individual products and taking the appropriate decisions for quantities to be ordered; handheld Store Activation Terminals (SATs) serve as tools to support these ordering activities. The SATs screens indicate how individual products are moving and the real-time situation in each store, and the operator can confirm what is on the display shelves and what is in stock before placing an order. Use of this state-of-the-art information technology enables FamilyMart to create stores that please customers by always presenting them with the merchandise they want. Another purpose of the New Store System for increasing the accuracy of product ordering is to divide ordering responsibilities: enabling it to be carried out not only by store managers and other management personnel, but also by other store staff. This sharing not only alleviates the administrative burden on store managers but also cultivates a sense of responsibility in non-managerial staff and boosts their motivation, and because of this it is effective for minimizing the risk of losing business opportunities and creating stores that generate customer loyalty. FamilyMart also uses Store Staff Total System (SSTS) for encouraging the division of responsibility for product ordering. By apportioning information on as many as 2,800 items of merchandise among store staff, it is possible to ascertain product movements accurately and to boost the precision of ordering substantially. Moreover, by raising staff members’ awareness of their sales areas and merchandise, the level of SQ&C is raised, and store-management capability is enhanced considerably.
In terms of e-commerce FamilyMart’s aim is to become a Super Convenience Store providing support for people’s lifestyles 24 hours a day based on FamilyMart’s unique FamilyMart EC Franchise System posting sales figures for individual franchised stores, FamilyMart’s famima.com Internet shopping site, and offering benefits such as award points. It had about 850,000 registered members at the end of April 2002. Two other sites usable from mobile phones, famima-i (i-mode accessible) and famima-j (J-Sky accessible), are also involved. By equipping all stores with terminals by the end of 2002, it expanded its E-Retail business so people may easily access it. Stores are also being equipped with bank ATMs, so by the end of April 2002 they were installed in 2,678 outlets, where they help attract more customers. They summarize this bricks and clicks and partnering effort in their 2001 Annual Report: As we undertake our E-Retail business, we are using the strengths of FamilyMart’s physical stores to support the e-commerce businesses of companies with which FamilyMart has formed tie-ups. Our e-commerce payment collection agency service permits those customers unwilling to provide credit card information on the Internet to make cash payments at any FamilyMart store. FamilyMart’s Open Cash on Delivery (OCOD) Service also allows customers to pay cash for purchases made on the Internet as well as pick up these items at FamilyMart stores. These services coupled with the Famiport MMKs and ATMs installed in stores are underpinning FamilyMart’s efforts to attract new customers. In addition, famima.com members are visiting stores to make payments and collect ordered merchandise, which is also fueling an increase in store sales.

**Basic Financial Data FamilyMart FY1996-2002 (February)**

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<td>Total Store Sales (yen billions)</td>
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<td>635</td>
<td>710</td>
<td>758</td>
<td>783</td>
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<td>Revenue (yen millions)</td>
<td>129</td>
<td>147</td>
<td>151</td>
<td>148</td>
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<td>176</td>
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<td>Operating Income (yen millions)</td>
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<td>27</td>
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<td>Number Stores</td>
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<td>4496</td>
<td>5039</td>
<td>5286</td>
<td>5546</td>
<td>5813</td>
<td>5825*</td>
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<td>Average Daily Sales per store (yen thousands)</td>
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<td>488</td>
<td>486</td>
<td>484</td>
<td>481</td>
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<td>Gross Margin (%)</td>
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<td>29.3</td>
<td>28.9</td>
<td>28.4</td>
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ABSTRACT

Policy Reform and the Governance of Postal Savings in Japan

This paper discusses the current policy challenges to the existence of Japan's postal saving system, the main repository for Japan's household savings.

Some critics have erroneously conflated the investment function of mobilized funds that occurred under the government's managed by the Ministry of Finance, with the collection mechanism managed separately by the Ministry of Posts.

Critically reviewed are the efficacy and wisdom of the search for market-oriented investment policies in view of the public's real fears for the safety of their savings; current proposals to privatize, not only the postal savings system but also the post delivery system itself and the potential loss of essential services to rural populations.

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Policy Reform and the Governance of Postal Savings in Japan

I. INTRODUCTION

Japan's postal savings system (*yubin-chokin*, popularly called *yu-cho*) with 240 trillion yen [July 2002] is not merely the world's largest postal savings system in volume of deposits, but is also the world's largest financial institution, with more individual and household savings deposits than all of Japan's commercial banks combined. As *yu-cho's* deposit base has steadily increased over the past decade, largely as a result of the public's fears over the uncertainty of the commercial banking sector, there have been repeated calls from *yu-cho's* critics for it to be privatized, if not entirely abolished. Japan took its first steps of reform in April 2001 when *yu-cho* was reorganized to give it autonomy over its investment policy and to achieve a partial "market solution" for the investment of postal savings funds. At the same time the intermediation of postal savings funds was partially delinked from the policy-based objectives of a key government loan program. With more changes on the horizon, *yu-cho*, which has been a government department, is slated in 2003 to become a separate, government-owned public corporation, which event may change the entire postal savings system.

Privatization of *yu-cho* is being fiercely advocated not only by banking industry critics but also by important members of government reform advisory committees. These include leading academic figures, who have put forth substantive recommendations for *yu-cho's* privatization, and government policymakers, including Prime Minister Koizumi, who has made market liberalization of all postal services one of his chief policy objectives. [Koizumi interview, *Financial Times* 13 May 2002]

In this chapter we will examine from a public policy perspective the issues related to the privatization of Japan's postal savings system and assess to what extent, if at all, privatization is likely to improve on government-run postal savings. We will also examine the social and
economic effects of privatization and/or termination of Japan's postal savings system within the context of the competition in Japan's financial sector for savings funds, and the possible effects on yu-cho's organizational strategy of a changing regulatory framework, market liberalization, and privatization. Postal savings in Japan has had a profound effect as a means for social growth and economic development. It still continues to serve this purpose by delivering financial services, often otherwise unavailable, to all segments of the population without discrimination, most notably the poor, as well as middle-income, pensioners, rural and low-population areas. Nevertheless, just as several European countries have privatized their systems, some important large business and financial organizations, such as Keidanren (Federation of Economic Organizations) and Zenginkyo (Japan Bankers Association), are advocating the same course for Japan.

II. Postal Savings and Japan's Development

A. Origins - inculcating values of thrift

Since its origins in the 19th century, Japan's postal savings system has played a significant role in economic growth. It has done so by serving as a collector of domestic savings and a provider of financial services for middle-income and poor people, and at the same time by serving as a means to build the nation’s capital resources. When Japan's postal savings system was introduced in the 1875, saving was not socially condoned according to the prevalent effete moral attitudes of the feudal aristocracy of the late Edo period of the 19th century. A popular saying of this elite time admonished "trying to get one sen (cent) to last from one day to the next was shameful." At that time, there were no savings banks or commercial banks in Japan for personal savings, either in the cities or the rural areas. Household saved in cash or kind to meet emergencies or special events. Despite such conditions, Maejima Hisoka, who had founded of
Japan's national postal system in 1871, at the beginning of Japan's modern period, the Meiji Era (1868-1912), introduced a postal savings system in Japan which he based upon his own first-hand observations of the British postal savings system. Maejima had been greatly impressed with the positive role he perceived the postal saving system to be playing in English society. Through his efforts, including the organization of school children's savings programs to inculcate thrift, post office branches for the first time began accepting deposits at 18 locations in downtown Tokyo and at one office in Yokohama in May 1875. The number of post offices taking savings deposits rapidly expanded to rural regions soon thereafter, aided by the fact that Maejima had previously charged all village headman throughout Japan to establish local post offices and to serve as postmasters in their villages. This step created an extensive nationwide network of post offices within a year or two of the institution of a national postal system. Japan was the fourth country to establish postal savings and the first in an Asian economy.

Japan's postal savings system was initiated at a time when Japan was moving out of centuries of feudalism and isolation. Unequal treaties had been earlier imposed by naval forces, granting Britain, France and the United States extraterritorial rights which also restricted Japan's rights to collect custom's duties to 5 per cent. By comparison, the United States' own tariffs were 45 per cent and the main source of revenue for the U.S. Government, as were Great Britain's tariffs during its Industrial Revolution. Japan's Meiji era leaders were acutely aware of the political dismemberment of China by the same Western imperialist powers. Elimination of the unequal treaties and restoring Japan's economic sovereignty was their prime concern.

The Government's leaders had also taken note of the foreign indebtedness' of the Ottoman and Chinese empires to European bankers. The Japanese Government decided to turn to mobilizing is domestic savings for building its industries, railroads, shipping and communications, and most significantly and not least, its military. Japan was thus able to
forswear almost all foreign borrowings for its military and infrastructure development for the next 20 years (until the advent of the Russo-Japanese War). It can be said that the establishment of a postal savings system at such a critical juncture in its history provided Japan with a significant resource in its future economic and social development.¹

The postal savings stamp deposit forms and promotional posters of the late Meiji and Taisho eras (1900-1925) document the appeals used by the post office to encourage individuals to save, both for their personal future prosperity and for the prosperity and development of the nation. One of the postal savings system's unique attributes, and the probable basis for its early mass appeal, was the fact that at one time it accepted deposits as small as one-half a sen (1 yen = 100 sen).

B. The State harnesses savings for development

In 1885, Meiji Finance Minister Matsukata brought postal savings funds under the control of the Ministry of Finance and directed their use towards the national goals of building its industrial, transportation, military infrastructure and carrying out anti-inflationary policy. Already by 1883, as the success of the system grew, the cumulative total of these small savings deposits had reached nine per cent of Japan's ordinary bank deposits, and by 1897 postal savings were nearly 13 per cent of ordinary bank deposits. Taxation riots following the Russo-Japanese

¹ The history of Japan's economic and financial development in the 1870s offers some interesting parallels to problems confronting developing economies today. With unfettered and untaxed access to Japan's domestic markets, foreign traders and mercantile banks also took advantage of the disparities between foreign and Japan's fixed gold and silver exchange rates and were able to completely drain Japan's gold reserves, not unlike the 1997 Asian financial crisis which also drained the reserves of several Southeast Asian countries that hopelessly tried to defend their currency's overvalued fixed exchange rates. Faced with runaway inflation from the Government's issue of inconvertible notes that in turn bankrupted the Government's efforts to collect taxes, Japan's banking system collapsed. This was then followed by an ill-fated experiment in adopting an American-style national bank system. Some 153 newly formed banks issued their own banknotes, further exacerbating inflation, with taxpayers again passing the depreciated banknotes at face value for payment of taxes. The public, than, as now, had no confidence in the banking system. Against this historical background, with the banking system in a complete collapse, the new Minister of Finance, Masayoshi Matsukata took charge in 1881, overturning previous monetary policy.
War (1905) further strengthened the government commitment to mobilize savings to serve its financing needs. Campaigns to increase postal savings deposits and promote thrift resulted in postal savings deposits increasing 390 per cent from 1905 to 1914, compared to a 120 per cent increase in ordinary bank deposits during the same period. Postal savings depositors increased from 12 per cent to 23 per cent of the population.

Postal savings deposit campaigns were later initiated at various times to remedy specific problems. For example, during the inflation following the First World War, a campaign was launched to encourage savings to stem spending and absorb the excess liquidity which had resulted from the war, postal savings represented 13 per cent of total commercial banking deposits. In 1919, postal savings deposits became the largest resource of direct government financing, as direct taxation had proved unreliable and counterproductive, sparking periodic riots and agrarian tax rebellions.

As the Japanese economy developed, the postal savings system was able to respond to the changing circumstances. Some of the issues, besides inflation, that the postal savings system helped the government confront included providing pump-priming private sector support to new and developing industries, development and modernization of infrastructure, pumping up the economy during recessions, and at times stabilizing capital markets and providing non-inflationary funding of government deficits. Postal savings deposits grew especially during deflationary periods, 1881-1887, 1925-31, and 1990-1992. Historically, however, its foremost goal has been to sustain economic development.

C. The Early Modern Period and the Development of Savings Banks

The development of the Japanese banking system coincided with the early growth of the postal savings system. In 1880, five years after the establishment of postal saving, Japan's first
private savings bank, the Tokyo Savings Bank was established, and by 1890, when the Savings Bank Act was passed to protect small savers there were 23 savings banks. Both the number of savings banks and the volume of deposits rapidly grew, doubling every four years or less. By 1920-21 the number of saving banks and their branches reached their zenith, with 2,128 savings bank branches holding 95 per cent of all bank deposits (including all private/ordinary banks). Alarmed at the deteriorated condition of the commercial bank sector, the Government moved to reverse this trend through the Savings Bank Act of 1921, which converted 77 per cent of the saving banks into commercial banks. Postal savings, a non-bank institution, continued to grow and in 1937 it had on deposit nearly one-third of the amount of deposits in commercial banks. Although the government had repeatedly sought to consolidate the savings banks, it was not until 1943 that the Ministry of Finance ordered almost all of them closed and the personal savings they held transferred into commercial banks to intermediate funds to munitions industries for financing the war effort. Postal savings, however, was left intact. By the end of the war only five savings banks remained, which were ultimately merged with or converted to commercial banks in 1949. At this point, individual and household savings became a large component and foundation of the profits of the main bank system [see: Scher 1997, 1998].

Today, besides the postal system the only remaining non-bank savings deposit takers are the shinkin (non-profit financial cooperatives) which has some 40 per cent of the volume of deposits by individuals compared to the postal savings system. Viewed from the perspective of total deposits raised by all of Japan's deposit-taking institutions, 1,202 trillion yen, postal savings share of 20.8 per cent slightly exceeds the 20.6 percent total share of Japan's seven existing city

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2 Some trace the origins of the Japan's main bank system to the wartime period. However, the system's origins were evinced in the dedicated financing of their industrial conglomerates by the zaibatsu-owned group's commercial banks, which were in turn prefigured by the earlier zaibatsu-group accounting houses of the seventeenth century, such as those owned by Sumitomo and Mitsui. See Scher: 1997; 1998.
banks. Regional and Second-Tier Regional banks make up another 19.8 per cent share.\(^3\)

However, from the perspective of small, individual and household savings, at the end of March 2000, there were 260 trillion yen in personal savings on deposit in the postal savings system, representing 36 percent of all personal savings on deposit in Japan, and nearly equal to the combined personal/household savings deposited among all private sector commercial institutions. (The balance of small savings is mainly in Shinkin, non-profit financial cooperatives, and mutual credit cooperatives). Deposits of individuals/households represent 54.9 per cent of total deposits in City banks, 67.0 per cent of Regional Banks, 69.6 per cent of Second-Tier Regional banks, 75.3 per cent of Shinkin banks, and 99.6 per cent of postal savings deposits. \([Economic Statistics, Bank of Japan 31 March 2000]\)

\(^3\) The balance of funds raised 18.5 per cent are deposited in private sector trust banks, long-term credit banks, and foreign-owned banks, and 19.6 per cent in government-owned policy-based financial institutions that specialize in lending to small and medium size businesses, agriculture, forestry, and fisheries \([Zenginkyo, 2001]\).
emphasis shifted to catching up with advanced countries in the synthetic fiber, oil refinery, nuclear power generation, machinery, and electronic industries. By the late 1960s and into the early 1970s, FILP's policy emphasis was re-directed towards social welfare and environmental considerations in urban and residential land development, pollution prevention, welfare facilities, private railroads, and further development of new technology. In the late 1970s and early 1980s, energy policy received priority from FILP with lending for energy conservation and the development of alternative energy sources.

Other public policy-based institutions which received FILP funds during the postwar period included: the Japan Import-Export Bank; regional development finance institutions, such as the Hokkaido-Tohoku Development Corporation and the Okinawa Development Finance Corporation; the Japan Finance Corporation for Small Businesses and the People's Finance Corporation, which provide loans for small and medium-sized firms; and the Housing Loan Corporation for housing finance. By the 1990s, however, JDB and other policy-based institution were no longer a major recipient of FILP funds.

The character of the FILP program changed in the early 1990s in response to the economic crisis following the collapse of the bubble economy. FILP's key mission was re-directed towards promoting structural adjustment of industry and maintaining employment through the funding of infrastructure and other construction projects aimed at providing economic stimuli to ailing sectors of the economy, the chief beneficiaries of what has come to be called "Japan's second budget." Whatever the policy intention, political trade-offs were involved in the FILP system. During the 1990s, the overwhelming majority of FILP funds for developmental purposes were no longer channeled through the JDB or other government-owned banks and policy-based financial institutions. Instead they were directly parceled out to designated quasi-governmental companies such as the Japan Highway Company and other
politically well-connected recipients of local infrastructure development funds, particularly those tied to the construction and real estate industries interests, which were also key borrowers responsible for the non-performing bank loans that still plague the banking industry. Political considerations were also never far from such an investment/disbursement system that favored rural provincial areas rather than urban industrial centers.

III. Reform of FILP and its Relation to Postal Savings

The 1990s economic crisis accelerated the movement for reform of Japan’s financial system, the so-called "Big Bang," which was modeled after the UK market liberalization reforms of the same name. There was already a growing demand that financial markets be liberalized, half-heartedly begun in the 1980s, to respond to new domestic and international monetary and structural environments. The State-led development model of postwar Japan came under criticism as incompatible with a liberalized financial system. Among the policies criticized were what some critics termed “government intermediation,” referring specifically to the use of postal savings funds by the FILP. Nevertheless, following the burst of the bubble economy in 1989 and the ensuing domestic banking crisis, the Government's need for State-directed credits to small businesses and housing lending overrode market liberalization concerns when the commercial banks ceased to lend. This further enhanced the FILP's role as a policy instrument in revitalizing the economy.

Some economists and financial industry critics have questioned the continued need for and the efficiency of FILP types of development-lending practices in the presence of a developed capital market. Others have seen the disbursement function of FILP as the underlying cause of fiscal inefficiency and have argued that the disbursement function should be kept separate from
the collection function of the postal savings system. Critics have emphasized a political rationale to what they term to be “government intermediation” of the postal savings funds to FILP to finance “Tokushu Hojin” – various governmental and quasi-governmental financial institutions and infrastructure agencies which finance housing, highways, and small businesses. The majority of these enterprises have been criticized not only for being inefficient and debt-ridden but also for undertaking unnecessary investment, as exemplified by bridges and rural highways that lead to nowhere and government-financed nearly-vacant resort facilities. Often justified as public works projects to create jobs to sustain the ailing economy, their political raison d’être is, however, feeding pork-barrel projects for politicians’ local districts and employment opportunities for higher-level retired bureaucrats. In 2002, the largest recipients of FILP disbursements were to local governments (28%), Government Housing Loan Program (19%), National Life Finance Corporation (13%), Japan Highway Public Corporation (8%), Japan Finance Corporation for Municipal Enterprises (6%), and the Japan Finance Corporation for Small Businesses (5%).

Indignant public outcry challenging the misuse of funds had become a staple of the press and a new term, "MoF-bashing," became a mainstay of public debate. Taxpayer outcry had its effect: the FILP program was reformed, and its direct financial ties to the postal savings funds through the Trust Funds Bureau of MoF were severed. However, FILP is still quite relevant to yu-cho since the postal savings funds and other postal administered funds are expected to be major investors in the bond issues of FILP and its related agencies through 2006. In 2001, 76 per cent of FILP bonds, some 33.3 trillion yen, were purchased by either postal savings (41%), postal pension plan reserves (27%), or postal life insurance funds (8%).

Another outcome of the reform program was that after several years of lobbying, the Postal Savings Bureau was finally granted the authority to invest the funds it collects in the
financial markets on its own, thereby bypassing the MoF/Trust Fund Bureau in the designated-finance FILP system. In April 2001, the reorganized Postal Savings Agency was given discretion over the investment of collected funds, thereby opening itself to market risk.

**A. The Fundamental Reform Law and the changing role of the FILP**

FILP related programs are now required to meet the following criteria to qualify for support:

1. Individual FILP institutions will be assessed by an independent policy assessment organization.
2. Each FILP operation will be either terminated or privatized unless its necessity as an activity of the government is convincingly proven.
3. Each FILP institution will utilize the private capital market to raise funds for the operations it supports.
4. If the FILP institution's activity is deemed necessary for policy purposes, its funding will be covered by bonds issued by the relevant sponsoring agency.
5. The FILP institution will focus on guaranteeing and refinancing through market mechanisms such as securitization.4

**B. Intermediation of postal savings funds: The search for a market-oriented solution**

One result of the Reform Law and changes, with respect to the intermediation of funds to the FILP, has been that the MoF Trust Fund Bureau was deprived of direct access to the postal savings funds. Now, Governmental Financial Institutions and Agencies (GFIA) have to issue their own bonds (agency bonds), participate in issuance of Trust Fund bonds to finance their own

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4 See the government website: http://www.kantei.go.jp/foreign/senryaku/chap3.html
lending, or issue Government-guaranteed bonds. Among these three classes of financial instruments, FILP bonds are the major source of funding for the new FILP system. In the case of agency bonds, each GFIA has to obtain a credit rating to issue bonds whose yield properly reflects its investment risk. MoF’s willingness to require all GFIAs to issue their own bonds, instead of piggybacking on Government bonds, in which GFIA’s rating is not questioned.  

While markets foresaw a Darwinian evolution in the FILP bond system, problems have been alleged in the credit rating process. It is said that rating agencies evaluate the solvency of the GFIAs based on a GFIA’s “closeness” to the government. The closer a GFIA is perceived to be to the government, the better the rating it receives [Cargill and Yoshino, 2002]. If such practices really dictate the ratings and the ratings determine the yield, than the yield of a FILP bond will not truly reflect its risk based upon financial fundamentals. For a genuinely free and fair market, FILP-related bonds must be rated based on the same rating criteria applied to private corporate bond issuers.

MoF sharply reduced the 2002 budget for FILP by 18 per cent from the previous year to 26.8 trillion yen [Asahi Shimbun, 19 December 2001], expecting the GFIAs to fill the gap by issuing their own bonds in the market, totaling 2.7 trillion yen, albeit all with Government-guarantees and therefore without credible risk. This was a 270 per cent increase in GFIA bonds over the previous year. As of November 2002, 14 out of 33 FILP agencies have issued their own agency bonds. In what seems to be a variation of Gresham's Law, of "bad money driving out the good from circulation," the weaker-rated, high interest guaranteed bonds work to exclude better-rated bonds from the market, a case of "junk bonds" driving out good bonds.

New accounting rules will be also applied to FILP projects. Each government entity will disclose its “policy cost” (i.e., State subsidies) and show the discounted present value of the

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project to be financed. In this way, it is expected that an accurate estimate can be made of future demand for a given public project and the future profitability of the project [Yoshino and Nakada, 2002].

This appears to be a good prescription for the financial health of postal savings and other purchasers of the bonds. It is especially significant for postal savings because, even though the postal deposit funds were officially severed from the controlling hand of the MoF in April 2002, the Postal Savings Bureau is expected to continue to finance FILP in the form of direct purchase of FILP bonds, and those issued by GFIAs, until the end of fiscal year 2006. As the major buyer of FILP bonds, *yu-cho* needs to be informed of the risks of the bonds and the solvency of GFIAbond issuers.

**IV. Commercial Banks versus Postal Savings**

Besides reproaching postal savings as the prime channel for financing highly political FILP projects, the postal savings system has been attacked for its savings mobilization function itself. Envying for many years the huge amount of deposits the postal savings system continued to garner, Japan’s private banking sector has called for the system's privatization, if not the abolishment of postal savings. In March 1998 postal savings represented a 36 per cent share of all household deposits, exceeding the combined household deposits in Japan’s City banks (banks with a national franchise), making the Japanese postal savings system the largest financial institution in the world. Since the Japanese banking crisis began in 1990, there has been a flight to safety by individual/household customers at commercial banks. The contraction of commercial bank deposits and marked increases in the size and number of depositors in postal

tokyo.co.jp/nms/column/itose/itose1205.html
savings accounts reflects the crisis of public confidence in Japan's banking system. This trend is likely to increase as the Government intends to reduce the ceiling on government guarantees on bank deposits in April 2003, further fueling the rise of postal savings deposits. While it thus remains popular with the Japanese public, we should examine the charges that have been leveled by yu-cho's critics.

A. Does postal savings have an unfair competitive advantage?

Critics from the banking industry have complained of the unfair advantages given the postal savings system by its exemption as a Government-owned institution from national and local taxes of all types and from the requirement to insure its customers' accounts with payments to the Deposit Insurance Corporation. Yu-cho is also exempt from Bank of Japan's reserve requirements and the payment of dividends that private banks make to their shareholders. On the other hand, the chronic losses experienced by banks over the last decade have also resulted in the banks' not paying taxes and issuing only minimal or no dividend payments to their shareholders. Furthermore, the huge portfolio of non-performing loans held by the banks is in stark contrast to Yu-cho's investment portfolio of Government-guaranteed bonds which obviates the need for deposit insurance.

The banks' main argument, and some economists' as well, is that yu-cho's success in mobilizing deposits deprives the banks of these funds for intermediation. If this argument is to be considered, we should first ask what in fact are banks doing with their funds? In 1999, 8.4 trillion yen (US$ 80 billion) in public funds were spent in recapitalizing the commercial banks so as to provide them with adequate capital reserves to resume their lending to small- and medium-sized enterprises (SME). Instead, banks have chosen to purchase Japanese Government Bonds with their funds rather than lend to SMEs, thus violating the spirit and intent of the Government's
bank recapitalization program. Meanwhile, for the SMEs, publicly owned policy-based finance companies that are funded, in part, by postal savings deposits must fill the needs left by the commercial banks' lending gap. This role reversal, where postal savings must indirectly take up the bank's role as a supplier of credit to SMEs, highlights a key policy failure in resolving Japan's long-ongoing banking crisis.

**B. Attractiveness and cost of savings products**

Postal savings has captured a substantial part of the retail market with its *teigaku chokin*, a 10-year time deposit with an early withdrawal option. Although the private banking sector has the right to issue the same product, virtually no banks do. Indeed, since the 1980s a level playing field has existed for both the type and features of financial products, including tax exemptions, that postal savings offers.

A case can also be made that the postal savings system helps keep the private sector honest, and that even with the competitive pressure from the postal savings system, private sector banking has shown little innovation on its own and made few efforts to provide competitively priced retail banking services and products for the general public (see table below). Government even aids the private banking sector by restricting *yu-cho* from making any comparison to banks in their advertising, and by restricting postal savings interest rates to the levels of commercial banks' offerings.

<p>| Comparison of Convenience: Postal Savings vs. Banks (as of January 2001) |
|---------------------------------------------------------------|----------------------|
| Postal savings                                               | Bank (Bank of Tokyo Mitsubishi) |</p>
<table>
<thead>
<tr>
<th>Annual interest</th>
<th>Regular</th>
<th>0.12%</th>
<th>0.10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>0.15%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Transaction fee</td>
<td>Teller</td>
<td>Y140</td>
<td>Y315—840</td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
<td>Y0—367</td>
</tr>
<tr>
<td>ATM fees (weekend and nighttime)</td>
<td>No fee at post office ATMs</td>
<td>Y105</td>
<td></td>
</tr>
<tr>
<td>No. of office branches</td>
<td>24,768*</td>
<td>316*</td>
<td></td>
</tr>
<tr>
<td>No. of ATMs</td>
<td>25,184*</td>
<td>3,873*</td>
<td></td>
</tr>
</tbody>
</table>

Source: *Shukan Daiamondo*, 2/20/2001

Note: *= March 31, 2000 Annual Reports: Postal Savings Bureau; Tokyo-Mitsubishi Bank

Indeed, the programs and plans offered by the postal service have materially improved the quality of financial services available to the general public. The post office has long offered products such as life insurance (since 1916) and pension plans (both managed separately from postal savings), and payment services (giro, since 1906; money orders, 1875), although it is only in recent years that Japan's private sector institutions have begun to compete in the cross-selling of products such as insurance and pension plans. Postal savings maintains a nationwide network of automatic teller machines that can be used to make deposits, withdrawals, credit card payments, or to pay utility bills or transfer payments to anywhere in Japan without the fees exacted by banks.

Banks are only now beginning to compete in these areas in response to consumer pressures. The number of postal savings ATMs also overwhelms those of any single private bank, with 25,184 machines (March 2000). This number is 6.5 times as many as those of Bank
of Tokyo Mitsubishi, one of Japan's Big Four banks. Postal offices’ ATMs are more depositor-friendly than those of banks, charging no transaction fee for after 6 p.m. and weekend use. The postal savings ATM outlets continue to expand, with tie-ups to several private-sector financial institutions adding 2,152 ATMs as of December 2000. Recently some City banks have begun to charge depositors a minimum account fee, while postal savings depositors can keep a minimal balance, even as low as 10 yen, without any account maintenance charges.

C. Accessibility of locations

The success of the postal savings system can be chiefly attributed to the fast and consumer friendly ease of counter service (average wait time 2 minutes 40 seconds), and the fact that Japan's widely dispersed 24,737 post offices function as collection points for its savings system, far outstripping the 16,000 branches of all 110 banks, savings and loans, and other financial institutions in Japan. In fact, Japanese people on average live within 1.1 kilometers from a post office, while bank branches are typically found clustered in the cities' commercial business districts. Of the 3,235 cities and municipalities that have post offices, 567, i.e. some 18 per cent, are without banks. The wide-based infrastructure of post offices offers tremendous economies of scale, especially in reaching out to rural areas where there would be little profit margin for a stand-alone institution such as a bank.

D. Cross-selling and cross-subsidization

Cross-selling of financial products has become a commonplace strategy in recent years in the global financial sector and has provided the motivation for many of the mega-mergers in the banking, securities, trust and insurance industries as a result of the market liberalization in
financial services that has taken hold in most developed countries. As discussed in Chapter 1, similar cross-selling opportunities have also taken place in the private sector express package delivery services which have reconfigured and market themselves as fully integrated logistic services, not only delivering parcels, but also including warehousing, product fulfilment, and financial service components such as billing, and factoring as newly formed logistics services. Despite the prevalence of cross-selling practices in the private sector, when government-owned institutions, such as the post, makes use of its facilities for multi-service activities, the charges of anti-competitive cross-subsidization are heard from the private sector.

Some critics of yu-cho have argued that revenues from postal operations subsidize the postal savings system; however, the Ministry of Post's own cost analysis shows there is no such subsidy. As discussed earlier in Chapter 1 postal financial services provide a substantial portion of the post's revenue and typically supports mail delivery, which operates at a loss. In fact, without the multiple use of the existing infrastructure, the Japanese postal system would find it difficult to sustain mail delivery operations in many rural areas if left on its own. Postal savings officials also counter criticisms of a supposed competitive advantage by pointing to the costs they must bear in providing postal, savings and life insurance services in rural areas to fulfill their official mandate to serve all markets, rural or urban whether profitable or not.

**E. Market strategies**

The commercial banks rely chiefly on the employee accounts of their client firms for individual and household savings. These employee accounts have historically been part of a package of rewards to the main bank, in which such accounts provide cross-subsidization of the bank-firm relationship. These accounts are the mainstay of a bank’s deposit base under Japan’s so-called “main bank system” whereby corporate finance in Japan has been largely mediated by
the banking sector, especially within groupings of affiliated companies. With captive employee accounts, as their prime source for retail banking fees such as bill payments, ATM transactions and other profitable services including consumer lending, the City banks have had no incentive to improve retail client services and products since these employee accounts are an expected component of the bank's commercial relationships with its corporate clients.

In contrast, the popularity of postal savings is due in large measure to the capabilities of postal savings, from the tremendous economies of scale provided by the post office network to reach out to rural areas and urban/suburban neighborhoods where there would be little profit margin for a stand-alone institution such as a bank. In addition, the popularity of the postal savings products and services is another crucial aspect in its ability to mobilize savings.

The ongoing shift of household deposits out of the employee accounts into postal savings has become a significant loss to the commercial banks and thus a factor in the declining efficacy of the corporate lending system and weakening of the so-called main bank relationship. This tendency is likely to continue in the face of corporate downsizing and layoffs, which have fueled employee distrust in the corporate system in general, and the profound fear by depositors of the lack of safety and security of the banking system in particular.

V. Postal Reform and the Future of Yu-cho

A. The creation of a postal corporation in 2003

In December 1997, then Prime Minister Ryuichi Hashimoto's final report on proposed ministerial reform, *The Fundamental Reform of the Central Government Ministries and Agencies*

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Law (Chuo shocho to kaikaku kihon ho), defined the future shape of the postal organizations. The current Postal Agency will be incorporated in April 2003 as an independent public enterprise to be known as the Postal Corporation. The new entity will continue to administer together postal services, postal savings, and postal life insurance businesses. The regulatory provision governing the Postal Corporation requires an annual financial audit by Financial Service Agency. Under the old rules, each one of the three postal businesses had what was called a "special budget" (tokkai), which was independent of the general accounts and operated within a special, regulation-free framework. [Shukan Daionondo, 20 January 2001, pp.32-33]

Even though opaque accounting frameworks are hardly unique among government agencies, the new accounting rules, which we discuss later in more detail, are expected to eliminate the obscurity of the postal accounting system, render the corporation subject to an independent audit by an external authority, and improve its accountability and transparency, thus eliminating the very points upon which many privatization advocates hang their arguments.

Junichiro Koizumi, then Health and Welfare Minister in the Hashimoto cabinet and an adamant postal reformer, reluctantly endorsed the 1997 proposals, although they fell far short of his ultimate goals of privatization of the posts, with the following conditions: 7

1) Mandatory deposit of postal savings funds with the Trust Fund Bureau (TFB) under management of the Ministry of Finance (MoF) will be abolished and the savings and life insurance funds will be independently managed (as discussed later, in more detail).

2) The postal delivery business will be deregulated and private companies can enter the market. This is more controversial.

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First class mail delivery in urban business areas, a profitable monopoly of the Postal Agency is the main target of deregulation. The scope of deregulating this sector is still under discussion. While Koizumi pushes for full, unconditional deregulation, the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPT) attempts to maintain some regulatory control through the partial deregulation of the posts by weight of the mail. The MPT is concerned that a full deregulation of the market may destroy the existing “universal service” principle, which guarantees the impartial delivery across the nation with equal service quality at the flat rate. Once the free market principle rules the industry, postal service companies – whether a privatized Postal Corporation or a parcel delivery firm like Yamato – are likely to stop service or raise fees to unprofitable areas. Such was the case in Finland and Sweden [See Chapter 1].

Japan's postal delivery already suffers from severe loss of market through regulatory evasion. For example, far from enjoying a monopoly position in the market, advertising circulars and utility bills bypass the postal system and are routinely deposited by independent carriers directly into the letterboxes of households and businesses. Non-priority mail (advertising, etc.) accounts for only 12 per cent by volume of the Japanese post office business compared to the U.S. Postal services 48 per cent, in the U.K., 69 per cent, and in France, 74 per cent. Japan also has the lowest average post deliveries per capita among the major industrialized countries, at 206 pieces per annum, compared to France 447, Netherlands 442, UK 336, and U.S. 734. The loss of these revenues is partially compensated for by Japan's high postal rates. Prime Minister Koizumi's proposed introduction of competing private-sector postal delivery companies

8 Liberalization typically brings new entrants into markets; thereby causing loss of market share in formerly highly regulated service industries, especially banking, but also in telecommunications, electric power generation and other utilities that are obligated to provide the public with certain basic, if not universal services, as does the posts.
9 The high rate of mail delivery in the U.S. stems from the U.S. Postal Service rigorously enforcing it legal control of exclusive access to letterboxes for advertising, as well as all other mail. This factor keeps U.S. First Class postal
to cherry-pick the market even further will likely result in making the postal system's urban deliveries unprofitable as well. Koizumi has already met partial defeat of his agenda when the Japanese parliamentary committee recently required any new entrants to the mail delivery market to provide as many letter collection boxes throughout Japan as the postal system provides, some 175,570, thus making it a non-starter. \[\textit{Financial Times, 4 July 2002}\].

In spite of strong political pressure within his own party opposing privatization, Koizumi has not given up his postal privatization stance. Yet, after more than a year and half from his entering the Prime Minister's office, Koizumi’s personal advisory group, which consists mainly of intellectuals and policymakers, that has been studying and discussing a postal privatization strategy has yet to make public any specific plans.

Nevertheless, business groups, including the \textit{Keizai Doyukai}, have proposed a privatization blueprint to create a post bank, separate from the postal service. The proposed post bank would first be 100 per cent government-owned, with its financial products sharply reduced to only postal savings and life insurance; privatization would follow as soon as possible. Some private think tanks have suggested a hybrid approach, breaking up the privatized postal savings entity into prefectures and turning them over to the severely ailing regional banks. Since a straightforward privatization of the Postal Corporation, which dominates in the three postal-related businesses, would not remove the threat of monopoly to other private competitors, it is argued by the business sector that the postal savings and postal life insurance businesses should be privatized and partitioned. The business groups complaint about the size and scope of the post's "monopoly" seems disingenuous when private sector financial mega-groups have been formed in recent years between commercial banks, securities firms, trust banks, and insurance companies, such as the Mizuho Group (centered around IBJ, DKB, Fuji Banks), UFJ Group

rates the lowest of all industrialized countries, and less than half of Japan's letter rate.
(Sanwa and Tokai Banks), Tokyo-Mitsubishi Bank Group, and Sumitomo-Sakura Bank Group.


B. Funds management and the privatization question

Some of the rationales for privatization of the postal system pertain to its financial activities per se:

1) The Postal Corporation lacks the ability to independently manage the enormous amount of funds on deposit, 255 trillion yen in the Postal Savings and another 112 trillion yen in the Postal Life Insurance. A failure in funds management would be a costly liability which would ultimately be borne by the taxpayers.

2) The funds are so large that they may distort the market. Of particular concern are the so-called PKO (price keeping operations) in equity markets, i.e., government intervention which buoys the stock market. The existence of PKO is frequently referred to in financial circles and the press, yet is flatly denied by postal savings officials.

3) The Postal Corporation deprives markets of business opportunities by “monopolizing” retail savings, a chief complaint of private sector financial institutions.

1. Is postal savings to blame for bad FILP performance?

The above points highlight a significant conceptual problem in the public debates over postal savings reform, namely the failure to distinguish between the function of the postal savings system (i.e., savings collection) with that of fund management. In particular, privatization advocates tend to focus on the past mismanagement of the funds as a major reason

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10 See Financial Times 13 May 2002 interview with P.M. Koizumi.
for liquidating the entire postal savings system. In a press interview last year, Mr. Koizumi argued:

“Why do we need a privatization of the three postal businesses? The answer is simple. A downsizing of public employment, an elimination and/or reorganization of the GFIAs, and a reform of the FILP system. All these reforms, which are the focal point of administrative and financial reforms, are in essence linked to a postal reform… The financial source of the GFIAs is postal savings and postal insurance. We cannot make progress in rationalization of the GFIAs and reduction of public service workers unless we privatize the postal businesses and sever this flow of funds.” [Shukan Daiamondo, 20 January 2001 p.46]

Savings collection and fund management, however, are independent functions, and had until 31 March 2001 been administered by different ministries. Management of the funds is guided by the investment practice of the fund managers and the institutional channels give discretionary access to the funds. Past investment and financing losses are more properly attributed to the Ministry of Finance, whose Trust Fund Bureau (TFB) had abused the fund by financing fruitless Government-sponsored projects and/or investing postal pension plan funds in volatile financial market operations. This confusion over the domains of responsibility and authority among government institutions is a misconstruction that harms serious consideration and discussion of institutional reforms of the postal savings system.

2. How should funds be invested?

This leads to a critical question that needs to be addressed, how should the funds raised through the postal savings system be managed for better performance? The past poor performance of the postal savings funds has come from, among other things, mismanagement by
FILP as mentioned above, the lack of transparency and accountability under accounting rules used for postal savings funds, and poor investment by the TFB in equities and land. We have already discussed how political considerations have wasted postal savings funds under the FILP program. The old accounting rules, which kept postal businesses untouched by external scrutiny, continued to cover-up the underperformance of investments. For example, the postal savings system was not obliged to report its financial statements based on market value (which was also the case until recently for commercial banks). Inadequate accounting and reporting frequently led to calls for a "market solution" for what was essentially a governance problem. Whether or not the market can provide any better governance mechanism or safety in preserving postal saving fund's assets we will examine next.

3. The mode of funds management and market risk

Under the new law, the Postal Administration Council, an advisory group to the Minister of Public Management, approves the portfolio structure of the postal savings fund. As of 2002 the fund is allocated as follows: 80 per cent of funds are in domestic bonds which are almost entirely invested in Japanese Government Bonds and other Government-guaranteed Securities; 10 per cent are divided equally into domestic and foreign securities, including some corporate bonds of foreign companies; 5 per cent in bonds of foreign governments and international organizations; 5 per cent are in the overnight interbank market. The basic composition of the portfolio has varied little in the past few years.

Since the government is prohibited from investing directly in stocks, the Postal Savings Bureau manages and invests the equity portion of the investment funds indirectly, through 15 or 16 private trust banks. The market keeps an eye on this type of investment because some analysts allege the funds are being used as the source of the government’s PKO operations.
Responding to these concerns, the MPT has pledged to “conduct a market-neutral fund management” [Nikkei Shimbun, 25 December 2001]. Nevertheless, the Postal Corporation will become a major market player with its 2-3 trillion yen in investments, which represent about 20 per cent of the 16 trillion yen traded through the market.

The MPT also expects that in the future when market demand by City banks for overnight interbank loans recover, that this demand will help to further diversify its portfolio structure to mitigate risks and better enable more stable investment returns. [Nikkei Shimbun, 11 February 2002]. Several asset liability management and portfolio diversification techniques are employed when 20 trillion yen are invested in equities together with life insurance in order to reduce exposure to volatile securities markets at home and overseas. The fundamental issue, however, is whether a market-vulnerable portfolio is desirable or necessary when Japanese Government bonds are a risk-free alternative.

Since postal savings has not publicly reported its investment performance to date, we do not know the specific performance of each class of investment or the amount of loss or gain associated with a specific class of investment. However, given the burst bubble and the stagnant Japanese equity market since then, coupled with the volatile U.S. and global markets, it is probable that postal investments have accumulated losses. As of the end of September 2001, unrealized losses in stock market investments were estimated to amount to some 6.6 trillion yen. [Nikkei Shimbun, 25 December 2001]. In a highly volatile market environment, it would therefore seem more prudent for postal fund managers to concentrate on low-risk investments, especially government bonds, which are virtually risk-free. Riskier investment requires fund management expertise and financial techniques, the very tools the postal savings system lacks. Moreover, poorer fund management may cost not only investment performance, but, more important, credibility and safety – two major advantages postal savings have over commercial
Postal savings depositors today do not expect higher returns but rather the safety and security of their deposits.

Even with a portfolio of only government and government-guaranteed securities, the postal savings system needs a viable internal risk management system, and especially for the existing portfolio strategy. Effective asset and liability management is essential to any financial institution entering into investment activities. The system helps to mitigate various kinds of risks inherent in financial markets and to take proper and quick action whenever risks come to a dangerous level. An improved internal control system needs to be the first step towards an accurate, market value-based accounting practice, which the current system lacks.

The savings fund intends to invest 10 per cent in stocks. Foreign denominated bonds for which 5 per cent of the fund will be allocated are subject to foreign exchange risk, and even sovereign-risk bonds are not risk free, as was recently seen in the Argentine debt default. The fund must also pay attention to solvency of its borrower banks in the call market. The exposure to volatile equity, bond, and call markets requires the postal savings fund managers to reinforce their risk management system and strategies.

An area that threatens consumer confidence in savings instruments is the postal savings system intention under its new business plan to sell a defined-contribution pension plan, a Japanese version of the U.S. 401K plan.11 This type of product would require a sufficiently competent sales staff to explain the risks involved in this and other investment fund products to its customers. Until now, post offices have sold only principal-guaranteed products like time deposits and life insurance accounts.

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11 The stunning loss of retirement savings facing US defined pension plan holders' owing to the US stock market collapse and the attendant fraudulent reporting activities of companies whose stocks were held in their employee plans should give pause to Japanese public policymakers, as if the 1989 Japanese market's collapse should not have already given enough of a clear warning to policymakers of the public's concern over loosing their retirement savings.
VI. Conclusion

Depositors in fear of a financial meltdown continue to shift their assets from private banks, equity, and real estate into postal savings, and to a lesser extent to foreign currency accounts mainly at foreign-owned banks, and more recently into gold bullion. With seemingly no headway in resolving long-standing banking issues, the popular distrust in banks was at a high point. The bankruptcies of major and smaller banks, slow progress in writing off non-performing loans, the limitation on deposit guarantees on banks accounts to 10 million yen, originally slated for April 1, 2003, and further postponed, has further heightened the public's sense of insecurity about the banking industry. With the possible loss of deposit guarantees at banks, postal savings stands as a harbor of safety and trust for an apprehensive public. Although the maximum amount in a postal saving account is 10 million yen, one can deposit an unlimited amount in a non-interest-bearing arrangement. Even with no interest income, Japanese depositors find comfort in the safety provided by the postal savings system. Thus, postal savings are the most popular form of savings nowadays.

Japan has a highly risk-averse culture, where safety and stability are the most crucial elements in people’s savings decisions. While commercial banks underwent reorganization through mergers and acquisitions, with changes in ownership, bank names, and brands, postal savings maintained its original brand identity. The long-term penetration of the postal savings system in every locality helped to assure confidence, trust, and familiarity among people. Bank mergers and ownership changes confused and worried many ordinary Japanese who prize what is old, large, and stable, and are not used to the constantly changing "M&A culture." One cannot
find a safer investment than postal savings in today’s Japan.

Critics acknowledge an “evolutionary” process of financial reform, including a continuation of postal savings, as the “second best option,” as opposed to radical change of the system [Cargill and Yoshino]. Any radical transformation in this huge savings system is viewed as too risky for a society undergoing critical structural changes, such as a decreasing working population, an increasing percentage of older people in the population, and a mounting public debt that now exceeds 140 per cent of annual GDP. As discussed earlier, the system needs to improve its accountability and transparency in its accounting and investment practices. It should also review its internal risk management system and its portfolio structure against market risks. On the other hand, the postal savings system cannot, indeed should not, take for granted its portfolio management capacity. Maintaining depositors’ confidence in the system matters most.

**Depositors’ confidence**

Many Japanese and foreign-owned financial institutions anticipated massive redemptions upon the maturity of the 10-year *teigaku* postal savings time deposits in FY1999 and FY2000, and began to introduce all sorts of attractive market-based financial products. Nevertheless, 84.9 per cent of the maturating deposits were rolled over into new certificates, and the remaining balance went into Ordinary Deposit postal savings accounts. The much-anticipated flow of funds to the commercial financial sector never materialized. Unlike savers in 1875 who had little choice but postal savings or those in the wartime who had to show patriotism in the form of postal savings, today’s depositors *choose* to put their money into postal savings.

**New products and services in a competitive environment**
The postal savings system is anticipating a freer and more competitive financial market to come. In order to be an efficient and profitable market player, it is planning to launch new lines of financial service products. Among them are agency agreements for over-the-counter sales of financial products of commercial sector financial institutions. Using the existing postal network to assist sales activity, the system expects to receive commission fee revenues without using its own assets. The relationship of mutual benefit to commercial financial partners will enable a symbiosis of postal savings with private sector institutions. Other new financial services being introduced include an Internet payment settlements service, and, a grocery shopping/delivery service for the elderly reflecting the needs of the aging population. The postal savings system plans to offer what it calls “one-stop administrative service,” which includes issuance of residence cards (scheduled for 2003), driver’s licenses, and passports at every local post office.

The politics of privatization

When Maejima first established the Japanese postal service, he appointed prominent individuals in rural areas as local postmasters who, in turn, provided postal station facilities at little or no cost. Even today some 80 per cent of Japan's post offices buildings are privately owned by their postmasters, most having inherited their positions over many generations. Needless to say, these postmasters are a powerful force in regional and national politics, with ties to prominent factions within the ruling Liberal-Democratic Party. Together with the postal workers union, which is affiliated with the Socialist Party's trade union confederation, they have been able to foil PM Koizumi's plans to privatize the postal sector and banking industry efforts to marginalize or abolish Japan's postal savings system.

Postal savings as a catalyst for a better service in banking
Banks have been allowed for many years to offer the same products that postal savings offer their clients, but have not done so. Postal savings officials counter criticism of its supposed competitive advantage by pointing to the costs they must bear in providing postal, savings, and life insurance services in rural areas to fulfill their mandate. A good case can also be made that the existence of the postal savings system may raise the quality of private banking services available to the general public. The postal savings system has been a catalyst for keeping the private sector competitive and better qualified in the services offered. The consumer-oriented Japanese postal savings system offers products such as life insurance and a nationwide ATM network that can be used to make deposits, withdrawals, credit card payments, or to pay utility bills or transfer payments to anywhere in the country at lower fees than charged by banks. Since the 1980s its inexpensive international giro payment service has become very popular for sending overseas remittances. Banks, especially the large City banks have long taken their retail clients for granted. Banks now, have come to realize the profitability of the retail banking market, especially its income from transaction fees. In fact, banks’ revenue from retail fees is larger than profits from corporate lending, especially in light of Japan's huge problem in non-performing bank loans. It is only recently that banks have begun to respond to the competitive pressures of the postal savings system. It would be instructive for banks to revisit their client strategies and to examine why the people prefer postal savings. The postal savings system’s attributes of safety, accessibility and convenience of service, and the ease of comprehension and use of its financial products are a clear advantage of the system over banks. It is hoped that banks will get some clues from these attributes and use them to provide better and more competitive services and products in the future.

Important policy implications are at issue in the intermediation of yu-cho’s funds that go well beyond the exposure to market risk. At issue is differentiating the intermediary roles of
savings institutions, such *yu-cho*, that were created for individual and household thrift, and charged with the prudent safeguarding of saver's deposits, as compared to the designated role of commercial banks of financing business enterprises with creditors' risk. A considerable amount of public funds have been spent in recent years by the Japanese Government to recapitalize the banks, some Yen 8.4 trillion (US$ 80 billion) in 1999, to provide the banks with adequate capitalization to resume financing small and medium-sized enterprises (SME). Rather than providing credits to SMEs, banks have instead invested their funds in the safety of Japanese Government Bonds (JGB). On the other hand, policymakers have moved to increase postal saving fund's investment-risk profile in equity markets instead of Government-guaranteed securities, thereby giving it greater risk exposure. By not addressing the wishes of postal savings depositors, who whose primary concern is safety, has led to a reversal of the primary roles of commercial banks with that of savings institutions. Government-owned policy-based finance companies must now provide small business loans, while commercial banks avoid credit risk by buying risk-free JGBs. With the huge amount of public debt that needs to be underwritten, some 140% of GDP, there is no reason not to provide postal saving depositors with the security they are seeking by investing in the safety of Government bonds. Commercial banks which rely on client companies' employee deposits as a cheap source of funds, on the other hand, have all but abandoned commercial lending and depend instead on fee income and government largesse. Unless banks that have accepted government injections of capital are proscribed from purchasing JGBs, there will be no way that the Japanese economy can recover based on its bank-centered financing regime.

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Bank-firm Cross-shareholding in Japan: What is it, why does it matter, is it winding down?

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Abstract

An institutional structure of corporate groups evolved over the post-war years in Japan, wherein members of a group were linked together through mutual shareholding, often with commercial banks at the centre of the network. This paper examines the functioning of cross-shareholding, as it involved Japan’s commercial banks in the 1990s. It finds that the banks have not been especially successful “monitors” of members of the corporate groups and that corporate management had relatively negative appraisals of the banks. Japan has been passing through a major financial crisis, which has shaken up the role of banks within its main bank system. It has also reduced the extent of cross-shareholding of banks. However, cross-shareholding continues to provide implicit relational contracts that play a role in Japanese business society. This study highlights the importance of paying adequate attention to historical and institutional factors in analyses of development.

Key words: Banking, Japan, corporate governance, cross-shareholding
JEL classification code: G32; L2.
Introduction

It has been a common practice in Japan for pairs of firms to exchange equity shares in each other, a practice called “cross-shareholding.” Sometimes the firms have been in the same industrial group, sometimes they are suppliers and customers, and sometimes creditors and borrowers. This paper focuses on the problems relating to bank-firm cross-held shares.

The shares cross-held by banks and firms became a matter of grave concern in the 1990s in part because most Japanese banks depended on the market value of stocks held in their portfolios to help satisfy capital adequacy standards. With the huge decline in the Tokyo stock market during the 1990s, at times falling to less than one-third of its 1989 high level, banks had great difficulty in maintaining the level of capital required to meet the Basel Committee standards to operate internationally, let alone to cover the burgeoning amounts of bad debt. Moreover, the greatest part of bank-held shares have been in each bank’s client firms and thus the fortunes of banks and firms were lashed together, as Japan faced its most profound economic crisis of the post-war era.

By the middle 1990s, it appeared that the prevalence of bank-firm cross-shareholding might be winding down, although it was not yet clear in the data. However, the major mergers and closure of large banks as the decade ended could signal the start of a new era. Whether or not winding down, it appears that bank-firm cross-shareholding has been a factor in the protracted financial crisis of the second largest economy in the world. This in itself would warrant investigation of the phenomenon; but such a study may be of interest as well for the light it sheds on relations that can develop between banks and their client firms, albeit in a specific institutional context.

Much of bank-firm cross-shareholding in Japan has taken place within groups of interrelated firms, typically with a large bank at the centre, the “main bank”. The implications of cross-shareholding and related issues in regard to the role of the main bank have been extensively studied and debated in the context of the governance of modern Japanese firms and questions of “industrial organization” [Scher, 1997, 1998; Ito, 1993; Nomura Sogo Kenkyujo, 1992; and Okumura, 1990]. Some economists suggest that the groups helped to manage risk in the Japanese economy [Nakatani, 1984; Aoki, 1984]. A number of Japanese studies have asked if there was a positive effect of cross-shareholding upon stock prices [Ikeo, 1993; Kanesaki, 1986; Kawakita, 1992, 1993; Kobayashi, 1991, 1992; Kumagai, 1994; Kurasawa, 1984; Ogishima, 1993; Wakasugi, 1982]. Other analysts, including this author, have been critical of bank-firm cross-shareholding. Two studies by Japanese research teams have analyzed corporate attitudes towards cross-shareholding in the 1990s, based on surveys of management, focusing in particular on the firms’ relationship with their main bank [Omura, 1993; and Fuji Sogo Kenkyujo, 1993]. They found corporate management to be generally critical of bank-firm cross-shareholding relationships.

This study draws upon these previous works, as well as on interviews undertaken by the author with the management of Japanese banks. It embodies an extension of the information collected in multiple in-depth interviews with seventy-seven Japanese bank practitioners, so as to now cover the period from 1992 to 1999, a very turbulent period for the Japanese financial sector.

The development of cross shareholding

Kabushiki mochiai (mutual aid shareholding) is the Japanese term for what is customarily translated as “cross-shareholding”, that is, equity shares that two companies hold in one another. Cross-shareholding, in turn, is a subset of what is known as antei kabunushi (quiescent stable shareholding), which may be held in trilateral, multilateral, or otherwise stable arrangements among companies, usually based on group and/or transactional relationships. Together, the various forms of stable shareholdings comprise some 65 per cent to 70 per cent of all stock issued by publicly traded corporations in
Japan. The remaining shares are freely traded on the stock exchanges.

Cross-shareholding in Japan, however, represents much more than a single-dimension ownership relationship. It often also reflects other understood but unstated obligations. As will be noted, cross-shareholding arrangements in the post-war era operated as tacit mutual pacts designed to insulate the management of both sides from any market threat of hostile takeover. The purpose of most cross-shareholding is to avoid rather than confer shareholder rights, so stable shareholding relationships function as a strategy of corporate management to limit shareholder governance of the firm.

Cross-shareholding may be divided into two categories: (1) cross-shareholding between members of a horizontal corporate conglomerate group, or kigyo shudan, the core of stable shareholding arrangements, and (2) cross-shareholding that reflects business relationships between suppliers and customers. In neither case is the cross-shareholding relationship intended to confer the ownership rights inherent in the Anglo-American model of corporate governance. Cross-shareholding arrangements between suppliers and customers are primarily a franchise to do business, a method of cementing transactional relationships. It is within this category of transactional relationships that one should view the shares of stock that a bank and its major client firms cross hold.

The same is true for insurance companies and trust banks (which are financial institutions that invest funds placed with them “in trust”, such as custodial accounts). They typically own shares in companies with which they do a significant amount of business, including selling insurance and pension fund products to the client firm and its employees. Such transaction-related shareholdings are considered to be separate and apart from any holdings of the client firm’s stock that these financial institutions may have in their investment portfolios.²

Pros and cons of cross-shareholding

In 1992, Japan’s Economic Planning Agency (JEPA) responded to criticism raised by the Government of the United States in the Strategic Structural Initiative (SSI) trade negotiations that cross-shareholding promoted unfair trading practices and that Japan’s cross-shareholding and main bank system specifically locked out foreign-owned banks. In its reply, JEPA advanced three main economic justifications, among others, for cross-shareholding, characterizing them as “merits.”

First, it argued that cross-shareholding provides a stable source of funding for businesses by ensuring that there will be partners who will be stable investors and who will buy new issues of stock whenever needed. Second, according to JEPA, cross-shareholding strengthens the stability of corporate management by acting as a bulwark against the threat of hostile takeover. Such arrangements relieve management of the necessity of responding to excessive pressures from the capital markets, permitting it to develop operations according to a long-term perspective. Lastly, JEPA maintained, cross-shareholding stabilizes and strengthens business transactions between companies. The JEPA White Paper of 1992 termed cross-shareholding a mutual “hostage” taking, which creates a captive relationship in the supply of goods or services and promotes long-term transactional relationships between cross-shareholding companies.

However, JEPA accepted the point that group companies tend to do business mainly with each other, thus making it difficult for foreign investors to break into Japanese networks, and thus that extensive cross-shareholding among members of a corporate group could lead to exclusionary, anti-competitive business practices:

“Even though interlocking stockholding has the functions mentioned above, if it creates a relationship of ‘conspiracy’, business may

² In the author’s interviews, trust bank and insurance executives reported that they principally rely on fixed-income securities in their investment portfolios to meet their actuarial needs, and that the overwhelming percentage of client firm equities being held were for “relational” purposes (see Scher, 1997 and 1998, as well, for a discussion of the types of transactional business relationships that financial institutions have with their client firms and their employees).
become inefficient. What is more important, in selecting the customers, if it is taken into account whether or not they have interlocking stockholding unrelated to their individual products or substance of service, or cartel relations come into existence between competitors, competition may be limited" [Japan Economic Planning Agency, 1992, p.181].

In addition, scholars in Japan have long criticized the practice of cross-shareholding as limiting shareholder governance, which they have characterized as among its major “demerits”, particularly in terms of management accountability. In other words, without effective oversight by shareholders of corporate operations and managerial performance, Japanese managers had little incentive to seek to maximize profits [Ito, 1993]. This is typically contrasted with the United States, where shareholders, at least theoretically, oversee the effectiveness of corporate management, and where the possibility exists of shareholders exercising their rights to change management if operations become too inefficient. Corporate management in the United States is thus given the incentive to focus on the more effective operation of the company for the benefit of the shareholders. In Japan, however, the mutual non-interference agreements generally implied in a Japanese cross-shareholding relationship gave Japanese corporate management an abundance of discretion in making business decisions and in regulating itself. This allowed inefficiencies to build up that produced a low return on equity. Indeed, declaring shareholder dividends has been neither a necessity nor even a priority concern of Japanese corporate managers [Nomura Sogo Kenkyujo, 1992].

Another significant demerit raised by critics in Japan is the potential for cross-shareholding agreements to damage and even defraud shareholders. Cross-shareholding represents an offsetting exchange of stock between companies, in most cases entailing no injection of new outside capital. Normally, when a company issues ¥100 million in stock, the company uses the funds to acquire productive assets worth ¥100 million. However, in a cross-shareholding arrangement, when a company issues stock to a partner, there are usually no net proceeds, just the receipt of new stock in exchange; such a transaction is purely a paper one. Third-party investors in both firms might be made worse off in that their ownership share in the equity of the firm has been diluted by the increase in the number of shares without there being a corresponding increase in the earning capacity of the shares from investment [Okumura, 1990]. In addition, there has been an unspoken fear among third-party shareholders that any large-scale sell-off of shares into the market by a cross-shareholding partner (i.e., without either consultation or the replacement of that partner with another stable shareholder) could cause the collapse of the company’s share price in the equity market.

The widespread practice of cross-shareholding has also been criticized as having negative effects on the stock market. As cross-held shares in a company are rarely traded on the exchange, the effective market in each company’s stock is restricted to a fraction of the firm’s outstanding shares. Thus, according to this view, speculators can manipulate the market price more easily. Such speculation by Japanese investors would tend to discourage outside investors, and, in overall terms, would dissuade participation of longer-term investors.

However, other analysts have taken the contrary view. Under the efficient-markets hypothesis of the Modigliani-Miller Theorem, stock prices are based upon the fundamentals of companies, in particular, their net asset values. Cross-shareholding should not affect a company’s value, and therefore cross-shareholding should not affect stock prices [Ikeo, 1993]. Still other analysts believe cross shareholding has a positive effect on price/earnings ratios [Ogishima, 1993], and some 82 per cent of company executives surveyed held the belief that cross-shareholding had a beneficial effect in stabilizing their own company’s stock price [Omura, 1993].

Whether positive or negative on a net basis, the
standard practice of enterprises holding substantial shares in other enterprises, owing primarily to the cross-shareholding phenomenon, creates an interdependency in the prices of enterprise shares. The shares of companies holding stock in other companies are more vulnerable to share price volatility the larger the holdings of such stock. The interdependency arises because when a firm has large holdings of shares in other companies, its own profits can depend to a significant degree on the price performance of those shares. If stock prices go up, the company earns “hidden profits” from those stocks; but if the prices of those stocks go down, they will have unrealized losses. As the market is at least implicitly aware of these unrealized gains and losses, it affects the first firm’s own stock price. Indeed, Japanese companies that showed a steady rise in their core business income between 1985 and 1991, suffered unrealized losses on shares held in other companies when the stock market declined from 1989 to 1991. This resulted in a decline in their own company’s stock price during those years, despite the core business profits, the effect being greater the greater the extent that they engaged in cross-shareholding [Kawakita, 1992].

**Evolution of cross-shareholding in the postwar period**

The post-war cross-shareholding arrangements grew out of the dissolution of the zaibatsu in the initial period of the Allied occupation of Japan following World War II. The zaibatsu were holding companies, each of which held shares in and controlled a group of firms, many of which, in turn, had controlling interests in other firms (albeit often through a minority stake). The dissolution was intended to introduce “Western” principles of corporate democracy and to dismantle the industrial underpinnings of Japanese militarism. The divestiture by the zaibatsu of their corporate holdings under the Anti-Monopoly Act of 1949 led to an increase in stock ownership by individual investors. As a result, individual investors held 69 per cent of all outstanding shares in 1949, a level that would fall dramatically as cross shareholding was resurrected (see figure 1).

The cross-shareholding system as it existed by the 1990s was the result of three stages of major buildup: the first in the early 1950s, the second from the middle 1960s to early 1970s, and the third in the late 1980s. The corporate equity market in the early 1950s was characterized by active takeovers and free-wheeling shareholder meetings. During this period, speculators purchased stocks, which management bought back at a higher price (greenmail). Companies wanted to protect themselves by cross-shareholding. However, the provisions of the Anti-Monopoly Act prohibited stockholding by companies. Revision of the Act in 1953 allowed companies to invest in stocks of other companies, providing their stock holdings could not be construed as anti-competitive. The resurrection of cross-shareholding during this period was thus primarily intended to protect companies from unsolicited acquisition by speculators, who were particularly active after Japanese stock prices collapsed following the end of Japan’s economic boom during the Korean War. The 1953 easing of the Anti-Monopoly Act also raised the upper limit of shareholdings by financial institutions from 5 to 10 per cent.

This first stage in the development of cross-shareholding was also significant in that the former zaibatsu groups of Sumitomo, Mitsui, and Mitsubishi re-established themselves as a new form of grouping of companies, called kigyo shudan, with their trading companies and banks at the centre of their groups (see below).

The second stage in the growth of cross shareholding was precipitated by the collapse of share prices in 1964-65 and the first Yamaichi Crisis (1964), in which Japan’s fourth largest securities company was faced with imminent bankruptcy. In order to boost the Japanese stock market, a special corporation, the Nihon Kyodo Shoken (Japan Cooperative Securities Co.), was set up by the securities industry with Ministry of Finance (MoF) administrative guidance to make major purchases of shares. Another factor was Japan’s having become a member of the Organization for Economic Cooperation and Development in 1964. As a condition of membership, Japanese capital markets were to be gradually deregulated, causing the MoF as well as business to become concerned about preventing hostile takeovers by foreign investors.

Once the Yamaichi bankruptcy had been
averted, the Nihon Kyodo Shoken was able to sell the shares it had accumulated. It proceeded to sell the shares to group-linked companies and their banks. As these shares were unlikely to be sold, it reduced the threat of hostile takeovers by either domestic or foreign investors. In addition, Section 280 of the Commercial Act was revised so that boards of companies would be able to allocate newly issued shares to specified companies and individuals. Such allocations were made primarily to financial institutions and companies within their own group, resulting in further stabilization and concentration of stock ownership. This strengthened the aforementioned successors to the prewar zaibatsu groups and aided newly emerging kigyo shudan, centred around Sanwa, Dai-Ichi Kangyo Bank (DKB) and Fuji Bank.  

The second stage of the growth of cross-shareholding ended with the introduction of a new policy to curtail the practice. After the first “oil shock” hit Japan in the fall of 1973, inflation rose and the price increases were seen as having been engineered by the corporations. This led, after much opposition, to adoption of the 1977 Anti-Monopoly Reform Bill, which entailed a reduction by the Fair Trade Commission of the allowed bank shareholding of company stocks from 10 to 5 per cent. The implementation of this reform, however, was stretched over ten years.

The third stage in the growth of cross-shareholding accompanied the “bubble period” of the late 1980s, when corporations took advantage of high and rising equity prices and flooded the stock market with new issues as a way to raise funds. By itself, this would have increased the proportion of company shares that were actively traded, relative to the “quiescent stable shares”. However, the issuance of new cross-held shares could prevent this, which was thus the primary purpose for the issuance of such shares in this period.

This was also a period of intensive zaitech (“financial engineering”) investment in securities by corporations, unrelated to investment for cross-

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4 Although Fuji Bank’s so-called Fuyo group originated before the war as the Yasuda group of financial companies, it was not a fully developed zaibatsu, since during the prewar period it lacked a manufacturing base. Member companies of the Kawasaki and the Furukawa groups, both smaller former zaibatsu, now belong to the DKB group, thus leaving Sanwa, the only bank purportedly without any zaibatsu past, with the sobriquet “The People’s Bank.” More recently, however, Sanwa has been tracing its roots to the Konoike finance house of the early seventeenth century.
shareholding purposes. That is, many companies sought to bolster their profits from gains in the rising stock market. The portfolio of the zaitech investor, like any unaffiliated investor, was strictly speculative, in anticipation of capital gains, and generally took the form of tokkin accounts, that is, discretionary trusts managed by their brokers. Firms following this practice thus built up their portfolios of shares in other firms and if after several years these new shares were not traded, they would appear quite like traditional “stable” shares. Indeed, after the stock market crashed there was little incentive to sell these shares.

In fact, when analysts observed a reduction in corporate shareholding portfolios in the late 1990s, they measured the fastest rate of dissolution as being in the stable-shareholding category. However, it is difficult to distinguish sales of shares that had actually been part of a firm’s stable shareholding from sales of zaitech shares which it would have been timely to sell given that the Tokyo market had regained some strength as foreign buying increased substantially in the mid-1990s. In any event, by this time the period of strong growth in cross-shareholding had ended.

Corporate groups, main banks and cross shareholding

As a result of the preceding developments, several kigyo shudan, or corporate enterprise groups, developed into huge conglomerates during the post-war period. Among the largest were those affiliated with the top six “city” banks, although a distinction should be drawn between the Mitsui, Mitsubishi, and Sumitomo groups, which were the direct descendants of the pre-war zaibatsu of the same names, and the groups that were affiliated with Dai-Ichi Kangyo, Sanwa, and Fuji Banks. As can be seen in table 1, the pre-war zaibatsu groups of Sumitomo and Mitsubishi have had a higher percentage of cross-shareholding than the bank-centred groups of

Table 1

Cross-shareholding ownership of firms in corporate (Kigyo) groups: total and amount held within group, 1987-1997

|         | Mitsubishi | Sumitomo | Mitsu | Fuji | Dai-Ichi Kangyo | Sanwa | Total | Total |
|---------|------------|----------|-------|      |                |       |       |       |
|         | WG         | WG       | WG    | WG   | WG             | WG    |       |       |
| 1987    | 27.4       | 16.5     | 31.5  | 13.5 | 28.3           | 11.2  | 31.4  | 12.4  |
| 1988    | 27.3       | 16.7     | 32.7  | 14.3 | 28.8           | 12.0  | 30.3  | 11.5  |
| 1989    | 28.7       | 17.0     | 32.8  | 14.5 | 28.7           | 11.9  | 29.8  | 11.6  |
| 1990    | 29.8       | 17.7     | 33.6  | 14.9 | 30.0           | 11.3  | 30.3  | 11.8  |
| 1991    | 30.5       | 17.8     | 34.3  | 15.3 | 29.0           | 10.3  | 30.9  | 12.2  |
| 1992    | 31.2       | 18.3     | 34.8  | 15.1 | 31.1           | 11.5  | 31.2  | 12.2  |
| 1993    | 31.1       | 17.9     | 33.3  | 14.8 | 31.2           | 11.2  | 30.5  | 12.0  |
| 1994    | 30.8       | 18.1     | 33.1  | 14.6 | 31.3           | 11.2  | 30.2  | 11.8  |
| 1995    | 30.1       | 17.8     | 31.9  | 14.3 | 29.8           | 11.0  | 29.7  | 11.5  |
| 1996    | 30.8       | 16.8     | 30.9  | 14.9 | 31.6           | 10.9  | 26.4  | 10.3  |
| 1997    | 29.8       | 16.7     | 30.9  | 15.0 | 32.0           | 10.8  | 24.6  | 9.2   |

Note: Following Japanese convention, data are for end of fiscal year (e.g., “1987” should be understood as 31 March 1988).
a Kigyo groups.
b Non-Kigyo groups.
WG: Within group.

A study by NLI Research Institute [1998] of 2,426 firms saw stable holding of their shares fall from over 41 per cent at the end of fiscal 1992 to under 36 per cent in fiscal 1997. During the same period, foreign holdings of the shares in these firms more than doubled, from 6.3 per cent to 13.4 per cent.
Fuji, Dai-Ichi Kangyo (DKB), and Sanwa (the Mitsui group has had weaker cross-shareholding ties as a result of circumstances following its postwar dissolution).

Members of the former zaibatsu groups consider their trading company or the original core company within their group as the group’s centre, although the group’s bank also plays a significant role. Group identity and loyalties are thought to be far stronger among the more tradition-bound former zaibatsu groups than they are in the post-war bank-centred DKB, Sanwa, and Fuji kigyo shudan. Within all of the kigyo shudan, however, the group’s bank and other financial institutions, together with the group’s trading company, have the most ties with all of the other group members by virtue of the basic nature of their transactional business.

In addition to the six largest kigyo shudan, other significant groups arose, for example, around such banks as the Industrial Bank of Japan (IBJ), the largest of the long-term credit banks, or the Tokai Bank, based in the Nagoya region. There have also been many other groups of lesser size associated with smaller city banks that have a strong regional base, or with the regional banks themselves or the second-tier regional (formerly sogo or mutual) banks, all of which had their “groups”. Cross-shareholding has been an important attribute of these groups as well.

In each of these cases, it appears that the objective of the cross shareholding, in particular as it pertained to the main bank, was strategic rather than for investment income. Evidence from interviewed bankers [Scher, 1997; 1998] indicates that it has long been a very common practice for banks and other cross-shareholders, when share prices have risen, to sell and then immediately repurchase their cross-held shares in order to realize the capital gains. While this captured profits that helped to dress up their annual statements, it left intact their ratio of cross-held to total shares. That banks felt obliged to repurchase these shares suggests that the purpose of this shareholding was to retain close transactional ties to client firms. This is no different from the expectation of firm executives for stable long-term transactional ties with their non-financial cross-shareholding partners. The obligations of bank-firm relationships are similar to the close vendor/supplier relations that non-financial companies also must maintain with their cross-shareholding business partners. As one banker reported to the author, his bank’s sale of any client shares required the assessment of the bank’s relationship to the firm and approval by three departments before the client shares might be sold.6

**Main banks within the groups: historical roots**

Of all of the cross-held share relationships within the kigyo shudan, one of the most significant has been a firm’s relationship with its main bank. The “main bank relationship”, as it came to be called, is said by some to have had its origins in the 1930s, when Japan’s economic planners sought to insure that companies deemed essential to the military economy received adequate funding for the production of munitions. Asajima [1984], studying zaibatsu group financing of the late 1930s, noted the Sumitomo group’s shift of financing functions from its holding company to the group’s bank and trust company. Teranishi [1994] pointed out the parallels between the role of the lead bank in a risk-diversification strategy for wartime loan syndication and in the postwar credit crunch period, while T. Okazaki [1994] emphasized the significance of the wartime planned economy and the National Mobilization Act. Another argument put forward is that the system was the unfortunate result of the timing of the 60-year renewal of the Bank of Japan’s charter in 1942, which consciously imitated that of the 1939 Reichsbank [Noguchi, 1995]. In any event, by 1944, as Horiuchi [1989] points out, when the MoF ordered the 700 largest companies to specify their “main banks,” the Government was merely making explicit previously established de facto lead bank relationships.

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6 When shares are sold to raise cash, the first to be sold are likely to be zaitech shares, those shares which were purchased by corporations as speculative investments during the zaitech era (the period of financial “engineering”) in the late 1980s. The rationalization of speculative investments from the zaitech era is to be expected, whereas shares that were acquired as part of a cross-shareholding pattern based upon customer-supplier relationships had a different purpose.
Others, however, see the main bank system as a reaction to the unusually free-wheeling financial markets of the post-World War I decade (1919-1929). This *laissez-faire* period was characterized by economic chaos and bank failures that ultimately led to the MoF’s intervention in the 1927 bank crisis. Indeed, one can go back further in history and say that the policy-based finance system has its oldest roots in the oligarchic rule of the Meiji *genro*, the “elder statesmen” period of the late nineteenth century, especially in the initiatives of Meiji Finance Minister Masayoshi Matsukata, who was noted for excluding parliamentary authority and the involvement of democratic processes, as he constructed a policy for economic development, including adoption of the German central-bank model.  

In fact, it is not useful to attempt to pinpoint the passage of any one government act or section of the Commercial Code as the foundation of modern-day bank-firm relationships in Japan. Such relationships not only predate the modern period, but extend back in time to the exchange houses, the money lending stores, and the lending practices to group member houses of the *Ômotokata* (central business offices) of the great merchant households of the Tokugawa period.  

A comparative institutional analysis that has also been popular in some circles is misleading as well. This is to compare the cross shareholding between the Japanese firm and its main bank to the German *Hausbank* system [see, for example, Carrington and G. Edwards, 1979]. There is a genre of literature, paralleling the literature on the Japanese main bank system, which favourably compares the *Hausbank*’s attributes to the market-based financing of the Anglo-American finance model and extols the purported efficiencies of German bank-based financing and bank monitoring [see for example: Cable, 1985; Crafts, 1992]. In this view, the *Hausbank* is not only a shareholder. It also exercises governance in the German two-tier board system by virtue of its dominant membership on the client firm’s supervisory board of directors, which it achieves through control of a substantial number of proxies. However, recent scholarship provides evidence that the outcome of such governance claims has been largely overstated [Baums, 1994; J. Edwards and Fischer, 1994]. Despite their position on the supervisory board, banks do not appear to play an active governance role [Wenger and Kaserer, 1998].

This much has also been the case for Japanese banks, albeit for a different reason. Though shareholders, Japanese main banks are seldom in a position to influence policy, even in those firms in which they hold outside directorships. Typically, the Japanese firm’s board of directors is made up almost entirely of inside directors, that is, the firm’s own executives, who are beholden to the president and chairman, both of whom retain real power along with the board’s executive committee, also composed of inside directors.

**The main bank relationship**

The post-war relationship of the main bank with other firms in its group has been seen as largely beneficial to the firms and society. The reasons have generally been classified as falling in the following three areas: (1) efficiency of capital derived from delegating the function of monitoring to the main bank as the implicit agent of the other creditors (and by extension of shareholders in the firm as well), which was called the “signal function”; (2) main bank assistance to firms in financial distress, the so-called “rescue function”; and (3) the main bank role in corporate governance. From the time these arguments emerged, however, their credibility was questioned by scholars in Japan studying the main bank system. In particular, they questioned the existence of such benefits, the efficacy of the relationship, and the actual role of the group’s main bank in risk-sharing, and at least one scholar has even questioned the existence of the main bank itself [Miwa, 1985, 1991].

Much of the theorizing on the positive role of

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7 As Yoshino [1977] points out, contrary to the apocryphal stories regarding Japan’s adoption of the Belgian model for its central bank, the Ministry of Finance in 1882, under the direction of Count Matsukata, after a rigorous process of examining the charters of more than thirty foreign central banks, decided upon the German model because it provided for the greatest control by the Ministry over the financial system, to the exclusion of parliamentary intervention.
the main bank relationship originated in a number of articles written by Nakatani on the purported governance/monitoring effects of the main bank within the industrial group. Nakatani put forward the notion that the industrial groups performed a risk-sharing function for their members, especially those grouped around a bank, which he saw as the group’s centre, and that the chief mechanism of that risk-sharing was the main bank’s implicit assumption of the role of risk-insurer for the group’s member firms [1983, 1984]. Nakatani also contended that the ongoing main bank relationship, an implicit long-term contract, provided a continuous signal of the creditworthiness of the client firm to banks and financial institutions outside the group. Nakatani’s overall approach emphasized the stabilizing effect of the main bank on the long-term performance of the firm. From this starting point, a number of hypotheses have been proposed by economists, principally focusing on the efficiency of capital in the main bank relationship and its benefits to the firm.

In Sheard’s [1989, 1994a, 1994b, 1994c] expansion on Nakatani’s thesis, he argues that the main banks are relatively efficient at gathering information about their clients and therefore are able to effect more efficient solutions to the “asymmetric information” problem. This view derives much of its theoretical foundation from Diamond’s 1984 discussion of information asymmetries and the costs of delegated monitoring, where he asserts that monitoring delegated to a bank as a financial intermediary allows better contracts and a Pareto-superior allocation of resources. Sheard [1989, 1994c], in his application of Diamond, relies heavily on anecdotal material from the business press in Japan, citing news stories of the main bank’s rescue role in times of financial distress for his evidence. For additional support, he points to the dispatch of bank employees on temporary assignments to the client firm and the role of the main bank in negotiating with other creditors for more lenient terms for the client firm.

Some economists [Sheard, 1989, 1991; Aoki 1990] have stressed the main bank’s monitoring role, particularly in light of its shareholding in its client firms, suggesting that the relationship represents a form of corporate governance in which the bank acts as the delegated monitor for the group’s cross-shareholding member firms. Other shareholders are then able to “free ride” on the main bank’s alleged monitoring activities. Aoki [1994] parses monitoring into three conceptual stages: ex ante, the evaluation of potential new projects of the client firm; interim, the ongoing monitoring of the performance of the firm; and ex post, the exercise of control over firms in financial distress.8

What the Aoki model does not consider, however, is that for many years, inter-bank competitiveness has been subverting the monitoring process.9 That is, most large firms deal with a number of banks, with which they have bigger or smaller relations and which compete with each other for the firm’s business. Non-main banks have only been too eager to lend to a client for ex ante projects, thereby gaining a foothold with which to increase their position in the lending hierarchy, if not displace the main bank. Interim monitoring, chiefly done by the bank team, turns out to be related more to the sales function of the team as it competes with the teams of other banks. Again, this is not an exclusive role of the main bank, but rather one method used by the bank as it vies against a whole hierarchy of rival banks.

Finally, when a main bank learns that any of its firms are financially troubled, “ex post monitoring by the bank” may actually entail taking advantage of the opportunity of insider information (to the extent it has any) to hasten its own strategic retreat. If possible, the bank cuts back its loan exposure in advance of the other banks within the lending hierarchy [Scher, 1997; 1998; 1999]. Moreover, the so-called “rescue” for most firms arranged under what is called ex post monitoring is often the seizure of its collateral and an acquisition by a firm favoured by the main bank. The main bank is thereby placed in a conflict of interest, not only vis-à-vis its fellow shareholders, but its fellow creditors as well.

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8 See also Hoshi [1990a, 1990b, 1991].
9 Other criticisms can be found in articles by Horiuchi [1989], Horiuchi and Fukuda. [1987], Horiuchi et al.[1988], Oba and Horiuchi [1991], and R. Okazaki and Horiuchi [1992].
Furthermore, this potential conflict is readily apparent to the other members of the cross-shareholding group, who will have observed that the bank’s interests as a creditor (to recover its loans) are not necessarily aligned with its interests as an investor (to protect its equity stake, when it is still positive). When those two interests clash, the significance of the bank’s role as shareholder will yield to its overriding concern as creditor.

In other words, the monitoring role places the main bank in position to make first claims upon a firm’s assets, to the detriment of the other principals (i.e. shareholders), or even the firm’s other creditors. As chief reorganizer and receiver of the firm in any reorganization plan, the main bank would be able to structure the workout to its own advantage, whether it is through dissolution of the firm, the seizing of collateral, or the continued infusion of cash and a negotiated easing of terms for new credits from the firm’s other banks. Only when the bank discerned that one of its client firms was in the midst of a liquidity crisis rather than insolvency would it have the incentive to attempt an actual “rescue” [author’s interviews].

By the second half of the 1990s, after a string of experiences, the main bank rescue function was largely demythologized, although the belief in the function still persists in much of the academic literature. Nevertheless, a belief remained among some practitioners that the function had existed in the past. In my 1997 interviews with Japanese bankers, who for the most part began their careers in the 1970s or 1960s, some acknowledged the belief that main bank rescues had occurred, but that “it was before their time.” My most senior respondent, a former director and an OB (“Old Boy”) of a major bank who had begun his career in 1943 with the Yokohama Specie Bank, (forerunner of the Bank of Tokyo), replied that he too thought that the rescue function had existed but that it was “before his time”. It was not until the collapse of the bubble economy in the late 1980s that the rescue function was seriously tested, and it failed. It may therefore be concluded that the main bank rescue function existed only in some mythical Golden Age in antiquity.

Perceptions of bank-firm relationships

The view of the main bank relationship presented here, at least as it pertains to the 1990s, is also supported by my research data and the data of the Fuji Research and Omura studies [Fuji Sogo Kenkyujo, 1993; Omura, 1993]. These last two studies, which reported on perceptions of the main bank from the perspective of the client firm, revealed that corporate executives generally saw the main bank relationship as lacking the benefits it purportedly accords the firm. This view was shared by banker practitioners in my data [Scher 1997; 1998], who also dismissed ideas of such benefits to the firm. Yet both the Fuji and the Omura data and my own qualitative data from banker practitioners clearly show that the main-bank relationship itself existed, was stable, and was part and parcel of expectations coming from traditional ideas of relationships. Furthermore, although the benefits of the relationship may have been perceived as doubtful by the client, the bankers believed the relationship was quite profitable for the bank.

The two surveys that studied corporate executives’ perceptions of their main banks demonstrate that non-financial company managers did not regard mutual stock ownership as financial investments, but rather as mutual security and non-aggression pacts. Indeed, the corporate managers themselves (as agents in their own firms) made non-interference pacts with their counterparts in the other firms so as to protect their own incumbency. In contrast to the attitude of managers who are keen to promote the interests of shareholders as investors, the majority of publicly traded firms in the Fuji survey would only concede that it was “somewhat necessary” to disclose information to individual investors. They saw their annual financial statement as sufficiently informative. Of the privately held firms, almost 72 per cent saw no necessity for disclosure whatsoever, beyond what was reported in their annual statement. Few companies saw any need to explain their policies for distribution of profits, management of capital expenditures or future project plans [Fuji Sogo Kenkyujo, 1993].

10 Some of the original authors of the Nakatani-Aoki-Sheard-Hoshi thesis have sought to limit the applicability of the thesis to the time up to the high-growth period of the mid-1970s (see Aoki, Patrick, and Sheard [1994]).
By the same token, it is not surprising that the firms in both the Fuji Sogo Kenkyujo and Omura surveys reported that they had a distinct preference for not selecting a bank as one of their stable shareholders. Moreover, according to Fuji Sogo Kenkyujo data, firms did not believe that their own banks had a right to monitor them (see figure 2). Among the list of stakeholders, almost 22 per cent of the executives surveyed felt that the main bank was not entitled to monitor, compared with only 11 per cent who thought the main bank was entitled. Indeed, this rejection of the main bank’s purported agency role was even more evident among the responding firms listed in the First Section of the Tokyo Stock Exchange. There, only 4 per cent of the executives felt that the main bank was entitled to monitor, whereas almost 25 per cent felt the main bank was not so entitled.

Privately held firms viewed their fellow non-financial “group” members as their most reliable shareholders. The stable shareholders most preferred by listed firms (and second most preferred by privately held firms) were companies that were not their banks or other financial institutions or even from their own group, thus enabling them to avoid the web of transaction expectations and obligations that often come with these types of institutional partners. Some 406 out of 570 privately held firms in the Fuji Sogo Kenkyujo [1993] survey reported that they had no stable shareholding relations with banks, compared with only 101 of the 604 publicly traded respondents.

For the non-financial firms which did have cross-shareholding relations with banks, 64 per cent of these firms expressed concern about the falling share prices of the bank stocks they held (as did 78 per cent of those firms which were having their own share price difficulties) [Omura, 1993]. Holding these bank shares was seen by firms as a burden rather than a benefit. Many of those bank shares were bought during the late 1980s when client firms were importuned by their banks to purchase their shares — or lent funds by the bank to make

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**Figure 2.** Firms report who is entitled to monitor their activities

<table>
<thead>
<tr>
<th>Role</th>
<th>Entitled to monitor</th>
<th>Not entitled to monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal auditor</td>
<td></td>
<td></td>
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<tr>
<td>Company self-monitoring</td>
<td></td>
<td></td>
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<tr>
<td>Board of Directors</td>
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<tr>
<td>Shareholder meeting</td>
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<tr>
<td>Outside auditor</td>
<td></td>
<td></td>
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<tr>
<td>Bond rating agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td></td>
<td></td>
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<tr>
<td>Main bank</td>
<td></td>
<td></td>
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<tr>
<td>Labour union</td>
<td></td>
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<tr>
<td>Regional citizen</td>
<td></td>
<td></td>
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<tr>
<td>Others</td>
<td></td>
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</tbody>
</table>

Source: Translated by the author from survey data of Fuji Sogo Kenkyujo [1993].
the purchase — as banks sought to raise capital to meet Basel Committee capital-adequacy requirements.

The Omura data [1993] further revealed that the only firms which valued their cross-shareholding relationships with financial institutions more than with non-financial shareholding partners were those firms that were highly dependent upon banks, not a surprising result. This category of firm was characterized as having relatively small capital, low efficiency of capital (low ratio of pretax income to total capital), low capital/assets ratio, low growth of capital, large decline in stock price, and low concentration of ownership. Another key factor reported by Omura as raising firm dependency on banks was the overall poor health of the particular industry to which the firm belonged. This included publicly traded companies in such ailing industries as iron and steel and, to a lesser degree, machine tools, electrical machinery, trading firms, and the services industries. The respondent companies from the healthy (at the time of the survey) high cross-shareholding automotive industry saw cross-shareholding relations with financial institutions as much less beneficial than those with their own suppliers or vendors.

Executives of publicly traded firms reported in the Fuji survey that the single most important benefit of cross-shareholding was that it prevents hostile takeover (36 per cent) (see figure 3). Second in importance was the “stability” cross-shareholding provided to the firm’s transactional relationships (27 per cent), and third, to the firm’s share price (23 per cent). The smooth operation of annual shareholder meetings (over 10 per cent) was cited fourth. Executives at privately-held firms reported their main benefits from cross-shareholding as providing stability to transactional relationships (46 per cent) followed by the prevention of hostile takeovers (24 per cent); smooth operation of annual shareholder meetings ranked third (over 10 per cent) (see figure 4).

Figure 3.
Benefits ascribed by publicly-traded firms to cross-shareholding

![Diagram showing benefits ascribed by publicly-traded firms to cross-shareholding]

Source: Translated by the author from survey data of Fuji Sogo Kankyô [1993].
Recent developments

In the light of the views expressed by managers in non-financial firms, one might expect to observe a significant reduction in bank-firm cross-shareholding. In fact, data compiled by NLI Research Institute of Tokyo show this to have been the case, mainly owing to changes at the end of the 1990s. In a sample of 2,426 firms, about a fifth of corporate and bank equity had been owned by cross-shareholding firms in the late 1980s and much of the 1990s (see table 2). The ratio last exceeded 21 per cent in fiscal 1992. By 1998, the ratio had fallen to 16 per cent. As may be seen in the table, although there were some declines across the board, the largest ones were in firm holdings of bank stocks (bank holdings of other banks’ stocks virtually disappeared). Table 3 shows the decline in firm holdings of bank stocks in more detail, albeit for a shorter period. The greatest sell-off has been of failed or failing banks (sales of shares in Bank of Tokyo-Mitsubishi by client firms reflect reduced shareholdings after their merger).

Banks have also reduced their rate of cross-shareholding. For example, table 4 shows reductions in the rate of cross-shareholding in their clients by most of the large banks, i.e., except for Tokai Bank and Asahi Bank, two banks that had announced merger plans, but that also had strong regional franchises in the Nagoya area and Saitama Prefecture. Furthermore, table 5 shows that fifteen regional banks increased their cross-shareholding between fiscal 1992 and 1997. In the light of the financial distress of the large banks, this data suggest that banks reduce their cross-held shares when they have to and otherwise would maintain their transactional ties with their client base through cross-shareholdings.

Perhaps this is the conclusion to be drawn as well from the differential sales of cross-held shares by banks and their client firms, as shown in table 6. It appears that banks do not rush to sell these shares when the firms sell...
their corresponding shares in the banks, or at least that sell-offs by clients do not necessarily cause the bank to reciprocate. In particular, the table shows that while trading companies such as Itochu and Marubeni have been net sellers, the only bank that made a more or less consistent effort to reduce its holdings of client shares at a rate equal to that of its cross-shareholding partners was the Industrial Bank of Japan.

When banks do sell shares, it has been predominantly shares of other banks, securities houses and insurance firms (see table 7). It is also usually the case that the banks selling these shares are not the main bank of the firms and that the firms had already sold their shares in the banks. The firms whose shares the

<table>
<thead>
<tr>
<th>Table 2. Bank-firm cross-shareholdings, 1987-1998</th>
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<tbody>
<tr>
<td>(Percentage)</td>
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<tr>
<td></td>
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<tr>
<td>Firm holds firm shares:</td>
</tr>
<tr>
<td>4.1 4.4 4.7 4.8 4.9 4.7 4.7 4.8 4.9 5.0 4.7 4.3</td>
</tr>
<tr>
<td>Firm holds bank shares:</td>
</tr>
<tr>
<td>6.7 6.0 5.5 5.9 5.7 6.0 5.8 5.7 5.4 4.2 3.5 3.2</td>
</tr>
<tr>
<td>Bank holds firm shares:</td>
</tr>
<tr>
<td>6.2 6.7 6.8 7.2 7.3 7.2 7.0 7.1 7.0 7.7 7.5 6.5</td>
</tr>
<tr>
<td>Bank holds bank shares:</td>
</tr>
<tr>
<td>0.4 0.4 0.3 0.4 0.4 0.4 0.4 0.4 0.3 0.2 0.1 0.0</td>
</tr>
<tr>
<td>Other entities:</td>
</tr>
<tr>
<td>4.0 3.6 3.0 3.1 3.1 2.9 2.9 2.9 2.8 2.5 2.3 2.0</td>
</tr>
<tr>
<td>Total:</td>
</tr>
<tr>
<td>21.5 21.0 20.3 21.4 21.3 21.2 20.8 20.7 20.3 19.5 18.2 16.0</td>
</tr>
</tbody>
</table>

Source: NLI Research Institute (1999), based on sample of 2,426 firms.
Note: As per Japanese convention, data are as of end of fiscal year (i.e., “1987” means as of 31 March 1988).
a Percentage of firm and bank equity mutually held by other firms and banks.

<table>
<thead>
<tr>
<th>Table 3. Bank stocks held by firms, 1989-1996</th>
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<tbody>
<tr>
<td>(Percentage of stock of each bank held by firms)</td>
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<td></td>
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<tr>
<td>1989 Annual percentage change 1996</td>
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<tr>
<td>Industrial Bank of Japan:</td>
</tr>
<tr>
<td>43.2 -0.4 2.5 -0.1 -1.1 -0.1 -1.3 -2.2 40.5</td>
</tr>
<tr>
<td>Long Term Credit Bank:</td>
</tr>
<tr>
<td>43.5 1.5 0.4 -0.9 -0.4 0.8 -0.5 -3.3 41.1</td>
</tr>
<tr>
<td>Nippon Credit Bank:</td>
</tr>
<tr>
<td>21.7 -0.2 3.4 0.4 -2.0 1.3 -0.4 -4.6 19.6</td>
</tr>
<tr>
<td>Dai-Ichi Kangyo Bank:</td>
</tr>
<tr>
<td>46.0 0.3 -0.1 -1.0 -0.5 -0.2 -1.1 -0.8 42.6</td>
</tr>
<tr>
<td>Sakura Bank:</td>
</tr>
<tr>
<td>44.7 -4.0 0.0 -0.6 0.2 0.6 -1.3 -1.6 38.0</td>
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<tr>
<td>Fuji Bank:</td>
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<tr>
<td>53.1 1.2 -0.7 -0.1 -0.8 -0.2 -1.3 -3.4 47.8</td>
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<tr>
<td>Bank of Tokyo Mitsubishi:</td>
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<tr>
<td>39.1 0.9 1.0 0.1 -0.3 0.1 -0.3 -4.3 36.3</td>
</tr>
<tr>
<td>Asahi Bank:</td>
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<tr>
<td>34.1 0.6 -1.2 -0.7 0.5 0.6 0.2 0.5 34.6</td>
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<tr>
<td>Sanwa Bank:</td>
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<tr>
<td>41.2 2.4 -2.0 -0.2 -0.3 -0.1 -0.6 0.0 40.4</td>
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<tr>
<td>Sumitomo Bank:</td>
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<tr>
<td>48.3 1.5 -1.8 0.0 -1.0 -1.7 -0.4 0.5 45.4</td>
</tr>
<tr>
<td>Tokai Bank:</td>
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<tr>
<td>35.0 1.2 -0.3 -0.6 0.0 -0.3 1.5 0.3 36.8</td>
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<tr>
<td>Hokkaido Takushoku Bank:</td>
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<tr>
<td>26.7 1.3 -0.5 -0.1 -1.0 0.1 -0.9 -2.6 23.0</td>
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</table>

Note: Data on a fiscal year basis (e.g., data for 1990 show percentage change from 31 March 1990 to 31 March 1991).
banks have been selling were generally firms belonging to the much-troubled construction, real estate, securities and financial service industries. These industries were the front-line casualties in the collapsed bubble economy.

Overall, the highest degree of cross-shareholding has occurred among institutions within the financial sector, such as regional banks, mutual banks, finance companies, casualty insurers, leasing companies and other financial service companies. Fifteen out of the top sixteen companies in which city, regional and long-term credit banks held shares were in fact other financial institutions [Zenkoku Shoken Torihikijo Kyogikai, 1992]. It has thus been the failures, mergers and reorganizations within the financial services industry itself which have been most responsible for the realignment of cross-shareholding.

Bank mergers themselves cause sales of cross-held shares by the merged bank. If each of two banks that merge held shares in a client firm, then the new merged bank should sell off enough of those shares to

<table>
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<tr>
<th>Table 4. Cross-shareholding by major banks, 1992 and 1997</th>
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<td></td>
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<tr>
<td>Industrial Bank of Japan</td>
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<td>Long Term Credit Bank</td>
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<td>Nippon Credit Bank</td>
</tr>
<tr>
<td>Dai-Ichi Kangyo Bank</td>
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<td>Sakura Bank</td>
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<tr>
<td>Fuji Bank</td>
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<tr>
<td>Tokyo-Mitsubishi Bank</td>
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<td>Asahi Bank</td>
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<tr>
<td>Sanwa Bank</td>
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<tr>
<td>Sumitomo Bank</td>
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<tr>
<td>Tokai Bank</td>
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<tr>
<td>Yokohama Bank</td>
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<tr>
<td>Other regional banks</td>
</tr>
</tbody>
</table>


a Percentage of bank’s holding of corporate shares that are cross-held.

<table>
<thead>
<tr>
<th>Table 5. Cross-shareholding by regional banks, 1992 and 1997 (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Fukuoka Chuo Bank</td>
</tr>
<tr>
<td>Kyotango Bank</td>
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<tr>
<td>Minami Nippon Bank</td>
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<tr>
<td>Miyazaki Taiyo Bank</td>
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<td>Kinki Bank</td>
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<tr>
<td>Kumamoto Family Bank</td>
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<td>Sensu Bank</td>
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<td>Ikeda Bank</td>
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<tr>
<td>Mie Bank</td>
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<tr>
<td>Nishi Nippon Bank</td>
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<tr>
<td>Fukuoka City Bank</td>
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<tr>
<td>Chukyo Bank</td>
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<td>Kyushu Bank</td>
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<tr>
<td>Kansai Bank</td>
</tr>
<tr>
<td>Musashino Bank</td>
</tr>
</tbody>
</table>

Source: NLI Research Institute, 1998.
Table 6.
Selected firms that reduced shares held in banks in 1997: net reduction in holdings in major banks and net reduction of bank holdings in the firms
(Hundred million yen)

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Note: The Bank of Tokyo Mitsubishi is not included owing to the effects of the merger.
BSFS: Bank selling firm shares; FSBS: Firm selling bank shares.
bring the new bank’s total holdings down to 5 per cent of the firm’s equity. Since the main bank is typically the greatest cross-shareholder among the banks that are part of the firm’s stable shareholders, a merged bank that was not the main bank of the firm would have been compelled by custom to reduce its shareholding even further. In other words, a 5 per cent shareholding is generally an indication that the bank is the main bank of that firm, while lesser percentages of cross-held shares, for example, 4 per cent or 3 per cent or less, would indicate that these banks were second or third banks in the firm’s lending hierarchy.

In fact, merged banks were able to circumvent the imperative to sell down cross-held shares, as they had when the 5 per cent maximum shareholding rule was introduced with passage of the 1977 Anti-Monopoly Reform Bill, as mentioned earlier. In addition, in the bubble period of the late 1980s, when banks were supposed to be lessening their cross-held share ratios to meet the 5 per cent maximum share-holding requirements, bankers shifted excess shares to bank-owned subsidiaries [author’s interviews]. In particular, in the Bank of Tokyo-Mitsubishi case, the excess shareholdings were transferred to bank-owned subsidiaries. However, in the most recent cases—including the merger of IBJ, Dai-Ichi Kangyo and Fuji Bank, as well as Asahi Bank and Tokai Bank, and Sakura Bank with Sumitomo Bank — the pressure on the banks to sell cross-held stocks has been lessened by a new Bank Holding Company Law, which allows the new bank entities up to 15 per cent shareholding in client firms.

Of course, banks as a group were buying shares as well as selling them. We thus find evidence that some banks were increasing their holdings of the shares of a number of client firms (see table 8). In fact, banks continued to acquire shares in firms that had newly become main bank clients. Asahi Bank and Tokai Bank (both with strong regional bases) and most recently firms in the Fuji group and in Sakura Bank’s Mitsui group have also increased their holdings in order to strengthen their group’s main bank.
Table 8.
Selected firms that increased shares held in banks in 1997: net increase in holdings in major banks and net increase in bank holdings in the firms
(Hundred million yen)

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Note: The Bank of Tokyo Mitsubishi is not included owing to the effects of the merger.

BBFS: Bank buying firm shares; FBBS: Firm buying bank shares.
Conclusions

The financial system of Japan, in particular its banks, has been going through a crisis that may well spell profound changes. A long process of financial liberalization and increased competition among banks and with financial markets gave large firms more financing options. If the main bank relationship ever worked at all, it certainly stopped working by the 1990s. Banks made unprecedented numbers of poor loans, which turned into bad debt that had to be covered out of capital. Moreover, with stock prices falling and given the role of stock holdings in capitalization, banks had increasing difficulty meeting the ratio of capital to assets required under the Basel Accord. This put pressure on banks to curtail lending, which especially hit smaller domestic firms with fewer financing alternatives, reducing their earnings capacity and thus stock prices, further reducing the value of bank capital owing to the cross shareholding and so on in a vicious downward spiral. Moreover, as the international credit ratings of Japanese banks fell in response to these difficulties, it became more difficult to raise foreign-currency funds abroad. Indeed, Japanese banks were forced to close many of their overseas operations, while foreign direct investors have entered the Japanese market in unprecedented scale.

Government has responded to the crisis with additional policy measures, as the extent of the difficulties gradually came to be better understood. These included technical measures, such as relaxing the reporting requirements of banks so as to no longer require that shareholdings be regularly “marked to market”. In 1999, the measures also included having Government-owned banks, including the Bank of Japan, the Japan Development Bank and the Export-Import Bank, add liquidity to the market by lending to firms, buying commercial paper and providing foreign exchange for financing imports. Furthermore, through the use of Government-controlled pension funds, the Government has carried out so-called “price keeping operations” to keep the stock market afloat, while at the same time offering capital injections to banks to restore their liquidity.

The Government has also taken steps to ease the unwinding of cross-shareholding. That is, one possibility for dissolving cross-shareholding is for a firm to repurchase its own shares. This was not allowed until a series of revisions of the Commercial Code beginning in October 1994 that then permitted stock repurchase programmes by March 1998. As of May 1998, 644 companies listed on the Tokyo Stock Exchange had announced repurchase programmes and were enjoying stronger share prices than the rest of the market.

In the midst of these changes in Japanese (and global) financial systems, the prospects for bank-firm cross-shareholding are unclear. Japanese firms increasingly have market alternatives to banks for funds and depositors increasingly have market opportunities for placements of funds. Arm’s length, market-related financial transactions seem less amenable to the kinds of relationships that bank-firm cross-shareholding characterized.

However, business in Japan is typically conducted within highly contextualized sets of relationships and opaque rules that govern access and accountability. Thus far, there is little evidence of devolution in mutual shareholding arrangements on the part of banks, especially by regional banks whose clientele have very traditional notions of business relationships. For the banks, we can conclude that two significant purposes of cross-shareholding exist: to maintain stable business relationships, i.e., transactional relations between the cross-shareholding partner companies, in other words, as a franchise to do business with each other; and second, to maintain capital adequacy standards. Firms, on the other hand, are today buying bank shares generally only if they are in difficulty and need to preserve their relationship with a bank. Cross-shareholding thus continues to provide implicit relational contracts, a function that still has a role in Japanese business society.
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Japan’s Economic Malaise

Three simple models for why
Japan’s economy will never grow again

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The first version was entitled Three Simple Models for Undergraduate Economists and was prepared for the ASIANetwork Conference, Furman University, April 11-13, 2003. This paper differs primarily in the introduction and summary, and in the addition of more figures. The core analysis and most of the calculatioins remain the same.
I. Introduction

I argue below that Japan’s economy will not grow again, and that (with hindsight) this should not be surprising. First, Japan has matured, to the point where its labor force is in decline. Such an economy is unlikely to grow in absolute terms. Second, that maturation occurred in a short span of time, resulting in large structural shifts in the economy. These strained the Japanese financial system past the breaking point, and have stymied efforts at macroeconomic stimulus. I believe, however, that the magnitude of these shifts would have overwhelmed any financial structure. I do not deny that Japan’s financial system exhibited large vulnerabilities, and its macroeconomic policy systematic failures. Again, I believe that these are beside the point. Third, the current structure of Japan’s economy is not sustainable; financial liabilities (bank deposits, government social security commitments) and financial assets (good loans, and tax receipts under the status quo) are wildly out of balance. Bringing these into balance will inevitably impose a drag on economic growth into the distant future. The bottom line is that we should not expect the Japanese economy to grow again in our lifetimes.

Let me preface the paper proper with a methodological digression. The slowdown of the Japan’s economy during the past decade deservedly has been analyzed extensively. These analyses, however, assume implicitly or explicitly that Japan is “unique.” If that were not true at some level, analysis would be unnecessary; indeed, there would be no point to an Association of Japanese Business Studies. But I value my membership in AJBS; it is more useful to me intellectually than the American Economic Association. However, as someone trained in the social sciences, I am opposed to using the assumption of uniqueness as a starting point. What I present below are three simple models – one of which admittedly has several subcomponents – that seek to avoid that bias.

There are gains to be had from viewing Japan as a political-economic “system” on one extreme, and delving into the details of monetary policy transmission under the particular circumstances of Japan in the latter 1990s. The cost is missing commonalities with other countries – I stress those with China – and of substituting complex stories for simple ones that
can be told without resort to the peculiarities of Japanese institutions. Now I feel confident that I have substantial knowledge of those peculiarities; I could not have written this paper otherwise. So while what I present are simple models, they are not simple models naively applied.

As is obvious, I am an economist, for whom Japan today poses interesting questions. For example, in the last half-century it is the only major economy to undergo a full decade of stagnation; only the much smaller Switzerland has experienced something similar. More compelling, Japan will be the first developed country – indeed, perhaps the first sizeable society in human history – to see its population decline for other than traumatic reasons; Italy is following close behind, but as part of the increasingly integrated EU it is much harder to analyze. Finally, Japan is the first developed economy to confront deflation since the Great Depression, and with it the collapse of the effectiveness of monetary policy; I do not expect it to be the last. Obviously, my queries here are selective, and quite different from those I have when I put on my hat as a microeconomist who follows the automotive industry. I think the results I present are sobering, by I hope that the analytic perspective encourages the members of AJBS to find other simple stories the various disciplines that we can retell in a compelling manner because of our own detailed knowledge of Japan.

II. Growth Models: Changes of Stocks in Japan’s Economy

You can’t squeeze water from stone. This is the essence of the “classical” model of growth. In effect, it states that output is a function of inputs – hardly a novel idea – and that, to make this concrete, if we can understand what is happening to the growth of the labor force and to investment, then we can place an upper bound on growth. In the late 1950s Robert Solow and others plugged in numbers, using data on the stock of labor and the stock of capital (the value of buildings, cars, machinery, roads and other productive assets). To their initial surprise, their efforts explained only about half of US growth; the balance, unexplained sources of growth, was
later dubbed technical change. Applied to Japan, this sort of straightforward growth accounting exercise helps delineate what contributed to, and what limited, growth.¹

Capital growth was a major component; high investment gave workers more, and better, equipment with which to work. Such gains were not restricted to manufacturing. In Japan, new houses and office buildings were more comfortable than old – better lit, better cooled, better furnished. Likewise, formal education and skills acquired on the job made workers more productive; however imprecisely, such inputs can be measured, as can the absolute size of the labor force and changes in hours worked. Finally, research on Japan highlighted one-time factors that increased output, the most important of which was the transition from farm to factory.² That is important for today’s developing world, but was hidden in the early generation of applied work that drew on the easily available data on the post-1945 US economy. In sum, the expanded stock of these resources enabled higher output, promoting the general welfare, allowing the Japanese today to enjoy life, liberty and the pursuit of happiness.³

Now this model is important within the context of macroeconomics, and so is familiar to most economics majors. For one thing, it is the core of the “classical” tradition, which is central to modern treatments of the field. However, since the US economy has tended to grow at a relatively steady rate decade after decade, applying it does not add much to understanding contemporary issues. That is not the case for the rest of the world, and Japan is as good an example to use in employing it. In the 1960s investment was high, and by the middle of the decade the postwar baby boomers were entering the labor market. Furthermore, technical change was rapid, not just because of new processes but also new products. Trade played a role – not because of exports, but rather due to imports, which permitted workers to move out of low-

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¹ See Denison and Chung (1976) for such analysis applied to Japan.
² W. Arthur Lewis, a Nobel laureate and Princeton professor, was the first to stress this transition, later formalized as a 2-sector model of development. An initial empirical application of this model was by Gustav Ranis, a Yale economist, using data from Japan.
³ The 1990s saw a resurgence of growth theory; see for example Solow (2000).
productivity sectors such as coal mining and agriculture. Accounting for the growth of the stock of productive resources helped clarify why Japan could grow so rapidly, and provided grist to the academic mill for subsequent comparisons with other rapidly developing economies.\(^4\)

Such growth accounting shows its fruitfulness as a model when used to ask why growth slowed. It serves as a powerful antidote to more casual analysis. A simple graph of Japan’s postwar growth illuminates this. Now growth in Japan has been slow since the collapse of the “bubble” of the late 1980s, which tends to divert our attention. Indeed, the starting point for most analyses of Japan’s current problems focuses on a periodization of postwar growth, and on the apparent discontinuity \textit{circa} 1990. [See Figure 1, which uses the typology of Katz (1998, 2002).] I am uncomfortable with that approach on \textit{a priori} grounds. If nothing else, the graph shows two discontinuities, and yet no attention is paid to the former. [See Figure 2.] More generally, a unique event is not subject to analysis; it can be described, but not explained. Economics is of no use in such cases. Furthermore, it fits with a bias to which area studies are subject, of emphasizing the peculiar over the general. Now history is, to some extent, the study of the unique, and I emphasize history when I teach about Japan’s economy. But I use that to highlight that institutions differ from those in the US, not that economics is somehow a fruitless endeavor. I turn to the unique only to round out conventional explanations, not as a starting point.

To continue. Rather than looking at discontinuities, one theory-based approach is to examine fluctuations in GDP. Such business cycle analysis also has behind it a century-plus of cumulative empirical effort. From this perspective, there are many peaks and troughs, and while the economy was relatively stable from the late 1970s through 1991, the recent volatility does not look exceptional in the context of the past 50 years. [See Figure 3.]

The “bubble” – the late 1980s boom – and its subsequent collapse certainly can be analyzed within that tradition. Why did asset prices jump, how great was excess investment, how much did labor demand shift, and how long such negative impulses to run their course? All these

\(^4\) Note the limits of this approach: that Japan \textit{could} grow rapidly, which is the focus of these models, does not explain why it \textit{did} grow rapidly.
events are essentially short-run shifts, with a frequency of a few years. The economy, however, has been moribund for a decade. Business cycle models are simply inappropriate for analyzing that time frame, and for answering why average growth is low or high. Whether viewed as either a discontinuity or a cycle, for that purpose focusing on the “bubble” is misleading.

Such analysis instead is the domain of growth accounting. In Japan over the past 50 years, high rates of investment boosted the size of the capital stock, helping *per capita* output to rise sharply, but this process faced *diminishing returns*. As a result, it is only to be expected that growth would slow, and (less directly) that investment would fall. [See Figure 4.] This was noticeable by 1970, and widely discussed by contemporary economists, at least inside Japan. Starkly phrased, additions to the capital stock in and of themselves are not now, nor will they ever again be, a significant source of growth. Of course the absolute size of the labor force is also now shrinking, and absent large-scale immigration, this will continue; female labor force participation is already too high for shifts there to be likely to fill the gap. Likewise, a large proportion of Japanese youth – half, more than in the US or Germany – go on to obtain higher education directly out of high school. This ratio cannot rise much higher, and with the baby boom entering their mature years, neither will the level of work experience of the labor force expand. Other one-time changes, such as the movement of workers from farm to factory, ran their course long ago. Figures 5 and 6 present changes over time in these contributions to growth; Figure 7 tries to extrapolate these. Growth accounting suggests that the Japanese economy is not likely to grow again.5

Japan thus illustrates one of the lessons that Solow and subsequent economists drew from their empirical work: that the growth of the capital stock and of skills must slow over time, and that absent productivity increases, in the long run *per capita* growth stagnates. This is not necessarily bad. Japan’s labor force is in decline, and its population will soon start shrinking. As

5 This is reflected in the aphorism “less bang for the buck,” which here perhaps should be “less yin for the yen.” The overall issue was raised long ago by Jorgenson (1988); a well-known recent article in this vein is Krugman (1995).
a result, the economy can decline in absolute terms with little impact on average welfare. Stagnation is not a bad outcome, and is certainly not a crisis situation in and of itself.

There still remains some possibility for growth. In the short run, the economy can rebound from high unemployment, and by putting workers back to work can enjoy a year or two of modest growth. Nor can productivity improvements be ruled out. In parallel with the earlier shift from farm to field, we now see a shift from factory to services. At present this process is moving all too slowly; while output may not be reduced much by pulling workers out, along with unproductive employees in construction and mom & pop retailers, it will in my opinion prove difficult to transfer such individuals into health care and other expanding sectors. I personally expect this to add comparatively little to growth.\(^6\) In short, we ought to expect Japan’s economy to decline in absolute size. We do not need any hand-waving about Japan’s late-1980s stock market and real estate bubble and its subsequent bursting to explain the current stagnation of the economy – not that the “bubble” did not amplify underlying trends.

This simple model thus provides an antidote to the natural tendency to focus on the dramatic events of Japan’s bubble and its collapse. It is not the whole story, but no model ever is. However, as is true of other powerful models, the insights it offers are capable of generalization.

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\(^6\) Technical change increased farm productivity greatly in the 1950s and 1960s; as a consequence it freed up labor that could move to other sectors at little cost in output. From over 50% of employment in the early post-WWII years, the sector “agriculture, forestry and fisheries” now employees under 5% of the labor force, and much of this is comprised of elderly farmers tied to their fields because of the provisions of postwar land reform that precluded both renting out land and consolidating small farms into large ones. Agriculture will shrink further, but it is already too small for that to matter. Technical change in manufacturing is now freeing up resources there; “hollowing out” is both necessary and desirable. As noted, we can also anticipate that workers will shift out of construction and the retail-wholesale sectors, which are by any measure overpopulated. Potentially this enables a similar one-time increase in the overall economy, if resources can be reallocated without a drop in output elsewhere. But in part this will represent a move from production within the household (children caring for elderly parents) to production outside the household (paid care for the elderly) without much real change in the overall prosperity of Japan’s populace. At present I am in the minority. Richard Katz and Hiroshi Yoshikawa, among others, argue against my pessimism, stressing respectively the pervasiveness of idle resources, and at the economy-wide level continued productivity increases.
In particular, they are applicable to Asia’s other large economy, China. The accumulation of capital there has been even more rapid than in Japan; the shift from field to factory is still in its initial stages, but is clearly an important component of growth. Similarly, average education and experience levels remain low but are increasing. As a result, high growth will, I believe, continue for another decade, perhaps even two. But as in Japan, diminishing returns will set in as the capital stock expands. Similarly, a demographic slowdown is already guaranteed; the drop in the birthrate that began in 1980 means that China’s population will be shrinking by mid-century. The same model can both elucidate the potential for continued rapid growth in China today, and its cessation by mid-century.

III. The “Bubble:” Flows in Japan’s Economy

In retrospect, what is surprising to me is not that a financial crisis occurred, but that it took so long to occur. I develop this argument in three segments. First I examine changes in macroeconomic forces, in domestic savings and investment, that inexorably pulled down the growth rate, exemplifying the paradox of thrift that is treated in every Principles textbook. The second step is to look at the outworking of these forces on the flow of funds in the financial sector. Finally, I note the response of financial institutions – above all bank lending behavior – to these changes. While subsequent events revealed deficiencies in corporate governance and government regulation, these are in my opinion secondary. No economy, no financial system, could have survived the shocks suffered by Japan unscathed.
A. Shifts in Savings and Investment

Japan today exemplifies the well-known “paradox of thrift,” that an economy can save too much for its own good. To date macroeconomic policy in Japan has only been able to alleviate this imbalance on a temporary basis. As noted, subsequent sections trace the impact of this imbalance on the flow of funds, and the strain it imposed on the financial system.

One side of the ledger is savings. For simplicity, let us ignore corporate savings, and instead focus on household or personal savings. (This assumption is not innocuous, since swings in corporate savings are quantitatively large, but they do not affect the qualitative outcome of this exercise.) We can then look at the uses of that savings, namely corporate investment. Now the decisions to save and invest are made by different individuals, and there is no mechanism to guarantee that (for example) an increase in household savings will be matched by a compensating increase in corporate investment. Since funds cannot simply vanish, any surplus must end up somewhere. The following clarifies what that means.

As you must know, Japanese households save a lot. That has not always been the case. Before the late 1950s Japan was not notably thrifty; high savings rates did not arise until the 1960s. There is no discernible cultural propensity toward frugality, indeed impecunious behavior seems common to slow-growing economies, including our own. In contrast, once the Japanese economy began growing, households had many incentives to save. Urbanization and the rise of consumer culture led caused workers to set aside money for the purchase of new goods and (more importantly) housing. Education and weddings required funding, too. But above all, savings for retirement was central. Rapid growth is synonymous with a sharp rise in both incomes and the standard of living. As time progressed, this meant that the savings made early in a career – and which may have seemed generous at the time – turned out in retrospect not to add

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Sheldon Garon at Princeton has done interesting work on savings campaigns, which go back at least to the early Showa era (late 1920s). But such campaigns would not have been needed if the savings rate was high - just as Robert Bellah’s finding of a “Protestant Ethic” in Tokugawa Japan reflects his discovery of merchants fighting against the spendthrift behavior of their heirs.
up to much. That bank accounts, the primary means of saving, earned little interest did not help matters. Indeed, the savings rate peaked following the first oil crisis (1973), when high inflation eroded the value of household financial assets.

However, as noted in the first section, growth inevitably slows, and with it investment. Households, however, keep on saving; they are looking at retirement, 20 or 30 years into the future, not at current growth. Figure 8 illustrates this, showing the continuation of high household savings during the past 2 decades. Where to put these funds has been, is, and will continue to be a challenge, indeed the overriding macroeconomic challenge. Put simply, from the 1970s, Japan has been awash with savings.\(^8\)

The numbers are quite stark in magnitude. In 1970 corporate investment was 27.5\% of GDP; in 1975, it was 17.9\% and falling. [See Figure 9.] While this was partially offset by a decline in corporate profitability, the swing was nevertheless huge. Where did the savings go? Initially, they went to the government, which ran enormous deficits in the latter 1970s; when these were reigned, starting under Prime Minister Ohira, growth slowed markedly. But then it was US consumers to the rescue; the 1980s were the only time period since the Korean War when the economy was export led.\(^9\) Unfortunately, for an economy of Japan’s size, it is hard for exports to be more than a temporary salve, since to serve as an engine of growth, they must continue to expand faster than the rest of the economy. By 1986 under the dollar depreciation that followed the Plaza Accord, they had run out of fuel.

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\(^8\) While noted by others, the analysis is often idiosyncratic. Richard Katz (2003) talks about “anorexia” but he tries to diagnose this as a complicated by-product of government industrial policy. The closest in spirit to my analysis is Fukao (2001). He, however, stresses the international ramifications, noting that the definition of the various components of GDP implies that, in flow terms, foreign savings (the financial flows implicit in net trade) must equal private savings (savings net of investment) plus government savings (the consolidated net budget surplus), conventionally written as \((S – I) + (T – G) = (X – M)\).

\(^9\) This goes against folk wisdom, but in the 1960s and 1970s, increases in exports were offset by increases in imports; the net impact on growth was thus minimal. Furthermore, exports were and remain a small share of the economy. In these two aspects Japan is quite different from the rest of Asia, or for that matter Europe, and instead resembles the US.
Next, the bubble came to the rescue; a combination of renewed investment and lower savings (the flip side of a boom in consumption) kept the economy going. That, too, was not sustainable. Investment was high with a view to the profits to be made in real estate, and secondarily consumption was high with workers enjoying – or at least their incomes benefiting from – heavy overtime and fat bonuses, as well as profits in the stock market. Amplifying this was a general euphoria, that Japanese firms would drive the global auto industry and Japanese banks would dominate world finance. With hindsight, this exuberance was irrational. But the combination of higher investment and higher consumption (that is, lower savings) buoyed the economy, compensating for the shift to fiscal restraint.

What followed is well known, since it remains the dominant image of Japan’s economy. With the bursting of the bubble consumers saw wealth disappear (though the comparison of the peak of the stock market with today’s level vastly overstates their losses). The same was true for the banks and insurance companies that held most corporate shares. With bubble-induced lending and spending a thing of the past, demand declined and firms were left with excess capacity. Investment in plant and structures plummeted; since 1998, retained earnings have actually exceeded investment for the corporate sector as a whole. [See Figure 10.] At the same time, the retirement of the baby boomers loomed. The aging of society, widely trumpeted in the media from the late 1980s, made it seem only prudent to provide for the future today. Even without bad economic news, it is unlikely that savings would have continued to fall.

As a result, Japan could no longer avoid the paradox of thrift: while in Japan it is individually rational to save, if in the aggregate no one consumes and no business invests, then the economy must shrink. Despite the return of large government budget deficits in the 1990s, the Japanese economy has proven incapable of soaking up such bountiful savings. Stagnation inevitably resulted. Indeed the economy failed even to achieve the low levels that the growth accounting framework of Section II suggested were possible, with excess capacity and chronic unemployment. This is a novel situation, one not faced to date by other developed countries, and
that policy fumbled should not be surprising; even with hindsight it is not clear (at least to me!) that better timing or a more stable set of macroeconomic policies would have worked.

In conclusion, the shifts in the flow of *savings* and *investment* traced above were a natural counterpart to the petering out of growth. Such imbalances are almost inevitable when a secular slowdown in the economy is accompanied by the aging of the population. Japan will not be alone in this; China and other high-growth economies will sooner or later face the same dilemma.

B. Shifts in the *Flow of Funds*: Implications for Financial Intermediaries

Changes in savings and investment behavior were reflected in massive shifts in the flow of funds. If firms were no longer investing, then new channels had to be developed to allocate Japan’s still-abundant savings. Other changes amplified this, since not only were large firms borrowing less, but financial liberalization meant that they were able to borrow from sources other than banks. The combined effect was that large banks lost their traditional customers, and were forced to find new ones. As the next section will trace, that process did not go smoothly.

The change in the flow of funds forced financial liberalization. Beginning with the Occupation-imposed Dodge Plan of 1949 the government had run budget surpluses, or at most small deficits. As a result, there was no market in Japan for government bonds, and private bond issues were restricted to a few select borrowers, primarily electric utilities. Then in 1963 Yamaichi Securities, Japan’s largest brokerage, failed and had to be bailed out. In addition, companies sought cross-shareholdings to forestall hostile takeovers, which in principle were to be allowed from 1964, when Japan joined the OECD. Thereafter firms had no direct financing options; unable to issue either stocks or bonds, their only source of outside funds was the banking system.\(^\text{10}\) Individual savers likewise had no option but to place their money in banks.

This of course suited officials at the Ministry of Finance just fine, since the firms they monitored

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\(^{10}\) Life insurance companies were also important sources of funds; preferential tax treatment meant that Japanese buy far more life insurance than in the US, and this served as a source of long-term loans, partially compensating for the lack of a bond market.
faced less competition. Consistent with this regulatory stance, when the government first began running sizeable deficits after the first oil crisis, private placements allocated bonds directly to banks. But by 1979 they had accumulated a large bond portfolio, and ultimately refused to purchase the full amount the government wanted to issue. Regulators had to allow the development of a bond market, opening a hole in the dikes that segmented different parts of the financial system. The dikes rapidly collapsed; direct finance became possible, and the banking system lost its monopoly over the supply of funds.

At the same time, Japanese multinational corporations developed foreign funding sources, such as the US commercial paper market; they also began issuing “samurai” bonds in London. The deregulation of international finance in 1980 acknowledged this ongoing transformation. So not only were they borrowing less, with the slowdown in growth, they were able to turn to non-bank sources, a process denoted by that wonderful multisyllabic term, disintermediation. Banks had to find new customers.

C. Shifts in Lending Behavior

Leverage allows banks to use a small amount of capital (here meaning equity or financial reserves) to move a large amount of loans. But it is potentially dangerous: bad loans can overwhelm the cushion of safety provided by the reserves of an individual bank, and even push a financial system into crisis. The typical approach to looking at financial problems is to concentrate on individual shocks, and the circumstances that contributed to them; that leads to a plethora of sometimes idiosyncratic, often mutually inconsistent, analyses. In contrast, I want to stand this formulation on its head: why don’t financial meltdowns arise more frequently?

Two factors stand out when the question is phrased in this manner. First, bankers develop experience in avoiding problems. This is encapsulated in organizational structures and operating rules-of-thumb. In the case of the large Japanese “city” banks that dominated the financial system, these included a focus on lending against physical collateral, primarily real estate, and a
focus on loans to large firms. Many such borrowers were regulated, or were parts of tight oligopolies or otherwise stable industries, and were historically low in risk. Furthermore, during the high growth era even firms that were poorly managed did well enough to survive, so losses were not great. Real estate prices rose steadily; collateral provided a reliable cushion. Banks thus tended to focus on straight loans to support the expansion of borrowers’ ongoing operations; by 1980, they had had a stable set of customers for 20 or more years. These rules of thumb were sufficient for 40 years; from the return of normalcy to Japan at the start of the 1950s until the mid 1990s there were no bank failures.

Second, regulation complemented bankers’ rules of thumb. Following the example of the US, Japanese authorities tried to watch both the asset and the liability side of the system. They limited the opening of new branches and otherwise stunted competition among banks, as an indirect tool to buttress the stability of the financial system. If banks could not grow quickly, they faced diminished incentives to undertake risky (but potentially more profitable) lending. Banks were also required to maintain capital reserves, and were regularly inspected by the Ministry of Finance to check that they were honest, and that they had good management procedures in place. Finally, the authorities insured depositors against losses and prohibited banks from offering higher interest rates than their peers. Customers thus had no incentive to switch banks, or even to pull out their money if they feared their bank was in ill health. With competition muted, banks did not have to bother watching costs carefully. Indeed, they faced incentives that encouraged inefficiency: labor-intensive services and entertainment – and the purchase of shares in their clients – were the chief strategies they could employ to capture share from their rivals.

This cozy world proved a bit too comfortable; the rapid shift in the flow of funds undermined both internal and external checks. As noted, large firms disappeared as borrowers, and by 1980 fiscal restraint under Nakasone reduced budget deficits. Banks thus could no longer supplement their loan portfolio with the purchase of government bonds. What were large banks
to do? If they couldn’t lend to large firms, they could try lending to small, or internationally for project finance.

In reality, such new business was something for which neither banks nor regulators were prepared, a story familiar to those who watched the S&L crisis in the US. It is not that banks did not try. To develop expertise, they dispatched staff to the Small and Medium Enterprise Agency, something I observed first-hand as a summer intern in 1982. But lending in such markets requires very different skills; compared to large firms, bankruptcy rates are higher among small firms. Furthermore, creditworthy small firms were already served by mutual savings banks and other local financial institutions. To garner new business thus required the “city” bank newcomers to pick up less desirable customers, or to offer loans at prices that, given their cost structure, were not profitable. In practice they seem to have done both.

The same pattern can be observed in foreign lending. I personally participated in the international component, during a previous incarnation as a banker, as part of a team making Eurodollar loans to Latin American governments during the late 1970s for a now-defunct Japanese bank. International lending also required new analytic skills, one that as it turned out neither Japanese nor American banks had. (About $2 billion in loans on which I worked went bad.) In sum, everything large Japanese banks tried their hand at tended to go sour.

This was accentuated by the use of land as collateral. Once money began to flow easily, and land prices began climbing, the expansion in lending to small firms looked both safe and simple. Credit analysis, a skill in which Japanese banks were weak, fortunately wasn’t necessary – all that was required was a careful monitoring of collateral. What the money was used for didn’t matter. The monetary policy of the mid-1980s made matters worse. While exports were strong, fiscal retrenchment nevertheless meant slow growth, and interest rates were kept low. That continued with the Plaza Accord of September 1985, under which the US sought a depreciation of the dollar. That policy succeeded better than anticipated. The yen strengthened 50% over the next year, and the Bank of Japan interest rates to (then) record-low levels. That continued into 1987, and a return to “normal” interest rates was further delayed when the US
stock market crashed in October of that year. Easy money was fuel on the fire of bank lending. The more real estate prices rose, the more confident banks were in their lending, and the looser their controls became. At the same time, by their traditional guidelines – bankruptcy rates, collateral, bank capital adequacy – regulators saw no reason to worry. Nor did most foreign analysts see any problems.

Organizations find change difficult, the core assumption of the population ecology literature and an appropriate perspective in the case of an entire industry, and in retrospect they were ill-suited to the new environment. When problems surfaced after 1992, there were no pressures to undertake the sort of restructuring and retrenchment that now appear to have been sensible. Instead, both banks and regulators procrastinated in foreclosing on bad loans and trimming their own branch networks and lending staff. (Despite claims to the contrary, the US is a poor exemplar; delay was also our favored response to banking problems.) In any case, the story of the excesses of Japan’s “bubble” economy and its aftermath, including the bungling of the subsequent cleanup of the banking system and ill-timed on-again off-again macroeconomic stimulus, has been told many times, and is still unfolding; I will not reiterate it here.

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12 In our case, savings and loan institutions (S&Ls), banks specialized in financing residential mortgages, were effectively rendered insolvent in 1979, when interest rates on deposits jumped above the returns they earned on their portfolios of fixed-rate 30 year mortgages. Various “quick” fixes were tried for 10 years, vastly increasing the costs of closing them down and paying off depositors. It was only in 1989 that the Resolution Trust Corporation was established to purchase their bad assets; RTC operations continued through 1995. The process thus took 16 years. However, the danger was well known, as S&L profits plummeted every time interest rates rose. Congress tabled reform proposals in 1969 that would have prevented the crisis from occurring in the first place.

Similarly, regulators exercised forbearance in 1983-84, when banks suffered losses on loans to Latin America (most of which were booked before 1980). It was only with the issuance of Brady Bonds in 1989 that they were forced to start writing down these assets. This allowed, for example, the government to avoid shutting down Citibank and several other money center banks, which were already weak due to bad commercial real estate loans that paralleled the losses of S&Ls. I would argue that the US was merely lucky that the banking sector successfully outgrew its problems, not that we had better policy.
D. Summary

Thrift, a learned trait, imposed a high price on the Japanese economy. Its continuation as growth slowed faced those in charge of macroeconomic policy with an impossible challenge, as demand chronically lagged the supply potential of the economy. It also meant that the flow of funds shifted, and financial institutions proved unable to adjust to this. The “bubble” was thus but one symptom of this more fundamental set of problems.

In this Japan will not be unique. Rapid growth in other Asian economies has already produced shifts in their flow-of-funds that undermined tried-and-true rules of controlling leverage, leading to so far fleeting but nevertheless costly financial crises. As these economies see their population age, and investment fall, they too will face the paradox that plagues Japan today. China will be the most vulnerable.

IV. The Aging Society: Assets and Liabilities in Japan’s Future

Japan is now on the threshold of one of the most fascinating transitions in human history: natural population decline due to an increasingly elderly population. This is not a prediction; it has in a sense already happened. That is because at any point in time the size of the adult population 20 years hence is already known, since we know the number of children in the population. [See Figure 11.] Even a large rise in the birthrate cannot change that – and since Japan’s birthrate has declined monotonically for over 50 years, there is no reason to expect change on that front.\(^{13}\)

\(^{13}\) Immigration to rise during the coming decade. Japanese society is flexible in this regard; I lived in a section of Tokyo that, during the height of the “bubble” in 1991 had over 10% non-native residents. However, it would require a very large influx – over 300,000 a year – to offset the population decline, leaving 1/6th of Japan’s population comprised of (presumably Asian) newcomers by mid-century. This might have happened, alleviating the negative forces stressed in this paper, had the bursting of the “bubble” not led to a premature collapse of growth. Migrants are by nature ambitious, and are now less inclined to look toward Japan.
This transition ought to be of interest to all social scientists. There is a small body of literature in anthropology and sociology on cities and regions where the young have moved out. Perhaps that gives some sense of what Japan’s society will soon look like, but in general there is comparatively little work on this topic. Economists are no different. There is a growing literature on “generational accounting” and on projections of social security costs. However, while our students have a vested interest in such topics, we do not; it is difficult to motivate researchers (and those who fund them) to devote their professional lives to predicting the shape of their grandchildren’s world.

Various analytic approaches offer insight. The growth accounting of Section II above provides one such framework: a falling labor force will likely to lead to declining aggregate output. Section III can be extended as well: those retired dissave (or at least save less, and pass on assets to their heirs), so that as the number of elderly increases, Japan’s savings-investment imbalance will ease. However, this transition will occur gradually, and it will probably not be until the decade after 2010 that Japan will see relief from its current surfeit of savings.\(^{14}\) Both stock and flow analyses suggest that Japan’s economy will show minimal growth for the remainder of our lifetimes.

Here, however, I want to look at the future economy by listing up the liabilities the government has incurred, and the assets it has to offset these. Japan, like most developed countries, set up a social security system in the early 1960s that includes cash payments to retirees and provides comprehensive health insurance. This represents a large liability. Though the Japanese health care system is far more cost effective than that of the U.S., as the population ages, obligations will rise inexorably. Reforms, such as funding nursing homes and care at home as alternatives to hospitalization, can only pare the rate of increase. Indeed, per person costs for the elderly have risen by 33% over the past decade, as modern medicine extended life

\(^{14}\) However the decline of the working age population will also engender a wane in investment and slower growth in the capital stock. This makes projections of the net impact on private savings (S – I) quite sensitive to assumptions.
expectancy.\textsuperscript{15} Likewise delaying the age at which pensions begin only make differences on the margin.\textsuperscript{16}

Another contrast with the US is that the current generation is saving. However, output in an economy cannot readily be stored. While investment can expand total future output, health care services are consumed when they are produced. Hence the burden of caring for tomorrow’s elderly ultimately rests upon tomorrow’s workers. An aging society means that this burden will increase, and so the share of the national pie that workers will be able to consume will come under pressure, indeed will fall considerably.

The ratio of elderly to those in the working age population is one quick indicator of the magnitude of these pressures. Today it is about 27\% (3.7 people age 20-64 for each elderly person); by 2025 that will rise to 47\% (or a mere 2.1 working-age adults per retiree). A declining number of youth will only partially compensate for that, for reduced costs for education will be replaced by (much) higher costs for health care. On net the costs to those of working age must still rise, and indeed the age structure guarantees that they must rise significantly from a macroeconomic perspective.

Second, the fact that the saving rate is high is of scant benefit. At first glance, some of the costs will be born by the elderly, as they dissave. However, this requires that someone else be

\textsuperscript{15} Health care is, as a first approximation, both comprehensive and compulsory, and hence avoid some the “adverse selection” issues. In contrast, under the US patchwork of overlapping providers, many relatively healthy individuals are allowed to opt out from contributing, undermining the viability of insurance. The result is both the haphazard provision of health care, and unfairly high costs for those who have insurance and must indirectly pay for those without. In addition, from a US perspective, Japanese health care costs are quite low. It is not, however, that Japan is unusually efficient, but that no other nation has a health care system as inefficient as ours. We not only have costs almost twice as high, but under an array of public health metrics we also have poorer delivery of services. Note, though, that Japanese retirement benefits are more generous than ours.

\textsuperscript{16} Delaying the age at which retirement benefits can be received by one year both delays the onset of fiscal pressure and permanently shifts the ratio of those working to those retired by a percent or two. The effect compounded over decades is large, and must be modeled in any attempt at detailed projections. It is not critical to my analysis, which is qualitative in nature.
saving, in order to buy their assets. Indirectly, therefore, those of working age population still bear a burden, since they must reduce their consumption to generate the savings to purchase the assets of the elderly.\footnote{One “traditional” way to do this was for children to provide for the elderly; in return, they would inherit the family farm or home – realistic in that, unlike in Germany (but similar to the US), 60% of households own their residence. However, this system is breaking down, because the burden of caring for parents can outstrip a family’s current resources, since the children of the elderly may themselves be nearing retirement. In any case, the underlying adjustment – children must reduce their own consumption to provide for the elderly – is identical. It is just harder to generate accurate data as to the magnitude of within-household provision. A recent attempt to do this is Horioka et al. (2002); they find little evidence of a conscious behest strategy in Japan.} That choice, of course, is voluntary. In contrast, if current levels of social security and health care support are maintained, then social security taxes must rise to 30% of income, generating an effective income tax rate in excess of 50%. Alternatively, the consumption tax must go from its current level of 5% to 25%, and benefits must be cut.\footnote{This is Japan’s national sales tax. The US is the only developed country without a national sales tax or national value added tax.} In any case, this represents a swing of 10% of GDP – a large but not impossible amount.\footnote{Since there are a wide variety of baselines used, it is not possible to directly compare such estimates. The 10% number is my back-of-the-envelope extrapolation, from the shares of income (or consumption) in the economy. It is consistent with the tabulations in OECD (1997), and roughly comparable to that of Dekle (2002).}

It is very hard to peer into the future, but a shift in taxes of this magnitude cannot help but be politically contentious. What is already certain is that that process will be inequitable: those already retired benefit relative to their children. Today’s elderly are drawing national pensions and receiving national health insurance. But under the \textit{status quo ante} level of benefits and taxation, they incurred few obligations in their younger days to support their own parents. Younger Japanese face a different situation: they will have to pay high taxes to provide for the elderly, but will in the most optimistic scenario not receive higher benefits. Realistically, they must expect to receive substantially \textit{less} than their parents, and already the government is moving both to extend the retirement age and to reduce payouts. How will the youth of today react to an environment in which they work to pay taxes, but have to look forward to a less...
comfortable old age for themselves? Again, this is to my knowledge a novel situation, and we will have much to learn from observing what happens in Japan.

Let me attempt one very different way to summarize the dilemma, which is to try to add up the assets and the liabilities of society, through an informal extension of generational accounting. For the public sector, this can be done by adding up the benefits that a given generation can expect to receive over its lifetime, under the current structure of government programs. This ranges from education provided to the young, to the police and fire services provided for all citizens, to the social security provisions the current structure would provide for them when they are old. Properly discounted, this provides a summary of public sector liabilities to a given age bracket. Similarly, using current tax levels and projections of future income, public sector assets are estimated. Obviously such a procedure requires many assumptions, and so can only provide a sense of the general magnitude.

The bottom line, however, seems relatively robust: the Japanese public sector is fundamentally bankrupt. In order to balance assets and liabilities, some combination of increases in taxes and reductions in benefits will be necessary. This is a reiteration of what was stated above, that a large rise in taxes plus cuts in benefits are needed. However, it serves to highlight that the differences will be across generations, and stresses the magnitude of changes that must sooner or (not too much) later be made. The normal summation of generational accounting exercises focuses on the generational disparities. The extreme case older retirees, who are receiving 8 times what they paid in while they were working. Such a disparity is clearly not sustainable. Those just entering the labor force will pay out more than they receive. Indeed, the current generation appears to be leaving the next generation short by about 10% of GDP.

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20 In practice, this is netted out, under the assumption that most of the benefits accrue to current taxpayers, who thereby pay for such benefits, and in a manner that does not single out only some members of society. In contrast, it is possible to link the benefits of education to a particular generation or cohort, whereas the costs are born by older generations of taxpayers.
Again, as noted above, that is not an insurmountable burden, but it understates the true magnitude of government liabilities. That is because we also should add in the costs of bailing out the financial sector into this framework. The banking system is insolvent, with very low levels of capital and bad loan losses conservatively estimate at ¥25 trillion, or 5% of GDP. Guarantees to depositors mean that the government will ultimately be responsible for much of this. Problems do not end there. The Japanese post office is the world’s largest financial institution, with ¥250 trillion ($2.5 billion) in deposits. These funds have been handed over to the government, which has used it through FILP (the Fiscal Investment and Loan Program) to underwrite the construction of toll roads, bridges, and railroads, and to support small business loan guarantees and a host of other programs, including subventions to local government.21 Many of these individual programs have not only run operating deficits for their entire history, but hold assets of little value. Bridges that no one will never pay back the bonds issued to cover construction costs. For all practical purposes, the government is liable for this difference. FILP-related losses likely will total ¥75 trillion, or 15% of GDP. In addition, life insurers face many problems, and must unilaterally reduce payouts on policies if they are to remain solvent; since Japanese hold a much greater amount of their wealth in insurance than do Americans, this also needs to be factored in. At the moment, therefore, the liabilities of financial institutions, public and private, are at least ¥100 trillion, or 20% of GDP, larger than their assets.

Losses of this magnitude certainly can be born; how that will be done in practice is unclear (Beim 2002). Japan already has (gross) government debt of 150% of GDP, and is currently running a fiscal deficit of 9% of GDP.22 In the short run that is not a problem, because interest rates are now extraordinarily low. As a result, the government’s interest payments on its

21 Current reform proposals will let the postal savings system invest some of its own assets – which, since it lacks any such experience, it is unlikely to do well, as argued in Section III.

22 Some of the bad government assets noted above are already included in this gross number and so are double-counted. In contrast, good assets need to be deducted. I have not tried to make these corrections; I believe that such increased accuracy would not change the qualitative nature of the results I present.
ballooning debt actually are smaller than they were a decade ago. Nevertheless, the government will need to begin cutting its deficit before the end of the decade; Prime Minister Koizumi is pushing for austerity now. Adding in 20% to cover bad debt, and another few years of cumulative deficits, and governmental debt will reach 200% of GDP. Such debt can be rolled over, but interest must at least be paid. If interest rates rise to 3% (from the current .75%) then this will increase interest payments by 5% of GDP.

Let us add all these up. [See Figure 12.] A 9% of GDP increase in taxes (or decrease in benefits) to eliminate the deficit; a 5% of GDP increase in taxes to cover the servicing of government debt; and a 10% increase in taxes to cover the costs of the retiring generation. This gives an increased tax burden of 24% of GDP. Currently regular taxes comprises 23% of GDP and social security taxes another 14%, for a gross tax rate of 37%, roughly the level of the US and the UK. Future changes will thus push the gross tax rate to 61%, roughly the level of France. Japan would move from the low end to the high end of tax rates in the OECD. Such a change is thus clearly feasible. But tax increases will depress what would otherwise be at best slow economic growth. I thus do not expect the Japanese economy to grow again on a sustained basis during my lifetime.

V. Conclusions

I have employed 3 simple approaches to look at Japan’s economy. One is a basic “growth” accounting exercise, which looks at changes in the stock of the factors of production. Since the labor force is currently declining and will continue to do so for at least another 3 decades, this suggests slow or no growth into the foreseeable future. Second, the flow of savings in the economy shifted markedly during the postwar era. This underlies both the bubble, and the current banking crisis. The “paradox of thrift” that Japan faces due to this combination of high savings and low investment provides a separate impetus towards slow growth; this imbalance is

Data are for 1999, but levels of aggregate taxation tend not to change quickly. See Table 3-7 in Keizai Koho Center. Japan 2002: An International Comparison.
also likely to continue through the end of the decade. Finally, both the government and financial institutions have incurred a vast array of liabilities to the current generation, from promises to provide retirement benefits and health care to promises to guarantee the value of bank deposits and insurance policies. Unfortunately assets – including bank loans to healthy companies, fiscally sound public works projects, and future tax revenues – are much lower than financial sector and government liabilities. Furthermore, the starting point is high budget deficits. To avoid reneging on promises to retirees and savers, and to eliminate deficits, will require an increase in taxes by 25% of GDP. The fiscal drag that will result is the third reason that the Japanese economy will not grow again.

All of these issues are linked, directly or indirectly, to Japan’s demographic transition. Some of these problems are unavoidable, such as the rise of the dependency ratio of retirees to current workers. But others are in part a consequence of poor policy; financial bubbles are not inevitable, and the burden of thrift need not be so high. Analyzing these is important. The US, too, has an aging population, though Europe in general will age more quickly. But the real beneficiary of such analysis will be China. The precipitous drop in the birthrate that coincided with the end of Mao’s pro-natalist policies means that its aging process will occur even more rapidly than Japan’s or Europe’s. Analyzing Japan not only provides useful fodder for standards sorts of economic analysis, but also food for thought for those looking at the rest of Asia.
Bibliography


Ezrati, Milton "Japan’s Aging Economics." Foreign Affairs 76, no. 3 (May/June 1997): 96-104.


Real GDP Growth

The approach of Katz (1998)

May 2003

Smitka, The End of Growth

Figure 1
Real GDP Growth

The approach of Katz (1998) - but there’s more than one break!
Multiple and large swings - business cycle analysis of Japan

Figure 3

Real GDP Growth

May 2003

Smitka, The End of Growth

Figure 3
Real GDP Growth

Long-run trends - growth accounting analysis
### Growth Accounting for Japan

<table>
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<tr>
<td><strong>1.78</strong> Labor</td>
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<tr>
<td>+0.11 Hours</td>
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<tr>
<td>+1.09 Workers</td>
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<td>(agri, EOS, trade)</td>
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</tr>
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<td><strong>9.56</strong> Total</td>
<td><strong>3.24</strong> Total</td>
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May 2003  
Smitka, *The End of Growth*  
Figure 5
Growth Accounting
% pa contribution: an empirical study

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<td>1.6</td>
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Growth Accounting, 2010

- **-0.6 Labor**: Hours -0.2 Workers -0.4 Educ +0.0
  (Assumes -0.6% avg drop in working age pop plus continuation of long-run decline in hours worked & declining participation by elderly)

- **+0.1 Capital** (low investment in new physical capacity)

- **+1.0 Knowledge** (continued technical change)

- **+0.1 Structural** (shift of xs workers to services)

- **+0.6 Total** (my back-of-the-envelope best guess)
Savings and Investment Flows
1990-2001 figures are my calculations from SNA data
- light coloring indicates a savings surplus -

Net Household Savings Supplied
Net Investment Funding Demanded $I_a$ (Household Savings)
Japanese Savings-Investment Balances
1968 SNA from Lincoln (1988) updated with data from David Campbell

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May 2003
Smitka, *The End of Growth*
Figure 9
## Japanese Savings-Investment Balances

*Smitka calculations from 1993 SNA data; land transactions excluded*

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<th>Government Investment</th>
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Figure 11

Age Composition of Population

- 0-14 years
- 15-64 years
- 65+ years

May 2003
Predictable Changes in Japanese Taxes

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<td>Debt Service Increase</td>
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<td>[200% \text{of GDP} \times 3% \text{less current level}]</td>
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<td>Social Security</td>
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<tr>
<td>Total</td>
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<td>Current Tax Rate</td>
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<tr>
<td>Future Tax Rate</td>
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Effects of Strategy-HRM Alignment on Business Performance: A Test for Japanese Manufacturing Firms

Norihiko Takeuchi *
Aichi Gakuin University/ Japan Society for the Promotion of Science

Abstract
This study attempted to examine the interaction effects of business-level strategy and HRM policies upon performance among Japanese manufacturers, in response to the current debate around the contingency fit proposition in the field of strategic human resource management (SHRM). Specifically, it was hypothesized that the three generic strategic types (cost reduction, differentiation (innovation), and quality enhancement) would moderate the relationship between particular HRM policies and the performance of Japanese manufacturing firms. The results, based on a sample of 312 Japanese manufacturers operating in the domestic environment, reveal the existence of links between appropriate strategy and HRM policies in predicting performance, providing strong support for the proposition of contingency fit from SHRM theory. The findings are used to discuss how Japanese manufacturers can align their HRM policies with business strategies to increase manufacturing performance. Limitations of the study and directions for future research are also considered.

1. INTRODUCTION

There is no doubt that Japan established itself as an economic super power during the 1980s, with a number of competitive manufacturing firms emerging in the global economic arena (e.g. Beechler & Bird, 1999; Fujimoto & Ulrich, 1997; Kenney & Florida, 1993; Liker, Fruin, & Adler, 1999). Although some progressive Japanese manufacturers have continued to take the initiative as leaders of a global economic market, it has now been recognized by both researchers and practitioners that many others are facing serious economic challenges, in both domestic and overseas markets, after the decline in Japan’s economy in the early 1990s (the bubble bursting period). Japan’s economic recession in the past decade has been related not only to deficiencies in the political and legal environment but also to inefficient management (Porter, Takeuchi, & Sakakibara, 2000). Many firms have been shackled by the use of so-called Japanese-style management, based on traditional ways. Recognizing this potential problem, some firms have attempted to transform their business and management practices by integrating Western concepts with traditional Japanese ideas (Japan Federation of Employers Associations, 1995). In the specific area of human resource management (HRM), two basic principles which characterized Japanese-style management, namely lifetime employment and seniority-based wage, have been significantly modified in order to enable firms to cope with the dynamic and competitive pressures now surrounding them (e.g. Morishima, 1996; Takeuchi & Wakabayashi, 1998, 1999; Tapp, 2001; Wakabayashi, 2001).

In such a period of transformation, it is of critical importance to understand how firms
can change their existing HRM policies and practices and build an appropriate new HRM system in such a way as to ensure they can deliver their competitive strategies in the market. Previous theoretical research on strategic HRM (SHRM) has advocated that firms performance can be predicted not only by the internal/horizontal appropriateness or fit of their HRM policies and practices, but also the external/vertical alignment between corporate-level business strategy and HRM policies and practices (e.g. Becker & Gerhart, 1996; Ferris et al., 1998; Guest, 1997; Schular & Jackson, 1987; Wright & Snell, 1998). In other words, both internal and external consistency should be largely retained to enable firms to pursue improved economic performance within the market economy. In the past, strategic thinking about individual HRM practices has usually meant little more than long-range planning, such as succession planning in a human resources development program (Lado & Wilson, 1994; Lawler III, 1984, 1986). However, current work on SHRM has moved on from this to examine how the evolution of interlinked sets of HRM policies and practices is influenced by organizational strategies and environmental contingencies (Becker & Gerhart, 1996; Wright & Snell, 1998). The term strategy denotes fundamental choices about organizational intentions and implies the capacity to deploy and/or obtain the capabilities and resources, including employees and human resource practices, needed to realize those intentions. Thus, it may be assumed that organizations human resource policies and practices should reflect their strategies. Contingency theorists rely on this view and have examined the vertically appropriate fit between organizational systems, including HRM policies and practices, and the business environment (Dotty et al., 1993).

Within this perspective, it can be assumed that differentiation between firms potential competitiveness should depend not on the extent to which they can acquire the best practice versions of policies and practices, but on their ability to accumulate the knowledge required to adapt their management systems appropriately and quickly to a dynamic, uncertain and complex external market environment. Given this approach, firms can co-evolve with the environment and learn/unlearn their frame of reference through their corporate behavior in order to cope with the complexity, uncertainty, and unpredictability surrounding organizations. Embedding and strengthening this type of organizational knowledge within the firm will constitute the ultimate source of competitiveness (Schular, 1992; Schular & Jackson, 1987; Wright & Snell, 1998 Wright et al., 1998). Based on this assumption, HRM policies and practices will be expected to confer an economic benefit on firms when implemented in such a way as to underpin the competitive strategies being pursued to compete in the market.

The goal of this study was therefore to contribute to the research evidence looking at the ways in which firms can align their human resource management policies with business strategy, using Japanese manufacturing firms operating in the domestic environment as a source of information. In doing so the study makes a partial but significant contribution to the extant research on SHRM by testing and assessing the theoretical validity of a contingency fit proposition in the context of Japanese management. Almost all the research in this area has been conducted on domestic firms in North America and/or Europe. The study will also provide HR practitioners and executives with guidelines to help them in making strategic choices between various HR activities in order to deliver their competitive priorities in Japan.

2. THEORY AND HYPOTHESES

2-1. Strategic Types and Analytical Framework

A review of the literature on strategic management suggests that the most widely accepted definition of strategy comes from the work of Schendel and Hofer (1979), who refer
to strategy at the business level as the way a firm competes in a particular market (e.g. Porter, 1986). It is commonly accepted in the area of SHRM that, following the above definition, an organization’s strategy means a summary of its approach to managing its competitive environment (Chadwick & Cappelli, 2002; Cooke & Armstrong, 1990; Sanz-Valle, Sabater-Sanchez & Aragon-Sanchez, 1999). In addition, contemporary research on SHRM tends to treat strategy as a summary of the selection pressures in an organization’s competitive environment. In other words, SHRM researchers tend to use strategy as a lens through which they can view the effects of organizations competitive contexts on their human resource management practices.

The present study presumes that in order to compete effectively in the Japanese market, Japanese firms are expected to exploit three distinct competitive strategies; (1) cost reduction, (2) differentiation and (3) quality enhancement (Cole, 1999; Sanz-Valle et al, 1999; Schular 1992; Schular & Jackson, 1987). In the cost reduction strategy, firms typically attempt to gain competitive advantage by operating as low cost producers and selectively targeting the mass market. The differentiation strategy is used to develop different products or services from those of competitors and the primary focus is on offering something new and different, whilst enhancing product and/or service quality is the primary focus of the quality enhancement strategy. Although in this study we will treat these three competitive strategies as pure types applied to single business units of Japanese firms, a certain degree of overlap may occur. In other words, it is feasible for business units, plants or functional areas to pursue two or more strategies simultaneously (Porter, 1986; Schular & Jackson, 1987). Nonetheless, prior research suggests that even though a firm may do this, the degree of emphasis which it places on different types of strategies will vary (Schular & Jackson, 1987). Thus, an examination of which of the three competitive approaches is the most popular within a single organization may enable us to clarify that firm’s strategic focus for market survival. Therefore, this study takes the position that a firm will choose one of the three competitive approaches named above and will pursue that strategy most aggressively by aligning with HRM policies and practices that best fit the enhancement of its business performance. In other words, firms may be expected to perform better when their HRM policies and practices are implemented in ways that fit in appropriately with their business-level strategic focus.

The basic framework used in this study for analyzing the contingency fit proposition of SHRM can be presented graphically, as shown in Figure 1. Figure 1 demonstrates that two competitive strategies.
how one of the three generic types of business strategies is chosen and then combined with a
particular set of HRM policies and practices in order to establish a strategically competitive
position in Japan. Secondly, there needs to be an examination of the moderation (interaction)
effects of strategy on the relationship between HRM and firm performance. In this study, a
test-theory approach was adopted to examine how the business-level strategy mediates the
relationship between HRM and performance. In essence, testing and identifying appropriate
combinations of strategy and HRM variables to explain better performance from Japanese
manufacturers is our ultimate goal. In the following sections, we will review and clarify those
characteristics of firms’ HRM policies that are considered necessary for, and appropriate to,
each of the three generic types of strategies.

2-2. Hypothesis Building

Cost reduction strategy and associated HRM policies

It is well-known that firms attempting to compete on price will emphasize the need
for significant cost reduction in any aspect of an organization’s functions. Efficiency, rather
than effectiveness, is strongly pursued at all levels (Porter, 1986). Thus, all functional
strategies, including marketing and human resource strategies, are directed towards
decreasing unnecessary expense, an approach which is to be fitted vertically with the
corporate-level cost reduction strategy. Schular & Jackson (1987) point out that firms
pursuing such a strategy have the following organizational and operational characteristics;
tight controls (centralization), overhead minimization and pursuit of economies of scale. The
primary goal of these measures is to increase productivity and efficiency, i.e. the output cost
per person. Therefore, a reduction in the number of employees and/or a reduction in wage
levels constitute the basic human resource policies of this type of organization. In support of
this interpretation, Sanz-Valle et al. (1999) report that the level of employee incentives and
benefits in cost reduction-oriented firms were lower than in companies pursuing the
innovation strategy for a sample of 200 private firms in Spain.

Another important point stressed in the literature is that cost reduction can be
pursued through the flexible management of human resources (Khatri, 2000; Schular &
Jackson, 1987; Sanz-Valle et al., 1999). The key aspects of a flexible human resource
management policy include; (1) increased use of contingent (part-time, seasonal and/or other
short-term contracted) employees, (2) work simplification and measurement procedures, (3)
flexibility in job assignment, (4) emphasis on short-term technical training and development;
and (5) increased proportion of performance appraisal based on short-term, results-based
assessment. Although the details of these methods can differ somewhat across firms, they all
share the goal of reducing the output cost per employee (Schular & Jackson, 1987). Initial
tests of the relationship between flexibility-focused HRM and the cost reduction strategy have
been attempted in Western research contexts. In their study of a US manufacturing plant
Youndt et al. (1996) report that the low cost strategy fitted in well with what they describe as
an administrative HRM policy including hourly pay, individual incentives, results-based
performance appraisal and so forth. Sanz-Valle et al. (1999) suggest that firms applying the
cost reduction strategy will tend to invest less in training and development, and thus their
training approaches will become focused on technical and short-term activities. These results
suggest that in order to significantly reduce personnel expenses and meet the corporate-level
strategic goal of cost reduction, firms focusing on this strategy will develop a relatively short-
term and flexibility-focused HRM policy. Thus, the following hypothesis regarding the
relationships among the cost reduction strategy, a firm’s HRM policy, and performance can
be proposed:
**Hypothesis 1:** The cost reduction strategy will positively moderate the relationship between a flexibility-focused HRM policy and firm performance.

**Differentiation strategy and associated HRM policies**

The imperative for organizations pursuing the differentiation strategy is to become the most distinctive producer. In such a firm, human resource strategies must emphasize the need to maintain a competitive skill base and to motivate employees toward the basis for differentiation (Porter, 1986). Previous research has identified some important implications of the link between the differentiation strategy and HRM policies and practices (e.g. Miles & Snow, 1984; Sanz-Valle et al., 1999; Schular & Jackson, 1987; Khatri, 2000). There is a consensus among SHRM researchers that the successful implementation of the differentiation strategy requires certain types of employee role behaviors, including (1) a high degree of creativity, (2) a longer-term focus, (3) a relatively high degree of cooperation and interdependency, (4) a greater degree of risk taking, and (5) a high tolerance of ambiguity and unpredictability (Becker & Gerhart, 1996; Schular & Jackson, 1987). As such, the fundamental question for differentiation-oriented firms might be how to encourage employees to be more innovative. In particular, HRM policies among such firms tend to have a strong results orientation with the intention of developing a large number of innovative and creative employees (Miles & Snow, 1984; Khatri, 2000). This is linked to an emphasis on job performance/results in personnel assessment, meaning that promotion and compensation decisions are based on the principle of competition among employees. Such a competitive organizational climate strongly encourages employees to behave in a more innovative and creative manner (Cole, 1999; Miles & Snow, 1984). Some empirical work has partially supported this view. For instance, in his study of 194 Singaporean firms, Khatri (2000) found that innovative firms tended to introduce a more performance-based compensation system than did those with strong cost orientations. Sanz-Valle et al. (1999) conclude that firms using the differentiation strategy will compensate employees in relation to their competencies. They also found that such firms could afford higher remuneration, due to their ability to attract qualified, creative and skilled people (taking on both risk and responsibility) necessary for their development. Thus, based on both the theoretical and empirical work on the relationship between the differentiation strategy and HRM policies and practices, we can construct the following hypothesis:

**Hypothesis 2:** The differentiation (innovation) strategy will positively moderate the relationship between a performance-based HRM policy and firm performance.

**Quality enhancement strategy and associated HRM policies**

Some characteristics of HRM policies and practices associated with the quality enhancement strategy have been discussed in the literature on SHRM and quality management (Cole, 1994; 1999; Gillian, 1994; Sanz-Valle et al., 1999; Schular & Jackson, 1987). This work suggests that an explicit orientation to the management of human resources should be the HRM policy which aligns best with the quality enhancement strategy. Schular and Jackson (1987) state that for such firms, all those HRM procedures which involve recruitment and staffing, performance appraisal, and training and development should be standardized to a large extent, as they require to develop employees with the skills necessary to produce high quality products. Schular and Jackson also assumed that the role behaviors required from employees in quality enhancing firms are more repetitive and predictable than
those of employees in firms using the cost reduction or differentiation strategies. Unlike
differentiation-oriented firms, who typically offer a range of new product models to the
marketplace over a shorter period of time, quality-enhancing firms have relatively stable,
narrow and predictable market domains. Such external market characteristics drive such firms
to standardize their HRM policies and practices in ways that can develop skilful human
resources (Cole, 1994; 1999). Hence:

**Hypothesis 3:** The quality enhancement strategy will positively moderate
the relationship between an explicit HRM policy and firm performance.

3. METHOD

3-1. Sampling and Data Collection

The purpose of this study was to confirm the predicted interaction effects of strategy
and HRM upon the financial aspect of firm performance. To achieve this objective, a postal
questionnaire survey was administered during 2002. To identify an appropriate target sample
of firms, we used the database offered by Toyokeizai (2002) which comprehensively lists the
basic information of Japanese firms and is recognized as one of the most reliable business
directories available. After carefully searching the data, 1,093 Japanese manufacturing firms
were selected as potential respondents. Questionnaires were mailed to them with a cover letter
asking them to respond, together with a stamped return envelope addressed to the first
author’s institution in Japan. Several weeks after the initial contact, a reminder letter
accompanied by a duplicate questionnaire was mailed to non-responders in an attempt to
obtain their views. As a consequence, 313 usable responses were received, giving a response
rate of 28.6%.

3-2. Measures

**Human resource management policy**

The questionnaire items developed to capture the effects of strategy-HRM
interactions upon firm performance included the following four aspects of HRM policies: (1)
individual-oriented (as opposed to group-oriented), (2) short-term focused (as opposed to
long-term focused), (3) explicit (as opposed to implicit) and (4) performance-based (as
opposed to seniority-based). These were considered to be the critical policy dimensions of
HRM according to which the firm should correctly select the approach most appropriate to the
corporate-level strategic focus (e.g. Schular & Jackson, 1987). The firm’s choice of each
HRM policy dimension was measured by a multi-item instrument specifically developed for
the current research. Operationally, we included 18 HRM policy items subdivided according
to the above-mentioned four dimensions; individual vs. group orientation (5 items), short-term
vs. long-term foci (4 items), explicitness vs. implicitness (6 items), and performance vs.
seniority basis (3 items). The 7-point Likert scale was used to measure each of these
distinctive HRM dimensions. For each item, two short sentences were positioned at each end
of the scale: one end for one policy dimension (the individual-oriented staffing policy, for
example), and the other end for the conceptually opposed policy (the group-oriented staffing
policy, for example). Respondents were asked to rate the extent to which each HRM policy
choice (e.g. staffing, appraisal, compensation, development and training and so forth) was
close to that of their company. For the items associated with individual vs. group orientations,
the score was assigned to indicate that the higher the value, the more individual-oriented the
firm’s HRM policy. Thus, this measurement scale defined the level of individual-oriented
HRM policy (IND). Similarly, the scoring method for the other items was that the higher the score, the more short-term and flexible (FLX), explicit (EXP) (as opposed to implicit); and performance-based (PER) (as opposed to seniority-based) were their HRM policies.

Before constructing a scale for each policy dimension, we conducted a confirmatory factor analysis (CFA) over the 18-item HRM policy measures to see if they actually were valid operationalizations for this research. Following the recommended method for testing the convergent and discriminant validity of items (e.g. Hui, Law, & Chen, 1999; Lee, Pillutla, & Law, 2000; Podsakoff & Organ, 1986), we tested our hypothesized four-factor model against an alternative one-factor model (in which it is hypothesized that all items are explained by a single latent factor) as well as a null model (in which all items are expected to be totally unrelated). The results confirmed a four-factor structure for the instrument. Its chi-square statistics ($\chi^2 = 310.13, df = 129$) were significantly lower than those for both the null model ($\chi^2 = 1608.47, df = 153$) and the one-factor model ($\chi^2 = 791.26, df = 135$). Various fit indices for the four-factor model, including a goodness of fit index (GFI), an incremental fit index (IFI: Bollen, 1989), a comparative fit index (CFI: Bentler, 1990), and a root mean square error of approximation (RMSEA: Browne & Cudeck, 1993), all achieved the general acceptance limit of a model fit (GFI = 0.90, IFI = 0.91, CFI = 0.91, RMSEA = 0.07), and were reasonably better than those for the one-factor model (GFI = 0.76, CFI = 0.49, IFI = 0.55, RMSEA = 0.13). Thus, the statistical evidence clearly indicated that the respondents of this survey were able to distinguish between the four underlying dimensions of the 18 HRM policy items that subsumed the individual-oriented, flexible, explicit and performance-based HRM policies. The descriptions of all items and the factor loadings ($\_s$) produced by testing the four-factor model can be seen in Table 1. The Cronbach's coefficients of the four HRM policy scales all achieved alphas of around .70.

Business strategy
A number of researchers have developed survey instruments to measure firms strategic orientations. An intensive review of the relevant literature suggests that such studies have employed two basic procedures in an attempt to measure competitive strategy. First of these is the traditional paragraph approach developed by Snow and Hambrick (1980). In this approach, respondents read a short paragraph description of some strategic types and then select the description that best characterizes their business (Balkin & Gomez-Mejia, 1990; Peck, 1994; Bird & Beechler, 1995). The second approach is to measure firm strategy through multi-item scales (Arthur, 1992; Dess & Davis, 1984; Galbraith & Schendel, 1983; Kotha & Vadlamani, 1995; Segev, 1989; Zhara & George, 2000). Given that the paragraph method has been widely criticized for its simplicity and that the multi-item scaling approach is currently more widely accepted, we opted to use the latter.

To measure compliance with the generic archetypes of the three strategic dimensions involving cost reduction, quality enhancement and differentiation and innovation, we used the multi-item measurement instrument developed and validated by Zhara & George (2000) in their examination of the effects of strategy on performance for manufacturing ventures in the US. This strategy measure covered items associated with the above three strategic dimensions, and was considered suitable for this research framework. 8 particular items

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loadings</th>
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<tr>
<td>Individual-oriented HRM policy (IND: = .73)</td>
<td></td>
</tr>
<tr>
<td>1. Emphasizing his/her individual ability to perform jobs in selection and recruitment processes</td>
<td>.65</td>
</tr>
<tr>
<td>2. Training and development policy that develops individual job performance</td>
<td>.72</td>
</tr>
<tr>
<td>3. Reward system that largely reflects his/her individual performance</td>
<td>.58</td>
</tr>
<tr>
<td>4. Emphasizing his/her individual ability to achieve jobs in the performance appraisal process</td>
<td>.70</td>
</tr>
<tr>
<td>5. Encouraging individual-based problem solving among employees</td>
<td>.45</td>
</tr>
<tr>
<td>Flexibility-focused HRM policy (FLX: = .68)</td>
<td></td>
</tr>
<tr>
<td>1. Emphasizing the practice of hiring and recruiting contingent workers such as part-time and/or temporarily contracted workers</td>
<td>.63</td>
</tr>
<tr>
<td>2. Training and developing employees who can accomplish the specific task(s) in a short period of time</td>
<td>.50</td>
</tr>
<tr>
<td>3. Reflecting his/her short-term job performance in total compensation</td>
<td>.48</td>
</tr>
<tr>
<td>4. Emphasizing short-term employment relationships</td>
<td>.57</td>
</tr>
<tr>
<td>Explicit HRM policy (EXP: = .70)</td>
<td></td>
</tr>
<tr>
<td>1. Very explicit criteria in the selection and recruitment process</td>
<td>.56</td>
</tr>
<tr>
<td>2. Setting training and development goals for each employee as clearly as possible</td>
<td>.45</td>
</tr>
<tr>
<td>3. Well-defined rules and criteria for determining employees compensation (including the salary and bonus) for all employee groups</td>
<td>.87</td>
</tr>
<tr>
<td>4. Very explicit and agreeable criteria for assessing employees performance</td>
<td>.85</td>
</tr>
<tr>
<td>5. Offering to a large portion of employees labour contracts with clear job descriptions and employment periods</td>
<td>.43</td>
</tr>
<tr>
<td>6. High standardized methods of quality control being compiled in a manual in great detail</td>
<td>.43</td>
</tr>
<tr>
<td>Performance-based HRM policy (PER: = .70)</td>
<td></td>
</tr>
<tr>
<td>1. Emphasizing an employee’s merits and job achievements (as opposed to age and years of service) in the total pay scale</td>
<td>.68</td>
</tr>
<tr>
<td>2. Personnel assessment that reflects an employee’s merits and job achievements (as opposed to seniority)</td>
<td>.93</td>
</tr>
<tr>
<td>3. Personnel assessment based on the principle of absolute evaluation and/or point-addition scoring</td>
<td>.45</td>
</tr>
</tbody>
</table>

Table 1. The results of a confirmatory factor analysis for the 18-item measures of HRM policies

a. $2(29) = 310.13$, GFI = .90.
corresponding to the three strategic dimensions were used for scaling: 3 for measuring cost reduction, 2 for quality enhancement and 3 for product innovation. Respondents were asked to rate their business on these scales, reflecting their firm’s actual, rather than planned or desired, activities over the preceding three years. The original 5-point response format was modified to increase the variation of this strategy scale, being extended to a 7-point response format ranging from very true (=7) to very untrue (=1).

A CFA was conducted to check the multi-dimensionality of this strategy measure. The results strongly supported the predicted three-factor model of those items involving the dimensions of cost reduction, quality enhancement and product innovation. The fit indices achieved by this three-factor model were GFI = 0.94, IFI = 0.95, CFI = 0.95, and RMSEA = 0.03, indicating a good fit of the model. In addition, the three-factor model was found to account better for the present sample covariance matrix ($\chi^2 = 102.87$, $df = 34$) than the one factor model ($\chi^2 = 295.65$, $df = 40$) and the null model ($\chi^2 = 1099.55$, $df = 52$). The statistical evidence therefore confirmed that the respondents of this study could distinguish the three underlying dimensions of the strategy measure (cost reduction, quality enhancement and product innovation). Descriptions of the strategy items and the factor loadings obtained from running a CFA with the three-factor model are given in Table 2. Finally, the Cronbach’s reliability coefficients of the cost reduction, quality enhancement, and product innovation scales were found to meet the conventional criteria for acceptance with alphas being .70, .78, and .83, respectively.

### Firm performance

Three variables of a firm’s financial performance were used in the study: market growth rate (MARKET), profit margin on sales (PROFIT) and return of assets (ROA). Dess and Robinson (1984) suggest that, in the absence of objective data, self-reported measures constitute an acceptable substitute and are equally reliable. Prior research has also found that organizational performance rated by self-reported measures can be positively correlated with objective performance indicators (Dollinger & Golden, 1992; Powell, 1992). Following the procedure recommended by Dess & Robinson (1984) of measuring perceptual performance in the absence of objective performance indexes, respondents were asked to rate each performance scale on the basis of their firm’s actual, rather than planned or desired, achievements relative to their competitors over the past three years. A 7-point Likert scale was used to gauge the perceptions of the first two aspects of performance (MARKET and PROFIT), ranging from much better than others (=7) to much worse than others (=1). For the performance of ROA, the respondents were asked to indicate the relative standing of their firm with respect to

<table>
<thead>
<tr>
<th>Table 2. The results of a confirmatory factor analysis for the eight-item measures of strategy a</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality enhancement strategy ( = .78)</strong></td>
</tr>
<tr>
<td>1. This company stresses being a high quality producer.</td>
</tr>
<tr>
<td>2. This company competes primarily on the basis of quality.</td>
</tr>
<tr>
<td><strong>Cost reduction strategy ( = .68)</strong></td>
</tr>
<tr>
<td>1. This company pursues market leadership by being a low-cost producer.</td>
</tr>
<tr>
<td>2. This company charges higher prices than competitors (reverse scored).</td>
</tr>
<tr>
<td>3. This company stresses charging the lowest prices in the market.</td>
</tr>
<tr>
<td><strong>Differentiation strategy ( = .83)</strong></td>
</tr>
<tr>
<td>1. This company introduces many new products to the market.</td>
</tr>
<tr>
<td>2. This company introduces more new products than competitors.</td>
</tr>
<tr>
<td>3. This company offers a wide variety of products in its product line.</td>
</tr>
</tbody>
</table>

a. $\chi^2(8) = 102.871$, GFI = .94.
performance, ranging from higher than +10.0% (=7) to smaller than -10.0% (=1).

Control variable

Three variables were considered in order to control for other organizational and environmental forces related to the financial aspect of firm performance when running the regression analysis. These were; 1) the capital stock of a firm, 2) the number of employees, and 3) organizational age in years. The capital stock of a firm (CAPITAL) was gauged through a 5-point response option ranging from JP¥ 10 billion or more (=5), JP¥ 5 to 10 billions (=4), JP¥ 1 to 5 billions (=3), JP¥ 0.1 to 1 billions (=2) to JP¥ less than 0.1 billion (=1). In addition, following the convention for capturing the effects of size and scale on performance (e.g. Delaney & Huselid, 1996), we used the natural logarithm of the number of employees in a firm (log SIZE). Similarly the natural logarithm of organizational age in years (log AGE) was included to capture longevity and maturation effects.

4. RESULTS

4-1. Correlation Analysis

Table 3 displays the correlation matrix of all the variables used in the analysis. Before examining the specific hypotheses listed previously through a moderated multiple regression analysis, we will summarize the major findings from the correlation. Firstly, among the three variables relating to firms’ strategic orientations, a significant and positive correlation was found between differentiation and quality enhancement strategies ($r=0.37$, $p<0.001$). This indicates that the two strategic orientations were interrelated. In other words, firms pursuing the differentiation strategy tended to place an emphasis on enhancing product quality, and thus to perceive their sources of competitiveness as a range of innovative product models as well as the high standards of the products they offered. On the other hand, the cost reduction strategy was found to negatively correlate with the quality enhancement and differentiation strategies. In particular, the negative association between cost and quality strategies was significant, indicating that firms using the cost reduction strategy tended to regard their products as uncompetitive in terms of quality. It would appear that cost and quality were in conflict whilst quality and differentiation were interactive and mutual. These findings suggest that dual strategic orientations may exist within a firm, namely a combined
strategy of quality and differentiation. The existence of such duality in strategic orientations has long been proposed by the mainstream strategic management literature (e.g. Miles & Snow, 1984; Porter, 1986). There are different views on the way in which the quality enhancement strategy can be combined. Within their framework of three strategic typologies - defender, prospector and analyzer - Miles and Snow (1984) assert that quality is more likely to be tied to the defender strategy, under which firms are oriented towards penetrating their dominant market through reducing the scope of their product lines. Porter (1986) proposes an opposing view in which differentiation firms offering a wide range of product lines tend to adopt a quality enhancement approach. The results of this study support the latter perspective in that quality and differentiation are positively correlated. However, this association should be interpreted with caution, since under the current situation of Japan's economic deflation, some Japanese manufacturers have recently emerged who have sought to take the initiative in both lowering costs and simultaneously improving quality, such as Fast Retailing Co., Ltd. (Uni-Qlo).

Secondly, with regard to the relationships between strategy and HRM policies, the differentiation strategy was found to be positively associated with policies that were individual-oriented ($r = .12, p < .05$), explicit ($r = .23, p < .001$) and performance-based ($r = .18, p < .01$). It was negatively associated with short-term and flexibility-focused HRM ($r = .15, p < .01$). This indicates that firms using the differentiation strategy perceived their HRM policies as individualized, standardized, results-oriented and long-term focused. The same pattern of correlations was found between the quality enhancement strategy and four HRM policy variables. In other words, firms pursuing the quality enhancement strategy used the same types of HRM policies as those employing the differentiation and innovation strategy. Again, this might be a result of duality in strategic orientations by the firms, as discussed above. Differentiation (or quality enhancing) firms tend to make the strategic decision to simultaneously pursue quality (or innovation), so the HRM policies of both types of firm will look similar. However, in the previous section, we examined and clarified the differences in HRM policies and practices between firms focused primarily on quality enhancement and on differentiation. Moreover, it is logical to consider that examining strategic fit in relation to performance consequences will enable an appropriate strategy-HRM fit to be identified.

Thirdly, as shown in Table 3, one type of strategy, differentiation, was found to have significant and positive associations with all three performance indicators used in the study, i.e. market share growth (MARKET: $r = .13, p < .05$), profit margin (PROFIT: $r = .15, p < .01$) and ROA ($r = .16, p < .01$). Prior work in strategic management has acknowledged that differentiation-oriented and innovative firms are, by their nature, more likely to perform better than those with other strategic orientations (see for example Porter, 1986). In addition, the size and scale effects on strategies may make the statistical associations between performance and choice of differentiation strategy appear tighter than they are. To check this point, we computed the partial correlation coefficients between the differentiation strategy and the three performance indicators, controlling for two variables that denote firm size i.e. the natural logarithm of the number of employees and the capital stock. The partial correlation coefficients of differentiation strategy with MARKET, PROFIT and ROA were $r = .10 (p > .05)$, $r = .10 (p > .05)$ and $r = .12 (p < .05)$ respectively, indicating that the size of the positive correlation coefficients got smaller when the variables relating to firm size were controlled. Interestingly, the two performance indicators (MARKET and PROFIT) showed non-significant associations with the differentiation strategy when the size variables were controlled. This indicates that the firm's strategy choice in itself does not necessarily matter when predicting firm performance.

Fourthly, some HRM policies were found to be directly associated with variables
individual-focused HRM policy and all three performance measures were significant and positive ($r=.20, p<.001$; $r=.15, p<.01$; and $r=.12, p<.05$, respectively). Even after controlling for the two size variables (a log converted form of the number of employees and the capital stock) in computing the partial correlations between individual-focused HRM and performance, the coefficients still remained statistically significant for all three performance measures ($r=.19, p<.001$; $r=.13, p<.01$; and $r=.12, p<.05$, respectively). This indicates that firms that emphasized an individual-oriented HRM policy also rated their effects on performance relatively highly. Traditionally, the way of managing employees in Japanese firms has been regarded as more group- than individual-oriented. However, this finding suggests that firms adopting individual-based HRM policies, rather than group-based approaches, may enjoy better financial performance. Further analysis would be needed to test whether this association is general or conditional as main effects and interactions can exist simultaneously. In such a situation, the main effect (or direct association) is no longer a general effect, but rather a conditional effect that depends on the specific form of the interactions. In other words, the main effect of HRM upon performance can be interpreted conditionally when certain interactions exist between HRM and other variables (e.g. strategy). This will be tested using the moderated multiple regression analysis in the following section.
To test the specific hypotheses related to the strategy-HRM alignment and its effect on the perceptual measures of firm performance, a series of moderated multiple regression (MMR) analyses was conducted. The aim was to isolate the main effects of HRM policies on performance (i.e. MARKET, PROFIT and ROA) and to independently assess how each business strategy moderated this relationship.

In step 1, the three variables covering firms background information (log of number of employees, capital and log of organization age) were entered into the regression equation as a set. We introduced these variables first in order to control for possible extraneous effects caused by organizational size, scale and longevity. In step 2, a set of business strategy variables (i.e. cost, differentiation and quality) were added in order to control for any effects which strategy might have on HRM policies, firm performance or their relationship. Significant effects here would have indicated a direct relationship between the choice of strategy and the measures of performance.

<table>
<thead>
<tr>
<th></th>
<th>Market share (SE)</th>
<th>t</th>
<th>Profit (SE)</th>
<th>t</th>
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<tbody>
<tr>
<td>Organizational age (Log)</td>
<td>-.08 (.12)</td>
<td>-08 (.12)</td>
<td>-.08 (.12)</td>
<td></td>
</tr>
<tr>
<td>Number of employees (Log)</td>
<td>.07 (.07)</td>
<td>.02 (.08)</td>
<td>-.02 (.08)</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>-.02 (.08)</td>
<td>.00 (.09)</td>
<td>-.01 (.09)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.014</td>
<td>.111</td>
<td>.014</td>
<td></td>
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<thead>
<tr>
<th></th>
<th>Step 2: Strategic orientation</th>
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<tbody>
<tr>
<td>Cost reduction</td>
<td>.05 (.08)</td>
<td>-.03 (.08)</td>
</tr>
<tr>
<td>Differentiation</td>
<td>.11 (.07)</td>
<td>.15 (.07)</td>
</tr>
<tr>
<td>Quality enhancement</td>
<td>-.08 (.08)</td>
<td>-.11 (.09)</td>
</tr>
<tr>
<td>R²</td>
<td>.029</td>
<td>.033</td>
</tr>
<tr>
<td>+ R²</td>
<td>.015</td>
<td>.022</td>
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<tr>
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<th>Step 3: HRM policy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualization (IND)</td>
<td>.22 (.09) ***</td>
<td>.15 (.09) *</td>
</tr>
<tr>
<td>Flexibility (FLX)</td>
<td>-.03 (.09)</td>
<td>.06 (.09)</td>
</tr>
<tr>
<td>Explicitness (EXP)</td>
<td>.06 (.09)</td>
<td>.08 (.10)</td>
</tr>
<tr>
<td>Performance-based (PER)</td>
<td>-.13 (.09)</td>
<td>-.08 (.09)</td>
</tr>
<tr>
<td>R²</td>
<td>.070</td>
<td>.060</td>
</tr>
<tr>
<td>+ R²</td>
<td>.056</td>
<td>.027</td>
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<tr>
<th></th>
<th>Step 4: Strategy- HRM interaction</th>
<th></th>
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<tbody>
<tr>
<td>Cost ? IND</td>
<td>-.04 (.08)</td>
<td>.01 (.08)</td>
</tr>
<tr>
<td>Cost ? FLX</td>
<td>.16 (.07) *</td>
<td>.15 (.08) *</td>
</tr>
<tr>
<td>Cost ? EXP</td>
<td>-.05 (.08)</td>
<td>-.02 (.09)</td>
</tr>
<tr>
<td>Cost ? PER</td>
<td>.01 (.08)</td>
<td>.01 (.09)</td>
</tr>
<tr>
<td>Differentiation ? IND</td>
<td>.04 (.08)</td>
<td>-.04 (.08)</td>
</tr>
<tr>
<td>Differentiation ? FLX</td>
<td>.01 (.07)</td>
<td>.04 (.08)</td>
</tr>
<tr>
<td>Differentiation ? EXP</td>
<td>.00 (.09)</td>
<td>.00 (.10)</td>
</tr>
<tr>
<td>Differentiation ? PER</td>
<td>.18 (.09) *</td>
<td>.15 (.10)</td>
</tr>
<tr>
<td>Quality ? IND</td>
<td>.00 (.08)</td>
<td>.11 (.08)</td>
</tr>
<tr>
<td>Quality ? FLX</td>
<td>-.02 (.08)</td>
<td>-.03 (.08)</td>
</tr>
<tr>
<td>Quality ? EXP</td>
<td>.27 (.09) **</td>
<td>.23 (.09) **</td>
</tr>
<tr>
<td>Quality ? PER</td>
<td>-.03 (.10)</td>
<td>.01 (.10)</td>
</tr>
<tr>
<td>R²</td>
<td>.193</td>
<td>.157</td>
</tr>
<tr>
<td>+ R²</td>
<td>.123</td>
<td>.097</td>
</tr>
</tbody>
</table>

4-2. Moderated Multiple Regression (MMR) Analysis

To test the specific hypotheses related to the strategy-HRM alignment and its effect on the perceptual measures of firm performance, a series of moderated multiple regression (MMR) analyses was conducted. The aim was to isolate the main effects of HRM policies on performance (i.e. MARKET, PROFIT and ROA) and to independently assess how each business strategy moderated this relationship.

In step 1, the three variables covering firms background information (log of number of employees, capital and log of organization age) were entered into the regression equation as a set. We introduced these variables first in order to control for possible extraneous effects caused by organizational size, scale and longevity. In step 2, a set of business strategy variables (i.e. cost, differentiation and quality) were added in order to control for any effects which strategy might have on HRM policies, firm performance or their relationship. Significant effects here would have indicated a direct relationship between the choice of strategy and the measures of performance.
individual-oriented, explicit, flexibility-focused and performance-based) were entered as a set to control for the effects of HRM policy on performance. This procedure eliminated the main effects of HRM policies prior to examining potential HRM-strategy interaction effects (cf. Stone & Hollenbeck, 1989). Finally, in step 4, the cross products of each of the business strategies and HRM policies (i.e. the 12 interaction terms produced by multiplying cost strategy, differentiation and quality in turn with each of the four HRM policies) were entered as a set. Methodologically, the multiplicative interaction terms have often been criticized because they are so highly correlated with the component variables, creating problems of multi-collinearity that can inflate standard errors (Blalock, 1979). To deal with this potential problem, a conventional method of mean centring was applied to create the multiplicative interaction variables, by which the mean value for a variable is subtracted from each score (Cohen & Cohen, 1983; Jaccard, Turisi, & Wan, 1990).

Evidence of moderation can be said to exist when the set of interaction terms accounts for significant residual variance in the dependent variable. Significant interaction effects would indicate that business strategy was moderating the relationship between HRM policies and performance, thereby providing support for the contingency fit proposition that assumes that an appropriate link between business-level strategy and HRM policies will bring out synergistic effects on firm performance. We used the individual interaction term (e.g. cost by flexibility-focused HRM) to test the specific hypotheses (1 to 3) proposed in this study. These hypotheses would be supported if the individual interaction terms accounted for significant residual variance in firm performance.

Table 4 displays the results of the MMR analyses. It can be seen that the results provide basic support for the contingency approach to the relationships between HRM and firm performance. Beyond the main effects of the control, strategy and HRM variables, the overall strategy-HRM interaction effects accounted for significant incremental variances in the market share increase (MARKET: \( R^2_{(3-4)} = .12, p < .001 \)) and the net profit margin (PROFIT: \( R^2_{(3-4)} = .09, p < .05 \)). The results indicate that a firm’s strategy did moderate HRM-performance relationships, thereby providing support for the contingency view of strategy-HRM fit and its effect on performance. In testing the more specific moderation hypotheses, the cost reduction strategy was found to interact positively and significantly with flexible HRM policy to explain all three financial performance indicators (\( \_ = .16, p < .05 \) for MARKET; \( \_ = .15, p < .05 \) for PROFIT; \( \_ = .20, p < .001 \) for ROA), thereby providing strong support for Hypothesis 1. The differentiation strategy interacted positively with performance-based HRM policy to explain MARKET (\( \_ = .18, p < .05 \)) and PROFIT (\( \_ = .15, p < .10 \)), supporting Hypothesis 2. Finally, the quality enhancement strategy interacted positively with explicit HRM policy to account for variations in MARKET (\( \_ = .27, p < .01 \)) and PROFIT (\( \_ = .23, p < .01 \)), providing consistent support for Hypothesis 3.

To clarify these interaction terms, we plotted them using data from the regression equation (Stone & Hollenbeck, 1989). We input the means of the control variables and the high and low values (cut values) for each of the two relevant variables into the regression equation, and plotted four different prediction coordinates. Following the conventions for plotting interactions, the cut values for the high and low states on each variable were set at one standard deviation above and below the mean. Figures 2, 3 and 4 show the pattern of each interaction term. As Figure 2 demonstrates, firms using the cost reduction strategy can improve their financial performance when they adopt a flexible HRM policy, characterized as having a short-term orientation to employment, training and development, performance appraisal procedures and so forth. In contrast, the performance of firms which do not emphasize cost reduction seems to worsen if they implement flexible HRM. Figure 2 therefore suggests that a long-term approach to managing human resources may be an
Next, as shown in Figure 3, firms pursuing the differentiation strategy can enjoy a large market share when they adopt a performance-based HRM policy, characterized by a results orientation in developing, compensating and managing human resources. Interestingly, Figure 3 shows that the performance of firms which do not place any particular emphasis on differentiation or innovativeness in their products may significantly decrease if they employ performance-based HRM. Finally, as Figure 4 shows, quality-oriented firms can enhance their market performance when they adopt an explicit HRM policy, involving the standardization of all HR and quality management processes. However, employing such a policy seems to lead to relatively poor performance in firms which do not emphasize quality. We plotted the interactions between strategy and HRM in relation to the net profit margin variable (PROFIT), and found that the patterns of interactions in predicting profitability were almost the same as those predicting market performance (i.e. as shown in Figures 2 to 4). Thus, the same framework of strategy-HRM interactions can be applied to explaining the profitability of the firms included in the sample.

Overall, the moderation results provide strong evidence that strategy influences the relationship between HRM and performance. In summary, a cost reduction strategy interacts with flexibility-focused HRM, a differentiation strategy with performance-based HRM and a quality enhancement strategy with explicit HRM to predict financial performance. All these findings are consistent with Hypotheses 1, 2 and 3. In short, maximizing performance appears to depend on aligning HRM policies appropriately with corporate-level competitive strategy.

5. DISCUSSION
The primary purpose of this study was to test the effects of strategy-HRM alignment on firm performance in the light of the current debate on the contingency view in the field of SHRM research. Most research of this type has focused solely on testing the main effects of particular HRM policies and practices upon firm performance, providing evidence to support the best practice approach (e.g. Fey, Bjorkman, & Pavlovskaya, 2000; Harel & Tzafrir, 1999). Another strength of this study is that we explored the questions using a sample of Japanese manufacturers operating in the domestic market. Most research to date has focused on North American and/or European firms. The major findings of the study can be summarized and evaluated as follows.

Firstly, the three generic typologies of business strategy proposed by recent studies in SHRM (Schular & Jakson, 1987; Sanz-Valle et al., 1999) and manufacturing management (Zhara & George, 2000) were found to reflect the current strategic alignments of the Japanese manufacturing firms sampled here. Traditionally, US and European studies have examined strategy-HRM relationships using the classic strategy typologies of Miles and Snow (1978) or Porter (1980), which may be considered insufficient for use with a Japanese sample. These classic typologies, which classify firms strategies into two to three types depending simply on their involvement in different market segmentations, have been criticised as having too narrow a focus in more recent studies on SHRM (e.g. Chadwick & Cappelli, 2002). In this research, it was both vital and effective to augment Porter's framework of cost leadership and differentiation strategies with the quality enhancement strategy, as the latter is widely adopted by Japanese manufacturers. Our confirmatory factor analysis provides evidence that all three strategic typologies were valid operationalizations among the sampled firms. Nevertheless, given the increasing complexity, competitiveness and global nature of the Japanese market, we recommend that future studies should explore new strategic dimensions specific to Japanese firms, enabling the discovery of a set of HRM policies and practices to be aligned within this cultural context.

Secondly, our correlation analysis indicates that a firm's adoption of individual-oriented HRM policies was significantly and positively associated with performance. In addition, the MMR analysis shows that individual-oriented HRM policies had significant and positive effects on three measures of financial performance, despite the absence of interaction effects between individual-oriented HRM and any strategic dimensions of firm performance. This implies that the effects of individual-oriented HRM policies on the performance of Japanese manufacturers may be general rather than conditional. In this respect, an individual rather than a group orientation to the management of human resources, characterized by practices such as individual performance-based compensation, individual-based training and development and so forth, may function as a competitive HRM policy which can sustain the enhancement of performance among Japanese manufacturers. Traditional Japanese-style management has been characterized by team-based, group-oriented approaches that fit well with the culture of collectivism in Japanese industrial society (Hazama, 1968; Ouchi, 1981; Hofstede, 1980). However, since the bubble bursting of the Japanese economy in the early nineties, most Japanese corporations have been trying to transform their traditional group-oriented HRM policy into a more individual-focused approach. Therefore, the present findings can be interpreted to suggest that the successful adoption of individual-oriented HRM policies had led to an improvement in performance for Japanese firms operating within the current dynamic environment. One possible theoretical explanation of this situation is based on the current debate on convergent and divergent theories. Best practice theorists support the convergent view, assuming that particular sets of high performance HRM policies and practices will/should be universally applied to any type of organization, and
words, following the convergent view, the existing, culturally diversified, HRM systems in existence worldwide are assumed to converge into the best practice versions. Thus, it might be partially true to state that there exist some elements of convergence in the relationships between HRM and performance.

Thirdly, the MMR analysis clearly indicated that each of the three strategic dimensions (cost reduction, quality enhancement and differentiation) mediated the relationship between HRM policies and firm performance. Specifically, three interaction terms were found to be significant in predicting market growth and profitability. The cost reduction strategy fits well with a short-term, flexible HRM policy, and the differentiation strategy requires performance-based HRM to deliver its pursuit of improved organizational performance. In addition, the findings also suggested that the quality enhancement strategy necessitated the use of clear and standardized (i.e. explicit) HRM procedures so as to enable firms to produce products to a high quality standard and thus improve performance. All these findings are consistent with the assertions made by prior theoretical studies on SHRM that different types of HRM policies are required by firms undertaking each strategic dimension (e.g. Miles & Snow, 1984; Schular & Jackson, 1987). Given that so far little empirical evidence, even in Western research contexts, has been produced to enable researchers to test the effects of strategy and HRM interactions upon performance, the findings of this study may contribute to our understanding of the ways in which firms pursuing different strategies adopt particular sets of HRM policies and practices. In practical terms, the results can help Japanese manufacturers to make strategic decisions about which HRM policies should be applied given the strategy that they are pursuing overall.

Finally, notwithstanding these contributions, this study has several limitations, which means that care must be taken in interpreting the results. Firstly, in relation to the significance of the strategy-HRM interactions on firm performance, the regression analysis shows that the variances in the two measures of financial performance explained by the incremental effects of sets of strategy-HR variables were not necessarily large. After controlling for the main effects of background, strategy and HRM variables on performance, the variances were 12.3 percent for MARKET, 9.7 percent for PROFIT and 5.4 percent for ROA. This calls into question whether or not these interaction terms, when isolated, would bring a substantial practical economic benefit to firms, even though the concept remains theoretically valid. As Huselid (1995) points out, however, although the impacts of HRM on performance are relatively small in statistical terms, the actual dollar outcomes may be quite large.

Secondly, this research employed three perceptual measures of financial performance; market share, profit rate and ROA. These performance indicators may capture the relatively short-term performance outcomes of a firm. However, HRM can be regarded as an asset constituting a source of sustainable competitive advantage through the creation of valuable, rare, inimitable and non-substitutable human resources in organizations (Barney, 1991; Pfeffer, 1994). This being the case, an examination of the effects of a firm-level strategy-HRM interaction on employees behavioral outcomes would provide more powerful evidence with which to assess the theoretical validity of contingency fit (Takeuchi, Wakabayashi, & Chen, Forthcoming). It is recommended that future studies employ an improved research design to capture employee behavioral outcomes by collecting data from multi-level informants. In fact, an initial test of this sort has been attempted by Whitener (2001), who demonstrates that organizational-level human resource activities did affect employee commitment according to a multi-level analysis using hierarchical linear modelling (HLM). Thus, an examination of how the relationships between a firm s HRM policies and practices and employee behavior are contingent on corporate strategy would be an important direction for research.
which information on various HRM activities and firms’ outcome data were collected at the same time. This design limited its power to confirm the actual causalities among strategy, HRM and performance functions as well as their sequencing. In reality, there is a conflicting argument within SHRM research as to whether strategy supports HRM or HRM supports strategy. In order to address this issue, a longitudinal survey design in which data on different groups of variables (i.e. strategy, HRM and performance) are collected over adequate time intervals, as well as appropriate sequencing, would be required.

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Job scope, decision latitude and job burnout: An empirical investigation among airline employees in Japan

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ABSTRACT

This research focuses on the study of occupational mental health among airline employees in Japan. The purpose of the current investigation is to analyze the moderating effects of role overload, job scope, decision latitude, and job involvement in predicting occupational mental health and organizational commitment. A sample of 90 employees from eight major international airline companies located in Japan was used. Findings indicate that job scope moderates the effects of job involvement on emotional exhaustion, depersonalization and organizational commitment. Role overload interact with decision latitude in predicting diminished personal accomplishment. Furthermore, job scope and decision latitude interact in predicting organizational commitment. Implications for managers and future research are presented.
INTRODUCTION
Japanese employees who work in the airline industry are required to maintain high levels of performance, and must cope with high job demands. Employees who want to progress in their career must adequately respond to the needs of the organization of which they are members. Recent economic downturns transformed the workplace in Japan. Working for companies that offer possibilities for promotion and work stability is now more of a concern than before (Dedoussis, 2001; Palumbo & Herbig, 1994). To remain competitive airline companies must enhance quality of service by increasing employee competencies. As a result, we can expect an increase in job demands. When extensive job demands are to be fulfilled without adequate resources and in the face of serious negative consequences, distress results. Repeated episodes of stress without appropriate coping mechanisms usually provoke the syndrome of burnout that manifests itself through emotional exhaustion, depersonalization and diminished sense of personal accomplishment (Maslach & Jackson, 1981). Acute symptoms of burnout usually lead to depression and negative work attitudes that reflect in employee withdrawal behavior and indifferent individual performance (Baba, 2000; Baba, Jamal, & Tourigny, 1998).
Furthermore, Japanese work ethic, which emphasizes the values of benevolence, tradition, conformity, universalism, and achievement (Ralston & Holt, 1997), can contribute to increased job stress and emotional exhaustion when jobs are designed in a way so as to restrict the autonomy of workers who must cope with high job demands (Arimitsu, 2001). The job strain model (Karazek, 1979; Karazek & Theorell, 1990) suggests that employees should exercise enough job control to cope with job demands. There is evidence that job control reduces experienced psychological stress (Noblet, Rodwell, & McWilliams, 2001). When increased job demands are not matched with adequate control or decision-making autonomy it exacerbates the effects of job pressure, which is detrimental to occupational mental health (Karasek & Theorell, 1990; Schabracq & Cooper, 2000).
Furthermore, job characteristics and employee job attitudes can affect occupational mental health. Decision latitude and job scope are two important predictors of occupational stress (Karazek, 1979), which can interact in predicting occupational mental health (see Xie & Johns, 1995). Job involvement can increase one’s level of occupational stress (Baba, Jamal, & Tourigny, 1998). Research is needed to investigate the extent to which job involvement and job characteristics can jointly affect occupational mental health. There is a need to understand how job characteristics, role stressors, and job attitudes affect occupational mental health. This paper seeks to disseminate knowledge on the effectors of occupational mental health. We focus on the specific influences of role overload, job scope, decision latitude, and job involvement on the dimensions of job burnout. We finally explore the interaction effects among these variables in predicting burnout and organizational commitment.
THEORY AND HYPOTHESES

Role stressors

We define occupational stress as a state of being resulting from the tension caused by a perceived imbalance between work demand and what one can offer by way of meeting that demand (Karazek, 1979; Karazek & Theorell, 1990). In the current nomological network of variables that constitutes the overarching domain of research in mental health, role stressors are predictors of occupational mental health (Baba & Harris, 1989; Baba, Jamal, & Tourigny, 1998; Kelloway & Barling, 1991; Lee & Ashforth, 1996; Leiter, 1993). Role stressors include role ambiguity, role conflict and role overload (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; see also Baba & Harris, 1989; Maslach, Schaufeli, & Leiter, 2001). Acute work-related stressful experiences contribute to psychological stress and depression among Japanese employees (Tennant, 2001). One of the occupational factors that affect mental health is role overload, a source of workaholism among Japanese employees, which can decrease enjoyment of work (Kanai, Wakabayashi, & Fling, 1996), provoke fatigue, symptoms of burnout, depression, and karoshi (sudden death due to overwork). Role overload is particularly relevant in the airline industry for analyzing stressful situations among employees who must cope with multiple and critical demands in a timely manner. Given the fact that the jobs require employees to be exacting and consistent in the accomplishment of their tasks, role ambiguity and role conflict will be prevented by clear job descriptions and assignments. Furthermore, the Japanese culture, which fosters group collaboration, makes it possible for employees to exchange information and clarify roles. However, role overload is likely to occur due to the fact that the amount of work is difficult to predict and can fluctuate according to uncontrollable factors such as safety incidents, flight delays, and weather conditions. Airline employees can be requested to work long hours, and exert extra effort to deal with unexpected workload.

Role overload, which refers to excessive responsibilities and amount of work, did not receive enough attention in the literature on occupational mental health. Researchers focused on role ambiguity and role conflict to understand the attitudinal and behavioral consequences of work stressors. Meta-analytic research results indicate that role conflict and role ambiguity are negatively related to job satisfaction, job involvement, and organizational commitment, and positively related to turnover intentions (see Jackson & Schuler, 1985). However, role ambiguity and role conflict do not seem to be as relevant as role overload for understanding occupational stress in collectivistic countries. It has been demonstrated that collectivism is positively related to role overload, an indication that employees in collectivistic countries are expected to exert more effort to respond to the needs of others (see Peterson, Smith, Akande, Aystaran, Bochner, Callan, Guk Cho, Jesuino, D Amorim, Francois, Hofmann, Koopman, Leung, Lim, Mortazavi, Munene, Radford, Ropo, Savage, Setiadi, Sinha, Sorenson, & Viedge, 1995). Furthermore,
research indicates that role overload is a stronger predictor of emotional exhaustion and depersonalization than role ambiguity and role conflict (e.g., Fang & Baba, 1993).

**Decision latitude**

Job characteristics, including decision latitude and job scope, determine the extent to which one can cope with job demands (Karazek, 1979; Karazek & Theorell, 1990; Xie & Johns, 1995). Role overload can have an exacerbating effect on occupational mental health when employees have low decision latitude, the extent to which employees can make decisions pertaining to their work and receive sufficient assistance to help them make decisions, such as timely information for example. Decision latitude can help employees exercise more control over how activities will be performed, thereby providing them opportunities to select effective means for coping with job demands. Thus, decision latitude is expected to reduce occupational stress (Karazek, 1979; Karazek & Theorell, 1990). Furthermore, high decision latitude should enhance employee job involvement and organizational commitment as well (Dubinsky, Michaels, Kotabe, Lim, & Moon, 1992). Employees who can determine when and how to make decisions regarding their work should invest more in their jobs and develop higher levels of commitment toward the organization of which they are members.

**Interaction effects of role overload and decision latitude**

Role overload can interact with decision latitude in predicting emotional exhaustion, depersonalization and diminished personal accomplishment. When role overload is too high and employees have low decision latitude it may lead to increased emotional exhaustion. Employees perceive that there is too much to do and that they are not in a position to make decisions regarding how the work should be performed. As a result, emotional exhaustion is likely to be higher. Furthermore, if employees feel helpless due to lack of decision latitude and high role overload, they may start to depersonalize others as a means to psychologically withdraw from the situation. Finally, high role overload and low decision latitude will preclude employee performance and provoke a sense of diminished personal accomplishment. As a consequence, we expect that employees will reduce their levels of organizational commitment. Therefore, it is hypothesized:

Hypothesis 1: Role overload interact with decision latitude in predicting emotional exhaustion. The highest level of emotional exhaustion will occur when role overload is high and decision latitude is low.

Hypothesis 2: Role overload interact with decision latitude in predicting depersonalization. The highest level of depersonalization will occur when role overload is high and decision latitude is low.

Hypothesis 3: Role overload interact with decision latitude in predicting diminished personal accomplishment. The highest level of diminished personal accomplishment will occur when role overload is high and decision latitude is low.
Hypothesis 4: Role overload interact with decision latitude in predicting organizational commitment. The lowest level of organizational commitment will occur when role overload is high and decision latitude is low.

Job scope

Job scope, which refers to the extent to which employees must be creative, exercise freedom and judgment, and are required to develop new skills to cope with various situations, can increase job stress (Champoux, 1992; Xie & Johns, 1995). Although job scope offers an opportunity to fulfill one's need for growth, and has been considered as a motivator rather than a stressor (Ilgen & Hollenbeck, 1991), high job scope leads to increased occupational stress, particularly if one perceives that the resources are not adequate to cope with the demands. High job scope becomes dysfunctional when it raises one's level of stress to a level that is higher than optimal (Levi, 1972). However, the extent to which job scope may be too high may depend on its interaction with employee job attitude such as job involvement. Job scope can also be too low leaving little opportunity for employees to develop and enhance their competencies even if employees are highly involved in their jobs.

In the theory of activation, low job scope leads to under-activation, and high job scope gives too much activation (Levi, 1972), both situations are stressful for an employee. Champoux (1978; 1992) and Xie and Johns (1995) proposed and tested a U-shaped curvilinear relationship between job scope and stress. Individual response to job scope varies depending on stressful contextual factors such as organizational climate, and shift work (e.g., Baba & Jamal, 1991). A U-shaped curvilinear relationship usually occurs in a very heterogeneous sample that yields a broad range of contextual factors (see Xie & Johns, 1995). We do not anticipate a U-shaped curvilinear relationship between job scope and occupational stress in a more homogenous sample that restricts the range of contextual factors. Therefore, in this research, we focus on linear relationships that reflect the variability in psychological processes that is specific to individuals, thereby minimizing the potential number of confounding contextual factors that may come into play in a very heterogeneous sample that would include different occupational settings (Ganster & Schaubroeck, 1991).

Employees who have high job scope may invest time and energy in their jobs. We would expect employees to display high job involvement when they have high job responsibility and complexity (Schaubroeck & Ganster, 1993). The extent to which job scope and job involvement interact in predicting job burnout has not been investigated. In this paper, the premise according to which low job scope and low job involvement are associated with under-activation and high job scope and high job involvement with higher levels of activation is stressed as a foundation to explore the interaction effects of job scope and job involvement in predicting burnout and organizational commitment. Job scope in itself may be hard to adjust unless employee job attitudes are considered. When employees express high job
involvement high job scope may not necessarily lead to too much activation. Indeed, employees may report positive experiences especially if they seek additional responsibilities.

Job involvement and job scope may interact in predicting emotional exhaustion. Employees with low job scope and low job involvement may feel under-activated and experience higher levels of emotional exhaustion. This under-activation may also contribute to increased depersonalization and diminished personal accomplishment. Furthermore, under-activation will lead to lower levels of organizational commitment as well. In this research, the effects of under-activation are investigated. Analyzing the interaction between job involvement and job scope should also reveal whether over-activation leads to burnout and lower organizational commitment.

Therefore, it is hypothesized:

Hypothesis 5: Job scope and job involvement interact in predicting organizational commitment. The lowest level of organizational commitment will occur when job scope and job involvement are low.

Hypothesis 6: Job scope and job involvement interact in predicting emotional exhaustion. The highest level of emotional exhaustion will occur when job scope and job involvement are low.

Hypothesis 7: Job scope and job involvement interact in predicting depersonalization. The highest level of depersonalization will occur when job scope and job involvement are low.

Hypothesis 8: Job scope and job involvement interact in predicting diminished personal accomplishment. The highest level of diminished personal accomplishment will occur when job scope and job involvement are low.

**Interaction effects of job scope and decision latitude**

The job strain model suggests that when job demands are high and decision latitude is low employees experience high level of stress (Karazek, 1979). It is expected that when employees have high decision latitude, an increase in job scope may maintain the level of occupational stress at an optimal level. Therefore, high job scope would not be detrimental to mental health but, rather, act as a motivator under such conditions. However, if decision latitude is low, high job scope may provoke symptoms of stress.

There has been very little investigation on the detrimental effects of job scope (Xie & Johns, 1995). In this research, we focus on the interaction effect of job scope and decision latitude in predicting emotional exhaustion, depersonalization, and diminished personal accomplishment. Therefore, it is hypothesized:

Hypothesis 9: Job scope and decision latitude interact in predicting emotional exhaustion. The highest level of emotional exhaustion will occur when job scope is high and decision latitude is low.

Hypothesis 10: Job scope and decision latitude interact in predicting depersonalization. The highest level of depersonalization will occur when job scope is high and decision latitude is low.
Hypothesis 11: Job scope and decision latitude interact in predicting diminished personal accomplishment. The highest level of diminished personal accomplishment will occur when job scope is high and decision latitude is low.

Job scope and decision latitude affect employee job attitudes. High job satisfaction, a predictor of organizational commitment, occurs when job scope and decision latitude are both high (Karazek, 1979; Xie, 1996). Researchers did not analyze the joint effect of job scope and decision latitude on organizational commitment. We would expect higher levels of organizational commitment among employees when job scope and decision latitude are both high, and lower levels of organizational commitment when job scope and decision latitude are both low. Therefore, it is hypothesized:

Hypothesis 12: Job scope and decision latitude interact in predicting organizational commitment. The highest level of organizational commitment will occur when job scope and decision latitude are high. The lowest level of organizational commitment will occur when job scope and decision latitude are low.

**METHODOLOGY**

**Sample**

Data were gathered from 90 employees through a field survey in eight international airline companies located in Japan. Questionnaires, which had been translated from English to Japanese, showed high validity, and cultural sensitivity. Two independent Japanese translators back translated the questionnaires to verify the accuracy of meaning.

**Measurement**

*Role overload*

Role overload was measured with three items from Beehr, Walsh, and Taber (1976) using a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 (neither agree nor disagree): The performance standards on my job are too high, The work I am assigned to do is always within my capabilities, My job carries too much responsibility. I would prefer less. Items 1 and 3 were reverse scored. The scale has a reliability coefficient of .63, a mean of 2.61, and a standard deviation of .76.

*Decision latitude*

Decision latitude was measured with three items from Beehr et al. (1976) using a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 (neither agree nor disagree). A sample item is My job allows a lot of decisions to be made on my part. Items were reverse scored so that a high score on this scale indicates high decision latitude. The scale has a reliability coefficient of .81, a mean of 3.24, and a standard deviation of .93.

*Job scope*

Job scope was measured with five items from Beehr et al. (1976) using a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 (neither agree nor disagree). A sample item is My
Job requires a high level of skill. Items were reverse scored so that a high score on this scale indicates high job scope. The scale has a reliability coefficient of .72, a mean of 3.20, and a standard deviation of .70.

Job burnout

Job burnout is composed of three dimensions: emotional exhaustion, depersonalization and diminished personal accomplishment. The Maslach Burnout Inventory was used for measuring the dimensions of burnout using a frequency scale ranging from 1 (a few times a year) to 5 (every day) (Maslach & Jackson, 1981). Sample items include I feel emotionally drained from my work for emotional exhaustion, I feel I treat people as if they were impersonal objects for depersonalization, and I feel very energetic for diminished personal accomplishment respectively. Items used to measure diminished personal accomplishment were reverse scored so that a high score on this scale indicates a low level of personal accomplishment. Reliability coefficients, means and standard deviations were .89, 2.58, and .89 for emotional exhaustion, .79, 2.16, and .88 for depersonalization, and .78, 3.15, and .67 for diminished sense of personal accomplishment respectively.

Job involvement

Job involvement is measured with nine items using a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 (neither agree nor disagree) (Kanungo, 1983). A sample item is I live, eat and breathe my job. Items were reverse scored when necessary so that a high score on this scale indicates a high level of job involvement. Reliability coefficient, mean and standard deviation are .88, 2.64, and .80 respectively.

Organizational commitment

Organizational commitment is measured with 15 items from the OCQ (Mowday, Steers, & Porter, 1979) using a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 (neither agree nor disagree). A sample item is I really care about what happens in this airline. Scale items were appropriately reversed so that a higher score on this scale indicates higher organizational commitment. Reliability coefficient, mean and standard deviation are .84, 3.28, and .66 respectively.

Control variables

Age, gender and years of experience in the current job were used as control variables.

RESULTS

Correlations, presented in table 1, reveal that gender, age and experience in the current job are positively interrelated. Gender is positively correlated with age ($r = .40, p < .01$) and experience ($r = .46, p < .01$) indicating that male employees tend to be older and more experienced. Furthermore, there is a positive correlation between age and experience ($r = .77, p < .01$). Results also indicate that decision latitude is positively correlated with age ($r = .31, p < .01$), gender ($r = .28, p < .01$), and experience ($r = .24,$
p< .05), which highlight the fact that older male employees with more years of experience have more decision latitude.

Role overload is positively correlated with emotional exhaustion (r = .23, p< .05). Decision latitude is positively correlated with job scope (r = .65, p< .01), and organizational commitment (r = .44, p< .01), and negatively correlated with emotional exhaustion (r = -.35, p< .01), and depersonalization (r = -.21, p< .05). Job scope is positively correlated with job involvement (r = .22, p< .05) and organizational commitment (r = .38, p< .01), and negatively correlated with depersonalization (r = -.26, p< .01).

Emotional exhaustion is positively correlated with depersonalization (r = .61, p< .01), and negatively correlated with job involvement (r = -.36, p< .01), and organizational commitment (r = -.46, p< .01). Depersonalization is also negatively correlated with job involvement (r = -.27, p< .05), and organizational commitment (r = -.40, p< .01). Diminished personal accomplishment is negatively correlated with organizational commitment (r = -.22, p< .05). Finally, job involvement is positively correlated with organizational commitment (r = .55, p< .01).

Hierarchical regression analysis reveals that role overload and decision latitude interact in predicting diminished personal accomplishment (_R² = .04, p< .01). As illustrated in figure 1, the highest level of diminished personal accomplishment occurs when decision latitude is low and role overload is high. Results indicate that there are no significant interaction effects between role overload and decision latitude on emotional exhaustion and depersonalization. Hypotheses 1 and 2 are not supported. Hypothesis 3, which states that role overload and decision latitude interact in predicting diminished personal accomplishment is supported. As illustrated in figure 2, it was also found that the highest level of organizational commitment occurs when decision latitude is high and role overload is high as well. The lowest level of organizational commitment occurs when role overload is high and decision latitude is low. However, even if this finding offers support to hypothesis 4, it is not statistically significant (_R² = .03, p< .10). Results are presented in table 2.

As presented in table 3, job scope and job involvement interact in predicting organizational commitment (_R² = .03, p< .05). As illustrated in figure 3, the highest level of organizational commitment occurs when job scope is high and job involvement is also high, thereby illustrating the positive effect of high activation. Hypothesis 5 is supported. Furthermore, job scope and job involvement interact in predicting emotional exhaustion (_R² = .07, p< .01). As presented in figure 4, when job scope is low and job involvement is also low, under-activation produces the highest level of emotional exhaustion. However, results reveal that the lowest level of emotional exhaustion occurs when job scope is low and job involvement is high. Hypothesis 6 is supported. Job scope and job involvement interact in predicting depersonalization (_R² = .05, p< .05). Figure 5 illustrates that when job scope is low and job involvement is also low, under-activation leads to the highest level of depersonalization. However, when
job scope is low and job involvement is high, depersonalization is at its lowest level. Hypothesis 7 is supported. Finally, results indicate that there is no support for hypothesis 8, which states that job scope and job involvement interact in predicting diminished personal accomplishment.

Table 4 presents the statistical results of the hierarchical regression analysis for the interaction effects of job scope and decision latitude. Results indicate that there is no support for hypotheses 9, 10 and 11. However, job scope and decision latitude interact in predicting organizational commitment. As presented in figure 6, the lowest level of organizational commitment occurs when job scope and decision latitude are both low. However, the highest level of organizational commitment occurs when decision latitude is low and job scope is high. When decision latitude is high, there is a negative relationship between job scope and organizational commitment. Therefore, results support hypothesis 12.

**DISCUSSION**

An important finding consists of the interaction effects of job scope and job involvement on the dimensions of job burnout. It was found that under-activation, which involves low job scope and low job involvement, is associated with the highest levels of emotional exhaustion and depersonalization among airline employees in Japan. It was also found that there is a negative relationship between job involvement and emotional exhaustion when job scope is high, thereby confirming the positive effect of high job scope on occupational mental health. There is no relationship between job involvement and depersonalization when job scope is high. Therefore, it can be concluded that under-activation has negative effects on employee occupational mental health. Furthermore, it should be stressed that the extent to which employees invest in their jobs is an important factor to consider in the adjustment of job scope. Job characteristics and employee job attitudes can exercise a joint effect on occupational mental health as demonstrated in this research.

Another interesting finding pertains to the interaction effect of role overload and decision latitude in predicting diminished personal accomplishment. The extent to which employees perceive that they are overloaded by work demands can determine whether they can maintain adequate levels of personal accomplishment. If employees are provided high decision latitude, they may act upon their environment so as to select appropriate means to deal with work demands. If decision latitude is low and role overload is high, conditions are such that employees can experience a sense of imbalance between the demands and the resources, thereby lowering their sense of personal accomplishment. Workload adjustment may require changes in job design and decision latitude so as to increase employee discretionary action in the accomplishment of their tasks. Such changes would allow for increased flexibility and responsiveness in aligning work demands and resources, and serving the needs of customers as well.

It should be stressed that the lowest level of organizational commitment occurs when role overload is high and decision latitude is low. A too high workload serves to diminish employee
commitment toward the organization of which they are members particularly when they are not given enough decision latitude to act upon their work environment. Exercising pressure and controlling employees to such extent that they do no longer feel that they can participate in decision-making can be detrimental to the well being of the organization as a whole.

However, job scope and job involvement interact in predicting organizational commitment. Fostering employee job involvement and increasing job scope can sustain higher levels of commitment toward the organization. Therefore, job scope should be adjusted so as to maintain higher levels of activation, and job involvement should be enhanced by providing opportunities for employees to develop additional skills and competencies so as to make them better cope with the multiple challenges involved in their jobs.

Another finding reveals the positive effect of high job scope on organizational commitment. Indeed, the highest level of organizational commitment occurs when job scope is high and decision latitude is low. This may be due to the fact that when employees want to gain access to more decision latitude they capitalize on their job scope so as to increase their knowledge and competencies. Therefore, they increase their commitment toward the organization and raise their expectations regarding the possibilities to enhance their positions in the organization so as to participate in decision-making. Organizational commitment can serve to develop employee credibility, which is essential to have access to information relevant for decision-making.

In this research, we addressed the joint effects of role stressor, job characteristics and job attitude in determining job burnout and organizational commitment. Research is needed to determine whether the interaction effects proposed and investigated can actually be found in other occupational settings in Japan. The prevention of burnout through the adjustment of job scope, decision latitude, and workload needs to be investigated so as to propose concrete means that can serve to enhance employee well being in organizations.

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* p< .05, ** p< .01
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Results of hierarchical regression analysis of interaction effects of role overload and decision latitude

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* p<.05, ** p<.01
Table 3
Results of hierarchical regression analysis of interaction effects of job scope and job involvement

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* p < .05, ** p < .01
Figure 1
Interaction effect of role overload and decision latitude on diminished personal accomplishment
Figure 2
Interaction effect of role overload and decision latitude on organizational commitment
Figure 3
Interaction effect of job scope and job involvement on organizational commitment

Job involvement

High activation

Organizational commitment

High

Low

High job scope

Low job scope

High

Low

Job involvement
Figure 4
Interaction effect of job scope and job involvement on emotional exhaustion

Emotional exhaustion

High

Low

Job involvement

Low

High

Under-activation

High job scope

Low job scope
Figure 5
Interaction effect of job scope and job involvement on depersonalization

Depersonalization

High

Low

Job involvement

Low

High

Under-activation

High job scope

Low job scope
Figure 6
Interaction effect of decision latitude and job scope on organizational commitment
Japanese Politics:
Ex-Bureaucrats and Hereditary Politicians

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Abstract

This paper calls into question the meaning of Japanese democracy by investigating the background of top political office holders since WWII. The paper reveals greater stability and resilience in the backgrounds of high political office holders than might not comfortably fit within definitions of representative democracy. The movement to political office by ex-bureaucrats (seikai tenshin) and hereditary politicians (seshu giin) consistently make up a high percentage of the prime ministers, the cabinet, and elected positions among the Lower House of the Diet, and LDP Diet members. The percentage of seikai tenshin remained relatively stable, while seshu giin dramatically rose over time pointing toward a narrowing of channels to high political office. Close to 70% of cabinet members and 50% of LDP Lower House members came through one of the two channels by the 2001 election. This pattern, showing that high political office is only open to a select few, infringes on the normative foundations of the idea of representative democracy.
It is more than a little poignant that while there is a rising tide of exuberance over the reform of Japan’s political institutions, they continue to exhibit both an elite pedigree and historic low levels of popular confidence and support. Surveys of confidence in political institutions placed Japan at the bottom of OECD countries for the 1980s and 1990s, and popular support for democratic institutions (elections, parties, Diet, and cabinet) plunged after 1996 to the lowest levels in decades by 2001. This lack of confidence and support for democratic institutions should be juxtaposed with the view that political offices are the preserves of entrenched elites, raising questions of democratic representation.

The resurgence of political dynasties and the continuing high number of ex-bureaucrats in national politics raise issues of the nature of Japanese politics. For example, Yuko Obuchi’s recent election to the Lower House Diet seat of her father, the late prime minister Keizo Obuchi, generated much media attention. Commentators called into question Japanese democracy, pointing out the many politicians coming from political families (e.g., Prime Minister Junichiro Koizumi and Makiko Tanaka). Others emphasized a fusion of bureaucratic and political elites (Pempel 1998; Colignon and Usui 2001) or the corporate cohesion of the state (Evans 1995). Shigenori Okazaki, a political analyst at Warburg Dillon Reed, said Nothing has changed since the feudal era. Being born into a political family, or getting into the national bureaucracy, is one of the only ways to become a politician (quoted by Yamaguchi 2000). The heavy traffic along these two paths to political office is seen as
smothering Japan's democracy. But what is the empirical content of these pundits comments?

The movement of ex-bureaucrats to political office (*seikai tenshin*) and the succession to political office by family members (*seshu giin*, or hereditary politicians) are two forms of elite entrenchment indicating the narrow channels to political power. These two paths call into question representative democracy and reassert notions that Japan is governed by an iron triangle of elites. This pattern violates the foundations of representative democracy by suggesting that high political office is only open to a select few. These exclusive paths to high political office erode democratic notions of open contest and fluid circulation of representation, which refresh political perspectives and bring flexibility and legitimacy to political decisions. *Seikai tenshin* and *seshu giin* also link two sides of the iron triangle of business, bureaucracy, and politics. *Seikai tenshin* fuses the bureaucratic position and political office. *Seshu giin* is figuratively the inheritance of political office from a family member, usually by a son from his father, representing an amalgamation of business interests into high political office. Most commentators recognize the political importance of *seikai tenshin* and *seshu giin* but disagree on the extent and location of these phenomena as they developed over time. They do not draw out their meaning for the state of Japanese democracy.

This paper investigates the background of top political office-holders since World War II. While some authors suggest a rise of democratic politics and diversity of political
officers since the 1970s and especially in the 1990s, our analysis does not support such views. The movement to political office by *seikai tenshin* and *seshu giin* reasserts latent notions of an iron triangle among the ministries, LDP, and business interests. The academic literature often overlooks the structural aspects of political office-holding by focusing on indicators of democratic possibilities (e.g., nonelite policy impact). In an effort to disprove the foil of the argument, they ignore the foil. Our analysis reveals more stability and resilience in the backgrounds of high political office-holders than might comfortably fit within the definitions of representative democracy. To explore this fit, we examine the prevalence of ex-bureaucrats and hereditary politicians in the prime ministership, the cabinet, and elected positions in the Lower House of the Diet since World War II.4

I. Two Paths to Political Office

*Seikai tenshin* and *seshu giin* occupy diverse political offices at the local, prefectural and central levels of government. We restrict ourselves to the high political offices of prime minister, cabinet members, and Lower House Diet members. In our analysis, *seikai tenshin* include only those who retired from a central ministry or agency at the level of section chief or above. Famous ex-bureaucrats who went on to have notable careers as prime minister include Shigeru Yoshida, Hayato Ikeda, and Kiichi Miyazawa.

After the Meiji Restoration in 1868, bureaucrats moving into political parties were thought to strike a balance between dictatorship and mass participation and provide a basis
for a guided democracy in the first few decades (Scalapino 1968, 249-91). After World War II, Occupation policies strengthened the role of the bureaucracy in postwar recovery. The bureaucracy rose in institutional stature, and *seikai tenshin* contributed to the political stability of the war-damaged country (Johnson 1975). The bureaucracy was the principal source of political talent after World War II and the primary recruiting ground for party [LDP] leadership between 1955 and 1980 (Kawakita 1989). The conservative party (LDP) was closely intertwined with the bureaucracy in the early postwar era through its recruitment of high-level bureaucrats (Curtis 1988; Rothacher 1993).

A common feature of *seikai tenshin* is an educational background at the University of Tokyo (Todai). Bureaucrats are recognized as holding a common orientation to the national interests based on a common socialization in education and training coming from the same universities and career experience (Abegglen 1970, 33-35; Kubota 1969; Johnson 1982). Bureaucrats’ common orientation generally refers to their broad custodial responsibilities (for the nation) (Fukui 1987) or their role as managers of economic life (Haley 1987), both typically learned at Todai. The similarity of socialization and experience among top-level bureaucrats who become *seikai tenshin* produces a common culture of cognitive and normative categories (Colignon and Usui 2003). Thus, *seikai tenshin* is the basis for an institutional fusion of Todai, top ministry positions, and national political office.

As an example of societies that fuse bureaucratic and political spheres of activities, France is often compared to Japan because it has the *grandes coles* (great schools), which
supply most personnel to the bureaucracy, and *pantouflage*, whereby civil servants join the private sector and politics. The differences between *seikai tenshin* and *pantouflage* are that French students are defined as civil servants upon entrance to university and most bureaucrats leave the civil service early in their careers (by their mid-30s). Further, French bureaucrats often are in conflict with politicians, in part because of multiparty French politics. Japanese bureaucrats rarely come into conflict with the dominant political party, the Liberal Democratic Party (LDP) which ruled from 1955 to 1993 and has regained political control through coalitions since 1996 (Funaki 1997; Muramatsu 1994; Samuels 1987; Pempel 1998). Thus, *seikai tenshin* is a comparatively unusual element of the Japanese political scene.

Although much is made in the popular press of the prominence of hereditary politicians (*seshu giin*), almost 15 years ago Gerald Curtis (1988, 96) pointed out that the rise of hereditary politicians was one of the most notable changes in LDP Diet membership in the postwar era. Hereditary politicians are not limited to the LDP but it has by far the greatest representation. Exaggerated estimates of the prevalence of hereditary politicians among the LDP in 1980 and 1990 ran as high as 50%. Hereditary politicians are not unique to Japan. For example, the 2000 election in the United States fielded two hereditary politicians in the presidential race. George W. Bush, the Republican candidate, is the son of former president George Bush; Al Gore, the Democratic candidate, is the son of former Senator Albert Gore of Tennessee. Although comparative data are hard to find, Ishibashi and Reed (1992) report that
only 5.9% of congressional members had relatives who served in Congress in the 1960s. They go on to point out that in Ireland, with an electoral system similar to Japan’s, 25% of deputies were related to current or former parliamentary deputies in the 1980s. Thus, there are hereditary politicians in the United States and Ireland, but Japan appears to represent a dramatic extreme.

The hereditary politician (seshu giin) is someone who inherits family wealth (kaban), reputation (kanban), and political network and social organization (jiban). These resources are then converted into election to political office. Technically, hereditary politicians include sons and daughters, adopted sons, sons-in-law, nephews, and brothers (Uchida 1993; Rothacher 1993). High-profile seshu giin include ex-prime ministers Kiichi Miyazawa, Ryutaro Hashimoto, Yoshiro Mori, Keizo Obuchi, and current prime minister Junichiro Koizumi. Other hereditary politicians are Tsutomu Hata (ex-prime minister) of the Democratic Party, Tomiichi Murayama (ex-prime minister) of the Socialist Party, and Ichiro Ozawa of the Liberal Party.

Curtis (1988) provides a profile of hereditary politicians as representing a diversity of educational background and outlook in contrast to that of seikai tenshin. According to Curtis, between elections in 1983 and 1986, the second-generation [hereditary] phenomenon has closed off opportunities for other ambitious politicians to get into the Diet, but it has brought greater diversity in career backgrounds and life experience to the LDP’s Diet member contingent and has played a role in giving the party a more modern look. . . . Many of these politicians convey a more cosmopolitan image than an earlier generation of LDP politicians or the present generation of largely union-based opposition party politicians. And they appeal to a
young and urban electorate party for that reason. (Curtis 1988, 97)

Thus, the suggestion is *seshu giin* manifest a diversity of educational backgrounds in comparison with the profile of earlier generations of *seikai tenshin* who had a more uniform educational background from the University of Tokyo.

The profiles are not that simple. For many years, the profile of *seikai tenshin* overlapped with *seshu giin*. Many of the most famous politicians were both ex-bureaucrats and hereditary politicians. Several postwar prime ministers were not only ex-bureaucrats, and University of Tokyo graduates, they were also members of political families representing a superimposition of status credentials (Colignon and Usui 2001). More recently, however, these profiles separated into two distinct and possibly contradictory patterns. It appears that the conditions facilitating this superimposition changed, leading to the separation of paths to high political office. We review the literature on the causes of *seikai tenshin* and *seshu giin* to describe those elements contributing to the changing paths to high political office in Japan.

II. Decline of *Seikai tenshin* and Rise of *Seshu giin*?

Changes in the political representation of *seikai tenshin* and *seshu giin* are attributed to several somewhat complementary explanations suggesting different timing and locations of change. These include the rise of the *zoku* politician, the increasing enforcement of the LDP seniority system, and changes in rules governing campaign financing and electoral rules for the Lower House.
According to Gary Allinson (1993, 17-49), the emergence of zoku politicians led to the notion of the end of iron triangle politics and created a steadily more competitive polity in the 1980s and 1990s. Zoku politicians are those LDP career politicians trained to tackle the policy issues of specific ministries and specific business sectors. They are represented in the LDP’s Policy Affairs Research Council (PARC). Since the 1970s these politicians have gained policy expertise, become more involved in policymaking, developed closer ties with business interests to obtain political funds and votes, and decreased their dependence on bureaucrats for technical information (Schoppa 1991; Sato and Matsuzaki 1986; Uchida 1993; Park 1986; Mabuchi 1997; Richardson 1997). Thus, although seikai tenshin politicians dominated the prime ministership and key cabinet posts in the 1950s and 1960s, by the 1970s ex-bureaucrats were almost shut out of top positions (in the LDP) in favor of men groomed from within (Allinson 1993). Thus, in this explanation, zoku politicians were thought to push seikai tenshin out of Diet membership and create more democratic representation and greater merit-based political competition, recruitment, and promotion.

The argument that the rise of zoku politicians led to the decline of seikai tenshin by the late 1970s (Uchida 1993; Sato and Matsuzaki 1986; Park 1986; Mabuchi 1997; Richardson 1997) is not without its critics. For example, Inoguchi and Iwai (1987) and Keehn (1990, 1028-29) suggest, rather than a relationship of competition and domination between bureaucrats and politicians, the relationship between zoku politicians and bureaucrats is more
one of reciprocal patronage. *Zoku* politicians act as proxies protecting and advancing their ministry's or agency's interests in return for access to the resources of that ministry or agency. They carry forward the bureaucrat's battles, on the latter's behalf, in the political arena (Keehn 1990, 1029).

A second feature thought to have led to the decline of *seikai tenshin* is the increasing importance of seniority within the LDP. In the early postwar period, several *seikai tenshin* politicians were able to start their political careers in their mid-40s, after a first career in the bureaucracy, and still become prime minister. In other words, there was considerable room for the fast track. Since the early 1970s, specifically the Kakuei Tanaka prime ministership of 1972-74, the accelerated career track has been almost eliminated. There is little or no credit for time served in the bureaucracy, the Upper House, or local political office (e.g., governorship) as had been routine in the earlier period. LDP party members are all required to move up the same seniority ladder (Sato and Matsuzaki 1986). This argument fits well with the data suggesting the decline of *seikai tenshin* in the office of prime minister after 1980 (discussed later).

Other features associated with change in *seikai tenshin* and *seshu giin* are changes in election laws. In the 1950s and 1960s a large proportion of party funds was garnered by the faction leader and distributed to his followers. Big business was the major donor, major faction leaders controlled these funds, and ex-bureaucrats from the central ministries (*seikai tenshin*) were viewed as promising politicians. However, a 1976 revision of laws regulating
political contributions made it impossible for faction leaders to raise and control large portions of political funds on their own (Curtis 1988, 84). Severe limits on types of campaign spending on mass appeal (prohibiting mass mailings, TV and radio advertising) served to funnel campaign efforts based on personal appeal and through koenkai organizations. The law had the effect of decentralizing the networks of political fund-raising, diminished the importance of the big business establishment (zaikai), and increased the importance of provincial business interests as a source of political financing. Curtis points out that this decentralization of fund-raising moved the funding pattern away from factional leaders and ex-bureaucrats, who are tied to central sources of support, and more toward politicians with strong local ties and political organization (koenkai) and seshu giin.

This 1976 change in election law is tied to both the decline in seikai tenshin and the rise of seshu giin in Diet membership. It also contributes to intense intra-party (LDP) campaigns, the rise of seshu giin, and the increasing emphasis in politics on personalities over policies (Jameson 1997, 2; Taipei Times, July 23, 2001). Koenkai function to affiliate voters with specific candidates, and bonding of local groups to specific candidates was a central strategy of the LDP for decades. However, the LDP evenhandedly distributed resources to LDP candidates within the multiseat districts, increasing competition among LDP candidates in the same district. LDP party organizations at the district or local levels remained weak and thus LDP candidates built their own grass-roots support organizations or resorted to koenkai. According to Ishibashi and Reed (1992), it is easier for the LDP to maintain support
by using hereditary politicians than to try to transform supporters of individual politicians into LDP supporters.

The election reform of 1994 was designed to address this intraparty (LDP) campaign rivalry. Whenever LDP candidates found themselves in intraparty competition, they needed to offer voters some reason to support them aside from party label. Thus, candidates appealed to voters with services such as pork, gifts, and favors. Under the old (pre-1994 election reform) election system, 511 Lower House members were elected from 129 election districts. These districts ranged in size from two to six seats. To win a Lower House majority, the LDP had to field two or more candidates per district. This produced intense intra-LDP rivalry, facilitating the development and expansion of a politician’s koenkai and the rise of seshu giin. Under the new election system, the size of the Lower House was set at 500 seats, with 300 seats elected on the basis of single-member districts and 200 seats elected from 11 regional districts on the basis of proportional representation. This electoral reform eliminated a substantial amount of intraparty competition and should, in theory, have removed the reason for the koenkai and the base for seshu giin.

The above explanations of the decline of the seikai tenshin politician and the rise of seshu giin suggest changes in different political offices and the timing of those changes. The rise of zoku suggests a general decline of seikai tenshin to the LDP membership of the Lower House and the overall membership in the Lower House in the late 1970s. Changes in the enforcement of LDP seniority rules suggest a decline in seikai tenshin at the level of prime
minister and cabinet member by the 1980s. Election law changes in 1976 suggest a decrease auf semi tenshin and an increase seshu giin thereafter. Election reforms of 1994 suggest a decrease of seshu giin thereafter.

III. Data

Our main concern is whether succession by inheritance (seshu giin) and transmission of bureaucratic elites (seikai tenshin) represent threats to Japanese democracy. This concern raises a series of questions. Are seikai tenshin and seshu giin increasing or decreasing over time? If these phenomena are changing, at what point did these characteristics change? Do they correspond to the explanations suggested in the literature? Is there a change in educational background among seikai tenshin and seshu giin suggesting homogeneity or diversity? At what level of political office are these features changing? Does the combination of both seikai tenshin and seshu giin represent a destructive feature of Japanese democracy?

To examine these questions, we assembled data at four levels of political office: prime minister, cabinet posts, Lower House LDP membership, and Lower House membership as a whole over selected time points since World War II. In addition, we examined career and family background and university graduation as features of the politician’s credentials to identify the extent, pattern, and interrelationship of seikai tenshin and seshu giin.

Table 1 lists the names, terms in office, age at election to the prime ministership, and career and family backgrounds of postwar prime ministers. There have been 28 prime
ministerships (but 27 prime ministers); ten were *seikai tenshin*, representing 35.7%. These 10 prime ministerships were Kijuro Shidehara, Shigeru Yoshida (twice), Hitoshi Ashida, Nobusuke Kishi, Hayato Ikeda, Eisaku Sato, Takeo Fukuda, Masayoshi Ohira, and Kiichi Miyazawa. They occupied 29 of the 57 years from August 1945 to August 2002 (348 months out of 684 months), or 50.9% of the period covered (1945-2002). If the placement and tenure of ex-bureaucrats in the prime ministership is an indication of the integration of the bureaucracy and polity, then the influence of *seikai tenshin* politicians is significant.

However, change is the issue. In the last 20 years, since Suzuki’s election in 1980, only one prime minister has had a background in the bureaucracy, Kiichi Miyazawa. He came from the Ministry of Finance and served as prime minister from November 1991 until August 1993. From 1980 to 2002, a period of 22 years (or 264 months), only one *seikai tenshin* prime minister, Miyazawa, served 8% (21 months) of the total time. In contrast, between 1946 and 1980, eight ex-bureaucrats occupied nine prime ministerships, serving 327 months out of 418 or 78.2% of the time. Thus, the data support the notion that *seikai tenshin* politicians declined among prime ministers after 1980, suggesting that structural changes in the 1970s affected this pattern.

Further, Table 1 shows the number of years each prime minister served in the Diet before taking office and his age at the time of appointment to the prime ministership. The issue of the increasingly strict enforcement of the LDP seniority system has been argued to relate to the decline of *seikai tenshin*. Before Tanaka, prime ministers had come with fewer
years of experience in the Diet. For example, Yoshida had less than one year of experience in the Diet before his first prime ministership. One might dismiss this as the result of conditions in the immediate postwar era, but before Tanaka, prime ministers averaged fewer than 12 years of experience in the Diet. From Tanaka’s prime ministership to the present, the average experience has more than doubled to 30 years. During the early postwar period, the LDP’s promotion system made it practical for elite bureaucrats to have full careers in the bureaucracy, retire in their mid- or late 40s, and begin their second careers in politics as *seikai tenshin* politicians. For example, Sato retired from the bureaucracy when he was 48 years old and became prime minister in 1964 after a 15-year career in the Diet. However, all of Sato’s successors had at least 22 years of Diet experience and three had over 35 years of Diet seniority. The two *seikai tenshin* politicians to become prime minister in the late 1970s, Fukuda and Ohira, retired from the bureaucracy at the ages of 45 and 41, respectively, with 24 to 26 years of time served in the Diet before their prime ministerships. Miyazawa, the only *seikai tenshin* politician to become prime minister in the 1990s, left the bureaucracy at the age of 34 and then spent 38 years in the Diet before becoming prime minister at the age of 72. This changing seniority profile indicates a pattern of more limited possibilities for *seikai tenshin* politicians to gain the prime ministership.

The more general pattern indicates that a potential prime minister serves in the Diet between 25 and 30 years. Such seniority requirements make it increasingly difficult for bureaucrats to retire after a full career, around age 45 to 50, and then rise through the seniority
ladder to become a candidate in their 70s. Miyazawa is the exception that highlights the rule.

Data in Table 1 are thus consistent with the increasing strictness of the LDP seniority system but do not exclude explanations based on the rise of the zoku, rise of seshu giin, or changing electoral rules and election reform.

The pattern of prime ministers after World War II also illustrates the importance of coming from a political family. The LDP's enforcement of a seniority system places a premium on starting young and on access to money and political resources. Access to existing political resources in the family (money, organization, and reputation) mitigates obstacles for new politicians. It is striking (Table 1) that 14 of 28 prime ministers (50%) were hereditary politicians.10 Nine of the 27 prime ministers had fathers who were politicians. Sosuke Uno's grandfather was a politician, and three prime ministers were the brothers of politicians. Kishi and Sato, both prime ministers, were themselves brothers.11 There appears to be a steady stream of hereditary politicians in the office of prime minister after World War II. Between 1945 and 1956, three of seven prime ministers were hereditary politicians. Over the next 20 years (1957-77), there were three heirs, but the brothers Kishi and Sato together occupied almost 11 of those 20 years. In the next 12 years, from 1978 to 1989, there were no prime ministers with hereditary backgrounds. However, since 1989, seven of ten prime ministers have been hereditary politicians, indicating an expanding preference for hereditary politicians as prime minister.

Table 1 also indicates that benefits of coming from the bureaucracy were compounded
by the advantages of inheriting the money, organization, and reputation of family politicians through the first 25 years of the postwar era, up through Sato’s administration. Five of the seven seikai tenshin prime ministerships were also seshu giin. However, since the 1980s the overlap between seikai tenshin and seshu giin has all but disappeared (again, Miyazawa is the exception). This suggests that factors contributing to seikai tenshin and seshu giin split apart in the late 1970s. The advantages of being an ex-bureaucrat and second-generation politician do not seem to overcome the increasing seniority requirements or change in funding patterns. Thus, the paths of seikai tenshin and hereditary politicians have unraveled, differentiating the two paths to political careers after 1980. As seikai tenshin among prime ministers declined after 1980, hereditary politicians have dominated the position since 1989.

Educational background provides a proxy measure for the homogeneity of outlook to the pattern of seikai tenshin and seshu giin prime ministers. It is generally expected that seikai tenshin politicians are Todai graduates. Bureaucrats are disproportionately recruited from the University of Tokyo. Seikai tenshin politicians tend to have successful bureaucratic careers. A successful bureaucratic career is more likely if one is a Todai graduate (Colignon and Usui 2003; Koh 1989). Eight of ten postwar seikai tenshin prime ministerships were Todai graduates. Only Ikeda and Ohira did not graduate from Todai. This draws an unambiguous line from Todai, through the bureaucracy, to the top political position prime minister. Little pattern, however, may be seen over time. Of the 14 prime ministerships occupied by hereditary politicians, Todai graduates occupied seven. This overlap of elite
status is strongest in the first 25 years (1945-72), when six all Todai graduates of the 11 prime ministerships were occupied by hereditary politicians. From Tanaka to the present, eight hereditary politicians were prime ministers, but only one, Miyazawa, is a Todai graduate.

Table 1 further suggests that the Todai credential was not the same after Tanaka. Before Tanaka, eight of the 11 (73%) prime ministers were from Todai. All but two of these, Katayama and Hatayama, were also *seikai tenshin*. After Tanaka’s prime ministership, only three of 16 (19%) prime ministers graduated from Todai, and two of these were also ex-bureaucrats, Fukuda and Nakasone. Eight different universities represent the remaining 16 prime ministers after Tanaka: four prime ministers were from Waseda University, two from Meiji, and another two from Keio. These are all private universities. Thus, the educational background of prime ministers has become dramatically more diverse over the last three decades. The institutional credential of Todai graduation for top politicians (prime ministers) has declined with a corresponding diversity in the educational backgrounds of prime ministers.

Eighteen of 28 prime ministers in the postwar era were from either the bureaucracy or political families, or both. Conversely, persons without these credentials occupied only 10 of 28 prime ministerships. Sixty-four percent (18 of 28) became postwar prime ministers through either *seikai tenshin* or *seshu giin*. The twin institutions of bureaucracy and family form the fundamental stepping stones to the prime minister’s office. Although prime
ministers have demonstrated a diversity of educational backgrounds in the last decade, the paths to the highest office are limited. Further, since 1989 it is clear that *seshu giin* is the current path of preference with seven of ten prime ministers and no *seikai tenshin* among them. At the level of prime minister, *seikai tenshin* may be antiquated, at least as long as the LDP dominate party politics.

To examine the pattern of *seikai tenshin* and *seshu giin* occupying cabinet positions, Table 2 provides a summary of the bureaucratic career, family, and educational backgrounds of cabinet members. In his 1953 cabinet, Yoshida included four *seikai tenshin* politicians in addition to himself, accounting for five of the 20 cabinet positions (25%). The Ikeda cabinet of 1963 was the peak of *seikai tenshin* representation with 11 *seikai tenshin* politicians out of 21 positions, or 52.4% of the cabinet. Although there has been considerable fluctuation, the representation of ex-bureaucrats has been stable over time at between 20% and 35%.

There is a clear decline in the percentage of Todai graduates in the cabinet, from a high of 61.9% in 1963 to a low of 27.8% in 2001 (Table 2). The extraordinary presence of *seikai tenshin* and Todai graduates in the 1960s gave way in the 1980s and thereafter to a rough stability between 20% and 33%. The decline of Todai representation is not necessarily determined by the decline in ex-bureaucrats, but it is closely related. Considering the elite cachet of Todai graduation, this declining percentage indicates an alternative trend that might represent the rise of democratic politics or the reversal of democracy with the rising popularity of hereditary politics. This declining percentage of Todai graduates in the 1980s
refracts the dearth of Todai graduates among prime ministers (Table 1) about the same time.

The percentage of hereditary politicians in Table 2 makes clear a gradual but steady increase in *seshu giin* from only 10% of members of the Yoshida cabinet in 1953 to 44.4% in the 2001 Koizumi cabinet. Hereditary politicians are characterized as tending to graduate from private universities (Rothacher 1993, 51; Uchida 1993), a pattern demonstrated among prime ministers. Over time we see a definite decline in Todai graduates serving as prime ministers and in cabinet positions, suggesting a differentiation in educational backgrounds of both prime ministers and cabinet members. Similarly, hereditary politicians are on the rise in their representation in these offices, lending credibility to the argument that *seshu giin* pushed *seikai tenshin* out of top political positions.\[12\]

In certain ways, cabinet membership reflects patterns similar to the prime ministership. In Koizumi’s 2001 cabinet, 13 of 18 members (72.2%) were either *seikai tenshin* or *seshu giin* or both. Only five cabinet members were neither ex-bureaucrats nor hereditary politicians. The postwar pattern indicates the high and increasing importance of the paths of *seikai tenshin* and *seshu giin* varying from a low of 47.6% in 1972 to the high of 72.2% in the Koizumi cabinet of 2001. A closer look at these patterns indicates that *seikai tenshin* was the more privileged path of political career mobility in the early postwar years, but there was parity with *seshu giin* in 1983 and 1993, and thereafter *seshu giin* became the dominant path. This pattern suggests that increasing enforcement of LDP seniority rules and the increasing security of having a strong *koenkai* for reelectations diminished *seikai tenshin* and
expanded *seshu giin*.

Since cabinet members are usually senior party officials with several continuous reelections, arguments over background characteristics of politicians often extend to LDP Diet members or Diet members as a whole. The next two tables compare patterns of *seikai tenshin*, Todai graduates, and *seshu giin* for LDP members of the Lower House and the whole membership of the Lower House. Table 3 summarizes LDP Diet members and their background characteristics for selected elections between 1953 and 2000. We supplemented our data with estimates from other sources to better identify patterns. Data from other sources indicate slightly higher percentages but suggest the same pattern as our data.

Table 3 indicates no decline but an increase in *seikai tenshin*. The column headed *seikai tenshin* shows an increase in the percentage of ex-bureaucrats as LDP members of the Lower House from 1953 to 2000. According to our calculations (highlighted in bold in Table 3), LDP Diet members with bureaucratic backgrounds range from a low of 18% in 1953 to a high of 23.5% in 2000. Examination of the percentage of *seikai tenshin* for all Lower House members also shows stability over time (Table 4). Lower House Diet members with bureaucratic backgrounds accounted for 13.9% in 1953 and 15.8% in 2000. Neither LDP Lower House members in Table 3 nor Lower House members as a whole in Table 4 indicate a decline in *seikai tenshin*, but instead suggest a pattern of increase or stability. The decline of *seikai tenshin* after 1980 in the prime ministership and cabinet membership but not in the LDP Diet membership suggests the credibility of the explanation of changes in LDP seniority
rules but not the rise of zoku politicians. Changes in the enforcement of seniority rules would not affect Diet membership but would affect senior LDP members’ probability of gaining promotions to prime minister or cabinet positions.

Turning to educational background in Table 3, the percentage of Todai graduates among LDP members was 24.4% in 1953 and 25.6% in 2000. Between these elections, the highest level of Todai graduates occurred in 1967 when fully one-third (33.8%) of all LDP members were Todai alumni. However, if we consider the entire postwar period, graduates of Todai are relatively stable but rose above 30% between the 1967 and 1972 elections. In a shorter time frame, Todai graduates might appear on the decline, but the general postwar pattern reveals more stability. The stability of seikai tenshin and Todai graduates among the LDP members of the Lower House throughout the postwar era lends support for the continuing integration between Todai and the parliament at the level of LDP members of the Lower House. However, Todai graduates among all Lower House members (Table 4) indicate a decline over time, from 23.2% in 1953 to 20.8% in 2000, with the lowest level of 18.4% in 1993.

In contrast, there is a high and increasing concentration of hereditary politicians among LDP members within the Lower House, from 6.4% in 1953 to 31.9% in 2000 (Table 3). However, between these years, there was a dramatic increase from the 1950s to the early 1990s and a tapering off after 1993 to 2000. It appears that the electoral reform of 1994 somewhat undermined the linkage between koenkai/personal politics and the prevalence of
seshu giin. Intraparty competition may have been reduced, but that did not eliminate the usefulness of koenkai, seshu giin, and their personal vote-seeking campaign strategies. Jameson (1997, 3) points out that the success of LDP defectors well after the 1994 reform exemplifies the strength of koenkai support for seshu giin and the weakness of local LDP political organization.

The Lower House LDP Diet members demonstrate a more varied and complex pattern compared to the prime ministers and cabinet members, but demonstrate the same preponderance of seikai tenshin and seshu giin. There were 118 out of 238 politicians (49.6%) who were seikai tenshin or seshu giin or both in 2001 among LDP Lower House Diet members (Table 3). These two combined paths were as low as 18.0% in 1953, steadily increased to a peak of 58.1% in 1983, and declined thereafter to 49.6% in 2001. Thus, approximately 50% of the paths to LDP Lower House Diet membership came either through the bureaucracy or political families. A closer look indicates a steady number of seikai tenshin from 1953 to 2000 and dramatically rising numbers of seshu giin over the same period. The dramatic expansion of these combined paths is based on the stability of seikai tenshin and the expansion of seshu giin. Although seikai tenshin is not in decline, seshu giin has exhibited a robust recent expansion among Lower House LDP members.

Seshu giin for all Lower House members (Table 4) demonstrate a consistent pattern of increase between 1953 and 2000, with slightly lower percentages than the LDP in the Lower House. The increase took place from the 1950s to the early 1980s and reached a plateau.
thereafter at 24%.\textsuperscript{13} The difference between 24.4\% \textit{seshu giin} for the overall Lower House in 2000 and 31.9\% for LDP in the Lower House in 2000 is indicative of the LDP strategy of recruiting and promoting hereditary politicians.

\textit{Seikai tenshin} and \textit{seshu giin} among all Lower House members demonstrate a similar pattern to those of the LDP in the Lower House, but with certain differences. In 2000, 36.9\% of all Lower House members were \textit{seikai tenshin} or \textit{seshu giin}. There is a consistent increase from 14.4\% in 1953 to highs of 37.0\% in 1993 and 36.9\% in 2000. A closer look shows \textit{seikai tenshin} dominating the two paths in 1953, parity in 1967, and \textit{seshu giin} dominating the two paths subsequently. What is curious is the expanding percentage of non-LDP \textit{seshu giin} after 1972. In 1972, 9 of 77 (11.7\%) \textit{seshu giin} in the Lower House were non-LDP. This percentage continued to increase in every subsequent election to a high of 41 of 117 (35\%) in 2000. This indicates the strength of hereditary politicians, even outside the LDP, supporting Jameson's (1997) contention that the strength of hereditary politicians is indicated in the success of LDP defectors after 1993.

\textbf{IV. Discussion}

Our data show that the representation of ex-bureaucrats (\textit{seikai tenshin}) and hereditary politicians (\textit{seshu giin}) in politics depends on the level of political office examined. There was a decline in \textit{seikai tenshin} in the postwar prime ministerships after 1980. Six (33.3\%) cabinet members in 2001 were \textit{seikai tenshin} politicians, up from 1998 but more
indicative of a stable range since 1953. The proportions of *seikai tenshin* in the LDP Lower House and the Lower House as a whole indicate an incremental expansion between 1953 and 2000, representing 23.5% of LDP and 15.8% overall in 2000. The fabric of cohesion between the bureaucracy and political office, as represented by *seikai tenshin*, appears to be frayed at the top (prime minister) but resilient at the levels of cabinet and LDP membership. There appears to be no necessary correspondence between the supposed rise in *zoku* politicians and any change in percentage of *seikai tenshin* politicians in either cabinet positions or LDP and general members of the Lower House, which would be expected at the level of the Lower House.

The fusion between sectoral interests and political office, as represented by hereditary politicians (*seshu giin*), appears to be increasing at all levels of political office examined. Hereditary politicians accounted for 50% of the prime ministerships since 1945, but 70% of the prime ministers after 1989 were hereditary politicians. The percentage of *seshu giin* in the cabinet rose steadily from 10% in 1953 to 44% in 2001. The percent of *seshu giin* in the LDP paralleled the rise among cabinet members, from 6.4% in 1953 to 31.9% in 2000 among the LDP members and from 13% in 1953 to 24% in 2000 among all Lower House members. A notable pattern is the decline of *seshu giin* to 31.9% of the LDP Lower House membership in 2000 from a high of 39.3%. Other authors have calculated this percentage to be as high as 44.8% in 1986. This pattern of declining percentage pattern is consistent with discussions of the impact of election law reform in 1994.
Turning to educational background, we found a significant decline in the share of Todai graduates among prime ministers and cabinet members since the 1970s but stability among LDP Lower House members. What is interesting, however, is the relative stability of the twin credentials of *seikai tenshin* and Todai graduation as a percentage of LDP Lower House membership. The data do not support contentions that there has been a decline of *seikai tenshin* politicians. There is a substantial fusion of Todai, the bureaucracy, and political office among the LDP membership. More specifically, it is a fusion of Todai, Ministry of Finance, and LDP membership. Thus, in the 1970s and 1980s, the previous fusion was split at the level of prime minister, but the fusion continued at the levels of cabinet and the LDP membership. This suggests a decentralization of cohesive, stable, structured relations of influence among Todai, the bureaucracy, and different levels of political office.

V. Conclusion: Limited Elite Competition, Limited Democracy

The stability of *seikai tenshin* and Todai background at the level of cabinets and Diet membership along with increasing levels of *seshu giin* among prime ministers, cabinet members, and Diet lend support to the view of elite integration and homogeneity, but there are notable changes. The convergence of *seikai tenshin*, Todai education, and *seshu giin* found in the early postwar decades suggests a powerful superimposition of elite characteristics. The more recent separation of these background characteristics for prime ministers and cabinet
members and their continued concentration in LDP and Lower House Diet members suggest the limiting conditions for notions of elite homogeneity and integration.

Ex-bureaucrats and hereditary politicians are two distinct paths to political office, occupied by two distinct types of politicians. *Seshu giin* are characterized as cosmopolitan or international in outlook (Curtis 1988), more public and accountable in their politics, and they have a stronger appeal to ordinary people (Toyonaga 2002). These hereditary politicians are juxtaposed with ex-bureaucrats with particular and elite career and educational backgrounds and a more parochial outlook. The ex-bureaucrats are seen as representing an old style of closed, backroom, centralized politics whose appeal is based on their elite status (Toyonaga 2002). Thus, we find a series of dichotomies between these two types of politicians, including mass versus elite appeal, local versus central political bases, and local versus big business representatives.

The data indicate that election law changes gave prominence to local political organizations, *koenkai*, which, in turn, fueled the rise of hereditary politicians. LDP party organizations at the district and local levels are weak and Diet members have built their own grass-roots support organizations. The *koenkai* promoted exclusive personal ties between voters and politicians and this support was not synonymous with LDP support. One consequence of the strength of the *koenkai* organization and the weakness of LDP district and local organization has been the recruitment of family members of politicians who retire or die while in office. The election reform of 1994 only marginally eroded the reason for *koenkai,*
but some are optimistic that election reforms will have greater impact in the future (Reed 2002).

Yet, the rise of the hereditary politician has been linked to sapping the dynamism of Japan’s democracy, the disintegration of the LDP, and the rigid institutionalization of politics that inhibit change. The popularity of hereditary politicians such as Prime Minister Koizumi, ex-minister of Foreign Affairs Makiko Tanaka, and the recent election of 26-year-old Yuko Obuchi to succeed her late father’s Diet seat, has prompted some analysts to contend that hereditary politics has contributed to the cult of personalities. This type of politics, they argue, saps the political openness and dynamism of Japanese democracy. For example, Sakakibara (2000) contends that excessive institutionalization of koenkai as the expansion strategy of the LDP has inhibited flexibility in responding to changing conditions. Lost is the injection of new blood, energy, and dynamism into a politics that has become sclerotic, corroded and torpid (p. 2). He goes on to suggest term limits and a ban on hereditary politics as an antidote. Further, Yamaguchi (2000) asserts that the high percentage of hereditary politics has smothered Japan’s still-young democracy. Hereditary transmission of political office is likened to feudal intergenerational occupational determination. She goes on to point out how hereditary politics has alienated the voting public.

The rise of hereditary politicians reflects the strength of koenkai as the mechanism of the intergenerational transfer of support based in specific local constituencies. The already high and increasing percentage of hereditary politicians among prime ministers, cabinet
members, and members of the LDP and Lower House are a major challenge to pluralist optimism about representative democracy in Japan. This represents a movement toward competition, merit, and dispersal of power only in the narrowest sense of elite competition between *seikai tenshin* and *seshu giin*. Hereditary politicians do not represent diversity as much as they reflect money politics and the integration of the LDP with parochial private-sector interests. The rise of *seshu giin* at all levels of political office, coupled with the decline of *seikai tenshin* at the level of prime minister, its stability in cabinet membership, and its increase among LDP members in the Lower House, suggests a decentralization of political patterns similar to Schwartz’s (1998) notion of neo-pluralists. But pluralism is a misnomer.

Japanese democracy manifests features of an organized and limited elite competition. Democracy, in this sense, has come to mean the existence of competing elites, operating through factions with different institutional, economic, and geographic bases. Differences among elites may be worked out in alliances, which correctly calls up images of an iron triangle suggesting a high level of integration and coordination among these elites dominating political office. Discussions of *seikai tenshin* and *seshu giin* in the Diet represent two fundamental linkages in Japan’s iron triangle. *Seikai tenshin* represents the fusion of the bureaucracy with high political office, whereas the emergence of hereditary politicians represents the fusion of sectoral interests into political office. Together they indicate how political office has become the linchpin in the iron triangle. However, relations among Todai,
the bureaucracy, and politicians are too fragmented for the strong version of the iron triangle model to be substantiated by these data. Yet, these relations are by far too structured, continuous, and stable to support those who argue the iron triangle never existed or has long since met its demise. They are also too structured to support the pluralistic optimism for the rise of representative democracy in Japan.
References


Table 1
Backgrounds of Japanese Prime Ministers since 1945

<table>
<thead>
<tr>
<th>Term of Office (Year/Month/Day)</th>
<th>Duration (in months)</th>
<th>Yrs in Diet</th>
<th>Name</th>
<th>Age†</th>
<th>Career Background</th>
<th>Years in Bureaucracy</th>
<th>University Graduated</th>
<th>Family Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945.8.17-1945.10.09</td>
<td>2</td>
<td>0</td>
<td>N. HIGASHIKUNI</td>
<td>58</td>
<td>Military</td>
<td></td>
<td>Army</td>
<td></td>
</tr>
<tr>
<td>1945.10.09-1946.05.22</td>
<td>7</td>
<td>0</td>
<td>Kijuro SHIDEHARA</td>
<td>73</td>
<td>Bureaucrat (MFA)</td>
<td>1895-na</td>
<td>Tokyo</td>
<td>father=politician</td>
</tr>
<tr>
<td>1946.5.12-1947.5.24</td>
<td>12</td>
<td>0</td>
<td>Shigeru YOSHIDA</td>
<td>68</td>
<td>Bureaucrat (MFA)</td>
<td>1906-39</td>
<td>Tokyo</td>
<td>father=politician</td>
</tr>
<tr>
<td>1947.5.24-1948.3.10</td>
<td>10</td>
<td>17</td>
<td>Tetsu KATAYAMA</td>
<td>60</td>
<td>Politician</td>
<td></td>
<td>Tokyo</td>
<td></td>
</tr>
<tr>
<td>1948.3.10-1948.10.15</td>
<td>7</td>
<td>16</td>
<td>Hitoshi ASHIDA</td>
<td>61</td>
<td>Bureaucrat (MFA)</td>
<td>1912-32</td>
<td>Tokyo</td>
<td>father=politician</td>
</tr>
<tr>
<td>1948.10.15-1954.12.10</td>
<td>74</td>
<td>0</td>
<td>Shigeru YOSHIDA</td>
<td>71</td>
<td>Bureaucrat (MFA)</td>
<td>1906-39</td>
<td>Tokyo</td>
<td>father=politician</td>
</tr>
<tr>
<td>1956.12.23-1957.2.25</td>
<td>2</td>
<td>9</td>
<td>TANZAN ISHIBASHI</td>
<td>72</td>
<td>Journalist</td>
<td></td>
<td>Waseda</td>
<td></td>
</tr>
<tr>
<td>1957.2.25-1960.7.19</td>
<td>41</td>
<td>15</td>
<td>Nobusuke KISHI</td>
<td>61</td>
<td>Bureaucrat (MCI)²</td>
<td>1920-41</td>
<td>Tokyo</td>
<td>brother=E. Sato</td>
</tr>
<tr>
<td>1960.7.19-1964.11.09</td>
<td>52</td>
<td>11</td>
<td>Hayato IKEDA</td>
<td>61</td>
<td>Bureaucrat (MOF)</td>
<td>1925-47</td>
<td>Kyoto</td>
<td></td>
</tr>
<tr>
<td>1964.11.9-1972.7.792</td>
<td>15</td>
<td>63</td>
<td>Eisaku SATO</td>
<td>1938-48</td>
<td>Bureaucrat (MOR)³</td>
<td></td>
<td>Tokyo</td>
<td>brother=N. Kishi</td>
</tr>
<tr>
<td>1972.7.7-1974.12.929</td>
<td>25</td>
<td>63</td>
<td>Kakuei TANAKA</td>
<td>54</td>
<td>Businessman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980.7.17-1982.11.27</td>
<td>29</td>
<td>33</td>
<td>Zenko SUZUKI</td>
<td>69</td>
<td>Interest group (fisheries)</td>
<td>Tokyo Suisan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1982.11.27-1987.11.6</td>
<td>59</td>
<td>35</td>
<td>Yasuhiro NAKASONE</td>
<td>64</td>
<td>Politician</td>
<td></td>
<td>Tokyo</td>
<td></td>
</tr>
<tr>
<td>1987.11.6-1989.6.219</td>
<td>29</td>
<td>35</td>
<td>Noboru TAKESHITA</td>
<td>63</td>
<td>Prefectural assemblyman</td>
<td>Waseda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989.6.3-1989.8.102</td>
<td>29</td>
<td>67</td>
<td>Sosuke UNO</td>
<td>58</td>
<td>Politician</td>
<td></td>
<td>grandfather=mayor</td>
<td></td>
</tr>
<tr>
<td>1989.8.10-1991.11.5</td>
<td>58</td>
<td>29</td>
<td>Toshihi KAIFU</td>
<td>58</td>
<td>Politician</td>
<td></td>
<td>Waseda</td>
<td></td>
</tr>
<tr>
<td>1991.11.5-1993.8.921</td>
<td>38</td>
<td>62</td>
<td>KIICHI MIYAZAWA</td>
<td>72</td>
<td>Bureaucrat (MOF)</td>
<td>1942-52</td>
<td>Tokyo</td>
<td>father=politician</td>
</tr>
<tr>
<td>1993.8.9-1994.4.278</td>
<td>22</td>
<td>42</td>
<td>Morihito HOSOKAWA</td>
<td>55</td>
<td>Politician</td>
<td></td>
<td>Sophia</td>
<td></td>
</tr>
<tr>
<td>1994.6.30-1996.1.11</td>
<td>18</td>
<td>22</td>
<td>Toshiichi MURAYAMA</td>
<td>70</td>
<td>Politician</td>
<td></td>
<td>Meiji</td>
<td></td>
</tr>
<tr>
<td>1996.11.1-1998.7.30</td>
<td>31</td>
<td>33</td>
<td>Ryutaro HASHIMOTO</td>
<td>59</td>
<td>Politician</td>
<td></td>
<td>Keio</td>
<td>father=politician</td>
</tr>
<tr>
<td>1998.7.30—2000.4.020</td>
<td>20</td>
<td>35</td>
<td>Keizo OBUCHI</td>
<td>61</td>
<td>Politician</td>
<td></td>
<td>Waseda</td>
<td>father=politician</td>
</tr>
<tr>
<td>2000.4.05—2001.4.26</td>
<td>12</td>
<td>31</td>
<td>Yoshiro MORI</td>
<td>63</td>
<td>Politician</td>
<td></td>
<td>Waseda</td>
<td>father=politician</td>
</tr>
<tr>
<td>2001.4.26—</td>
<td>16</td>
<td>29</td>
<td>Junicho KOZUMI</td>
<td>59</td>
<td>Politician</td>
<td></td>
<td>Keio</td>
<td>father=politician</td>
</tr>
</tbody>
</table>

**Total**: 684 months/seinaki tensin=348 months
Table 1, continued

Notes:

1. Age refers to age at the beginning of the prime ministership.

2. MCI = Ministry of Commerce and Industry (precursor to MITI).


4. Nakasone was a civil servant (Home Ministry) but left the bureaucracy after six years and entered politics when he was 29 years old.

5. Total months is calculated for 57 years from August 1945 to August 2002.

Table 2

Summary of Cabinet Members and Their Backgrounds

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cabinet Size</strong></td>
<td>20</td>
<td>21</td>
<td>21</td>
<td>23</td>
<td>23</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td><strong>Seikai tenshin</strong></td>
<td>5 (25.0%)</td>
<td>11 (52.4%)</td>
<td>7 (33.3%)</td>
<td>6 (26.1%)</td>
<td>6 (26.1%)</td>
<td>5 (20.0%)</td>
<td>6 (33.3%)</td>
</tr>
<tr>
<td><strong>Todai Graduates</strong></td>
<td>9 (45.0%)</td>
<td>13 (61.9%)</td>
<td>9 (42.9%)</td>
<td>8 (34.8%)</td>
<td>7 (30.4%)</td>
<td>7 (28.0%)</td>
<td>5 (27.8%)</td>
</tr>
<tr>
<td><strong>Seshu giin</strong></td>
<td>2 (10.0%)</td>
<td>3 (14.3%)</td>
<td>3 (14.3%)</td>
<td>6 (26.1%)</td>
<td>6 (26.1%)</td>
<td>11 (44.0%)</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td><strong>Seikai tenshin</strong> + <strong>Seshu giin</strong></td>
<td>n.a.</td>
<td>12 (57.1%)</td>
<td>10 (47.6%)</td>
<td>12 (52.0%)</td>
<td>12 (52.0%)</td>
<td>15 (60.0%)</td>
<td>13 (72.2%)</td>
</tr>
</tbody>
</table>

**Notes:**
2. Hereditary politicians (*seshu giin*) refers to those with family members in political office, including grandparents, fathers-in-law, spouses, siblings, and uncles.
3. *Seikai tenshin + Seshu giin* refers to the number of politicians who either are *seikai tenshin*, *seshu giin*, or both.
Table 3

*Seikai tenshin*, Todai Graduates, and *Seshu giin* among LDP Members of the Lower House for Selected Election Years

<table>
<thead>
<tr>
<th>Election Dates</th>
<th>Data Source</th>
<th>LDP N</th>
<th>Seikai tenshin</th>
<th>Univ. of Tokyo Graduates</th>
<th>Seshu giin¹</th>
<th>Seikai tenshin + Seshu giin²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947.4.25</td>
<td>(a)</td>
<td>120</td>
<td>17 (14.2%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a)</td>
<td>106</td>
<td></td>
<td>8 (7.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1949.1.23</td>
<td>(a)</td>
<td>261</td>
<td>44 (16.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a)</td>
<td>75</td>
<td>13 (17.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953.4.19</td>
<td>(a)</td>
<td>237</td>
<td>58 (24.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a)</td>
<td>76</td>
<td>14 (18.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b)</td>
<td>283</td>
<td>51 (18.0%)</td>
<td>69 (24.4%)</td>
<td>18 (6.4%)</td>
<td>51 (18.0%)</td>
</tr>
<tr>
<td>1958.5.22</td>
<td>(a)</td>
<td>298</td>
<td>79 (26.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1967.1.29</td>
<td>(b)</td>
<td>278</td>
<td>58 (20.9%)</td>
<td>94 (33.8%)</td>
<td>52 (18.7%)</td>
<td>97 (34.9%)</td>
</tr>
<tr>
<td>1972.12.10</td>
<td>(b)</td>
<td>282</td>
<td>56 (19.9%)</td>
<td>88 (31.2%)</td>
<td>68 (24.1%)</td>
<td>109 (38.7%)</td>
</tr>
<tr>
<td>1983.12.18</td>
<td>(b)</td>
<td>236²</td>
<td>49 (18.5%)</td>
<td>75 (31.8%)</td>
<td>99 (37.4%)</td>
<td>137 (58.1%)</td>
</tr>
<tr>
<td>1986.7.6</td>
<td>(c)</td>
<td>304</td>
<td>70 (23.6%)</td>
<td>67 (22.6%)</td>
<td>115 (38.7%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d)</td>
<td>297</td>
<td>67 (22.6%)</td>
<td></td>
<td></td>
<td>133 (44.8%)</td>
</tr>
<tr>
<td>1993.7.18</td>
<td>(b)</td>
<td>226</td>
<td>51 (22.6%)</td>
<td>52 (23.0%)</td>
<td>89 (39.3%)</td>
<td>128 (56.6%)</td>
</tr>
<tr>
<td>2000.6.25</td>
<td>(b)</td>
<td>238</td>
<td>56 (23.5%)</td>
<td>61 (25.6%)</td>
<td>76 (31.9%)</td>
<td>118 (49.6%)</td>
</tr>
</tbody>
</table>
Table 3, continued

Notes:

1. Hereditary politician (*seshu giin*) refers to those who inherit political machinery from their parents (including adoptive parents and fathers-in-law) and other family members.

2. *Seikai tenshin + seshu giin* refers to the number of politicians who are either *seikai tenshin*, *seshu giin*, or both.

3. There were 309 members of the Liberal and Progressive Parties but data are missing for 26 cases. Thus, the percentages were calculated based on 283 (309 minus 26).

4. There were 240 LDP members but data are missing for 4 cases. Thus, the percentages were calculated based on 236 (240 minus 4).

Table 4

*Seikai tenshin*, Todai Graduates, and *Seshu giin*¹ among Lower-House Members

<table>
<thead>
<tr>
<th>Election Date</th>
<th>Data Source</th>
<th>Lower House Total</th>
<th><em>Seikai tenshin</em> Graduates</th>
<th>Univ. of Tokyo Graduates</th>
<th><em>Seshu giin</em></th>
<th><em>Seikai tenshin + Seshu giin</em>²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947.4.25</td>
<td>(a)</td>
<td>466</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1953.4.19</td>
<td>(b)</td>
<td>431³</td>
<td>60 (13.9%)</td>
<td>100 (23.2%)</td>
<td>22 (5.1%)</td>
<td>62 (14.4%)</td>
</tr>
<tr>
<td>1967.1.29</td>
<td>(b)</td>
<td>483</td>
<td>63 (13.0%)</td>
<td>114 (23.6%)</td>
<td>61 (12.6%)</td>
<td>111 (23.0%)</td>
</tr>
<tr>
<td>1972.12.10</td>
<td>(b)</td>
<td>491</td>
<td>59 (12.0%)</td>
<td>108 (22.0%)</td>
<td>77 (15.7%)</td>
<td>121 (24.6%)</td>
</tr>
<tr>
<td>1983.12.18</td>
<td>(b)</td>
<td>508</td>
<td>55 (10.8%)</td>
<td>97 (19.1%)</td>
<td>119 (23.4%)</td>
<td>163 (32.1%)</td>
</tr>
<tr>
<td>1993.7.18</td>
<td>(b)</td>
<td>511</td>
<td>79 (15.5%)</td>
<td>94 (18.4%)</td>
<td>123 (24.1%)</td>
<td>189 (37.0%)</td>
</tr>
<tr>
<td>1996.10.20</td>
<td>(c)</td>
<td>500</td>
<td>74 (14.8%)</td>
<td></td>
<td>122 (24.4%)</td>
<td></td>
</tr>
<tr>
<td>2000.6.25</td>
<td>(b)</td>
<td>480</td>
<td>76 (15.8%)</td>
<td>100 (20.8%)</td>
<td>117 (24.4%)</td>
<td>177 (36.9%)</td>
</tr>
</tbody>
</table>

Notes:
1. Hereditary politicians (*seshu giin*) refers to those who inherit political machinery from their parents (including adoptive parents and fathers-in-law) and other family members.
2. *Seikai tenshin + seshu giin* refers to the number of politicians who are either *seikai tenshin*, *seshu giin*, or both.
3. There were 461 members of the Lower House but data were missing for 30 cases. Thus the percentages were calculated based on 431 (461 minus 30).

Notes

2. This lack of confidence in institutions is distinct from the Koizumi phenomenon.
3. The sense of inheritance is different from a political position directly inherited as in the House of Lords in the United Kingdom. Instead, the key ingredients of a successful election are passed through the family.
4. The Diet consists of the Lower House (or the House of Representatives) the more powerful chamber with 500 seats, and the Upper House (or the House of Councilors) with 252 seats (IMPS Group 1994, 110).
5. Guided democracy places a heavy premium upon the virtue and wisdom of the ruling elite. Bureaucratic power was enhanced by entry of the bureaucrats into political parties, eventually (1908 election) making up one of two key elements in the ruling parties, the other being pure politicians (Scalapino 1968, 264-65).
6. Unlike the Japanese case, job training is also broader typically French bureaucrats are attached to other government agencies, public corporations, banks, and the private sector as part of their career training. Japanese bureaucrats spend their entire career in one ministry. See Suleiman 1974, 1978; Birnbaum 1982; van Wolfren 1989, 155-57.
7. In other words, the development of technical expertise by zoku may have neither shifted the balance of influence between the LDP and the bureaucracy, nor eroded the position of seikai tenshin politicians. Complicating the issue, Sato and Matsuzaki (1986) point to the problem of measuring who exactly qualifies as a zoku politician. This basic issue of definitions and measurement is not settled and no one has taken the next step to present evidence on this presumed inverse relationship between zoku and seikai tenshin politicians. For now, the rise of the zoku phenomenon is not firmly measured, and the relationship between zoku and seikai tenshin is at best a correspondence in time and not causally established. The suggestion is that zoku politicians began to undermine seikai tenshin politicians by the late 1970s.
8. It takes 25-30 years of career experience in party politics to rise to the level of prime minister. This suggests the impossibility of seeking a second career in high political positions for any bureaucrat. Seikai tenshin prime ministers have become the exception since the 1980s. One must win political office continuously from around age 35 to be considered for the prime minister position late in one’s career. The arithmetic of the LDP’s seniority system narrows the probability of seikai tenshin politicians achieving high political office.
9. We did not count Nakasone as a seikai tenshin politician. He left the Home Ministry in six years.
10. Shigeru Yoshida is counted once, although he occupied two prime ministerships.
11. The details of this intergenerational conversion of social and economic capital is a topic of principal importance (Bourdieu 1986).
12. Some authors contend that some cabinet positions are more important or prestigious (e.g., MOF, MITI, MFA, Justice) (Kerbo 2000; Rothacher 1993). However, there does not appear to be a pattern when looking at these six cabinets.
13. Another measure of potential change involves *newly* elected LDP Diet members and Diet members generally for selected elections. We found no consistent relationship between newly elected and prevalence for either *seikai tenshin* or *seshu giin*. Perhaps this was because compensating elections took place in nonselected years.
Japanese Corporate Governance in a Globalized Knowledge Economy

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Japanese Corporate Governance in a Globalized Knowledge Economy

Abstract

Japanese corporations have been facing increasing pressure since the collapse of the bubble economy, yet little progress has been made in resolving structural conflicts within the Japanese economic system. In this paper, we examine the complexity of Japanese corporate governance structure with an emphasis on Comparative Institutional Analysis (Aoki, 2000A, B, Aoki, Okuno-Fujiwara and Kim, 1998, Aoki and Kim, 1995). Drawing on the literature of economic history (David, 2003, 2002, Nelson and Bhavan, 2001) path-dependence and increasing returns (Arthur, 2002, 1999, 1994), we suggest that a modified governance system may be necessary for the revitalization of the Japanese economy.
Introduction

Over the past twelve years, Japanese companies have been facing an increasingly complex and unfamiliar business environment largely as the result of the information technology (IT) revolution (Drucker, 2002, 2000) and the emergence of increasingly open reciprocal global markets (Aoki 1998A). The IT revolution with its ubiquitous Internet technologies has changed the fundamental nature of business information not just by speeding up information flows and increasing transaction speed (Porter, 1997) but also by erasing many of the traditional tradeoffs between richness and reach, and by deconstructing the value chain of businesses based upon intensive personal selling (Evans and Wurster, 1997). Often such changes may turn a corporation’s greatest assets into its greatest liabilities over a very brief period of time. Economic systems which cannot adapt to these changes face the very real possibility of exclusion from new information-based trading regimes. Even systems like that of Japan, which are making a concerted effort to adapt, may face a substantially increased degree of financial and political uncertainty and instability.

In the case of Japanese industrial investment policy, the stickiness (or non-transferability) of Japanese investment has made these problems even more intense (Aoki, 2000). Not only is the investment sticky, or reflective of heavy sunk costs on the part of Japanese corporations, but in the context of human behavior, the members of Japan’s labor pool have also invested heavily in skills which correspond to a familiar system with deep historical roots where context-oriented skills yield higher economic returns than does an investment in individualistic or contractarian skills (Aoki, 2001). If exogenous changes in the international business environment had not already put the Japanese system under a high degree of pressure, the collapse of Japan’s Bubble Economy subjected the system to successively increasing strains, especially in the financial sector (Sheard, 2002). Then the 1997 Asian
currency crisis subjected the entire Japanese system to further stresses, since Japan was a major investor and financier for almost all of the Asian countries whose economic wealth was depleted or even disabled in the meltdown (Johnson, 2001). Nonetheless, the underlying constraints on institutional patterns of investment and industry support continue to bedevil attempts at reforming Japan’s industrial policy process and the mechanisms by which resources are allocated for production (Katz, 1998, Aoki, 1998)\textsuperscript{iv}.

In its most fundamental form, if we consider the argument put forth independently by Aoki, Johnson and Katz, that while Japan’s industrial policy created the basis in the 1960s and 1970s for the economic miracle, the politicization of this same process ended up forcing the ministries to subsidize Japan’s most inefficient industries (such as food production).\textsuperscript{v} If we attempt to analyze this kind of dual-economy situation from the standpoint of comparative marginal returns (i.e., is the particular industry or product group characterized by decreasing, stable or increasing marginal returns) the results of such policy choices may be far more dire under certain situations than even the harshest critics suggest. In particular, in industries characterized by network externalities\textsuperscript{vi} or increasing marginal returns (David, 1985, Arthur, 1989, Shapiro and Varian, 1998), such as information technology, telecommunications and computing, the subsidization of a losing technology or industry can become a cash trap of near infinite proportions\textsuperscript{vii} (see Appendix II).

Under such harsh competitive conditions, with a world economy which continues to underperform and the de-facto collapse of local government in many third world countries, it is difficult to imagine any easy mechanism leading to prosperity. However, three recent strands of economic endeavor do show promise for the eventual revitalization of the world economy. These three areas are (a) evolutionary economics, with its unique concept of co-evolution on a dynamic fitness landscape, which holds the promise of providing some innovative solutions to economic growth as well as creating a larger buffer for Schumpeterian gales of creative destruction\textsuperscript{viii}, (b) agent based modeling, which may eventually provide us with more powerful tools for the prediction of market behavior and the hedging of high sigma events\textsuperscript{ix}, and (c) comparative institutional analysis\textsuperscript{x} which offers the promise of harmonizing the world’s economic and business systems as compared to the currently popular convergence paradigm, which has taken false premise and sophist logic to unrivaled heights in recent years (Fellman and Takei, 2001, Takei and Fellman 2002).

Global Competition and the Consequences of the IT Revolution

More than 200 billion US dollars were invested in the information industry during the year 2000 alone. While investment dollars are not very forthcoming at the moment, telecommunications giants are already
maneuvering for position in the next technological revolution — wireless broadband computing and communications. Despite the dot-com crash and the slowdown in technology enterprises, investments in the information industry have grown by a relatively steady 8% per annum since the early 1990s.

In many ways, the IT revolution, through the spread of universal connectivity (Evans and Wurster 1997), has created a new kind of globalization. The globalization of shared information has increased the volume and depth of information available to all sectors of advanced nations economies, including suppliers, manufacturers, customers, consumers, and secondary markets (Drucker, 2002). The IT revolution has also created a blurring of traditional distinctions in the service sector by allowing a broad range of participants to engage in adding value to enterprises where previously they were merely passive consumers or limited to participation in a single position in the value chain (Norman and Ramirez, 1993).

Given the powerful effects of the internet on the world environment, several authors have begun to argue that we are witnessing the emergence of a knowledge economy or a knowledge society (Abramowitz and David, 2001, David and Foray, 2003, Cave, 2002, Smith, 2000). Although nobody appears to be able to agree about standards, intellectual property rights (David 2000 or many of the other and often novel misuses and abuses to which the global network has been put, such developments seem not to slowed the trend at all. Other authors argue that the shortened distance between markets (Drucker 2002), and the ability for new market entrants to operate without the kinds of tradeoffs and constraints inherent in earlier, non-digitized enterprises (Evans and Wurster 1997) has resulted in the growth of both new competitors and has increased the severity of global competition (Porter, 1996).

Improving the efficiency of information sharing and increasing the speed and bandwidth (information content) of communications has also forced multinational companies to accelerate product development processes in order to retain a position of sustainable competitiveness. At the same time, the global information explosion has increased the pressure on companies to increase the efficiency and quality of their development process. Efficiency of production is paramount in this arena because at the same time producers are able to share and utilize information more efficiently, consumers are also gaining an increased access to rich information. As a result of the increased bandwidth available to consumers, price competition becomes increasingly severe and cost leadership becomes an increasingly determinant for success in global markets.

In order to meet the challenge of increased consumer demands, global companies must constantly innovate, build new technologies, achieve new economies of scope and scale, and create increasingly deep strategic positions. This means creating a value chain where the various elements and processes (or core competencies, to use the language of Hamel and Prahalad) cross-subsidize one another creating what Porter (1997) denotes as higher order strategic fit. In the information age, staking out a sustainable competitive advantage means creating products whose value chain is sufficiently complex, coordinated
and self-reinforcing that for competitors to duplicate a company’s products (even universal products of the type suggested by Ohmae) they must essentially duplicate the firm’s entire value chain.

The IT Revolution and Japanese Management

The combination of domestic deregulation, the economic panic and disinvestment pattern which followed the collapse of the bubble economy followed by 1997 Asian currency crisis, where Japan was the major investor in many of the countries whose currency underwent radical devaluation put the Japanese economy under tremendous strain. Subsequent to the 1997 Asian melt-down, increased mergers and acquisitions in a volatile market for corporate control, combined with the emergence of E-commerce during a period where market and consumption dynamics have often shifted both rapidly and unpredictably, the traditional Japanese management system has proven itself increasingly ineffective and inefficient.

A number of Japanese corporations and corporate groups have attempted to meet this challenge by introducing various organizational changes aimed at moving away from some of the traditionally more fixed elements of the Japanese management system. In particular, these efforts have focused on improving the board system, reduction of costs, improving operational efficiency, and attempting to deal with a new kind of globalization, where Japan is often sandwiched between the inefficiencies of its own corporations and growth of low-cost production centers in other parts of Asia. As we have argued elsewhere, the results of these reforms have generally been, at best, mixed. Moreover, where companies focus exclusively or nearly exclusively on operational effectiveness (OE), Porter (1997) argues that the long-term outcome of such changes can be generally characterized as destructive competition.

Thus, the dilemma for Japan’s major industrial groups is not only how to implement change, but how to do so in a way which will improve the overall competitiveness of Japanese firms in the global marketplace, as opposed to merely increasing their comparative operational efficiency.

Designing New Systems for the New Global Business Environment

The changes in the global business environments which have occurred over the past decade have profoundly impacted both the product development process as well as market competition. This is true not just for Japanese firms, but for all multi-nationals. In broad brush strokes, these changes require a dramatic revitalization of both products and services not only in the way they are designed, delivered, segmented and bundled, but also in the way the companies delivering those goods and services are themselves organized (Lissack, 1996). In Asia, and most clearly, in Japan many management practices,
and even structural elements of business-government cooperation which once constituted the firm’s or the industry’s or the country’s greatest strengths have in the 21st century turned into substantial competitive weaknesses (Takei and Fellman, 2002).

In many cases, companies and industries which historically may have exhibited the greatest ability in adapting to changing markets and technology, now find themselves unable to cope with the kinds of change that the digitization of information and the decentralization of commerce has brought about. While this may at first appear to be rather surprising, it is actually rather typical of the kinds of adaptive behavior which population biologists observe (and explain) when charting the changes in various ecological niches. Stuart Kauffman (1992) explains this kind of multi-dimensional dynamic in terms of a fitness landscape where the comparative successes or failures of various species are represented as peaks and troughs which act as deformations of a dynamic competitive.

Michael Lissack (1996), editor of Emergence: A Journal of Complexity Issues in Organizations draws upon the work of Lakoff and Johnson to explain how the metaphor of the fitness landscape (and indeed, metaphors in general) may provide powerful cues to strategic behavior in a competitive environment:

Lakoff and Johnson argue that "many of our activities (arguing, solving problems, budgeting time, etc.) are metaphorical in nature. The metaphorical concepts that characterize those activities structure our present reality. New metaphors have the power to create a new reality." Corporate managers tend to view their companies as being in a race -- be it for success, market share, revenues, or survival. That metaphor influences the way they see the world and the way they manage their companies.

In the race metaphor, the landscape is fixed even if the course is not. One has an identified goal and a set of competitors. In the fitness landscape metaphor, the landscape itself is always changing. One’s goals, course, and competitors are but factors which can and do affect the shape of the landscape itself. The objective is to climb to a non-local peak and your peaks may be very different from your competitor’s.

Stern et al (1998) make a very similar point in Perspectives on Strategy from the Boston consulting group in their chapter on Sectoral Competition. Here the emphasis is not on absolute profitability but rather on marginal profitability in comparison to the nearest competitor. In this kind of situation two competitors may pursue entirely different goals. While each sees their choice as rational or as the best available choice under the circumstances, one competitor is pursuing a course designed to drive their competitor out of the business or at the very least out of a particular business segment.
Elements of this strategy can be seen in China's seizing the advantage of being a low-cost producer (primarily for lower value added goods) and then shifting from lower cost, light industry products to higher value added, capital intensive products such as steel, (i.e. Bao-Yao Iron and Steel).

Emphasizing the value of information, and the ways in which individual choices can affect both managerial performance in a direct sense as well as the more theoretical sense which we pursue later in this paper, Lissack also notes that:

Complexity research has developed a descriptive language which can help to shape the world around us. By use of the vocabulary of complexity, managers view the world in a different light. Meanings and metaphors matter. The meanings that we give to ourselves, our products, our competitors, our customers, and all the relevant others in our world determine the space of our possible actions -- and, to a large extent, how we act. Complexity metaphors -- fitness landscapes, simulated annealing, local maxima, patches, generative relationships, increasing returns -- when accepted within the vocabulary of an organization can change both the way managers manage and the problems they choose to manage. Once these metaphors are accepted, it becomes reasonable to divide the organization by recognizing some pieces as "traditional" businesses and others as "knowledge based" businesses. By applying lowest cost margin approaches only to the traditional businesses, allowing simulated annealing approaches such as patches and the careful cultivation of "noise," and focusing on "search strategies" for the knowledge-based businesses, managers can have their cake and eat it too.

In examining the changed nature of global competition and the required elements for adaptation to this new competitive landscape we focus on three key elements of organizational structure and strategy. The first element is transaction costs. Beginning with the early work of Ronald Coase (1990) and following on to the work of Oliver Williamson (1985, 1993, 1998, 1999) and Michael Jensen (1998), we view transaction costs as setting the boundaries of the firm. Similarly, we see the lowering of transaction costs as the most direct route to maximizing the firm's overall efficiency. In examining Japanese firms, we draw particularly on the work of Masahiko Aoki (2000) to explain transaction costs and the principal-agent problem in strategic (game theoretic) terms. We also draw upon complexity science to characterize the nature and types of local rules of behavior (Waldrop, 1992; Holland, 1995) which lead us to expect success or failure from various management configurations (such as the A,J, and P [statistical mechanics] equilibrium states explained by Aoki ).xv

The second element of consideration in Japanese corporate decision-making is information asymmetries. After transaction costs, information asymmetries are most likely the single greatest source of inefficiency and decisional degradation in the Japanese corporation, and hence a major obstacle in the
firms learning how to adapt to the kinds of change confronting it in the 21st century. In addition, whenever strong information asymmetries are present, they act in such a way as to prevent the minimization of transaction costs and therefore represent a major obstacle to achieving efficient firm structure. The last element is cultural persistence. There are profound differences in the cultural and institutional histories of Japan and the United States. In the context of corporate governance, as we have argued elsewhere (Takei and Fellman, 2002a), there is a form of path dependent lock-in (Arthur, 1992) which we refer to as cultural persistence that requires hybridization rather than the wholesale convergence or convergence suggested by other authors (Bradley et al).

Transaction Costs and Governance Efficiency

In attempting to design a more efficient model of Japanese corporate governance, there are two elements which merit particular consideration. The first element is that of transaction costs. In order to constitute a substantial improvement over the existing system, the new model must minimize transaction costs as a basic mechanism for economic efficiency (Williamson, 1998). Secondly, the new model must provide a clear set of mechanisms for solving the kinds of information asymmetries which currently hamper the decision-making process (both with respect to speed and magnitude) in most Japanese corporations.

Aoki (2000) proposes a rather novel treatment of institutions and agents for handling the definitional mechanics of intra and inter-firm transaction costs. With respect to agents, he uses a game theoretic framework to define agent strategies in a fashion that is consonant with Brian Arthur's (1994) path-dependency argument, where a variety of firm behaviors are seen as being subject to small, random perturbations with a feedback mechanism that leads to multiple, unstable (and a priori, unpredictable) equilibria. In The Evolutionary Game and Multiple Equilibria, Aoki develops his theory of agent behavior under the rubric of The formation of functional/contextual skills as strategy (p. 43). He compares the United States and Japan by noting (p.43):

For example, modifications to the classical hierarchy principle under the Anglo-American system have tended toward the gradual incorporation of diffused information processing. On the one hand, the information processing functions relevant to the strategic decision-making role that involves upper-level judgment are concentrated in the hands of management; while on the other, the information processing functions relevant to operations have been delegated to the functionally specialized lower-level units according to prescribed rules. If the technological complementarity between task units is strong, the
diffusion of information processing will be limited to the idiosyncratic environment of the task unit (functional hierarchy), while if weak, the diffusion of information processing will extend to the systemic environment (an element of the decentralized hierarchy) with the support of developments in digital communications technologies.

Aoki’s treatment of information diffusion (and at the very least the implicit treatment of information costs and information asymmetries) and the incorporation of digital information technologies into the corporate decision-making process in Japan presents a very different picture (p. 44):

On the other hand, modifications to the classical hierarchy in Japan have tended toward first incorporating elements of the homogenous team on a trial-and-error basis, and later establishing them permanently. Japanese firms have had to adapt to an incessantly changing environment, from the prewar emphasis on heavy and chemical industries, to the war-time shift to war-related production and extreme labor shortages, to postwar recovery and the high growth period. However, given the relatively under-developed social accumulation of entrepreneurial leadership skills needed for strategic decision making, as well as various kinds of functionally specialized skills, adaptation to such an environment could not have been accomplished through the evolution of the Anglo-American-style differentiated information structure. The various problems that continuously arise in the process of adapting to the environment were approached collectively either by the organization as a whole or by the task unit as a whole. The functional responsibilities of each individual were not clearly demarcated, and collective and ad hoc problem solving techniques prevailed. Through this trial-and-error process of problem solving, effective techniques were identified and gradually established as organizational routine.

Aoki’s argument echoes some of our own earlier findings, with regard to the now problematic lack of clearly defined authorities and responsibilities among and between directors in the Japanese corporation. At the same time, Aoki at least partially explains why the simple wholesale transplantation of Anglo-American corporate structures (decision-making, strategy, information systems and corporate governance systems) is unlikely to yield much in the way of improved performance for Japanese corporations. He then proceeds to model agent performance based on the payoffs expected from investment in various, mutually exclusive competing managerial skills. His most important conclusion in this regard is that the formation of organizational nodes in Japan can be explained to a large degree by the phenomenon of path dependence (p. 53). Paralleling the treatment of Type I, Type II and Type III Path Dependence as described by Liebowitz and Margolis, Aoki generally treats the evolution of Japanese corporate form as falling in the Type III category, arguing that if economic agents are shortsighted,
viewing as optimal those strategies that assure them the best average payoff in the present then the selection is entirely path dependent (p.53). When Aoki runs multiple generation simulations with the possibility of agent mutation and migration and with provisions for bounded rationality, he still finds that out of the multiplicity of possible equilibrium states there are three stable, or dominant positions (Axelrod, 1985). While Aoki’s theory is not nearly so complete as that of Arthur et al, it nonetheless does show that there are stable configurations around the A-Equilibrium, the J-Equilibrium and the P-Equilibrium and that while the Pareto-optimal equilibrium is the most robust (i.e. resistant to mass simultaneous mutations in agent strategies) it is also very costly to transition from the A-equilibrium to the J-equilibrium or vice versa (pp. 54-55).

While Aoki’s treatment of the principal-agent problem is both illuminating and thought provoking, it treats only one aspect of the information cost problem. At least as important as his various game theoretic scenarios for agent strategies and behavior is his treatment of the role of institutions. In the context of local rules of behavior and the game-theoretic modeling of the decisional processes of agents in the principal-agent relationship, Aoki defines institutions as the codification of evolution equilibrium strategies. In this context, and consistent with his path-dependent treatment of culture, he argues:

If the dynamics of an economy that starts out with a fixed set of historical conditions reinforces the complementarity between specific strategies and approaches the corresponding equilibrium situation, establishing rules to enforce the adoption of those strategies will serve to reduce social and individual costs. (p. 57)

This argument can be taken as the base case for cultural persistence. Its corollaries are that when an equilibrium strategy is turned into a rule, it reduces the information costs for all agents adopting the strategy, particularly the costs of information acquisition and the more difficult and uncertain costs of calculations with respect to utility or return on investment in the strategy. Moreover, when the strategy is institutionalized as a rule or a law, the costs of enforcement (social cost) may also be significantly lower than even the base cost of finding the information for the strategy in the pre-institutionalized stage. There are many reasons why one might expect enforcement costs to be lower than information gathering costs in such a scenario, but the simplest explanation is just that the institutionalization or social implementation of the rule will consist largely of activities which are consistent with the equilibrium preferences of the individual actors in the vicinity of the institution. Aoki takes this view even one step further, again reinforcing the cultural persistence argument, by taking the position that in such cases, the institutions
will be sustainable and will contribute to the stability of the economic system. As an example he argues:

Rules may be established as a legal system or may consist of customs or spontaneous moral codes. For example, contextual skills may be accumulated through continuous cooperative relationships between workers, but organizational conventions such as the seniority wage system or lifetime employment system also provide workers with incentives to form these skills. Case laws that make it difficult to terminate employment contracts give workers confidence in the corporate commitment to long-term employment. Under the Anglo-American system, on the other hand, MBA programs and other job training institutions aimed at training people with specialized skills have been institutionalized, while property rights to jobs based on seniority are recognized under collective agreement. In this kind of economy, investing in specialized functional skills will clearly produce the highest economic payoff. The real choice comes down to collecting the information regarding the institutionalized market for each specialized skill, and determining what type of functional skill investment will yield the highest net returns.

Aoki’s approach is interesting in that he very closely parallels the most outspoken, hard-liners who have criticized Japanese mercantilism (i.e. Prestowitz and Johnson). Almost the only difference in their respective viewpoints is that where Prestowitz and Johnson view the otherness of Japanese markets as mercantilist, or even pernicious and threatening, Aoki sees them as a natural outgrowth of the institutionalization of cultural norms.

The real crunch comes then, not in competing definitions of the Japanese corporation or Japanese markets or even Japanese companies, industrial groups and their respective financing arrangements. Rather, the problem, as indicated above is the very nearly intractable effort of restructuring institutions build around a powerful, persistent core of social and economic arrangements, institutionalized in corporate practice, culture and law in order to allow them to once again provide the social stability and economic growth which are central to the Japanese value system (in both culture and business).

The most appropriate vehicle for change in the Japanese system may well be Japanese corporate governance.

Information Asymmetries and the Efficiency of Corporate Governance

Information asymmetry occurs when information is either not shared or not perfectly understood in organizations. In Japanese corporations, imperfect information sharing and understanding are the main
sources of agency costs and inefficient resource allocation (Spiegel, 2001). Aoki (2000) describes the centrality of information to corporate efficiency by noting that:

The operational efficiency at a petroleum or nuclear power plant depends largely on how the firm copes with emergent events that arise in the normal course of operations. To what degree are the on-site-operations teams granted discretionary power to react quickly? Is there a built-in structure by which information on an observed irregularity can be communicated laterally to other operating units, or would such a situation be handled only through a vertical command structure? The productivity of a firm may depend on the quantity and quality of information exchanged among a firm’s administrative or production personnel, as well as on the structural allocation of decision-making authority and responsibility. Firms may be engineering entities, but they are also information systems. (p. 27)

Yoshida (1995) argues that a major historical strength of the Japanese firm was the ability to implement high speed decisions. He explains the high speed of Japanese decision-making as the result of a high degree of information sharing, deep mutual understanding, meticulous coordination of stakeholders’ interests, and continuously updated consensus created through long discussions. These factors are still available in the Japanese work force and could be used to create an accurate, high speed decisional implementation system, but only under conditions of market stability (with the implicit corollary that stable markets are also predictable markets). Yoshida also suggests that Japanese companies can only maintain high speed decision-making and high speed implementation systems so long as they have an efficient system for information sharing and distribution. In this sense he echoes Aoki’s argument that even engineering entities are also information systems.

The Japanese Corporate Board System and Rapid Decision-Response Times

Sheard (1994, 1998, 2002), along lines discussed earlier in this paper, argues that the Japanese corporate governance system is under severe pressure from the new global business environment and international informational regime. In a long list of diagnostics, he notes that the Japanese governance system has been malfunctioning in (a) monitoring, (b) controlling, (c) coordinating, and (d) in resource allocation due to its internal structural inefficiencies. We can group these inefficiencies into five basic categories:

First, the size of the board of directors grossly exceeds optimal number of directors. The overstaffed Japanese board, with its complex vertical hierarchy interferes with both board and firm efficiency. In
addition, an oversized board faces greater obstacles to information sharing and prompt decision-making simply because of its size. xxvii

Second, the hierarchical structure of the Japanese board of directors also impedes decision making (Monks and Minnow, 2001). xxviii

Third, the system of internally promoting directors is responsible for a significant deterioration in the quality of financial decisions (Schena, 2002, Sheard, 1998, 2002). If the board has many internally promoted directors, the quality of final decisions may deteriorate because the board is closed to outside, information, competition and stimulation. In addition, Yoshida (1995) points out that Japanese information sharing and consensus in large organizations tends to have organization-specific logic. This argument is somewhat similar to Aoki’s argument about workforce investment in contextual skills. The problem is that contextual, or organization-specific logic can become illogic if the directors have no external mechanism for information, or control. The results of internal board governance which have been seen since the collapse of the bubble economy in 1990, is that conclusive decisions tend to avoided, or else with tremendous inefficiency, impracticality and sometimes simple irrationality (Sheard, 2002).

Fourth, Japanese directors do not have a clear distinction between top managers and directors. As a result, Japanese directors tend to have unclear task description, diluted authority, fuzzy responsibility, overlapping functions, and inadequate specialization (Yoshida, 1995). This unclear division of labor blocks the efficiency of the board and renders the need for professionalism, specialization, commitment, and responsibility nugatory. In addition, given the consensus nature of Japanese top management, no director would be willing to take personal responsibility for failed management policies and practices, because, except in cases of criminal misconduct, no director really knows who is responsible for corporate failure. Yoshida (1995) suggests that this lack of clarity is a problem not only with respect to the efficiency of the board, but that board lassitude or board incompetence threatens the long-term survival of the Japanese economy in an increasingly competitive globalized economy.

In addition to board reform, corporate financial officers are not far away from being faced with earnings pressures much like those of their American counterparts. As Japan’s population ages (my 2015 it is estimated that approximately two-thirds of the Japanese population will be over 65) pensioners, who can expect little support from the Ministry of Health and Welfare are going to demand dividends, normal interest rates and a fair return on capital. This means that along with the impending short-circuiting of the Japanese retail distribution system by the internet (long a favorite vehicle for the Ministry of Finance to
tax at every stage of its cumbersome progress) debt-holders, shareholders and bank depositors can reasonably be expected to exert increasing pressure for short-run earnings.

Finally, because decision times are so long in today's Japanese corporation. The simple erosion of assets due to inaction (a persistent pattern in the banking sector since 1990) is a genuine possibility (Lightfoot, 1992). Japanese companies are used to coordinating all stakeholders' interests and acting only after having made sure that appropriate sharing of information has taken place and a consensus among the stakeholders has been achieved. While this allows for a greater degree of harmony in the Japanese corporation than in its western counterparts, these practices take a deadly toll on the decision making process.

As we discussed earlier, the existing Japanese corporate governance system has problems with the efficient use of information, with excessively long decision times, and with both operational efficiency and strategic performance. Some of these problems are the result of trillions lost in the speculative bubble, come are the result of the Southeast Asian currency meltdown, and some are simple the result of open markets, increasing globalization and the ongoing IT revolution.

We agree with Aoki, Okuno-Fujiwara and Kim that there is a great deal of synergy to be gained from working within a comparative institutional framework. Aoki's contingent governance system may well be the best available program in the short term, and his evolutionary finance has genuine prospects of bringing Japan's economic value drivers back to world leadership. In our next paper, we will propose a somewhat more sweeping reform model for the long-term health of the Japanese corporation, which we have labeled Hybrid-Interlocking-Governance (HIG) and which we believe can be integrated in a very complementary fashion with Professor Aoki's punctuated equilibrium institutional dynamics.

Appendix I: Sony’s Executive Officer System (Shikkou Yakuin Seido), Is this an optimal solution?

In the past two years, several major Japanese companies have aggressively introduced an executive officer system or Shikkou Yakuin Seido based on the Anglo-American model of corporate governance, with the intention of improving both their corporate governance practices as well as the efficiency of the firm (JIL, 2001, Ueda, 1999). In the following section we will briefly discuss the new Japanese executive officer system of Sony and assess how it performs as a model for the new Japanese corporate governance.

Sony is a rather interesting company, as many of you already know, since it is still relatively young and under the leadership of Akio Morita it obtained world class status without assistance or guidance from MITI. However, even though SONY is a relatively young company, it nonetheless faces
many of the same problems as the bulk of the other large Japanese corporations do. In 1997, Sony decided to introduce a new corporate governance structure, which had been approved at the 80th regular shareholder meeting. This initiative introduced an executive officer system based on the Anglo-American system.

Sony proceeded to set up both a Business Operations Committee and a Management Committee. The board, at that time, had seven internal directors and three external directors, as well as two internal auditors. All of the internal directors were concurrently officers. The management committee consisted of seven directors (Torishimari-yaku), one former senior director (Senmu Torishimari-yaku), four former managing directors (Jomu Torishimari-yaku) and thirteen former directors (Torishimari-yaku). Nine new officers were added to the company’s rolls. Sony’s internal regulations for officers places a term limit of one year on each officer. Sony also instituted a mandatory retirement policy. In addition, Sony bound the new system’s officers as well as its directors to the Anglo-American standards of due care, good faith, and loyalty. Forcing executive officers (Shikko-yakuin) to adhere to these standards goes far beyond the limits of existing Japanese Commercial Law (Kester, 1991). Sony also defined the two main functions of its headquarters as being (1) the making and monitoring of decisions for all Sony group companies, and (2) the holding board meetings for three critical functions: (a) regular shareholder meetings, (b) auditor meetings, and (c) internal board meetings.

The most important function of these board meetings is business decision-making. Meetings for the purposes of operational monitoring and improving corporate transparency are held once a month. The time devoted to these meetings has been substantially increased from the previous, purely formal, one-hour meetings. The Board has several support groups including the Business Operations Committee, the Compensation Committee, and a Nominations Committee for choosing new directors. These committees meet weekly.

The Management Committee meeting is regarded as the most important event for Sony’s corporate officers (Shikkou-yakuin) and was intended to insure both the best operational decisions and to optimize Sony’s group-wide interests. At the committee level, business strategies for multiple business divisions are intensively reviewed and evaluated. Sony’s Management Committee also has a management consulate (Shimon-Kikan), which functions as the chief advisor in this decision making process. Officers meet once a month to exchange and share information informally through liaison meetings.

Management, Transparency, and Coordination Problems in the New Model
Although the traditional Japanese corporate governance system is outdated with respect to dealing with the post-bubble economy globalization of the markets, Japanese companies have not been able to successfully introduce a new system of governance which can cope with these changes. Instead, Japanese firms have tried to modify the existing Japanese system in order to make it more nearly like the Anglo-American system. Many Japanese companies have been persuaded that convergence to the Anglo-American system, no matter how deep its structural conflicts with Japanese culture, offers an easy way out of Japan's current economic dilemma. According to Nihon Keizai Shimbun (Japan Business News) by 1999, 21.4% of the top 100 Japanese corporations had introduced or attempted to introduce an Anglo-American governance system. The major feature of this change was the introduction of an officer-director system.

In brief, implementing an executive officer system means that a Japanese corporation creates two levels of governance. Kotaro Tsuru (2000) observed the de-facto creation of a two tier board in his study as well. The first level is the board of directors and the second level consists of the executive officers who are not directors. According to Ueda, the board has legal authority over the actual business operations of the company, but the executive officers appointed by the board operate the actual businesses. In contrast to the Anglo-American system, even this revised system has its own internal auditors in order to meet the requirements of Japanese Commercial Law.

A survey by Shoji Homu Kenkyu Kai found that 87.3% of all respondents had introduced an executive officer system in order to shorten the corporate decision-making process. 65.1% of respondents said that the introduction of the system was also intended to revitalize corporate board meetings. Other reasons reported for adopting an executive officer system were to (1) reduce the number of directors, (2) to strengthen the monitoring of board functions, and (3) to allow directors to focus on a higher level of decision-making.

While the study demonstrated a variety of practical reasons for restructuring Japanese corporate boards, 63.5% of the respondents said that these changes did not result in actual changes in the decision-making processes of top management. Additionally, 74.6% of respondents said that the number of board meeting was not changed.

These mismatch between the goals of the executive officer system (derived from Anglo-American corporate governance) and the actual results of its introduction are largely due to the shortsighted nature of the assumptions made by Japanese companies about convergence and the nature of the Anglo-American system.

Another reason the reforms have failed so miserably is provided by Ueda who argues that the recent introduction of the executive officer system in Japanese companies is largely symbolic. In addition Japanese corporations are introducing these reforms in exactly the reverse order of the flow of
authority characteristic of Japanese corporation. In other words, the restructuring of board structure and executive roles is preceded by attempts to restructure the role of blue-color workers, middle management, and aged non-executive employees. This reversal of the natural order of things in the Japanese corporation tends to rob corporate restructuring of much of the legitimacy which it would otherwise posses. Finally, even after restructuring Ueda argues that the new executive officer system still blurs the distinction between the Business Operations Committee of the Board (Keiei Kaigi) and the Management Committee. xlv
Appendix II: Subsidization and the Cash-Trap Problem

W. Brian Arthur (Arthur, 2002) approaches the problem of cash traps from a very different perspective than Henderson and the Boston Consulting Group. Although both deplore corporate over-investment in inappropriate technologies, products and market sectors, Arthur's analysis also encompasses a policy dimension because of the potentially unlimited drain on resources which subsidies to inefficient sectors, such as Japan's food processing industry (Katz, 1998) may inflict on an economy. In this sense Arthur's analysis more nearly resembles that of Aoki with respect to technology replacement, although Aoki's focus is more nearly on human capital, with investment in different types of skills (Aoki's competitive units, i.e., his A's and B's are sets of skills which individuals invest in for the purpose of earning a return on their skills through corporate employment — the A's are denoted as individualized or functional skills and the B's are contextual or malleable skills).

In this regard, Arthur builds an analytical process-dependent model that explains the extent to which small events determine the selection of one of the many possible paths of development, emphasizing the theoretical benefits of determining the timing and direction of policies that can lock economies and firms in optimal alternatives or dislodge locked-in structures. He begins by exploring the ways in which competing technologies can be allocated under conditions of increasing marginal returns.

This underlying assumption of increasing returns allows for multiple equilibria and possible inefficiency and is characterized by inflexibility and non-ergodicity. Increasing returns are accompanied by a non-predictability of the final outcome—an ex-ante preference for one option does not
foretell the final market outcome. Thus, small events eventually cumulate to lock-in one of many possible outcomes (most of which are sub-optimal or represent non-equilibrium solutions).

Using a simple model of allocation, Arthur considers competing technologies under varying conditions of decreasing, stable and increasing marginal returns. In the simplest case with heterogeneous adopters, the model takes into account the payoffs of two unsponsored technologies competing for the replacement of an obsolete technology, for two equal categories of agents differing in their preferences (R agents have a natural preference for technology A, and S agents have a preference for technology B). The variants of A and B available for choice change with the numbers \( n_A \) and \( n_B \) of previous adoptions. From the observer’s point of view, the sequence in which agents make their choices is unknown, in that R and S agents have equal likelihood of standing in the \( n \)th position, while the return functions are known and the demand for one agent is inelastic. The purpose of the model is to investigate whether the fluctuations in the order of choices make a difference in the market share outcome under three varying assumptions: (a) diminishing, (b) constant, and (c) increasing marginal returns.

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<th>Technology ( A )</th>
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<tr>
<td>R Agent</td>
<td>( a_R + m_A )</td>
<td>( b_R + m_B )</td>
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<tr>
<td>B Agent</td>
<td>( a_S + m_A )</td>
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In order to model the dynamics of the selection process under alternate scenarios of increasing, decreasing or constant marginal returns, Arthur assumes that \( a_r > b_r \) and that \( a_s < b_s \), so that R agents have a natural preference for A and S agents have a natural preference for B. In order to build in small indeterminacies (i.e. stochastic perturbations) Arthur assumes an observer who has complete knowledge of all the conditions and returns functions, except the set of times of choice \( \{ t_i \} \). The observer then sees the choice order as a binary sequence of R,S with the property that \( p=0.5 \) for both R and S to stand in the \( n \)th position. This produces a typical neoclassical allocation model where two types of agents each choose their preferred option at an arbitrary time \( t \). By specifying the evaluation function for everything except time, the system has room for little other than small random changes (stochastic perturbations). Arthur’s
purpose here is to discover whether such changes (embodied here as uncertainty about the time when preferences are exercised) can influence the final distribution of technologies.

In order to complete the model, Arthur argues that a specification for the process \( \{x_n\} \), where \( x_n \) represents the market share of A after \( n \) choices have been made. Because of the slight uncertainty built into the model, exact specification of the market shares at the outset is not possible. What is important here is that after the \( i \)th iteration, the system will arrive at one of three possible states (each of which may or may not be influenced by a subsidy). Based on the final state/states of the system, we can then specify whether the process is predictable, flexible, ergodic or path efficient (p. 18).

The process is **predictable** if small deviations and uncertainties cancel one another out. In that case, there will be an ex-ante forecasting sequence \( \{x_n\} \) such that \(|x_n - x_n| \to 0\) with probability 1 as \( n \to \infty \) (the observer can accurately determine initial and final market share once the fluctuations average out).

The process is **flexible** if the amount of tax or subsidy on one of the technologies returns needed to influence future market choices always remains small, less than some arbitrary constant \( g \). Non-ergodic processes (see below) are non-flexible.

The process is **ergodic** if, given two samples of possible historical events \( \{t_i\} \) and \( \{t_i\} \) with time paths \( \{x_n\} \) and \( \{x_n\} \), then \(|x_n - x_n| \to 0\) with probability 1 as \( n \to \infty \), which implies that different sequences of historical events lead to the same outcome. (i.e. there is a single, predictable equilibrium)

Finally, the process is **path efficient** if, at all times equal development (equal adoption) for the technology that is behind in adoption would not have paid better. Mathematically he expresses that as the condition that at any time \( n \), an agent chooses the more adopted technology \( \_ \), which stands at variant \( m \), with payoff to him of \( \Pi _{\alpha} (m) \). The less adopted technology \( \_ \) stands at variant \( k < m \). If \( \Pi _{\alpha} (m) \geq \max _j \{ \Pi _{\beta} (j) \} \) for \( k \neq j \neq m \) then the process is path-efficient. (p. 18)

The simplest situation is the one which is characterized by constant marginal returns. In this case \( n_A(n) \) represents the number of choices of A and \( n_B(n) \) represents the number of choices of B when \( n \) total choices have been made. Arthur writes the difference in adoption as \( n_A(n) - n_B(n) = d_n \). The market share of A can then be expressed as:

\[
x_n = 0.5 + d_n / 2n
\]

In this case, the full dynamics of the technology adoption can be expressed with just the variables \( n \) and \( d_n \), the number of adoptions and the difference in adoptions between A and B. With constant marginal returns, R agents always chose A and S agents always chose B. To an outside observer the
process follows the IID dynamics of a fair coin toss and adoptions cumulate according to the central limit theorem.

In the diminishing returns the dynamics are rather more complex. R agents will start by choosing technology A, but as returns decrease, they will change their preference to B, if the numbers using A become sufficiently greater than the numbers using B, then:

\[ d_n = n_A(n) - n_B(n) > \Delta_R = (a_R - b_R) \]

\[ (-r) \]

Similarly, although the R agents will initially choose the technology which has higher returns for them, their choice will eventually drive the value of that choice down. The S agent dynamic follows the same rules. Originally S agents choose the technology which has the higher return for them (B) but as their bids drive the returns down, they switch to the A technology. S agents will switch their preferences from B to A if:

\[ d_n = n_A(n) - n_B(n) > \Delta_S = (a_S - b_S) \]

\[ s \]

This process follows a random walk with reflecting barriers (See Arthur 2002, p.20 for the mapping of the reflecting barriers.)

The process is rather different for the case of increasing returns. Arthur notes, that unlike the preference dynamics of the previous two scenarios, now, R-agents who start with a natural preference for A will switch allegiance if adoption pushes B far enough ahead of A in numbers and in payoff. Similarly S-agents, with a natural preference for B will switch their choices to A if adoption pushes A far enough ahead of B. (p. 20)

Arthur goes on to explain that just as there were reflecting barriers bounding the random walk based on the dynamics above, there are barriers in increasing returns case, however the dynamics here will be a random walk with absorptive barriers. What is important here from our perspective is that while situations with diminishing marginal returns are flexible (they are also ergodic, predictable, and path efficient), constant returns will only warrant subsidization under conditions where the gain in future returns outweighs the subsidy. Increasing returns are essentially non-flexible, and in Arthur's own words:

Policy adjustments to the returns can affect choices at all times in the constant-returns situation but only if they are large enough to bridge the gap in preferences between technologies. Flexibility here is, at best,
partial. In the two other regimes, adjustments correspond to a shift of one or both of the barriers. Once the increasing returns process is absorbed into A or B, however, the amount of subsidy or tax necessary to shift the barriers enough to influence choices (a precise index of the degree to which the system is locked-in) increases without bound. (p. 22)

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Japan is facing a critical period of time. Large Japanese companies tend to be closed and centered on the lifetime employment system. There is little information sharing. This was efficient in the 1960s and 70s when we needed a high degree of coordination. But now that the world is changing, these companies need to change as well. For example, they could start by appointing outside members to their board of directors. In the government, bureaucrats who until now have dictated should start to interact more with academics and business people. (Aoki, 1998)

Avi-Yonah (2000) argues that the rise of electronic commerce is likely to make it easier to locate production facilities in tax havens. The Intel example, which involves traditional, nondigitizable goods, is a case in point: Modern communication technology has enable Intel to coordinate production across the globe and to locate its production facilities in such production tax havens as Malaysia. When goods can be conveyed in digital form, such as software, locating the entire operation in a tax haven is even easier. The software can be written anywhere and transmitted elsewhere over secure corporate intranets.

Stanford Economist, Masahiko Aoki, who also heads the Research Institute of Japan's Ministry of International Trade and Industry noted recently that "People think Japan is facing its third major institutional change in the last 150 years or so," he said, referring to the Meiji Restoration in the 19th century and the American Army occupation period from 1945 to 1947. "Lots of politics is involved, so nobody knows how much institutional change we can do now, but the Ministry of International Trade and Industry is quite progressive among the Japanese bureaucracies and they are advocating more deregulation. I wanted to see this from inside the system." (Stanford On-line Report, January 21, 1998). Despite his apparent optimism, Aoki (2000) also notes that in the Japanese economy, the sense of powerlessness that haunts Japanese firms regarding their role in the formative stages of the internet industry comes from the limitations of an organizational mode based on information sharing and coordination within individual firms or designated groups of firms. (p. 42) Aoki also proposes a hybrid structure to address these problems, which he labels contingent governance and which depends on using main banks for centralized monitoring. Whether this system will work in practice remains to be seen, since Japan's banking sector has been the aspect of the economy most affected by the events discussed above and has also been the major element of the Japanese system which has proven least adaptable to the changes which took place in the 1990s.

In his 1998 Business Week interview, when asked what he saw as the major hindrance to change in the Japanese system, he pointed to, The strong collusion between politics, bureaucracy, and big business, which is hard to change. He focused particularly on the iron triangle relationship between politics, big business and Japan's industrial bureaucracy (MITI and MOF), noting that The so-called iron triangle was started by MITI and then expanded to the rest of government. In the 1960s and 70s, its aim was to nurture industry. There was a shortage of labor, so it was important to overcome a dual structure of labor and wages... MOF became mediators in drawing up the budget and thus built up their power, while politicians representing interest groups lobbied the MOF officials for
a share of the budget. In MITI’s case, it set up regulations to protect industry. But export-based companies like Sony didn’t need MITI’s protection and drifted away. Because they are the most successful, they are now the most heavily taxed and are supporting the least productive sectors like banking and retail. If Japan continues to do this, what will stop companies like Sony from moving operations overseas?

Katz describes this process as follows: If industrial policy is a matter of picking winners and losers, then the essence of Japan’s malaise is that it gradually shifted from promoting winners to protecting losers.

As this happened, Japan turned into a deformed dual economy—a dysfunctional hybrid of super-strong exporting industries and super-weak domestic sectors. Under the pressure of stiff competition overseas, exporters like autos and machinery learned to offer some of the best technology and highest productivity in the world. Just as Washington overestimated the strength of the Soviet Union by extrapolating from its mighty nuclear arsenal, so many Americans, who were exposed only to the exporting sectors, naturally presumed that all of Japan was as efficient as the exporters. Within Japan, however, the picture was quite different. Domestic manufacturing sectors from food processing to textiles, which were protected from competition, let themselves become woefully backward by international standards. In food processing, for example, Japan’s productivity is one-third of U.S. levels and falling further behind. And yet, more people work in food processing than in autos and steel combined. (Katz, Chapter 1)


Bruce Sterling has written an interesting extrapolation of current trends in the information revolution, Distraction: A Novel, Bantam Books, New York: 1999

Lissack (1996) provides an interesting and detailed typology of organizational repertoires using advances in applied mathematics and physics (chaos and complexity theory) to explain the new generation of managerial repertoires which can be employed to tackle the more complex problems of global management. See Lissack, Michael, "Chaos and Complexity: What Does That Have to Do with Knowledge Management?", in Knowledge Management: Organization, Competence and Methodology, ed. J. F. Schreinemakers, Ergon Verlog 1: 62-81 (Wurzburg: 1996)

For example, Panasonic has introduced a new HRM system (http://www.panasonic.com);

Sony (www.sony.com) and Fujitsu (www.fujitsu.com) have also introduced new governance systems (the Executive Director System or Shikkou-yakuin-sei) and a new HRM system.

Aoki (2000) notes. If firms could always select the most efficient coordination structure, or information system, based on the specific nature of the good to be produced, the results of that selection would likely be represented by the production function (cost function). However institutional factors do not always allow firms to select the most effective information systems. In Japan, the increasingly meticulous coordination schemes within firms and among fixed groups of firms has become so prevalent that flexible digital information sharing among firms is lagging behind. Part of the explanation for the sense of inadequacy haunting Japanese firms regarding their role in the formative stages of cross-industrial sectors like the internet industry may in part be a result of their having mismatched information systems An understanding of today's economy, where complex technologies for meeting diversified consumer preferences have been developed, requires more than an analysis of how the market will affect the coordination of resource allocation. It also requires an analysis of the coordination that occurs within and between organizations through non-price media. (p. 25)
Second, the taken-for-grantedness of institutionalized norms limits the range of choice at any given time. Law is politics. Collective identities are not easily changed, as any number of intransigent disagreements vividly illustrates. Far deeper meanings to the historical battles that define collective identities than to the transient conflicts of daily time in response to the push-and-pull of daily politics? The answer lies in history and in institutions. Actors attribute culture and law, arguing Norms are not static; they are contested and contingent. Why do they not change all the years. He locates the centrality of these features in the Japanese preference for social stability as expressed in both they are not transient and that they have contributed substantially to Japan’s international position over the past 50 years. While Katzenstein admits that these characteristics are not graven in stone he also argues that are the reasons he attributes to the persistence of the Japanese policy of police and military non-violence throughout the post-war era. While Katzenstein admits that these characteristics are not graven in stone he also argues that they are not transient and that they have contributed substantially to Japan’s international position over the past 50 years. He locates the centrality of these features in the Japanese preference for social stability as expressed in both culture and law, arguing Norms are not static; they are contested and contingent. Why do they not change all the time in response to the push-and-pull of daily politics? The answer lies in history and in institutions. Actors attribute far deeper meanings to the historical battles that define collective identities than to the transient conflicts of daily politics. Collective identities are not easily changed, as any number of intransigent disagreements vividly illustrates. Second, the taken-for-grantedness of institutionalized norms limits the range of choice at any given time. Law is such an institution. History and institutions thus give norms both importance and endurance.

Peter Katzenstein (1996) in an analysis of Japanese national security policy argues that Japan’s security policy cannot be understood without a proper consideration of the centrality of social stability and the persistence of cultural norms, particularly those embodied in Japanese Law. Among the more interesting aspects of his argument are the reasons he attributes to the persistence of the Japanese policy of police and military non-violence throughout the post-war era. While Katzenstein admits that these characteristics are not graven in stone he also argues that they are not transient and that they have contributed substantially to Japan’s international position over the past 50 years. He locates the centrality of these features in the Japanese preference for social stability as expressed in both culture and law, arguing Norms are not static; they are contested and contingent. Why do they not change all the time in response to the push-and-pull of daily politics? The answer lies in history and in institutions. Actors attribute far deeper meanings to the historical battles that define collective identities than to the transient conflicts of daily politics. Collective identities are not easily changed, as any number of intransigent disagreements vividly illustrates. Second, the taken-for-grantedness of institutionalized norms limits the range of choice at any given time. Law is such an institution. History and institutions thus give norms both importance and endurance.

Takei, Hideki and Fellman, Philip V., Corporate Governance, Core Competency and Human Resources Management: A New Comparative Model, paper presented at the 15th Annual Meeting of the Association for Japanese Business Studies, St. Louis, Mo.

Aoki argues, for example, If the differentiated information structure is prevalent, economic agents will expect to receive a higher payoff from investing in some kind of functional skill (p. 45). Aoki then models competing types of organizations possessing high complementarity of skills (and a high stochastic correlation between task units) labeled V industries and organizations which are instead characterized by resource competition in production technology (and a low stochastic correlation between task units) labeled M industries. With just these two competing types of industry Aoki is able to model 9 equilibria, with three being economically significant: a Pareto-Optimal equilibrium, labeled P-Equilibrium, an A-equilibrium where both kinds of firms are organized as differentiated information structures comprised of economic agents with functional skills, and a J-Equilibrium in which all firms in both the V industry and the M industry are organized as assimilated information structures comprised of economic agents with contextual skills.

The typology developed by Liebowitz and Margolis (1995) revolves around the well known phenomenon in chaos theory called sensitive dependence on initial conditions. With respect to path-dependent lock-in they argue that in some cases, sensitive dependence on initial conditions and path-dependent lock-in may do no harm. This occurs when small, random perturbations lock in a particular path of development but that path happens to be the optimal solution anyway. In Type II path dependence the primary problem is that decisions which appear to be efficient at the time they are made, are discovered not have been efficient (or optimal) in retrospect. Type two outcomes are regrettable and
costly to change. Liebowitz and Margolis do not treat these outcomes as sub-optimal because, they argue, they were the best decisions which could have been made at the time, given the limitations on the decisionmaking process. While that aspect of their characterization remains open to debate, the regrettable and costly nature of Type II path dependence indicates that while it is not the subseqently preferred outcome, it can (at some significant cost) be changed, repaired, retro-fitted or otherwise remedied. Type III path dependent lock-in is defined by Liebowitz and Margolis as an outcome that is inefficient -- but in this case the outcome is also remediable." Here they draw on Williamson (1993), who uses a similar treatment for the discussion of public policy. While these distinctions are helpful, the Margolis characterization of Type III path dependence differs rather significantly from that developed by Arthur et al.(1992), particularly the mathematical exposition of Chapter 10, co-authored with Russian probability theorists Yuri Ermoliev and Yuri Kaniovski, entitled Strong Laws for a Class of Path-Dependent Stochastic Processes. In the case discussed by Arthur, Ermoliev and Kaniovski, what Margolis and Liebowitz would call Type III path dependence is not only one of several multiple unstable equilibria but it is both likely to be suboptimal (as defined by economics) and irreversible (i.e., locked-in which is why the authors are describing a strong law as opposed to an ordinary law of probability it s applicability covers an entire class of phenomena, without exception).

xx Here, Aoki provides a mathematical confirmation of our rejection of the convergence hypothesis advanced by Bradley et al which claimed that ultimately the Japanese and German forms of corporate governance would necessarily converge to the Anglo-American standard and that where convergence did not occur voluntarily, forced conversion would occur.

xxi Alternative views of the role and nature of institutions can be seen in Nelson and Bhavan (2001) and Silverberg (1997).


Industrial organization costs arise if stronger financial institutions could sometimes have allowed firms to avoid the stultifying bureaucracy of tight vertical organization. Stronger financial intermediaries might have linked related suppliers and customers with partial cross-ownership, but without tight (and sometimes costly) vertical organization. Foreign systems with stronger financial intermediaries might have avoided some of these costs, but they would have faced other costs. The German and Japanese corporate systems, for example, have usually been said to involve substantial bank ownership or voting of stock and thus greater bank presence in corporate policymaking. Although the foreign systems would not then experience the agency, short-horizon, and industrial organization costs to the same extent as American corporations, the foreign systems would have faced other costs, such as financial institution agency costs, over-investment in long-term capital projects, and too many loose supplier-customer linkages that could have reduced, say, entrepreneurial innovation.

xxiii Richard Cooper, in a review of Japan s Economic Dilemma: The Institutional Origins of Prosperity and Stagnation by Bai Gao, notes that Drawing heavily on Japanese sources, sociologist Gao provides an admirable interpretation of Japan’s economic boom and subsequent stagnation. Both resulted from postwar strategic decisions regarding the choice of national objectives, above all economic growth and social stability, and the distinctively Japanese means to achieve each goal. (Foreign Affairs, May-June, 2002).

xxiv Although his study is still very much a work in progress, Kotaro Tsuru, of the Institute for Monetary and Economic Studies of the Bank of Japan, comes to much the same conclusion in his 1999 and 2000 papers on Japanese Corporate Governance in Transition.

xxv Yoshida (1995) makes two critical points here: (1) A high degree of information sharing is still critical for enabling Japanese organizations to conduct business based upon long-term relationships (across virtually all groups of stakeholders — buyers, suppliers, workers and bankers) and (2) A properly implemented system of information sharing which is both broad and deep can create significant synergies across traditional corporate lines, ranging from Kaizen activity (continuous quality improving activity), to design an manufacturing improvements flowing through company suggestion boxes, both of which are deeply connected to employee morale.

xxvi The same point is made by Evans and Wurster (1997), when they argue Every business is an information business.

xxvii In general, the optimal size of the board of directors is thought to be between 10 and 15, depending on the specifics of the company s operating structure. (Journal of International Law, 2001).
Monks and Minnow, in 2001, reported that approximately 91.1% of the 33,013 directors of 1,888 Japanese public corporations were internally promoted in 1990.

Keiretsu members and Main bank are the most important stakeholders because of the cross shareholdings. According to Monks and Minnow (2001), 91.1% of all 33013 directors of 1888 Japanese corporation was internally promoted, 3.8% was from main banks, 0.1% was from keiretsu members, and 2.9% was from Japanese government (Amakudari) in 1990.

Ibid. No. 9

www.sony.co.jp, Sony Japan Press Release (June 27th, 1997).

In attempting forced convergence some Japanese companies have had particularly miserable experiences attempting, with great vigor, to implement an impossibly Anglo-centric HRM system. Because of the role of culture and institutions in path-dependent lock-in, such attempts are not likely to succeed. For further detail see Arthur, 2002, also Appendix I.

Ibid. No. 22, the weight of the external directors was increased significantly by this process, growing from just 5.4% (two directors out of thirty-seven) to 30% (three directors out of ten).

(a) Amir Licht, in The Mother of All Path Dependencies Toward a Cross-Cultural Theory of Corporate Governance Systems Delaware Journal of Corporate Law, 26, 2001 advances the argument that different societies have differing cultural preferences regarding the claims of equity and debt holders. He characterizes the Anglo-American system as an equity culture, arguing that some cultures favor, or at least tolerate, the typical features of equity securities more than others do. Strongly supportive of our earlier arguments about Japanese risk-aversion, he notes that A plausible hypothesis about people who lack equity culture is that on average they have a higher degree of risk aversion. (p. 191). Sony’s abrupt shift to a Quasi Anglo-American system of corporate governance creates problems of consistency, coherence and consonance since Japanese equity preferences are likely to be very slow to change, if they change at all.

Interview with Peter F. Drucker (2000). NTV, Japan. According to Drucker, information technology (IT) revolution, Japanese long economic recessions, and slow pace of Japanese structural restructurings bring Japanese market the real globalization. Under the real globalization, Japanese companies have to compete with foreign competitors not as Japanese companies but as global companies with global business standards.

See (a) Japan Institute of Labour (JIL) Research Report (April 1st, 2001) www.jil.go.jp, (b) also Ueda, Shoji Homu Kenkyu Kai and Nikkei research results as reported in Executive Officers, Commercial Law and the Board Meeting System, Asian Legal Studies, No. 34, Asian University, (Tokyo: 1999).

Ueda, Hiromi (1999). Asia Hogaku (34). Asia University, Department of Law, Japan. Nikkei research of March in 1999, Questionnaires to 100 presidents of leading Japanese corporations, showed results as follow. 7.1% of all companies have introduced the executive officer system before 1998. 0.9% of all companies introduced the system in 1998. 13.4% of all companies introduced or is introducing the system in 1999. 24.1% of all companies is thinking introductions of the executive officer system after 1999.

The definition of an executive officer in Japan is that the officers are in charge of the actual business operations of the corporate headquarters, the business divisions, the subsidiary companies, and the research institutions. Despite this inordinately broad span of control, there is no formal description of the duties of an executive officer in Japanese Commercial Law.

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Ibid. Also see Japanese Commercial Law, article 260, for a further elaboration of the functions of the corporate board meeting.

Ibid., No. 31. Sony reduced the number of its board members from 38 to 10, Toshiba reduced its board from 33 to 10 and Fujitsu reduced its board from 32 to 10.

Ibid.

Ibid.

Ibid., No. 29. Licht points out that the integration of cross-cultural psychology (most notably the work of Hofstede and Shwartz) is still in its infancy in the field of legal scholarship, noting that Many legal academics have become aware of this behavioral research only in the last few years (p. 184) and in Corporate Governance, Securities Regulation and Culture in Theory that Unfortunately, scholars general notion is similar to that held by practitioners and policy makers, having little to say about the role of culture in the development of corporate governance and securities regulation. Although many analyses mention culture as an important factor, with few
exceptions, they treat it as a black box an opaque component in path dependence dynamics of corporate governance systems. (p. 160)

According to the Japan Institute of Labour’s (JIL) Research Report of April 1st, 2001, Post Bubble-Economy Japanese public opinion tends to regard the Anglo-American system as being both more productive and more efficient than the current Japanese system. Hence, a symbolic introduction of Anglo-American corporate reform may help to placate Japanese equity holders who have watched their stock stagnate for over a decade at (discounted) levels roughly one sixth of their pre-cash value.

Ibid. No. 31. One of Ueda’s criticisms is that even under the new system a majority of board members (70%) are also corporate officers. As indicated above, with no clear separation between officers and directors, duties overlap, functions are unclear, and corporate performance languishes.

This index is drawn from Competing Technologies, Increasing Returns and Lock-in (Arthur 2002).

Arthur comments that

While the idea of a nominal subsidy of an arbitrarily small denomination does not initially upset the model, if the process involves network externality effects, or is a process of increasing returns instead of a nominal subsidy, the subsidizing entity is pulled into a basin of attraction which has no upper bound with respect to the magnitude of funds required for the obsolescent good to reach nominal parity with the dominant good (nominal, because being asymptotic to infinity, the dominated technology never actually catches up with innovation that replaced it). This problem is discussed both by Arthur and by Aoki. If anything, Aoki makes even stronger case against subsidization because his model of human capital and individual investment in learned behaviors and skill sets incorporates a more nuanced relationship between firm structure, the firm’s method of processing information, the level of communications technology the exogenous parameters which specify the technological interdependencies between the firms tasks. Aoki’s model is also a strong optimizer because it contains a fairly high level evaluation function. Even with rather strongly bounded rationality, his agents are able to discover, at the very least, the local maxima of the fitness landscape, simply through their interaction with other agents and with local corporate organizational structure (Aoki 2000, pp. 26-39, Aoki 1997 pp. 5-7). Aoki also has an agent-firm-skills pattern matching algorithm which is designed to optimize the distribution of the information-specific components of fitness, which if implemented leads to one of nine asymptotically stable Nash equilibria, of which four are evolutionary and one is Pareto optimal (Aoki, 2000, pp. 50-52, Aoki 1997 pp. 10-13).

Arthur comments that efficiency requires additional explanation, because in this type of allocation problem, choices define a path or sequence of A- and B- variants that become developed with externalities present because previous choices affect present-variant payoffs. Thus a good path may require investment sacrifices by early adopters to arrive at better variants. (Arthur 2002, p. 18) Arthur briefly discusses a situation with a more developed evaluation function, where players attempt to achieve the highest aggregated payoff after some arbitrary number of rounds (for a good exposition of this kind of game see Cooperative Games at http://students.cs.byu.edu/~cs670ta/Lectures/Coop1.html). He dismisses this model rather quickly however, for two reasons. First, the model he develops is one of heterogeneous agents, playing by a greedy algorithm. Under such conditions of individual value maximization he argues that it is easy to show that no-cooperative regime can guarantee a maximal payoff (i.e., the meta-structure of the game always allows for a defection on the n-th move).
While this appears self-evident at an elementary level, Aoki argues that with sufficient encouragement given to early adopters (i.e., tax relief, accelerated depreciation — a factor which rapidly makes early adopters better off than the adopters of the earlier technology — exactly the opposite of a subsidy to the producer of the less competitive technology) there is some possibility of increasing aggregate value for all players through a punctuated equilibrium (Aoki, 1998C pp. 19-20).
STATISTICAL MECHANICS, COMPARATIVE INSTITUTIONAL ANALYSIS AND HYBRID INTEGRATED GOVERNANCE: A NEW CONCEPTUAL PARADIGM FOR JAPANESE CORPORATE GOVERNANCE¹

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Abstract

In this paper we examine an emerging school of thought on corporate governance and the theory of the firm, whose methodological foundations are primarily derived from physics and applied mathematics, particularly statistical mechanics. In the latter part of the paper we present for the reader’s consideration a novel Hybrid Integrated Governance form (HIG) for modern Japanese corporations. We believe that in comparison to the various governance schemes which have attempted the wholesale transplantation of Anglo-American or contractarian models, HIG can provide a more efficient, transparent, flat board structure without sacrificing the positive communitarian features which make Japanese business unique.
Introduction: Chaos and Complexity - Modeling Markets and Institutions


In this opening section of the paper we explain the importance of statistical mechanics to research in economics and economic policy. We start with a broad overview of chaos theory presented by Jim Crutchfield of the Santa Fe Institute, one of the original members of the chaos group at Santa Cruz in the late 1970s. We have chosen Crutchfield’s explanation as a starting point precisely because he explains the connection between statistical mechanics and other disciplines with exceptional clarity. We follow the Crutchfield explanation with a specific example from J. Doyne Farmer, another member of the Santa Cruz group, now McKinsey Professor at the Santa Fe Institute. Here, Farmer explains how random walk theory, a cornerstone of modern finance, and the effects which it is presumed to produce, such as clustered volatility, are particularly well suited to a statistical mechanics treatment.

Within the domain of statistical mechanics, the most common methodology is that of agent based modeling. We review some of the most salient differences between the assumptions of traditional neoclassical economics and modern evolutionary, behavioral and non-equilibrium economics, particularly their differing treatment of rationality, drawing upon the explanations of Nelson and Winter (2002), Farmer (1999) and Arthur (1994). After some further developing of the agent based modeling framework, we conclude this section with a few excerpts from the results of two recent agent based market studies, Market Force, Ecology and Evolution (Farmer 2002) and The Price Dynamics of Common Trading Strategies (Farmer and Joshi, 2000).

In the next section we take up the discussion of one of the most important models of chaos theory for management studies, the NK fitness landscape model. The NK model has its roots in cellular biology where Sewall Wright (Wright, 1932) discovered that when genes have fitness interaction between one another the genetic composition of a population can evolve into multiple populations with different degrees of fitness.
(Altenberg, 1997). The technical name for this mutual interactive process is epistasis. Stuart Kauffman first developed the NK model for epistasis in 1969 (Kauffman, 1969). The model later attracted the attention of physicists, who were able to show that even the simple model had some remarkable properties (Derrida and Pomeau, 1986). The best known version of the NK model appears in The Structure of Rugged Fitness Landscapes in The Origins of Order (Kauffman, 1993). This version of the model, which Kauffman developed in conjunction with Farmer and Norman Packard is the one most commonly applied to organizational structure and firm selection (Lissack, 1996).

After explaining these models and the methods which they entail, we next turn to a general discussion of organizations and economics. We begin with some remarks by Sidney Winter, one of the founders of evolutionary economics, on the traditional neoclassical approach and its paucity with respect to organizational structure, organizational learning and change and technology substitution. We follow Winter’s general remarks with some specific observations on the nature of organizations from his coauthor, Richard Nelson and end this section with a discussion of the Masahiko Aoki’s treatment of institutions as an equilibrium and his information-theoretic model of corporate governance. In the final section we introduce a sketch of Hybrid Integrated Governance an information-theoretic model of Japanese corporate governance which we believe can be used to improve Japanese corporate performance.

The Domain of Statistical Mechanics

As indicated above we will draw our broad conception of the application of statistical mechanics from Crutchfield (1996):

Consider, for example, statistical mechanics, dynamical systems, and the study of pattern formation. One of the central goals of statistical mechanics is to explain the emergence of large-scale, macroscopic thermodynamic properties from low-level entities, such as atoms, molecules, and now even artificial neurons. The theories of phase transitions and especially of critical phenomena provide probably the widest range of concrete results on cooperative systems. It’s no wonder that the methods, concepts, and results in statistical mechanics are powerful descriptive metaphors for researchers in complex systems. Occasionally, these metaphors are rendered into hard results on complex systems --- such as the adaptation of renormalization group methods to show that qualitatively higher levels of computation appear at phase transitions than away from them.

Dynamical systems explains the emergence of the apparent randomness of deterministic chaos as the product of the moment-to-moment application of elemental, but nonlinear, operations. It also explains, via bifurcation and singularity theories, how qualitatively new behavior and structure can arise with the smooth
variation in experimental controls. Dynamical systems theory and its applications have been pursued for decades now. So it’s no surprise that the basic theory and results are available in over 30 textbooks (my estimate a few years ago).

It’s very important to emphasize that many of the basic concepts and results in statistical mechanics, dynamical systems, and pattern formation apply across many disciplines. They’re found not just in physics, but are used from biology to computer engineering. Am I arguing for a theory of everything here? No, this generality just reflects the nature of the underlying mathematics and physics. Am I making unjustified and vague generalizations about some future desired theory? No, not at all.

Farmer expressed this broad applicability with respect to financial economics in a recent seminar by noting that (Farmer 2001):2

The theory that prices follow a random walk was proposed a century ago, and although there are clearly some deviations, it remains an important and useful approximation in financial economics. One of the most basic properties of a random walk is its diffusion rate, which for prices is called volatility. Given the long standing nature of the random walk theory of prices, and its importance in finance, it is surprising that the relation between volatility and other aspects of markets is not at all understood. We model the statistical properties of the order book, which is a device used to store demand in financial markets. This theory makes strong predictions relating price movements to other measurable properties of markets, such as rates of order flow, under the assumption of random trading. These results suggest that some basic properties of markets can be explained by a theory much like statistical mechanics, in which each trade imparts an impact to prices, much like a molecular collision.

As an example of how statistical mechanics and non-linear dynamical systems modeling can be used to analyze the properties of markets, we now turn to two studies of market behavior, Market Force, Ecology and Evolution (Farmer 2002) and The price dynamics of common trading strategies, (Farmer and Joshi 2000).3 In Market Force, Ecology and Evolution, Farmer explains that Markets have internal dynamics leading to excess volatility and other phenomena that are difficult to explain using rational expectations models. However, in order to properly understand this claim, we need pull back for a moment and examine how economists have traditionally viewed rationality.

The Problems of Assumed Rationality
Nelson and Winter (2002) give a particularly cogent picture of the divide between orthodox economic theory and evolutionary, non-equilibrium, or agent based economic theory when they argue that:

Mainstream economic theory typically sees rationality as undifferentiated, inhering in the actor at a uniformly high level and independent of the situation the actor confronts. The specific kind of rationality that economists usually build into their theories typically implies, or at least connotes, careful deliberation and attempted foresight. Real actors, however, simply do not have the vast computational and cognitive powers that are imputed to them by optimization-based theories. Organizational decision processes, in particular, often display features that seem to defy basic principles of rationality and sometimes border on the bizarre.

Arthur (1994) sheds further light on the problem, noting that while simple problems are amenable to solutions which posit rational calculations, what Nelson and Winter refer to as computational and cognitive powers are quickly overwhelmed as the problems become more complex:

The type of rationality we assume in economics--perfect, logical, deductive rationality--is extremely useful in generating solutions to theoretical problems. But it demands much of human behavior--much more in fact than it can usually deliver. If we were to imagine the vast collection of decision problems economic agents might conceivably deal with as a sea or an ocean, with the easier problems on top and more complicated ones at increasing depth, then deductive rationality would describe human behavior accurately only within a few feet of the surface. For example, the game Tic-Tac-Toe is simple, and we can readily find a perfectly rational, Minimax solution to it. But we do not find rational "solutions" at the depth of Checkers; and certainly not at the still modest depths of Chess and Go.

There are two reasons for perfect or deductive rationality to break down under complication. The obvious one is that beyond a certain complicatedness, our logical apparatus ceases to cope--our rationality is bounded. The other is that in interactive situations of complication, agents can not rely upon the other agents they are dealing with to behave under perfect rationality, and so they are forced to guess their behavior. This lands them in a world of subjective beliefs, and subjective beliefs about subjective beliefs. Objective, well-defined, shared assumptions then cease to apply. In turn, rational, deductive reasoning--deriving a conclusion by perfect logical processes from well-defined premises--itself cannot apply. The problem becomes ill-defined.

Farmer (1999) amplifies the argument with respect to agent based modeling when he expands the problem is to included bounded rationality as well as perfect rationality:
While bounded rationality is a nice idea, it is only part of the story. People are not identical finite-capacity calculating machines differing only in their utility functions. Equally important is the diversity of viewpoints induced by nature and nurture. Formulating successful predictive models is extremely difficult and requires both hard work and intelligence. To make a good model, it is necessary to specialize, which stimulates diversification of financial strategies.

As a result, financial agents are very heterogeneous. Some agents are more skilled than others, and the excess profits of such agents are not necessarily reasonable. The behavioral economists are clearly right that people are not fully rational and that this can play an important role in setting prices. But where do we go from there? Despite the idiosyncrasies of human psychology, *is there a statistical mechanics that can explain some of the statistical properties of the market, and perhaps take such idiosyncrasies into account?*

Agent-based modeling offers one approach to addressing these problems. Efforts in this direction range from simple, metaphorical models, such as those of evolutionary game theory, to complicated simulations, such as the Santa Fe Institute stock market model. The SFI model, which was a collaboration between two economists, a physicist, and a computer scientist, was a significant accomplishment. It demonstrated that many of the dynamical properties of real markets, such as clustered volatility and fat tails, emerge automatically when a market simulation allows the views of the participants to be dynamic (p.32)

Agent Based Models

Again, heterogeneity is a critical dividing line between orthodox economics (which requires homogenous rational agents in order to arrive at equilibrium) and evolutionary and non-equilibrium economics. With respect to agent based modeling, a certain degree of non-linearity is inherent in the model simply by virtue of the approach it takes. Farmer (2001) explains this when he recounts how as a physicist he became interested in modeling markets and consequently, human behavior:

One of the things that attracted me to financial prediction is the possibility of forecasting the behavior of people. People have free will you never know what they will do. Of course, we make predictions about people in our day-to-day lives. We all know people whose behavior is pretty consistent and whose responses are predictable. But making quantitative predictions about people in general is a real challenge, and little success has been apparent so far.

As surprising as we might think it, Farmer compares the difference between predicting prices and predicting physical phenomena to the difference between predicting the weather and going to a fortune teller. The dilemma he tells comes from the psychologically self-reinforcing nature of human prediction (Arthur et al,
The lesson which he draws from this is that human behavior can be self-invalidating, and this is a central element behind the concept of efficient markets:

If someone discovers a pattern, it diminishes as it is exploited. If enough people discover the pattern, it will disappear. Informational efficiency (the lack of arbitrage) is a central idea of modern finance. Anybody who has spent time building market models knows that markets are arbitrage efficient at some level. Building models that make good market predictions is not easy. But markets cannot be perfectly efficient; otherwise, why would so many smart people waste their time investing in them?

But, efficient markets, Farmer argues are inherently self-contradictory. From the standpoint of a physicist, he sees replacing the efficient market hypothesis as one of the major challenges to the advancement of economics as a scientific discipline. Farmer argues that markets are efficient at the first order but not at the second order (the level of technical traders and market makers):

At first order, markets are arbitrage efficient, but at second order, they are not. For markets to function, there. Although agent-based models are not yet ready for practical investment application, they can yield powerful insights about market behavior, particularly in regard to the second order inefficiencies that create profit-making opportunities. When practical use of agent-based models becomes possible (perhaps within the next five years), their effectiveness will cause securities prices to change.

Farmer further argues that markets must possess second order inefficiencies in order to be able to attract investors — a practice in investment banking which is referred to as leaving something on the table. Without allowing the inefficiencies which let technical traders and market makers profit (here, Peters 1992 definition of market liquidity as the ability of investors to trade across different investment horizons provides a powerful insight into the exchange process) markets would not function, or at least they would not function well and with a high level of liquidity (Bhide, 1994). Farmer explains the structural basis for second order inefficiencies as being customer driven and that they depend on the continuous evolution of the needs of the customer. Specialization is driven by economies of scale in digesting and understanding information. Reiterating his 1999 argument on agent heterogeneity, he says, one must regard the market as an ecology of highly specialized, heterogeneous agents, linked together by their relationships to each other and the flows of money that these relationships imply. (p. 62)

Modeling the Market
In his study, *Market Force, Ecology and Evolution* (Farmer, 2002 - See also http://netec.mcc.ac.uk/BibEc/data/Articles/oupindcchv:11:y:2002:i:5:p:895-953.html for the most recent version of the original 1994 study and 1998 Santa Fe Institute Working Paper) Farmer states the nature of his investigation as follows:

Markets have internal dynamics leading to excess volatility and other phenomena that are difficult to explain using rational expectations models. This paper studies these using a non-equilibrium price formation rule, developed in the context of trading with market orders. Because this is so much simpler than a standard inter-temporal equilibrium model, it is possible to study multi-period markets analytically. There price dynamics have second order oscillatory terms. Value investing does not necessarily cause prices to track values. Trend following causes short term trends in prices, but also causes longer-term oscillations. When value investing and trend following are combined, even though there is little linear structure, there can be boom-bust cycles, excess and temporally correlated volatility, and fat tails in price fluctuations. The long term evolution of markets can be studied in terms of flows of money. Profits can be decomposed in terms of aggregate pairwise correlations. Under reinvestment of profits this leads to a capital allocation model that is equivalent to a standard model in population biology. An investigation of market efficiency shows that patterns created by trend followers are more resistant to efficiency than those created by value investors, and that profit maximizing behavior slows the progression to efficiency. Order of magnitude estimates suggest that the timescale for efficiency is years to decades.

Naturally, analyzing the full range of conclusions from this 66 page study far exceeds the scope of the present paper. However, in addition to seeing Farmer's conclusion above, we can take a brief look at some of his methodology, which will also bear on our discussion of statistical mechanics in modeling the economic behavior of corporations and institutions. Farmer states his goals quite clearly at the outset:

This paper develops a simple non-equilibrium theory of price formation that naturally explains the internal dynamics of prices and markets. The central goals are: (1) to provide a treatment of price formation that is motivated by the structure of markets, and is simpler than standard inter-temporal equilibrium models;
(2) to use this to study the price dynamics of common trading strategies; (3) to understand how profits and losses drive market selection; and (4) to study the progression toward market efficiency in a framework that does not effectively assume it at the outset.

Farmer divides his paper into five sections, an introduction, along the lines of what we have already seen, a section on force, which is primarily devoted to the need for a non-equilibrium explanation of price formation (for more information on this see Arthur, 1989 A-D, 1994, 1996, 1997, 2000, 2002, etc.), a third section on ecology, which primarily clarifies the behavior of trend investors, value investors and generally characterizes the various classes of heterogeneous investors and the dynamics which drive their decision models, a fourth section on evolutions which deals with more general, law-like behavior, including accounting, conservation laws, the relation between profits and strategies, market friction, crowding and market maker profits, as well as a concluding section. For our purposes, we will simply review how Farmer generates and then applies the market impact function $\phi$, which to the outside observer is probably the single most important explanatory variable of this work.

Farmer begins the development of his price formation model (section 2) with the postulate that there are two types of financial agents. He explains the process as follows:

We assume there are two types of financial agents, who trade an asset (measured in units of shares) that can be converted to money (which can be viewed as a risk free asset paying no interest). The first type of agents are directional traders. They buy or sell by placing market orders, which are always filled. In the typical case that the buy and sell orders of the directional traders do not match, the excess is taken up by the second type of agent, who is a market maker. The orders are filled by the market maker at a price that is shifted from the previous price, by an amount that depends on the net order of the directional traders. Buying drives the price up, and selling drives it down. The market impact function $\phi$ is the algorithm that the market maker uses to set prices. This defines a price formation rule relating the net order to the new price.

Let there be $N$ directional traders, labeled by the superscript $i$, holding $x^i_t$ shares at time $t$. Although this is not necessary, in this paper we assume synchronous trading at times $t, t - 1, t + 1$. Let the position of the $i^{th}$ directional trader be a function $x^{(i)}_{t+1} = X^i(P_t, P_{t+1}, I^{(i)}_t)$ where $I^{(i)}_t$ represents any additional external information. The function $X^i$ can be thought of as the strategy or decision rule of agent $i$. The order is determined from the position through the relation: (p. 7)

$$x^{(i)}_{t+1} - x^{(i)}_{t-1} = \phi$$  \hspace{1cm} (eq. 2)
A single timestep in the trading process can be decomposed into two parts:

The directional traders observe the most recent prices and information at time $t$ and submit orders $\_^{(i)}_{t+1}$.

The market maker fills all the orders at the new price $P_{t+1}$.

To keep things simple, we will assume that the price $P_t$ is a positive real number, and that positions, orders and strategies are anonymous. This motivates the assumption that the market maker bases price formation only on the net order $N$:

$$\_^{(\_)}_{(\_)} = \_^{(\_)}_{(\_)}$$

The algorithm the market maker uses to compute the fill price for the net order $\_^{(\_)}$ is an increasing function of $\_^{(\_)}$:

$$P_{t+1} = f(P_t, \_^{(\_)})$$  \hspace{1cm} (Eq. 3)

Note that because orders are anonymous, with more than one trader, the fill price is unknown to individual agents when orders are placed. (p. 8)

Farmer then proceeds to the formal derivation of the market function. He assumes that:

$$f$$ is a function of the order $f(P_t, \_^{(\_)}$)  \hspace{1cm} (Eq. 4)

where $\_^{(\_)}$ is an increasing function with $\_^{(\_)}(0) = 1$.

Taking logarithms and expanding in a Taylor series, providing the derivative $\_^{(\_)}(0)$ exists to leading order:

$$\log P_{t+1} - \log P_t = \_^{(\_)} \lambda$$  \hspace{1cm} (Eq. 5)

He then explains that this functional form for $\_^{(\_)}$ will be called the *log-linear* market impact function. $\lambda$ is a scale factor that normalizes the order size and will be called the *liquidity*. It is the order size that will cause the price to change by a factor of $e$, and can be measured in either units of shares or money. (p. 8) In
Farmer and Joshi (2000) the term liquidity is dropped and \( \lambda \) is simply a scale factor that normalizes the order size that will cause price to change by a factor of \( e \), measured in units of shares. (p. 5) Farmer then goes on to develop a model for the equilibrium clearing price. In this simplified case, the equilibrium clearing price relies only on the current demand function. The reason he has derived equation 5, the log-linear rule is because a general non-linear price formation function depends upon the full sequence of previous orders (an implicit presumption of both persistence and path-dependence). Farmer argues that the log-linear rule represents a useful simplifying compromise providing the following treatment: (p. 9)

Suppose we require that two orders placed in succession result in the same price as a single order equal to their sum, i.e. \( f(f(P, _{-1})_{-2}) = f(P, _{-1} _{-2}) \) (Eq. 6)

This functional equation for \( f(P, _{-1} _{-2}) \) has the solution:

\[
  f(P, _{-1} _{-2}) = e^{-\lambda_{-1}} \quad \text{(Eq. 7)}
\]

which is equivalent to equation 4. Other possible solutions are \( f(P, _{-1} _{-2}) = 0 \) and \( f(P, _{-1} _{-2}) = 1 \) but neither satisfy the requirement that \( f \) is increasing.

Farmer freely admits that the log-linear price formation function is only a compromise, but that it is a useful model which gives interesting results. He argues that the advantages it provides are:

- that it is the simplest price formation rule that gives reasonable results
- that in addition to path-dependence it has useful conservation properties
- that it and simplifies the calculation of profits (through the pairwise decomposition based on correlations of positions mentioned in the abstract).

This process in turn allows the computation of evolutionary future states of the market.

Above and beyond that, he notes, the log-linear price formation function also implies that total realized wealth is conserved in closed systems. The demonstration of these properties is interesting in part because it makes it clear how nonlinearities lead to path dependence, non-decomposability, and non-conservation of realized wealth. (p. 9)
In terms of an evolutionary model, (and here we must pass over the many interesting aspects of pricing, noise, added dynamics, insider trading and many other topics in what is essentially a book length article\(^5\) Farmer explains:

Use of the log-linear price formation rule simplifies this, since the average profits can be written in terms of aggregate pairwise correlations. This makes it possible to construct a trophic web characterizing the flow of money. *Reinvestment of profits leads to a simple model for capital allocation that is a generalization of the standard population dynamics model in biology*, with species replaced by strategies, and population replaced by capital.

This can be used to study the progression toward market efficiency. If there are patterns in prices, they should disappear as capital is allocated to strategies that exploit them.

This is illustrated by studying a simple example. Myopic blind investment by even a single agent drives profits to zero. The original pattern is eliminated, though a new one can be created in its wake. In contrast, if the agent is smarter and more restrained he will maximize profits. In this case the original pattern is only reduced by half, and thus the market is only partially efficient. If profit-maximizing agents discover the same pattern and use the same strategy, however, in the limit they fully eliminate the original pattern. In any case the progression toward efficiency is slow: Order of magnitude estimates based on typical rates for capital allocation give timescales to achieve efficiency measured in years to decades.

Farmer and Joshi (2000) provide a somewhat expanded version of this model, simplifying some equations, and adding additional measure to flesh out the analysis, but their derivation of the price impact function which is the foundation of much of their substantive analysis is essential the same as that described above. The point to be made here is that statistical mechanics and agent based modeling have allowed the authors to capture rich dynamics which cannot be easily explained by conventional economic models.

The Boolean NK Model and Rugged Fitness Landscapes

In the present paper, a simplified version of the NK fitness landscape model (properly called a Boolean NK Network) will be used, primarily to explain certain common properties between evolutionary economics, non-equilibrium economics, and Masahiko Aoki’s Comparative Institutional Analysis (which in its complete form is a novel system of non-equilibrium economics, whose dynamic follows the evolutionary mechanics proposed by Kauffman and which is fully supported by statistical mechanics). Among the common features which these systems share are (a) tightly coupled stochastic processes (b) heterogeneous adaptive agents (c) an endogenous adaptive mechanism which can normally be represented by
a random walk. Typically the selection algorithm will be weak (i.e. it does not possess any knowledge of the evaluation function) and adaptation can be described by random mutation - which for economic modeling purposes can be represented as a movement from the n\textsuperscript{th} position to the n-1\textsuperscript{th} position with the two positions having different fitness values, and (d) complex, rugged fitness landscapes, which are themselves deformable by the adaptive behavior of agents.

Simple Boolean Networks

Torsten Reil provides a simplified version of the NK network in An Introduction to Complex Systems (Reil 2002). Following Lewin (2000), he explains complex systems as dynamical systems which are poised at the edge of chaos. What is interesting about such systems is that at the boundary between order and chaos, they exhibit a variety of behaviors, not found at the extremes of either ordered or random states (Waldrop, 1992). Among these behaviors are self-organization (Kauffman 1993, Holland 1996). For those wishing to see the explanatory graphics which accompany Reil’s tutorial, they are available at: http://users.ox.ac.uk/~quee0818/complexity/complexity.html

Reil first explains random Boolean networks:

The central idea of Random Boolean networks is to connect a large number of light bulbs with each other. Each of these can be either on or off (representing the Boolean states true and false). The state of each light bulb at the next time step is dependent on the current state of the bulbs it is connected to. How the state is dependent on the other bulbs is determined by a Boolean function. For example, for a light bulb B that is connected to only one other bulb, A, the Boolean function could look like a)

\begin{tabular}{c|c}
 A & B \\
 0 & 1 \\
 1 & 0 \\
\end{tabular}

Analogously, the state of a light bulb C, which is connected to A and B, could be determined by the function depicted in b). For a bulb connected to K other bulbs, there are 2^K different states these other bulbs can be in. Because the dependent bulb itself can be either on or off for any for these states, the number of possible
Boolean functions for a single such bulb is $2^{(K+1)}$. As you may have anticipated, a Random Boolean Network is dependent on two parameters: the total number of bulbs N, and the number of bulbs each bulb is connected to K. It would be a laborious task to manually set all the Boolean functions for each bulb. Rather, they are generated randomly (giving the net its name) by an algorithm.

What we have now is a rather simple model of a complex system - dependent on just two variables, and yet it is capable of exhibiting extremely surprising behaviour. Reil has set up several applets to run live demonstrations of phase transitions between order and chaos. He sets up a simulation of 500 light bulbs and then allows students to vary the K (connectedness) parameter from 1 to 5. At the K=1 level there is, not surprisingly, very little activity. At K=3, the system tends to settle into small groups of flashing bulbs (crystallization), but the flashing group will be a different particular array each time the simulation is run. At K=5 the system exhibits true chaos and all the bulbs flash, but in a random, unpredictable way. Reil uses this demonstration as a way to get students thinking about regularity, periodicity and aperiodic regularity. He explains:

However, at K=3 the system is behaving in a somewhat intermediate fashion. It is definitely not frozen, but it is also not chaotic: first, not all bulbs are involved; second - and a bit harder to spot - the flashing of the bulbs is not random - it is periodic (or: it has entered a state cycle). You can convince yourself that this is true by concentrating on nearby flashing bulbs and trying to see the rhythm they flash in.

In case you are not baffled by this finding, consider the number of possible states the net can potentially be in. Each bulb can be in two states, on or off, and there are 500 bulbs in the net (or more or less if you have subsequently changed the N parameter). Thus, there are $2^{500}$ possible states. This is a 10 with 150 zeros. Even if a computer was to try out 100 Billion combinations per second, it would still need more than $10^{131}$ years, which is $10^{121}$ times longer than the universe is old. Yet, the system settles down to a small number of bulbs and cycle steps. It is self organizing.

Reil then has the students vary the N parameter in order to demonstrate the robustness of the attractor at K=3.

Now try out something else. Create a new network (by pressing "Apply") with N=500 (you can set it to higher numbers, if your computer can handle it) and K=3. Run it and wait until it enters a state cycle. Press stop. This time, instead of creating a new network, restart the current one, but with a different initial configuration (i.e. the bulbs, connections, and Boolean functions stay the same; only the initial random on/off pattern changes). You can do this by pressing "Reset" and "Run".
You will notice that most of the time, the system settles down to the same state cycle (or attractor), although
the initial configurations were completely different. *This is a typical feature of complex systems. They are
robust to initial conditions. This is another characteristic that distinguishes them from chaotic systems,
which are extremely sensitive to initial conditions.*

Before chaos theory, researchers had spent a considerable time studying random Boolean networks,
with little in the way of interesting results. The one interesting solution is that for fully connected networks,
the average period of the state cycle $T$ follows the law: $T = _2^2$ with $= 0.63$ Reil explains these
findings by noting:

This means that the average length of the state cycles increases exponentially with the number of bulbs. For
our example of $N=500$, the average state cycle is $10^{75}$ steps long - way to many to see any periodicity - which
is why this systems appears to be chaotic. The number of attractors, $M$, on the other hand, increases linearly
with $N$, following the law:

$$M = \frac{N}{e}$$

For example, for $N=500$ and $K=500$, there are about 185 different attractors.
Unfortunately, these analytical results are not of much help when analyzing complex systems, as they apply
to non-complex ones. As a result, much research on Random Boolean Networks has been based on running
simulations (like the one above) and analyzing the data statistically.

One of the questions asked in these studies was: at what point exactly changes the system from the
complex to the chaotic regime? The problem with the NK-model is that $K$ is an integer, and the transition
happens somewhere between 3 and 4. Thus, it is impossible to exactly pinpoint the point of phase transition.
Derrida and Stauffer (1985) solved this problem by introducing continuous parameter, called $p$, which
represents the probability that in a given Boolean function the response state of a bulb to the state of the
connected bulbs is 1.11

What we can conclude from this analysis is that given an NK model, we can calculate the strength of
network connections in a way which will, at the very least, approximate the systems ability to self-organize,
stabilize as well as predicting states which will either dampen out entirely or turn into pure random chaos.
Kauffman, himself, uses a standard a 6-N Dimensional state space representation from which he constructs a hypercube, each of whose vertices have a particular fitness value (the overall model is again, a fitness landscape). Detailed graphics and a non-technical explanation are available at: http://www.cbi.cgey.com/events/pubconf/1996-07-19/proceedings/chapter%2010.pdf

Kauffman’s NK model has had unusual success in evolutionary economics uses the N and K parameters to provide a simultaneous measure of both fitness and connectedness in ways that other network models are not able to model (McKelvey 1999). Using techniques from statistical mechanics, the NK model is able to describe in considerable quantitative detail the nature of rugged fitness landscapes and the mechanics of adaptive walks on those landscapes (Hill and O Riordan, 1998). In the more complex dynamical version, the NK rugged fitness model describes not only the fitness of the actors, but also the ways in which their adaptive walks deform the fitness landscape itself (Kauffman 1993, Lissack, 1996).

Fitness Landscapes

In a recent conference address, Sidney Winter, one of the founders of evolutionary economics explained the ubiquitous presence of heterogeneity taking a rather different approach than Farmer et al, and tying much of his methodology to the kind of evolutionary biology proposed by Kauffman’s NK model and rugged fitness landscapes:

An important empirical issue illuminated by the evolutionary account is the existence of very marked heterogeneity in techniques almost anywhere you look -- anywhere, that is, except where very determined efforts are made to stamp it out. It appears that substantial heterogeneity is the normal state of affairs, and approximate uniformity is achieved only with considerable effort. Why might this be? It is not so mysterious once one realizes that productive techniques are in important respects learned anew every time they are initiated in a particular locale; we sometimes say that routines are "always home grown." There is inevitably a distance between the immediately available performance associated with the best available knowledge platform and the level of performance that is attainable after many repetitions -- and the process filling that gap is idiosyncratic, path dependent learning.

One could think of the stochastic process governing performance during learning as a random walk with drift; individual steps represent solutions to the innumerable details that are settled independently across instantiations of the routine. As the process goes on, the performance realizations fan out. A more probing analysis of the sources of persistent heterogeneity recognizes the important role played by complexity, itself rooted in multiple tight complementarities among different aspects of the process. Such complexity produces rugged landscapes in the space of process parameters. The result is multiple local maxima in performance
(adaptive peaks), which limits the effectiveness of local adaptation as a means for improving performance. The different learning processes of different organizations, starting from different initial conditions, can lead them to find, and stay on, different peaks.

Not surprisingly, evolutionary economists have been rather successful in using this model is often used to analyze technology replacement (Windrum and Birchenhall, 2001). The NK Fitness model has also proven useful in measuring the fitness or competitiveness of workers with different types of skills and training in various organizational settings, as well as suggesting how learning organizations might find their way to higher fitness levels (Aoki, 2000, Lissack, 1996, 2000). Lissack (1996) explains how, in more sophisticated scenarios, where one is modeling not just product variations from one manufacturer, but where the fitness landscape is deformed by the competitive adaptations of market rivals, understanding the characteristics of the fitness landscape can provide valuable information on when to introduce, promote, speed up or phase out a particular product or product line (Maguire, 1999, 2002). When one is able to model the total effect of multiple competitors on the fitness landscape in this dynamic fashion, the exercise then becomes complexly interactive. For example, of there are too many players in the market, each of whom is seeking their highest fitness value, and in performing this evolutionary walk they deform the landscape, then even though each entrant may end up on her local fitness maxima, what was a mountain range may flatten out to be a large collection of tiny dimples. This kind of market saturation effect is already well known in the business world, but what makes Kauffman's techniques interesting is that he is able to model these kinds of situations quantitatively and in more complex situations, his framework can provide an instant sensitivity analysis as it calculates the fitness of mutants who are basically just one step removed from any of the positions on the existing grid. With the hypercube lattice, another interesting property which Kauffman is able to discover in advance is under what conditions a particular adaptive walk will trap a product, a division, or an employee on a local maxima which is well below the global optima but from which there is no escape because every adjacent position is worse off than vertex where the adaptive walk finishes.

Kauffman's work has had some very direct applications to Comparative Institutional Analysis. Lissack (1996) has adapted elements of Kauffman's model to explain how corporations can get trapped in suboptimal patterns of performance. Bill McKelvey (1999) takes this analysis one step further in analyzing complexity catastrophes, which he relates very specifically to Nash equilibria in organizational competition, concluding that strategic planning needs to formally incorporate an analysis of opponents connectivity as well as that of one's own organization. Using $C$ as the variable which measures coevolutionary density among parts between competing pairs of firms (similar to Farmer (2002), and Farmer and Joshi's (2000) pairwise decomposition of aggregate pairwise correlations in the price impact model) he argues:
When Nash equilibria are encountered, fitness levels of low K firms are higher than fitness levels of high K firms, independent of the values of C. Increasing K is not good, unless the opponent has a high K or fosters a high C. But if Nash equilibria are encountered, low K is better than high K, because low K means higher fitness peaks. So, as the probability of encountering Nash equilibria goes up, say because of an opponent's actions to raise its K or C, the better it is to have a low K. But if the opponent does not raise K or C, and therefore Nash equilibria do not occur quickly, the low K firm will lose its advantage. A firm's strategy with respect to number of internal coevolutionary links among value chain competencies, K, seems to hinge on whether Nash equilibria can be anticipated; that is, on whether an opponent will raise its K or C. In general the simulations indicate that keeping one's internal and external coevolutionary is the best strategy. Thus, a little more coevolutionary prioritizing compared to one's opponent seems a good idea. (p. 309)

Institutions and Evolutionary Economics

One of the more difficult challenges in economics is understanding how to approach institutions and organizations. As Sidney Winter explains, the neoclassical orthodoxy cannot answer this problem because they are ultimately preoccupied with analytical questions largely irrelevant to either the theoretical or practical advancement of business, technology and society. Speaking at a 1999 panel on Innovation, Technological Progress and Competition described some of the differences between the kind of economics inquiry which he and Richard Nelson founded in the early 1980s and the economic orthodoxy of pure analysis (Winter 1999):

One of my long-standing interests is in the character of productive knowledge in organizations: what is the reality behind the everyday fact that organizations know how to do things? This theme, which is of central importance in the evolutionary economics approach developed by Dick Nelson and myself, has in recent years become increasingly prominent in business practice. First under the heading of quality management, and more recently under the broader heading of knowledge management, business firms have explored a variety of methods and organizational approaches to expanding and strengthening their productive knowledge. For the sake of clarity, let me stick close to the orthodox language as I expound that view briefly. The basic concept is the individual technique, not the production set or function. Individual techniques are conceived to be realized through the performance of organizational routines, which are learned and practiced patterns of behavior. Some collections of routines are keyed to respond automatically to the environment, in ways that correspond to the smooth movement along a short-run production function.
in standard theory. Aside from that possible correspondence, however, there are no production functions or sets recognized in evolutionary theory. There are techniques and choices of technique, especially the basic comparison between the status quo technique performed through existing routines and some alternative to it. But there are no well-defined production sets and no optimizations -- unless you want to call any goal-oriented analysis of a choice between two alternatives an "optimization.

It has long been amazing to me that the production function and optimization tools are clung to so tightly by economists, given that they offer so little grip on a world where technical opportunity sets are changing rapidly. While many share this perception, it obviously has not swept through the discipline like wildfire.

In the evolutionary approach, an important question is "where is the knowledge stored?" — an issue ignored in the mainstream treatment. A full answer is inevitably complex. But an important locus of storage is the memories of the personnel who perform the relevant routines, also their machines and tools, and the physical layout of the production site. This analysis implies that productive knowledge can be lost from an organization in various ways, and an important part is definitely lost when the routine is discontinued and personnel and machines are dispersed. Of course, it may be possible to reconstitute a very similar routine with different personnel and machines and so forth. Such an effort requires new learning and will be successful more or less quickly depending on the height of the knowledge platform from which it starts. An example of a high platform is a similar routine that is actually functioning elsewhere in the same organization; a low platform is a manual describing only the technical aspects of the routine.

An important empirical issue illuminated by the evolutionary account is the existence of very marked heterogeneity in techniques almost anywhere you look -- anywhere, that is, except where very determined efforts are made to stamp it out. It appears that substantial heterogeneity is the normal state of affairs, and approximate uniformity is achieved only with considerable effort. Why might this be? It is not so mysterious once one realizes that productive techniques are in important respects learned anew every time they are initiated in a particular locale; we sometimes say that routines are "always home grown." There is inevitably a distance between the immediately available performance associated with the best available knowledge platform and the level of performance that is attainable after many repetitions -- and the process filling that gap is idiosyncratic, path dependent learning.

In one way it is surprising that such large gaps in economics have gone mainly unattended for so long. Stanford's Paul David who fills the roles of both economic theorist and economic historian describes a similar problem with the economic mindset in relation to path dependence and increasing returns (David 2000A).14
The concept of path dependence refers to a property of contingent, non-reversible dynamical processes, including a wide array of biological and social processes that can properly be described as evolutionary.

Within this context, he notes that assessments of the economic significance of path dependence are shown to involve difficult issues of counterfactual specification, and the welfare evaluation of alternative dynamic paths rather than terminal states. This kind of clarification illustrates the difficulties of communication across the various paradigms of economics.

Just as Winter complained of the resistance of economics as a discipline to a shift in emphasis and a prolonged focus on non-explanatory tools, David also finds that much of the literature on path dependence is somewhat confused. One reason he cites for the confusion is that assessments of the economic significance of path dependence are shown to involve difficult issues of counterfactual specification, and the welfare evaluation of alternative dynamic paths rather than terminal states. The policy implications of the existence of path dependence are shown to be more subtle and, as a rule, quite different from those which have been presumed by critics of the concept. (David 2000A, p. 1) Too much of the discussion centers around the specifics of a particular product or package of goods and services and not enough analysis focuses on the harder to measure and harder to discuss nature of stochastic processes which lead to multiple, unstable (unpredictable or indeterminate) equilibria.

In the field of law, the emerging discussion of path dependence is particularly insightful, especially with respect to the comparative law of corporations and comparative corporate governance. Amir Licht, for example, argues that corporate governance systems tend to preserve outmoded historical conditions (Licht 2001). Whether these conditions were the result of economic endowment, political machination or simply due to historical accident, their results can easily lock-in a sub-optimal structure of relationships between shareholders, stakeholders, investors, agents and the market. Drawing on Arthur’s work, Licht further argues that a nation’s unique set of cultural values might indeed affect—in a chain of causality—the development of that nation’s laws in general and its corporate governance system in particular. In this context, grand theory and ubiquitous prophecies of global convergence should not be expected to carry much empirical weight. Indeed, after the Southeast Asian currency crisis of 1997, many Asian corporations either by choice or at the unwilling or unwitting behest of the IMF and the World Bank, may have rushed to judgment prematurely and adopted Anglo-American organizational standards which were and are antithetical to the country’s institutions and cultural heritage, thus injecting an additional element of chaos into an already unstable system (Johnson, 2001).

Institutions as a Punctuated Equilibrium
One of the difficulties in analyzing institutions is the complexity of institutional behavior. As Nelson and Sampat (2001) note, the revival of interest in the subject of institutions by economists has led to the emergence of several schools of thought, many of them antithetical to one another in the way that they define institutions and in the ways in which they model institutional behavior. Nelson and Sampat also note that what is problematic or the view of a small minority in economics may be the mainstream view in other fields such as sociology or psychology. While they argue that there might be a broad general coherence with respect to the theoretical concept of institutions, they also note that there are inherent problems of discourse when some authors refer to institutions as the unit of analysis, some refer to them as the rules of the game and still other authors regard institutions as the background setting in which the development of the rules of the game takes place.

Masahiko Aoki (2000B) raises a very interesting question with respect to institutional convergence when he asks:

What are institutions? Can we identify them with statutory laws, informal norms, established organizations, contracts, people’s mind-sets, or possibly combinations of some or all of these? A proper formulation of a concept, such as that of institutions, may depend on the purpose of the analysis. For example, consider the following question: If institutions matter to economic performance, why can’t the best institutions from better-performing economies be learned and adopted by other economies?

Aoki turns to Douglass North (1990) for a typology. North, starting from the standpoint that institutions represent the rules of the game argues that there are two types of rules — formal, (such as constitutions, contracts and property rights) and informal, which basically refers to cultural values and norms. Aoki then points out that if one merely tries to transfer institutions of the first type to settings of the second type, then a borrowed institution may be neither enforceable nor functional. (Aoki 2000B, p. 2) In the context of European corporate governance this has been an ongoing conflict, particularly where market institutions or the harmonization of multiple markets into a single integrated market has had to contend with what Peter Katzenstein (1984) calls the institutions of state corporatism. 17

Citing the interest of economists in enforceability and the question of what makes the rules of the game enforceable, Aoki argues that the easiest way to conceptualize enforceable institutions is as the outcome of a game (Aoki, p. 2). He then argues that the way to get around various logical problems (such as an infinite regress with respect to the origin of the rules) is to treat the rules as endogenously generated. To the casual reader, this may not be of any great significance, but from the standpoint of modeling, Aoki has just moved his analysis into the domain of statistical mechanics. As we have already seen, both the artificial stock market discussed by Arthur and Farmer, and the NK Boolean networks used by Kauffman
(and applied in business an organization theory by Lissack, Maguire and McKelvey are all based on modeling heterogeneous agent behavior with endogenously generated rules. Aoki recognizes that this involves a complex feedback mechanism, and like McKelvey, he uses the Nash equilibrium to represent the basis of agents' choice rules. An interesting conclusion which Aoki arrives at from his treatment of institutions as an equilibrium is that a salient feature of an equilibrium state recognized as an institution may be represented in some explicit codified symbolic forms, such as statutory laws, agreements, social structures or organizations. However, the point is that a certain representation is an institution only if the agents believe in it. From this perspective, statutory law and regulations per se are not institutions if they are not necessarily observed. (p. 16)

In the context of institutional convergence arguments, Aoki points out that from a game-theoretic equilibrium view, the convergence argument inevitably leads to the kind of contradiction which Arthur (1994) relates to the explanatory power of rationality (i.e., tic-tac-toe vs. checkers vs. chess vs. go, etc.). He argues, If one subscribes to the view that institutions are made of polity determined rules yet that they matter to the performance of the economy, its implications could then be that a badly performing economy should reform itself by designing and implementing better rules, possible emulating the best practices elsewhere. Aoki finds two kinds of problems here, first that the government is itself part of the endogenously determined game and second, that the policy may have unintended consequences. He goes on to discuss the determinacy paradox arguing that endogenizing the government does not necessarily mean, however, that the outcome of the game we are studying will become fully determined, leaving no scope for policy advising. He concludes, however, that what will determine the degree to which policy discussions will have an impact is their fit with emergent practices in domains other than the polity. (p. 25)

Aoki (2000) also derives game theoretic equilibria for a comparison of various types of organizational form. As a general proposition, he defines organizational structure in an information theoretic context. A organizations (loosely modeled after American corporations) are primarily task specific in their information processing structure and the individuals within those organizations invest in technical skills. J type organizations are assimilated information structures where skills are largely contextual. (pp. 46-52) In comparing the two types of organizations he models to their actual American and Japanese counterparts, Aoki argues that the differences are largely the result of path-dependent evolution. (p. 53) He also argues that within an evolutionary modeling context (i.e., using Kauffman's NK model) that neither organization reaches the global optimum, which he labels as the P type (Pareto optimal) organization.

Two factors influence Aoki's evaluation of organizational structure. One is the organization's external competitive performance, which Aoki admits varies between the two organizational types. More interesting, however, is his characterization of internal information processing capabilities and the ways in
which this affects their governance structures.\textsuperscript{18} Building on this type of approach, we propose Hybrid Integrated Governance, as a structure for emulating P type, or Pareto optimal organizations in the Japanese corporate context, through a modification of information processing achieved through the flattening of hierarchy in Japanese corporate board structure.

Governance, Convergence and Human Resources Management Policy

One aspect of organizational structure which offers some potential for revitalizing Japanese corporate performance is the modernization of human resources management practices, particularly through the implementation of competency based systems.\textsuperscript{19} Aoki (1999A), for example, uses the heterogeneous agent approach of statistical mechanics and agent based modeling in combination with the endogenously generated rules of information handling and task management to address Japanese corporate governance from the standpoint of information theory. One important result of his approach is that contrary to the orthodox neoclassical view, Aoki finds that in the contingent governance model (Aoki, 2000) typical of Japanese corporations, keiretsu have used the development of financial markets more as a mechanism of insulating their managements from outside raiders rather than a source of external financing as such. Naturally, the long-run effect of such practices will be to isolate decision-making from market realities, particularly unpleasant realities, which will consequently act as a drag on the corporation's ability to earn economic rents in changed environments.

Amir Licht (2001), following Arthur (1994) argues along similar lines that corporate governance systems tend to preserve outmoded historical conditions. Whether these conditions were the result of economic endowment, political machination or simply due to historical accident, their results can easily lock-in a sub-optimal structure of relationships between shareholders, stakeholders, investors, agents and the market. Licht further argues that a nation’s unique set of cultural values might indeed affect—in a chain of causality—the development of that nation’s laws in general and its corporate governance system in particular.

The critical question then becomes how can a new system be introduced without either foundering on institutional boundaries which have been locked-in by path-dependence? A related problem is if a new system is introduced, how can conflict with establish social and culture norms be avoided? The largest problem with the wholesale transplantation of western management techniques to Asian economies, particularly in fundamental areas of corporate structure like governance, is that structures which are non consonant with respect to local cultural norms are not likely to work effectively (Kurth, 1996, Johnson, 2001).
In the present case, the system which we would like to consider contains two elements, which at least for large Japanese corporation, represent novel modifications. The first is a flattening of corporate board structure and a realignment of decision making elements at the director level as shown below (Figure 1):

Figure 1: The Basic Hybrid Integrated Governance model

In this model, we assume that decisions made by executive directors are not routine decisions but are, instead, critical strategic decisions. We have also assumed that each executive director is the top manager his respective division. The intent here is to build a structure which seamlessly links the board of directors with each business unit. At present, while most Japanese corporations have an internally flat management structure, the Japanese board of directors typically has a very strong vertical, hierarchical structure. While each level of directors has a relatively well-defined set of tasks which are different from those of the other levels, it is not normal for each member of the board to have either a clear set of tasks or clearly defined individual responsibilities. The structure of the Japanese board under the keiretsu system has served more to assure every stakeholder of some degree of representation rather than to efficiently direct the corporation’s strategy and policy.
A key element of the model as discussed below is the interlocking structure with a new proposed management consulate to solve agency costs of corporate governance with respect to information asymmetries between the firm, its management, its board, its keiretsu members, its lead bank and its buyers and suppliers. The principal information asymmetry problem in Japanese corporate governance is found in the difference between the level of information available to shareholders as compared to that available to the company's managers. Some management theorists even argue that the underlying reason behind management's existence is the large gap in the kind and degree of information available to managers as opposed to that available to shareholders (Jensen, 1998).

To return to board level decisions, under the current Japanese corporate governance system, decisions made by directors may not be undertaken in the same fashion as the directors intended because of the information asymmetries between those charged with making the decisions and those charged with carrying them out. In order to solve this problem, information flows need to be examined and restructured at both the policy level and at the technical or operational level of the firm.

Aoki (1999A) uses an information theoretic model to characterize firm behavior at this level. He describes the firm's information environment by modeling an idealized corporation with just two task units in order to present the clearest typology of cross-functional information handling structures:

Imagine the organization composed of only two task units, say T1 and T2. They are engaged in their own activities that may jointly contribute to the fulfillment of organizational goals, using limited organizational resources. The organization is surrounded by an uncertain environment and, in order to achieve organizational goals more efficiently within the limited organizational resources, the direction of each activity needs to be adjusted in response to the changing environment. We may refer to incomplete monitoring of the environment by each task as information processing, and the adjustment of the activity of each task based on acquired information as organizational coordination. We assume that, because of inevitable bounded capacity of economic agents, the outcome of information processing, however it is done, is not a precise representation of the environment.

Type I organizations are labeled as processing information by hierarchical decomposition where individual units respond to information according to their own specialization (this is essentially an extended definition of the BCG strategic business unit, SBU concept as applied to information theory). In Type II organizations, information is pooled and adjustments are coordinated between the two units. In general terms, Type I organizations are typical of U.S. companies and Type II organizations are more reflective of Japanese organizational practices. The intent of the structure shown in Figure I is to hybridize these two structures, so that the gains of specialization can be more clearly taken advantage of by Japanese
corporations without trying to impose a form of governance which would be culturally antithetical to the Japanese corporate environment.

Aoki extends his model to encompass the relative efficiencies of information processing with respect to the kinds of environments in which they operate, arguing that organizational forms are environmentally dependent upon whether information processing for their industry or operating unit is more efficient in an assimilation mode or a hierarchical mode.\textsuperscript{21} In the context of the model represented above, the informational structure of the flattened board structure is aligned with the kinds of enterprise management resource packages (i.e., Oracle Financials, People Soft and SAP) which are currently used to link firms both vertically and horizontally to a common database (Porter 1997, Evans and Wurster, 1997). Thus, we would argue that the HIG model will improve Japanese corporate performance through a combination of more efficient information processing and a reduction in cross-unit and intra-board informational efficiencies. In our future work, we plan to use the NK fitness landscape model to test the comparative fitness of the HIG structure against typical Japanese corporate board structures using Aoki's information processing categories as the basic fitness variables.

Another characteristic which the HIG model shares with Aoki's model is the ability to assign tasks on the basis of task-unit, or SBU information processing capabilities. This opens up the possibility of introducing a task-specific or performance based human resources methodology in the Japanese corporate setting. As long as the contextual dynamics are properly managed, this type of system can be introduced as a functional adaptation of the existing system through an organizational learning process rather than either an extra-contextual transplant or a mechanical imitation of American corporate structure under the banner of convergence (Takei and Fellman, 2002).

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Aldana (2002) notes that an interesting dynamical network in which the scale free topology has important implications is the N-K model proposed by Stuart Kauffman in 1969 to describe generically the dynamics involved in the processes of gene regulation and cell differentiation. In this classic model, the genome of a given organism is represented by a set of N genes, each being a binary variable describing the two possible states of gene-expression: either the gene is expressed (1) or it is not (0). Since the expression of a gene is controlled by the expression of some other genes, Kauffman assumed the genome as a directed network in which a link from a given gene A to another gene B means that A controls the expression of B. In view of the complexity exhibited by real genetic networks, Kauffman made three simplifying assumptions: (a) every gene is connected (is controlled) by exactly K other genes; (b) the K genes to which every gene is connected are chosen randomly with uniform probability from the entire system; (c) each gene is expressed with probability p and is not expressed with probability 1 − p, depending upon the configurations of its K controlling genes. Even with these simplifying assumptions, a very rich and unexpected behavior of the model was found. In particular, in 1986 Derrida and Pomeau showed analytically the existence of a dynamical phase transition controlled by the parameters K and p. For every value of p there exists a critical value of the connectivity, K_c(p) = [2p(1 − p)]^{−1}, such that if K < K_c(p) all perturbations in an initial state of the system die out (ordered phase). For K > K_c(p) a small perturbation in the initial state of the system propagates across the entire system over time (chaotic phase). According to Kauffman, Stauffer, and other authors, only when K = K_c(p) (the critical phase) does the N-K model have the required stability properties compatible with the order manifest in the genetic networks of living organisms. This fact made Kauffman coin the term ‘life at the edge of chaos’.

During 2002, Farmer and his colleagues (Daniels, Farmer, Iori and Smith, 2002; Zovko and Farmer, 2002; Smith, Farmer, Gillemot, and Krishnamurthy, 2002; and Smith, Farmer, Gillemot and Krishnamurthy, 2002) have used models from statistical mechanics to directly explain market volatility. Earlier theorists (i.e., Black and Scholes, 1973, etc.) given the nature of their models, have generally been forced to rely either upon measures of implied volatility or alternatively, employ generalized models of heteroskedasticity borrowed from engineering (i.e. ARCH, GARCH and I-GARCH) which frequently fail to fit market data (Peters, 1992, 1994).
Those readers wishing a more complete explanation of the range of problems in financial economics to which statistical mechanics may provide new or better answers are encouraged to review Farmer, J. Doyne (1999), Physicists Attempt to Scale the Ivory Towers of Finance, (Computational Finance), Computing in Science and Engineering, November-December 1999 also available at http://www.santafe.edu/sfi/publications/Working-Papers/99-10-073.pdf


The artificial stock market was designed to test the recursive character of endogenously defined markets, which, for want of a better term we shall characterize as the fortune teller effect. Arthur et al state this hypothesis as: Asset markets, we argue, have a recursive nature in that agents’ expectations are formed on the basis of their anticipations of other agents’ expectations, which precludes expectations being formed by deductive means. Instead traders continually hypothesize—continually explore—expectational models, buy or sell on the basis of those that perform best, and confirm or discard these according to their performance. Thus individual beliefs or expectations become endogenous to the market, and constantly compete within an ecology of others’ beliefs or expectations. The ecology of beliefs co-evolves over time. As profound a criticism of the underlying dynamics of neoclassical economics as this statement is, this line of inquiry continues to be a fruitful area of research and has attracted a number of highly recognized economists, game theorists, mathematicians and sociologists. One reason for the attractiveness of the topic is that it gets at the meta-structure of economics by addressing questions such as the origins of money (Shubik, 2000A, 2000B; Greif, 2001). Shubik and Greif both argue that the origins of money derive from a substitute for trust in trade. Grief asks the very difficult question, In many trade centers merchants from various parts of Europe, who seemed to have few personal and repeated relationships, entered into exchange characterized by separation between the quid and the quo over time and space, such as credit, contracts for future delivery, negotiable securities, and marine insurance. The ability to conduct impersonal exchange enhances efficiency. But what were the institutions, if any, that enabled such exchange in the late medieval period? How could a creditor from one corner of Europe, for example, trust a debtor from another corner about whom he knew little and who could avoid interacting with him in the future to pay his debt? His answer in part is that communities can (rather than an impartial legal system with authority over both transacting individuals) can provide the basis for the functioning of inter-community impersonal exchange. Furthermore, this exchange is not necessarily spot exchange. Rather, similar to the exchange made possible by the court, as long as past actions can be verified at relatively low cost, this exchange can be with respect to transactions, (such as credit and contracts for future delivery) characterized by separation over time and space between the quid and the quo. (p. 5) Greif’s example is exceptionally thought-provoking if one thinks of it in terms of a geographically isolated economy, such as that of pre-modern Japan.

One alternative to the efficient market hypothesis is Peters Fractal Market Hypothesis (Peters, 1996) which involves analyzing the Hurst exponents of various time series and mapping various scaling effects. Farmer’s 2002 research (Zovko and Farmer) appears initially to confirm some of Peters’ predictions, however the Hurst exponent for technical trades has a slope too nearly approximating a random walk (0.51) to be described as fully confirming Peters work. One reason for the difference in magnitude of persistence may be the relatively short period of Zovko and Farmer’s database (three years), with a greater longitudinal span, their results might, in fact, be more nearly convergent.

Farmer further explains this process as follows: Market makers have risk aversion, which means that once they acquire positions, they have to off-load them. But risk aversion means that their actions are somewhat predictable. For example, if they off-load their positions gradually, they cause trends in prices. Trends in prices are exploited by technical traders, who analyze patterns in past prices and trade accordingly. Thus, we see how the demand for liquidity can sustain a population of technical traders, even though the technical traders are not providing liquidity directly. Money flows from liquidity demanders to technical traders. This pattern does not mean the market is not pretty efficient; it just means that this approximate efficiency comes about only through a web of interactions among heterogeneous players, who are all part of an interconnected market ecology. (p. 62) David Reaume (1996) offers several reasons why doing statistical approximations of imputed Taylor expansions can be very misleading. Perhaps the most striking issue is that even for some very simple quadratic and cubic functions one can easily have second order terms which are not only larger in absolute value than first order terms, but of the opposite sign. Thus truncating a Taylor series expansion, which is what any good econometrician will do, can be extremely misleading. Nor is this the only group of critics or the only line of inquiry which finds the Walrasian price mechanism at least as much of a hindrance as an aid to explaining economic behavior. Note that Farmer here qualifies this step by saying, taking logarithms and expanding in a Taylor s series, providing the derivative _0(0) exists . Farmer and Joshi (2001) use the same set of equations with one or two minor additions, and are forced to make the same qualification. Farmer himself admits that there are some problems with the model’s assumptions. The existence of the appropriate Taylor s series for the lognormal distribution may or may not be one of these problems, but it certainly needs to be specified in a more well-defined fashion.

Among the many interesting market behaviors which Farmer discusses are the dynamics of the trend follower and value investor relationship. While he feels that the few results presented here fail to do justice to the richness of the trend follower/value investor dynamics. This is probably an understatement of the richness of his price impact model. He does note that among the interesting effects the model does capture are that the presence of trend followers increases the frequency of the oscillations in mispricing. Noting that the mechanism seems to be more or less as follows: If a substantial mispricing develops by chance, value investors become active. Their trading shrinks the mispricing, with a corresponding change in price. This causes trend followers to become active: first the short term trend followers enter, and then successively longer term trend followers enter, sustaining the trend and causing the mispricing to cross through zero. This continues until the mispricing becomes large, but with the opposite sign, and the process repeats itself. As a result the oscillations in the mispricing are faster than they would be without the trend followers. (p. 33) In The Price Dynamics of
Common Trading Strategies (Farmer and Joshi, 2000) Farmer and Joshi do get to address some of the elements which Farmer originally did not include in Market Force, Ecology and Evolution. In treating commonly used trading strategies as signal processing elements (the same approached used in Market Force, Ecology and Evolution). They are able to explain how trend following strategies act as signal filters, amplifying high frequency noise and inducing short term positive autocorrelations, while value investing strategies act as signal transducers, incorporating information about value into prices, and inducing negative short term autocorrelations. They infer from the fact that prices have very small autocorrelations, the very interesting likelihood that value investors alone cannot be the only group present -- there must be other groups present, such as trend followers, to cancel their negative autocorrelations. (p. 24)

Farmer and Joshi also note that nonlinear value investing strategies can amplify noise in a heterogeneous setting where there are diverse views concerning value. Trend following strategies strongly amplify high frequency noise, so that when the two groups are combined the result is excess volatility. When value investing and trend following strategies are combined, by adjusting their relative populations, the short term autocorrelations can be made to cancel, so that in a long time average there is very little linear structure. However, because each style of trading is activated differently, there may be bursts of trading by either group, even without agents defecting from one group to the other. The feedback effects studied here give rise to clustered volatility; unlike explanations that rely on oscillations in the populations of different groups of traders, this explanation is plausible even on fairly rapid time scales. Whether such feedback mechanisms are strong enough to explain the clustered volatility observed in real markets, remains open to question. (p. 25)

10 Those wishing to investigate more complex systems with modifiable dynamical graphs should see Abraham, Ralph; Giardini, Laura and Mira, Christian, Chaos in Discrete Dynamical Systems: A Visual Introduction in 2 Dimensions, Springer Verlag (1997)

11 The full dynamics of this type of phase transition have been worked out in great detail. See Glass, L., and Hill, C., Ordered and Disordered Dynamics in Random Networks, Europhysics Letters, 41 (6) pp. 599-604, 1998. Referenced therein, (1) Derrida B. and Pomeau Y., Europhys. Lett., 1, (1986) 45; (2) Derrida B. and Pomeau Y., Europhys. Lett., 2, (1986) 739. (3) Derrida B., Philos. Mag., 56 (1987) 917. See also, Aldana, M., Dynamics of Boolean Networks with Scale-Free Topology Condensed Matter, abstract cond-mat/0209571, who notes The dynamics of Boolean networks (the N-K model) with scale-free topology are studied here. The existence of a phase transition governed by the value of the scale-free exponent of the network is shown analytically by analyzing the overlap between two distinct trajectories. The phase diagram shows that the phase transition occurs for values of the scale-free exponent in the open interval (2,2.5). Since the Boolean networks under study are directed graphs, the scale-free topology of the input connections and that of the output connections are studied separately. Ultimately these two topologies are shown to be equivalent. An important result of this work is that the fine-tuning usually required to achieve stability in Boolean networks with a totally random topology is no longer necessary when the network topology is scale-free.

12 On complex surfaces (i.e., rugged fitness landscapes with many hills and valleys) systems can become trapped on poor local optima (the wrong hill). Kauffman’s research has developed a variety of approaches to “simulated annealing” to assist in getting organizations away from these local optima and moving toward a more global optimum. "Simulated annealing is an optimization procedure based on using an analogue of temperature, which is gradually lowered so that the system nearly equilibrates at each temperature and is gradually trapped into deep energy wells. The general concept lying behind simulated annealing is that at a finite temperature the system sometimes "ignores" some of the constraints and takes a step "the wrong" way, hence increases energy temporarily. Ignoring constraints in a judicious way can help avoid being trapped on poor local optima.” (Kauffman, 1993) One such procedure he calls "patches" -- "partitioning a system on a complex, rugged fitness landscape into independent departments, or patches, each of which thereafter optimizes selfishly. Because the departments are independent and selfish, actions by one department to improve itself can move the entire system "the wrong way," hence [those independent actions] can [allow the entirety to] avoid bad local minima." Kauffman suggests "flatter, decentralized organizations . . . business, political, and otherwise might actually be more flexible and carry an overall competitive advantage." By flatness, Kauffman means an organization designed around a relatively flat fitness landscape -- one without many jagged peaks and valleys, but not a piece of slate either. By decentralized, Kauffman means an organization broken "into 'patches' where each party attempts to optimize for its own selfish benefit, even if that is harmful to the whole." Such a structure "can lead, as if by an invisible hand, to the welfare of the whole organization." This clearly is a "how." Break up the organization into patches. Kauffman emphasizes that these patches must interact. Thus, this advice is clearly different from the old management standby of the independent self-sufficient business unit. It is in the nature and quantity of the interactions that Kauffman finds that the organization as a whole can be moved toward a global optimum even though each patch is acting selfishly. Interactions require language or some other mechanism of fairly continual communication. He stresses that the patches must be coupled. In management lingo, the pieces must communicate, and not just at quarterly review sessions. (Lissack 1996)

13 McKelvey (1999) explains One overriding message for strategists is that it seems preferable to steer firms toward rugged landscapes rather than the single fitness peak among gently rolling coevolutionary hills or the opposite, jagged landscapes created by high complexity. Rugged landscapes occur only when internal coevolutionary density (K) is held to smaller numbers (but greater than zero), even though value chain lengths (number of agents N) may be increasing. In this circumstance there are fewer fitness peaks available, but they have high fitness levels. If a firm shifts toward landscapes having many peaks, the likelihood of reaching a peak is higher, but firms will be trapped on peaks having lower fitness levels the reward is smaller. The ruggedness message and the Lippman/Rumelt (1982) effect join here. Undoubtedly, coevolutionary competition in rugged landscapes is more difficult and risky. Consequently the Lippman/Rumelt effect applies rents go to firms reaching the high peaks in the rugged landscape, but the failure rate of firms to reach high peaks also rises, as Rivkin (1997) notes; trying for, but missing Mount Everest does
not mean one lands on Kanchenjunga it could be a deep valley in between. In contrast, in a jagged landscape, it is much easier to reach the peaks, but economic rents are unlikely since many firms can reach the peaks. (p. 295)


16 Epstein and Hammond (2001) in Non-explanatory Equilibria: An Extremely Simple Game With (Mostly) Unattainable Fixed Points Santa Fe Institute Working Papers, 01-08-043 argue that for many complex problems, equilibria may be either unattainable or non-explanatory. This again leads us back to Winter’s comment that too much emphasis is placed on ahistorical statics and not enough attention in economics has been devoted to the dynamics of distributional processes in empirical, historical settings.


18 Aoki (2000) pp. 25 ff. follows Liebenstein in analyzing the internal coordination of information to derive five different basic organizational forms, each of which has different degrees of efficiency for production in different kinds of industry. Aoki (1999B) explains corporate governance as a mechanism of controlling a particular pattern of allocation information processing functions among organizational participants rather than in terms of a principal-agent relationship between the stockholder and the manager. He bases this model on a combination of static and dynamic structures for information processing as well as hierarchical vs. vertical modes. (pp. 9-11).

19 Aoki (1999A) notes employment contracts in the horizontal hierarchies tend to become implicitly or explicitly long-term so that they become much more incomplete, not only in terms of job specification and description but also in terms of future pay schedules. Specifically, in the Japanese economy where the organizational convention of horizontal hierarchies has developed most conspicuously, pecuniary incentives for its participants are basically provided by the schedule of life-time promotion based on the employee’s performance (see Aoki 1988, chapter 3, for a detailed description and analysis). Employees’ contributions to the organization within the framework of information assimilation is not verifiable to a third party and its fair administration primarily relies upon the reputation of the firm.

However, if the ownership discipline is not effectively workable, as is indeed the case in Japan, there can be a problem of free-riding, as well as soft-budgeting, which may not be entirely controllable by the reputation-based administration of promotion rank hierarchies. (p. 10)

20 One unit, say T1, is responsible for monitoring the environment common to both units and makes a decision regarding its action (and possibly others’ actions as well) in response to the changing state of the environment. The other unit, T2, observes the decision (receives a command) of T1 (as well as the environment idiosyncratic to its own task) and makes a decision regarding its own action (which may deviate from the one commanded by T1). In this mode, the monitoring, or equivalently information processing, of the systemic environment is specialized by T1, while T2 is specialized in executing task 2 (and processing information relevant only to its execution). (Aoki, 1999A, p. 5)

21 Suppose that the information processing capacity is identical for all agents in all the modes. If both task units are technological/attribute substitutes, the information encapsulation mode is more efficient than the information assimilation mode, with other conditions being identical. If the task units are technological/attribute complements, the opposite is true. If the environmental change facing both units tends to be similar and both tasks units are technological/attribute complements, the hierarchical decomposition mode is more efficient than the information encapsulation mode. Further, if there is a large disparity of information processing capacity among the agents, the hierarchical decomposition mode is more efficient than the other two. As the information regarding the environment becomes available more in the form of commonly available digitalized data, the relative disadvantage of the encapsulation mode in dealing with technical/attribute complementarity may diminish. When both task units compete in the use of common organizational resources, the range of information efficiency of the encapsulation mode will expand. (Aoki, 1999A, pp. 6-7)

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Abstract

The global automotive industry is in a continuous state of flux with respect to technology, ownership and geographical reach. The American producers at home have lost considerable market share, especially to Toyota and Honda. However, there are now signs that the quality and productivity gap is beginning to close. If so, the chief enticement to consumers will likely be design. The question then is how will the Japanese fare. This paper gives some historical perspective to the global automotive industry, highlighting the key developments in the past with an eye to how the industry may look in another decade or so.
The Global Automotive Industry: What Role for Japanese-based Producers?

Japanese producers, especially Honda and Toyota have increasingly been enlarging their share of the world’s automotive market, especially in North America. (For 2001 shares, see Table 1) They have built a lead in productivity and quality. Now there are some sign that the gap between them and some other manufacturers is narrowing. If it continues, more importance will fall upon car design. Moreover, as the global automotive industry matures and competition intensifies within traditional markets, it has become necessary for established companies to branch out to pursue emerging markets, and develop new niche segments. This has in turn spurred on changing relationship structures, with an apparent realization by many within the industry that alliances of differing sorts may be necessary to compete effectively, allowing fierce competition to rationally coexist alongside cooperation that does not violate anti-trust legislation. This co-opetition has become the rule rather than the exception, as the web of interdependence amongst not only manufacturers, but also suppliers, has grown denser over the past decade. Given the possible narrowing productivity/quality gap, the jostling for strategic partners and the geographical expansion of the industry, one question is how will the key Japanese companies fare against their competition. This paper briefly traces the key developments in the industry with an eye to how the industry may look in another decade or so.

The Japanese Transplant Phenomenon and the Concept of Lean Thinking & Manufacturing

The dominant position in the North American market of the Big Three, (GM, Ford and Chrysler), was permanently altered in the 1980s. The oil crises of 1972/73 and 79/80 helped pave the way for the Japanese to penetrate the American market, making their smaller, more fuel-efficient cars an attractive alternative to the gas-guzzling offerings of the Big 3. As the US government reacted with protectionist measures in the 1980s, namely a voluntary export restraint negotiated with Japan in 1981, the Japanese turned to importing fewer cars, but at higher price and quality levels. In order to increase sales above quota-restricted levels, the Japanese then setup US manufacturing bases, termed transplants, beginning with Honda’s Ohio plant in 1982 [Smitka, Winter 1999]. These transplants solidified the Japanese presence in the North American market, and acted as a catalyst to a more global approach by the Big 3, which saw them view Asia as a potential market, both for export and production. In the 1950s, Toyota absorbed into its corporate culture the teachings of U.S. government advisor W. Edwards Deming, who stressed continuous improvement as the means by which productivity and quality could best be enhanced. The Japanese, beginning with Toyota, took this concept and made it their own, terming it kaizen. The result was that the Japanese achieved enormous gains in manufacturing efficiency, developing flexible methods of assembly that allowed them to manufacture various models on a single line. Combined with a holistic approach that sees all stages of design, engineering, & component manufacturing as having important implications on final assembly, this concept is termed lean manufacturing. The Japanese, due to their embrace of these principles, sustained continued growth in the US market long after fuel efficiency ceased to be the deciding factor. Rather, they stole away market share with superior product quality, and competitive prices, a trend that has continued to this day. The US manufacturers, experiencing declining domestic market share, have had to make adjustments, even if these adjustments have been occurring at a snail’s pace. Some lessons have been learned
from joint ventures engaged in with Japanese manufacturers, such as the Toyota-GM NUMMI California plant, but the impact is only recently being felt, reflecting the often lumbering gate of the American giants response to needs, versus the nimble motions of the Japanese. Acknowledging the quality gap, General Motors Vice Chairman Robert Lutz suggested In two years time, we will match Toyota and Honda — not only in IQS (Initial Quality Study), we are going to match them in long-term reliability [Reuters, September 17, 2002].

**Oh, What a Tangled Web It Is!**

Whereas in the not-so-distant past, it may have been difficult for a casual observer to determine where an automobile had been manufactured, it is now nearly impossible for even those who follow the industry, to trace a finished product to its originating source. With so much sharing of components, cross badging, outsourcing of assembly, and joint designing occurring in modern automobile production, it may no longer be accurate to term some cars as being a specific brand. Instead, it may be more accurate to describe many finished products as being a result of a concerted group effort, with final nameplate decisions resting more on strategic or tactical arrangements than being a true reflection of a car’s technical origins. As an example of this complexity, General Motors, the most broadly diversified global player, has relationship agreements with 35 different manufacturers, including eight minority equity ownership arrangements and over 13 current joint venture projects [Wards Automotive International, 2001, 12-14]. Relationship linkages can be forged in a variety of ways, with varying degrees of integration, with methods including direct equity ownership, joint ventures, and component sharing arrangements.

**Table 1**

<table>
<thead>
<tr>
<th>Global Vehicle Sales and Market Share: 2001</th>
<th>Sales</th>
<th>Mkt Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM*</td>
<td>8350000</td>
<td>15.08%</td>
</tr>
<tr>
<td>Ford</td>
<td>6906548</td>
<td>12.47%</td>
</tr>
<tr>
<td>Toyota</td>
<td>5927568</td>
<td>10.71%</td>
</tr>
<tr>
<td>Volkswagen</td>
<td>5107000</td>
<td>9.22%</td>
</tr>
<tr>
<td>DaimlerChrysler</td>
<td>4500000</td>
<td>8.13%</td>
</tr>
<tr>
<td>PSA/Peugeot-Citroen</td>
<td>3182800</td>
<td>5.75%</td>
</tr>
<tr>
<td>Honda</td>
<td>2670000</td>
<td>4.82%</td>
</tr>
<tr>
<td>Hyundai</td>
<td>2652412</td>
<td>4.79%</td>
</tr>
<tr>
<td>Nissan</td>
<td>2580328</td>
<td>4.66%</td>
</tr>
<tr>
<td>Renault</td>
<td>2409226</td>
<td>4.35%</td>
</tr>
</tbody>
</table>

*estimated

**Source:** Automotive News 2002 Market Data Book

Equity Ownership Holdings

Within the ownership structure, there are varying degrees of control and exposure, determined not only by percentage holdings, but also corporate legislation and the structure of equity ownership already in place prior to share acquisition. The types of companies either acquired or allied with through equity ownership, also vary considerably, with Ford moving upscale, GM allying with small-vehicle manufacturers, and Mercedes-Benz and Chrysler combining two distinct traditional market brands under one corporate structure.

Joint-Ventures and Component Sharing

Honda, eschewing the recent trend of using equity holdings to promote alliance incentives, has remained outside the dense web of equity relationships, instead limiting its involvement largely to technological agreements and supply arrangements. One such arrangement has Honda supplying 90,000 V-6 engines and automatic transmissions annually to GM, over a five-year
period beginning in 2003, while Honda will use GM’s Onstar communication system in its Acura vehicles. Joint ventures are also prevalent amongst those manufacturers that realize the substantial savings to be had in areas that require especially large investments and yield mutual benefits. Such is the case for projects dealing with auto emissions and pollution, as well as advanced propulsion technologies. USCAR is one such joint venture project that sees GM, Ford and DaimlerChrysler work together on environmentally based technology solutions [Ward’s Automotive International, 2001, 5]. Although not an equity-based joint venture, even archrivals, Toyota and Nissan, are embarking on long—term technological cooperation related to hybrid fuel systems that they are currently developing independently. Initially, Toyota will supply Nissan with components for its state-of-the-art hybrid system currently used in a number of its specialty vehicles. The agreement allows Toyota to amortize its development costs over a larger volume and it will allow Nissan to obtain a system that it would find difficult to replicate on its own [Nissan].

**Changing Market Realities**

Although the traditional markets of North America, Japan and Western Europe will remain important regions in terms of sheer volume of automobile sales for some time to come, growth prospects in these areas are limited. As emerging market economies expand and become viable vehicle consumer markets, automakers will pursue these markets to carve out market share and stake claim to future growth.

**Slowing Pains, The Maturing of Traditional Markets**

The advanced industrial countries are saturated with vehicles, with some characterizing these traditional markets as being reduced to replacement purchases by an aging population [Hiraoka, 143]. Using Automotive News 2002 Market Data Book’s North American vehicle sales projections data, we have calculated a geometric average growth rate of -0.38 percent/annum over an eight-year period from 2002 to 2006 for US auto sales, versus a growth rate of 3.57 percent/annum over the same period for Mexico, an emerging market [Automotive News, May 27, 2002, 25]. As competition increases in traditional markets, there will be greater pressure on established players to retain their current market share, as sales demand growth will be insufficient to absorb added capacity. Ford estimates that there were 31 brands fielding 56 sport-utility nameplates in the United States in 2001, resulting in an accelerated erosion of market share for its mainstay products by new entrants into this high-margin segment [Connelly, August 5, 2002, 30]. Margins and market share may be defended through a combination of lean manufacturing techniques, encompassing an overall approach of lean thinking in conjunction with brand leveraging and new product offerings [Automotive News August 5, 2002, 30]. Without such an approach, lean manufacturers that have greater flexibility will be able to adapt to new trends faster and more cost-effectively, leaving traditional manufacturers with reduced market share and higher costs.

**The Emerging Markets: China, S. America, S.E. Asia, Eastern Europe**

Emerging markets are characterized as having strong but volatile growth in vehicle sales. According to automotive representatives from Ford, DaimlerChrysler and GM, Asia is expected to account for 50 percent of the growth in global car sales over the next 10 years [Automotive
Table 2:

<table>
<thead>
<tr>
<th>Design Parent/Plant Location</th>
<th>Average Vehicle Production Per Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>149,664</td>
</tr>
<tr>
<td>Europe</td>
<td>119,110</td>
</tr>
<tr>
<td>Japan/Korea</td>
<td>267,008</td>
</tr>
<tr>
<td>S. America</td>
<td>61,198</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>61,364</td>
</tr>
</tbody>
</table>

Source: Automotive Industries, February 2002

News, June 10, 2002, 16]. However, economies of scale are not internally feasible for most growth markets at present, and high levels of protection make imports prohibitively expensive. Thus manufacturers are encouraged to setup shop within those countries that are accommodating toward FDI and have regional trade arrangements, utilizing them as export bases for the surrounding region. This allows not only market share to be captured in otherwise protected regions, but also allows regional plant output to approach or meet minimum efficient size, which would otherwise not be possible had production been relegated to serving only a small domestic market. Currently, there are substantial differences in manufacturing plant sizes between emerging market regions and traditional markets (see table 2) [Automotive Industries, February 2002, 14].

Mexico and Thailand provide examples of where domestic assembly output far exceeds domestic consumption, with the majority of production being exported. The ratio of total passenger vehicle production to vehicle sales in Mexico is over 2:1 [Automotive News, 2002 Market Data Book, 8-9]. Fostering brand recognition and loyalty is particularly important in securing a stake in these emerging markets. Toyota has indicated that it will expand facilities in both Mexico and Thailand. In Mexico, it will build a new pick-up truck plant [Kazim and Ibison September 20, 2002]. To Thailand, in search of lower labor costs, a large market and protection against the volatility of the yen, it will shift its global pick-up truck production base from its Hino Motors plant in Japan. The intention is to produce about 200,000 vehicles a year that will account for about 40 percent of the company’s total global pick-up truck capacity. Half the output will be exported.

Strong export ties between Japan and China have enabled Japanese manufacturers to leverage a positive brand image into increased market share, helping to propel Japanese automakers to a 25 percent share of China’s passenger vehicle market. The push into China continues with recent major announcements by Toyota and Nissan. As previously mentioned, Toyota is teaming up with China’s largest indigenous automaker, First Automotive Works. The joint venture is expected to produce up to 400,000 vehicles a year by 2010, equivalent to what VW, China’s leading car manufacturer now sells. The venture is part of Toyota’s goal to grab 15 percent of the world’s automotive market by 2010. Assuming it meets its plan, it will either be the largest or second largest automaker; currently it ranks third after GM and Ford [The Globe and Mail, September 23, B8]. Nissan, 44 percent owned by Renault, in an even bigger deal, is going to purchase 50 percent of Dongfeng Motor Corporation, China’s third largest indigenous producer. Together they are expected to produce 900,000 vehicles within a decade. Commercial vehicles will bear the Dongfeng brand and autos will be Nissan-branded cars [Treece, September 23, 2002, 3].

Of even greater importance to emerging market success, is the ability to produce a small car that fits within the budget of the consuming masses. The small car segment is overwhelmingly the largest segment in emerging markets, accounting for 50 percent of the Mexican market at present, with that share expected to rise and level off at 60 percent in the long term [Economist Intelligence Unit, 73-74]. For small car production to be profitable, manufacturing efficiencies are crucial, making experience in small chassis and engine development an important asset to anyone that wishes to compete. Following along these efficiency requirements, there is also a need for supplier efficiencies to be maintained. Manufacturers are increasingly calling upon
suppliers to commit resources and share in the risks (and rewards) of setting up manufacturing bases overseas, with GM, for example, requiring suppliers to share the costs and risks of its Gravatai complex in Brazil [Ward’s Auto World, September 2000].

Motivations Toward Global Relationship Enhancements: Economies of Scale/Scope

Procurement Cost Savings

New relationship structures that combine the purchasing powers of two or more manufacturers reduce costs through realizing greater economies of scale. GM and Fiat, by combining both companies’ purchasing efforts in an arrangement facilitated by GM’s 20 percent equity stake in Fiat, hope to reduce costs by $1.2 billion for the combined companies in 2005 alone [Guilford, September 10, 2001, 1]. Similarly, Renault and Nissan, allied after Renault’s acquisition of a 44 percent stake in Nissan, have outlined in their long-term strategic planning a common procurements body, the Renault-Nissan Purchasing Organization (RNPO). Savings through this arrangement are projected to be $2.9 billion by 2005 [Cullen, August 5, 2002, 34]. Following logically from common purchasing is common platform and component sharing. Mazda and Ford have leveraged their equity relationship through parts commonization as in the development of a new power plant for Mazda’s 2003 Atenza, for which Mazda designed the engine so that key components such as blocks, cylinder heads and connecting rods could be used through the Ford Motor Co. family regardless of brand. Furthermore, by teaming with Ford, Mazda expects to realize scale merits from global output of 2 million units, rather than 425,000 if production were limited to Western Japan [Automotive Industries, March 2002, 26].

Global Platform Engineering

Volkswagen has been particularly efficient in terms of basing multiple models off similar or identical platforms, currently utilizing only four platforms for its entire product range, down from 16 only nine years ago. [Ward’s Auto World, March 2001, 46]. The idea behind global platform engineering is to utilize common components and platforms across previously disintegrated manufacturers. The result is even greater efficiencies in design and assembly, as a common chassis may be carried over and refined for an extended period of time, retaining major components when at all possible in order to reduce redesign costs. The ability to reap volume production for platforms that can then also be used by niche-oriented products reduces development time and increases quality through a reduction in redesigns across multiple models. Instead, production can be done at a further point along the general learning curve than otherwise possible for each revision of the base platform. This strategy is becoming increasingly important, as cars that are exported to various markets must adhere to certain market-specific environmental requirements. Reflecting on this, Mazda’s senior managing director in charge of purchasing, Mutsumi Fujimara says, Having a global production base is especially beneficial for holding down investment in future market-specific derivatives, and with each major market setting different standards for emissions, these investments will be quite substantial [Automotive Industries, March 2002, 26].

The production of small cars can be enhanced by utilizing a platform across a global scale, both as an emerging market global car as well as a traditional market niche product, allowing higher volume production to be realized. Toyota leads the charge with three major global platforms while Volkswagen, Mitsubishi, Ford, Fiat and PSA are currently developing global
platforms for several Asian locations [Automotive Industries, January 2002, 7]. GM too is reducing the number of its global car platforms or architectures, from thirteen to seven by 2005. Sharing platforms across an acquired brand that has special marquee qualities can result in synergies that would not be possible in the absence of the partnership or acquisition. Ford for example, through the usage of common components and platforms between its Ford range of products and that of Jaguar and Volvo, can reap benefits of scale production that Jaguar and Volvo could otherwise not achieve as Ford products such as the Lincoln LS and its European Mondeo currently share platforms with Jaguar, and the next generation Ford Taurus reportedly is based on a Volvo platform [Wards Auto World, March 2001, 46]. This is done while still retaining the benefits of Jaguar’s prestige image, and Volvo’s reputation for quality and safety, and so long as the changes remain largely under the skin and invisible to the consumer, gains can be had in the form of increased margins. There are potential dangers, however, as in the case of Ford’s merging Jaguar, Land Rover and Aston Martin into a single business unit within Premier Automotive Group, a move that is causing concern over the potential for eroding their brand identity [Rechtin, November 19, 2001, 1]. Unfortunately, the zeal for over-commonization can be just as detrimental to long-run profitability as not engaging in global platform engineering in the first place, particularly in such cases as with Jaguar, where dilution of brand image may occur, largely negating the gains of the leveraged name.

**R&D Expense Sharing**

As new environmental constraints come to pass, R&D is becoming increasingly essential to offering innovative products in the home market, while also reducing costs of materials processing and assembly in emerging ones. Alternative fuel cells are a prime example of an R&D investment that requires substantial funding, and in which a breakthrough may bring mutual benefits to all manufacturers. Examples of relationships that are driven by this need to distribute research and development costs across numerous manufacturers are many. Toyota is involved both with Ford and General Motors. It is talking with Ford about creating a pool of common hybrid engine parts to reduce hybrid power train technology costs while concurrently signing with GM a five-year R&D agreement to develop advanced propulsion technologies. Meanwhile, Ford has an additional memorandum of agreement with DaimlerChrysler and Ballard Power Systems to develop hydrogen-powered fuel cells [Zachary and Priddle, February 1, 2001, 9].

**Using Equity Stakes and Alliances for Filling Gaps in Product Portfolios, Geographic Reach and Technological/Manufacturing Capabilities**

**Geographical Reach**

The key to attaining diversification across markets on a global level is the ability to offer appropriate products to appropriate regions. This has been a difficult concept for the US manufacturers to accept, as they have historically served a large enough domestic market to remain indifferent to external tastes and needs, with their European divisions highly insulated and independent of North American operations. The acquisition or partnership with firms that serve foreign markets may be an effective way to cross this hurdle. DaimlerChrysler, despite their strength in Western markets, have little presence in developing markets without their equity partners, Mitsubishi Motors and Hyundai. Their equity stake in Mitsubishi provides
DaimlerChrysler access to Asia/Pacific, the world’s fastest-growing market, in addition to well-placed manufacturing facilities across the continent, while Hyundai is a dominant player in the fast growing Korean market [Ward’s Auto World, February 1, 2002]. In its goal of enhancing sales in Asia, DaimlerChrysler is expected to take a greater stake in Mitsubishi Motors truck division [Miller and Zaun, September 18, 2002, B11]. GM recognizes that its (own) brands don’t attract much attention in many Eastern markets, fueling GM’s strategy of forming alliances [Ward’s Auto World, January 1, 2002, 44]. GM and Toyota will soon be selling Toyota-badged vehicles in Japan originating from the NUMMI joint venture with GM in California. Recently, GM injected more cash into Isuzu in return for a controlling interest of the firm’s truck division, where it is expanding production [Yamaguchi, August 19, 2002]. Similarly, through the Renault-Nissan alliance, Renault, traditionally strong in Europe but lacking any market share in North America, can now use Nissan’s established channels of distribution to reintroduce its vehicles, which it plans to do under the Nissan marque [Hiroka, 26].

Distribution and marketing channels are oftentimes difficult to setup and make effective if there is little or no experience in the region. Alliances that fill geographic gaps when combined with platform sharing, allow for partners to share one another’s resources and strengths, facilitating entry into each others markets, together capturing a greater share than either could alone. In Mexico, Nissan gains in its ability to utilize greater plant capacity and to obtain financing from Renault, while Renault benefits with an effective method of re-entering the Mexican market by utilizing Nissan production facilities in Aguascalientes and Cuernavaca [Economist Intelligence Unit, April 2000, 11]. In some cases, however, the volatility of certain markets may make green field FDI unappealing. Hence, the outsourcing of assembly to Chinese manufacturers might be an alternative approach to setting up transplant factories [The Economist, April 13, 2002]. Mazda has followed this tactic, outsourcing production of its Mazda 6 model to FCC to start production in March 2003, using knocked down assembly sets supplied by Mazda. This approach is expected to strengthen Mazda’s brand presence further, which will support sales and market share growth, while providing it with an export base for the region. The move doesn’t involve any capital tie-up in the form of foreign plant investments, but does give Mazda access to the strong local sales network of First Auto Works Group, China’s largest automaker [The Globe and Mail, August 6, 2002, B9]. Such a setup, if executed properly, can result in brand strengthening and distributorship connections, without the same exposure to risk that setting up a full-fledged plant entails. Stenciling of a brand mark over an outsourced assembly, although already practiced across various markets, is likely to be a frequently recurring strategy in new and highly volatile automobile markets, where establishing brand presence is a first-order objective.

Manufacturing Presence and Foreign Export Bases

Many automakers see certain types of investments in emerging markets not so much as risks, but as necessary steps to remaining competitive. In fact, the movement of manufacturing centers from high-wage areas such as Japan, to lower-wage, less developed countries has been a recent trend. In 2001, assembly plants in Japan produced 57 percent of all vehicles made in Asia. But in 2003, vehicle production in Asian countries outside Japan will surpass Japan for the first time [Automotive News, June 10, 2002, 16]. Thailand is particularly well positioned to serve as a manufacturing base because unlike many Asian nations that want to protect domestic manufacturers, there are few manufacturing restrictions such as high local-content mandates,
providing foreign manufacturers with flexibility in sourcing of parts and supplies [Zachary, December 1999]. Thailand increased production by 28.2 percent over the one-year period of 2001-2002, moving from the #8 producer by unit output in the Asia-Pacific region to the #5 producer, fueled almost entirely by export demand as domestic sales increased 7.8 percent over the same period, and accounted for only 21.7 percent of the new production output.

What is gained in terms of cost savings by producing in such a developing market? According to one PWC analyst there is about a $1,500 cost advantage per vehicle in small cars in the Asia-Pacific region when compared with the North American Market [Harrison, June 2002, 18-19]. Small car expertise is necessary to truly take advantage of such potential savings, which demonstrates once more the advantages of having appropriate allies for successful emerging market penetration. Through its alliance with Isuzu, GM is strengthening its manufacturing presence in Asia with the production of 40,000 to 50,000 Isuzu one-ton pickups moving from Japan to Isuzu’s Thai plant in mid-2003, intended for Asian export [Ward’s Auto World, January 1, 2002, 44]. The notion of utilizing these markets as export bases is enhanced by the Association of Southeast Asian Nations (ASEAN) regional trade agreement, which allows products to move between member nations with reduced tariff rates. It is not only low-end cars that are being manufactured in S.E. Asia, however, as BMW plans to produce its 7-series product in Thailand in 2003 partly to take advantage of a planned reduction in tariffs by ASEAN on such products as automobiles, to 5 percent or lower by 2005 [Japanese Transportation Scan, August 5, 2002]. Due to all this activity, Thailand is known as The Detroit of the East, with Toyota, Mitsubishi, Isuzu, Ford, Mazda, Honda, GM and BMW, all manufacturing vehicles there [Zachary, December, 1999]. Of course, Thailand is not the sole base for exports, as Honda wants to increase auto component production in China and export it to global markets. Toyota, typically cautious in terms of entering new markets, has finally made a move into China, teaming with FAW in a move that will likely see Toyota catapult ahead as it takes advantage of strong brand recognition [The Globe and Mail, August 30, 2002]. GM through their takeover of select assets of Daewoo intends to use Daewoo as an export base in Asia. The acquisition of such a company that has small-car expertise, allows GM to have mini-car market share in excess of 70 percent of the domestic minicar market with a product (the Matiz) that also enjoys mounting sales in European and emerging-economy markets [Business Korea, 29-30].

Product Portfolios

Having a broad product range is critical to maintaining market share, both within individual markets and globally. Across markets it is essential to have a product mix that reflects growth opportunities, therefore making a small car product an essential component of any emerging market strategy. Sometimes, however, it is difficult to develop a competitive product for segments in which a company has no previous experience. North American manufacturers have little experience in producing small cars relative to the Japanese and Europeans, where space and energy is scarcer than in North America. The DaimlerChrysler merger failed to give Chrysler a global small car that could compete in emerging markets like Brazil, China and India, something that would necessarily have to be smaller and cheaper than Chrysler’s Neon. Mercedes had the SMART car, but it was found to be too expensive, considering its attributes and untested nature. Robert Eaton, former CEO of Chrysler, reflecting upon the new DaimlerChrysler entity acknowledged the need for a small global car needed for emerging markets, and understood that in order to reduce development time and costs, the global car would have to be developed in partnership with another firm or through acquisition of outside
Table 3
JD Power & Associates Initial Quality Survey (2002) (Defects per 100 cars)

MANUFACTURERS WITH MULTIPLE BRANDS
AUTOMAKER  2002 2001
1. Toyota  107  115
2. Honda  113  133
3. GM  130  146
4. DaimlerChrysler  141  145
5. Ford  143  162
6. Nissan -- tie  152  145
6. Volkswagen -- tie  152  159

Source: Automotive News, various issues

expertise [Hiroka, 110, 111, 137]. This outside expertise eventually came in the form of Mitsubishi, which DaimlerChrysler obtained a 34 percent share of in 2000, increasing it to 37.3 percent in 2002. Ford has Mazda to assist it in its small car development, but for the most part has continued to market higher-end vehicles, not conducive to strong sales in emerging economies. The Ford brand in Mexico has been a near-luxury to luxury brand according to the head of Ford’s Mexico operations, Kathleen Ligocki [Connelly, January 22, 2001, 34]. Japanese manufacturers seem to be more attuned to emerging market needs. When GM introduced the GL8, it was found to be too big and unwieldy for most of China’s crowded, narrow roads, whereas Honda tailored their recent minivan offering to the Chinese market, making it smaller than their Japanese model and demonstrating once more the advantages of flexible manufacturing for emerging markets, as both their home-market product, and the Chinese variant, were produced on the same line [Webb, April 15, 2002, 8]. Having a broad product range can also help to maximize profits in traditional markets, using prestige brands to capture higher-end margins, while other models reap volume benefits, all the while costs are kept low and scale benefits are leveraged, as all ranges are based off common platforms. Some predictions have it that vehicle manufacturers will — with the exception of certain 2-seater roadsters and a number of low volume specialists — largely stop developing sports cars which are not based on another, high volume car platform.

Learning to Get Lean: How Partnerships Affect Manufacturing Expertise/Technological Capability

As American manufacturers attempt to get lean, their greatest source of inspiration and information come from their partners. Acquisitions, joint ventures and alliances accelerate the absorption of manufacturing techniques such as lean manufacturing, the prime example being that of the NUMMI plant in California, a joint venture between GM and Toyota initiated in 1984 [Culpan, 123]. Although GM was slow to take advantage of the information gathered at this plant, they nevertheless have begun to implement many of techniques employed by Toyota. The concept of ‘‘running common’’ - using the GM Global Manufacturing System and common processes, is a system adopted from knowledge gained about Toyota’s manufacturing system at the New United Motor Manufacturing Inc. plant in Fremont, California [Guilford, June 24, 2002]. Similarly, the CAMI plant near Windsor Ontario was intended to give Suzuki greater access to the North American marketplace while giving GM knowledge and experience of Japanese small-car manufacturing methods [English, March 25, 2002]. GM has implemented lean concepts in plants such as its Oshawa car and truck plants, where worker feedback is encouraged and rewarded as part of GM’s Ideas for Excellence Program, with savings of $6,000,000 for the 2001 year at the truck plant, reflecting an increase of employee suggestion participation by 57 percent. When touring the plant, significant adoptions of Japanese-style practices could be seen, including signs dedicated to Continuous Improvement (kaizen), as well as productivity charts on the walls near workstations. Manufacturing cost per truck also improved over the same 2001 period by 8 percent, with the result being that the 2002
Harbour Report, named the #1 Oshawa plant as the most efficient truck plant in North America with 16.79 HPV (hours per vehicle), while the neighboring #2 car plant received JD Power & Associates Gold Plant Quality Award for North America in 2002 (See table 3). These recent developments regarding quality and productivity among North American producers may allow them to regain some ground against the strong onslaught of Honda and Toyota.

Looking Ahead: Future Implications of a Global Sector

Manufacturing and Outsourcing to Move into Emerging Market Regions

One trend that is destined to continue is the movement of manufacturing bases out of traditional economies and into less developed countries. Typically, these areas consist of labor forces that are open to flexible manufacturing initiatives due to a lack of any historical union base. Through the transfer of manufacturing expertise into these regions, in combination with lower wage levels, firms can leverage their intangible assets or technological capabilities into areas of low-cost. Mexico is a good example of such a location. According to Ron Harbour of Harbour and Associates, Unlike many other North American plants that frequently have workforces that passively or actively oppose lean manufacturing techniques, Mexican plants are instituting them with a vengeance and in addition to this their application of lean has been deep and rapid, and it’s paying off with quality, cost and productivity improvements [Ward’s Auto World, May 2000].

Lean Manufacturing Critical

Last year’s Harbour Report (2001), suggested that Japanese makers held a $500 to $700 per vehicle cost advantage over the Big 3 in North America, because of their more efficient plants. This year’s 2002 report shows that the Big 3 would each save about $350 per vehicle if they matched their Japanese rivals’ hours-per-vehicle rate, indicating both the importance of lean manufacturing for remaining competitive, as well as the relative improvement of US manufacturers. Of US manufacturers, GM appears at present to be in the best position to fully take advantage of the efficiencies of lean manufacturing, as both NUMMI and Saturn ushered in progress for GM, as did the stakes it has taken in numerous small Japanese manufacturers. Although transferring those advances across the automaker’s diverse manufacturing operations proved daunting, GM has applied what it has learned in its newer emerging market plants such as its Brazilian Blue Macaw plant, regarded by some as being one of the leanest and most cost efficient car factories in the world [Wilson, August 21, 2000, 3]. The acceptance and usage of lean practices has paid off in quantitative terms as demonstrated in the 2002 Harbour Report where for the first time, General Motors was more efficient than Ford Motor Co. in its assembly and hours spent per vehicle. (See table 4) Harbour has indicated that GM (has now) learned more from NUMMI than Ford Motor Co. ever did from its U.S. auto making venture with Mazda Motor Corp., and more than DaimlerChrysler has from its 15-year-old U.S. manufacturing alliance with

<table>
<thead>
<tr>
<th>Automaker</th>
<th>Hours per Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nissan</td>
<td>17.92</td>
</tr>
<tr>
<td>Honda</td>
<td>19.78</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>21.82</td>
</tr>
<tr>
<td>Toyota</td>
<td>22.53</td>
</tr>
<tr>
<td>NUMMI</td>
<td>22.68</td>
</tr>
<tr>
<td>GM</td>
<td>26.10</td>
</tr>
<tr>
<td>Ford</td>
<td>26.87</td>
</tr>
</tbody>
</table>

Source: Automotive News, see endnote 4

Table 4
Harbour and Associates Ranking of Average Assembly Productivity In North America (2001)
Mitsubishi Motors Corp. GM is aggressively trying to disseminate what it learns from its alliances with such partners as Suzuki, Isuzu and Subaru (Fuji), launching the GM North American Project Center, which gathers the most innovative manufacturing practices from around the world, to then be applied in GM manufacturing plants around the world [Automotive News, August 21, 2000, 3]. Chrysler on the other hand, has done poorly in North American efficiency, becoming the high-cost producer because the company didn’t adopt a lean production culture fully, according to Tom Lasorda, Chrysler’s Executive VP of manufacturing [Kurylko, June 10, 2002, 3]. There also appears to be strong correlation between quality and productivity, perhaps due to the fact that if the design of an automobile takes into consideration assembly to improve productivity (as lean manufacturing calls for), the simplified processes should result in less errors being made, and therefore higher quality products.

The Need to Diversify, and the Dangers of Over Reliance on a Single Market or Product Segment

In a manufacturer’s regional portfolio of products, there is safety in diversification. Just as in a financial portfolio, having too much invested into either a single product, or single region, may make for spectacular gains in the short-run if the product and/or region are doing well, but will only increase volatility in earnings in the long run. The relationships engaged in by the manufacturers will help determine their risk profile, and the amount of diversification across both the markets and products that they have chosen. GM is a good study of how strategic alliances and affiliations can fill most of the gaps previously discussed, in geographic reach, product portfolio, and manufacturing capability, and provide a company with a more diversified portfolio both within and across markets. As table 5 shows, GM’s alliance structure has little effect in its core US market, increasing core market share by less than 3 percentage points. Meanwhile, GM’s share in growth markets such as China, India, South Korea and Latin America has increased considerably, by over 2 percentage points in Latin America, and 31 percentage points in selected Asian countries. In 1998, when including its affiliates, GM held a 34 percent share of the world’s eight fastest-growing markets, whereas without those affiliate shares, it controlled only 8 percent [Winter, August, 2000]. Ford on the other hand, has little presence in emerging markets, as Ford is still in need of a one liter car to keep pace with emerging market models on the way from GM-Suzuki and DaimlerChrysler-Mitsubishi, despite the recognition that Ford knows much of its longer-term growth is going to hinge on bigger success in the Asia/Pacific [Zoia, June 2000].

The structure of Ford’s US product fleet shows its different approach to product offerings when contrasted with the Japanese. Table 6 depicts the amount of small car offerings by Ford on the US market, both by model and volume, as well as for two Japanese manufacturers, Honda and Toyota. Ford, with only 8.24 percent of its volume sales being in small cars as a percentage of its entire US fleet, in contrast with Honda’s 28.16 percent and Toyota’s 16.5 percent demonstrates a greater reliance on large cars than its main foreign competitors. Notice as well, how effectively Toyota is matched between its model offerings and the sales volume that those models must carry, versus Ford and Honda, perhaps reflecting Toyota’s efficiency in terms of

Table 5: GM Passenger Car Market Share Data in Units Sold, selected regions (1999)

<table>
<thead>
<tr>
<th>Region</th>
<th>GM Core</th>
<th>GM + Affiliates</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>29.6%</td>
<td>31.4%</td>
</tr>
<tr>
<td>Japan</td>
<td>N/A</td>
<td>15.2%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>11.5%</td>
<td>21.1%</td>
</tr>
<tr>
<td>China/India/S.Korea</td>
<td>1.09%</td>
<td>32.65%</td>
</tr>
<tr>
<td>Latin America</td>
<td>20.87%</td>
<td>46.36%</td>
</tr>
<tr>
<td>World*</td>
<td>15.1%</td>
<td>23.7%</td>
</tr>
</tbody>
</table>

Source: EIU MBI, April 2000, *includes cars and light trucks

Table 6: Ford US Market Share Data, small cars (1999)

<table>
<thead>
<tr>
<th>Model</th>
<th>Ford</th>
<th>Honda</th>
<th>Toyota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic</td>
<td>1.0%</td>
<td>1.3%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Camry</td>
<td>2.4%</td>
<td>3.6%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Corolla</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Corolla altima</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Focus</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Escort</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Escort altima</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Raisen</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Taurus</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Taurus altima</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Taurus Sable</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Taurus Sable altima</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Source: EIU MBI, April 2000, *includes cars and light trucks
product line. Average passenger car vehicle weight by volume shows little diversification between Ford’s core products and that which it acquired, as consolidated vehicle weight comes in at a relatively hefty 3,390lbs, versus 3,343lbs when including acquired brands. Toyota and Honda on the other hand, weigh in at 3018lbs and 2955lbs respectively, making for an over 300lb average weight difference between Ford and its Japanese competition, a difference that is increased if light truck sales are factored in. This leaves Ford highly susceptible to rising energy prices as well as any softening in the now booming light-truck market, as light trucks accounted for over 65 percent of Ford’s US sales in 2001, making it the most heavily exposed manufacturer to the segment. The US manufacturers over the past few years have been sustaining profits largely on the back of light truck sales, areas which are increasingly coming under market share pressure [Grant, August 6, 2002, 13]. From 2000-2001, Toyota was able to increase its share of the light truck market by 1.5 percent, while Ford lost 1.2 percent, falling to the number two seller of light trucks as GM gained 2 percent over the same period, putting it ahead of Ford. Partly as a result of this movement into this uniquely American light truck market and the ceding of the small car market to the Japanese and Korean manufacturers, US overall market share has been in decline as U.S market share declined by 10 percent from 1995 to 2002, with each percentage point decline representing approximately $4 billion in sales [Muller and Kerwin, July 15, 2002].

Conclusion

The global automotive industry is in a constant state of flux, with relationship trends that reflect what is determined to be the overarching needs of the time. Currently these needs are multifold, and include not only efficiency requirements in order to compete profitably in traditional segments, but also quality improvements. As quality is now a more quantifiable criterion through such measures as *J.D. Power and Associates Initial Quality Survey*, the degree to which manufacturers meet expectations is now readily measurable and highly visible. Relationship building with suppliers and other OEMs strong in these areas is vital and when mutual benefits are available to both parties these relationships can be expected to continue to grow more complex in nature and more frequent in occurrence. The need to gain stakes in growing regions that have high volume potential such as much of Asia, further reinforces this move toward increasingly complex relationship structures in order to facilitate market entry, whether through joint ventures with government-backed manufacturers, as in China and India, or with small-car makers to provide much needed product experience and ultimately, cost savings. The stakes are high and with shifting sands it will be interesting to see whether Honda and Toyota can continue to strengthen their global position against North American and European producers. It is still too early to predict, but the Japanese producers with their obvious strengths will prove difficult to dislodge from their growth trajectory.

| Table 6: US Market Small Car Analysis of Selected Manufacturers |
| By Current Model Offerings | By Sales Volume (2001) |
| Manufacturer | Core | Core + Affiliates | Core | Core + Affiliates | Including L. Trucks |
| Ford | 8.3% | 8% | 21% | 21.5% | 8.24% |
| Honda | 12.5% | 12.5% | 37.85% | 37.85% | 28.16% |
| Toyota | 23.08% | 23.08% | 30.1% | 30.1% | 16.5% |

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Endnotes

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Market Economy Model of Chinese Management
Case of Haier

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Abstract

Wages of Haier's workers are piece rate wages and determined by the rightly done jobs and the defects in their jobs. The evaluation of workers for wages is individualistic, instantaneous, quantitative, monetary, competitive and open. There is practically no room for discrecional evaluation by supervisors and managers. Engineers who want to become the heads of new product development projects apply for the position with new product development plans (open competitive bidding). The salary of project managers and their subordinate engineers is determined by the market performance of new products. Haier's management is based on the market principles of economics.
1. Haier Group

The objective of this paper is to explore a new style of management of Chinese companies through the case study of Haier Group (later, Haier).

Haier is the largest Chinese company in the consumer electronics industry. It was established in 1991 when a company called Qingdao Refrigerator born in 1984 was transformed to Haier. Its product lines include refrigerators, freezers, washing machines, air conditioners, TV sets, mobile phones, PCs and so on. It is recently entering into non-manufacturing fields like finance and service businesses. Its sales amounted 60.2 billion Rmb. (about 7.3 billion US dollars) in 2001 and its employees count approximately 30000. Its products are exported to more than 160 countries, and manufactured in 12 foreign countries. It is a front runner of Chinese multinational enterprises. The company is ranked the 9th in the world in the home electric appliance industry. (Appliance Manufacturer, Feb. 2001)

Haier has been growing at an incredibly high rate of 80% annually for the last nearly ten years since its start in 1991. Its size in terms of sales is already getting close to that of advanced counterparts of American, European, Japanese and Korean consumer electronics giants. Haier has become one of the world’s leading companies in the industry in ten to fifteen years. Its high growth may well be characterized as compressed growth. (Ou-Yang, 2002B)

Our analysis shows there are two reasons behind its compressed growth. The first reason is the latecomer advantage. Haier has introduced advanced technology from Western and Japanese companies. The second reason is its management. (Ou-Yang, 2002B)

In the present paper we focus our attention on management of workers at plants and management of engineers who develop new products in R&D organizations.

We explore management of this company by the case study method. Our primary research method is interview. We conducted interviews to twenty five persons of Haier such as executives, managers, engineers and workers (as of October 2002). Among them were Mr. Zhang Ruimin, who was the CEO of Haier Group and Mr. Zhao Zhenzhong, who was the General Manager of Shunde Haier Electric Appliance Co., Ltd.. We collected and examined unpublished company documents such as company handbooks, materials on the bulletin boards in the factories and offices, various records of personnel evaluations, new product development plans and so on. Published materials such as books, academic papers, magazine articles and newspaper items also provided useful information to us.

2. Management of workers

2.1. Shunde Haier Electric Appliance
Shunde Haier Electric Appliance Co., Ltd. is located in Shunde City, Guangdong Province. Shunde City is known as the hometown of Chinese electric home appliance industry. Two gigantic companies of Kelon and Midea have their headquarters in Shunde City. There are literally thousands of assembling companies and parts manufactures in this region. Shunde Haier is a washing machine manufacturing subsidiary of the Haier Group. The number of its total employees is 425 and workers 368 (as of 2001).

In 1997 Aide Washing Machine Company which was a village-town company faced bankruptcy and was acquired by Haier. Haier introduced its management method in the company and quickly transformed it into a profitable company. Let us see the new management method applied to workers in this company.

2.2. SST wage

Ms Liu Aixing is a worker who attaches covers on the inside containers of washing machines. Piece rate of her job is 0.031955 Rmb.. Her daily Suochou wage (S1 wage) is the number of rightly done jobs multiplied by the piece rate (0.031955). She receives her daily wages once a month. In July 2001 her monthly S1 wage was 1421.63 Rmb.. As production is done on the conveyor line, the number of jobs done by workers is the same for all workers on the line. The only difference is the number of rightly done jobs since the number of defective jobs may be different among workers.

When Ms Liu finds defects in the jobs of the front worker, she is rewarded the Suopei wage (S2 wage). The rate of S2 wage is 10 times of the piece rate of the job. She found six defects in July 2001. The piece rate of the job of the front worker is 0.032. Thus, her S2 wage in July 2001 was 1.92 Rmb..

When she fails to find defective jobs of her front worker, she receives penalty for it. Also, penalty is given to her when her jobs have defects. Her penalty or Tiaozha wage (T wage) in July 2001 was 1.60 Rmb..

Her monthly wage in July 2001 was 1421.95 (1421.63 - 1.92 - 1.60) Rmb..

The wage system of workers is called SST wage system. It is practiced not only at Shunde Haier but also at other companies in the Haier Group. SST wage may be divided into two parts. The first part is S1 wage. It is based on piece rate wage. Its purpose is to increase production. The more jobs done, the more wages paid. The second part is S2 wage and T wage. It is composed of rewards and penalties. Its function is to decrease defective jobs on the assembling lines.

In the past there was a problem of conspiracy among workers. Workers intentionally overlooked defective jobs of the workers who were in front of them on the assembling lines. In exchange, their defective jobs were overlooked by the next workers. The conspiracy is now avoided by checks of inspectors. Inspectors check workers jobs. When they find defects, those workers who are responsible for the defects must pay penalty.
2.3. OEC management

OEC management is practiced at Haier. OEC is the abbreviation of Overall Every Control and Clear. The philosophy of OEC management is as follows. Let us solve problems immediately. Let us search causes of problems and find solutions one by one. Do not postpone problem solving. In 1995 Haier’s OEC management was awarded the National Management Innovation Advance Prize of China Enterprise Confederation. OEC management has attracted large attention in the Chinese business world and seen as one of the key factors of Haier’s success. Let us see how OEC management is practiced to workers at Shunde Haier.

After office hours workers check seven items of their jobs, that is, (1) job quantity (how many jobs are done), (2) defects in the jobs, (3) usage of parts and materials, (4) condition of jigs, (5) safety, (6) work attitudes and (7) work discipline. And they fill up the 3E card. 3E is the abbreviation of Everyone, Everything and Everyday. After workers fill up the 3E card, they clean their work places. And they go home.

Managers collect the 3E cards and check them. And they calculate wages of workers and show them on the bulletin board in the factory. It takes time to do this kind of paper work. So, it is not uncommon that managers work until 8 o’clock in the evening.

Workers are evaluated every day based on the records of the 3E cards. Those with the best records are considered the best workers and those with the worst records are the worst workers. The workers who are acknowledge as the best workers for consecutive three days have an honorary opportunity to tell their experiences for the workers. The workers who become the best workers most frequently in one month are considered the best workers of the month. They are given a better opportunity to have job training and social benefits. And, the workers who become the worst workers most frequently in one month are demoted to the trial workers. They will be fired unless they improve their records of the 3E cards. The other workers are considered good workers. Thus, there are three kinds of workers; the best workers, the good workers and the trial workers. Each worker is represented on the bulletin board with the mark showing the kinds of workers. The best workers have the red mark of smiling faces, the good workers have the green mark of faces and the trial workers have the yellow mark of wry faces.

OEC management is practiced to managers, too.

2.4. Characteristics of management of workers

The management of workers at Shunde Haier described above has the following characteristics.

First, workers are evaluated individually. There is no evaluation of group performance of workers. Teamwork of workers is not evaluated. As a matter of fact, neither small groups nor teams of workers exist in the company.
Second, their wages (including rewards and penalties) are determined by the evaluation which is exclusively focused on results (output) of jobs of workers. The results are basically composed of two parts, that is, the quantity of rightly done jobs and the defects in the jobs. Inputs and processes of jobs such as effort, attitudes, motivation, and team work spirits are only marginally considered in the evaluation. The evaluation of these inputs and processes of their jobs do not directly influence their wages. Age, education and length of service (seniority) of workers do not have any relationship with their wages.

Third, there is no portion of guaranteed or fixed wages in the total wages. The wages are composed of two parts. The first part is the piece rate wage (S1 wage) which is determined on the quantity of jobs rightly done. The second part is rewards and penalties (S2 and T wages) which are determined based on the defects in jobs.

Forth, evaluation is done instantaneously. Evaluation is done when each job is done. Daily evaluation results are shown to workers next day on the bulletin boards in the factory. In the company the phrase, instantaneous rewards and penalties is used.

Fifth, evaluation is open. Not only the results of evaluations but also the rules of evaluation are open to workers. Workers know calculation formula of their wages. As a matter of fact, workers fill the evaluation sheet (3E cards) after the work time and hand it over to managers. They themselves calculate their wages every day. When they find different figures in their wages on the bulletin boards, they claim to managers.

Sixth, there is no room for discretionary evaluation by the management. Workers evaluation and wages are arithmetically determined by evaluation rules. Foremen, middle managers, and managers in the personnel department have practically no power to influence the evaluation of workers.

Lastly, let us add one more characteristic which is not mentioned in the last section of this paper. The company has open competitive bidding system for job assignment. When workers think some particular job is unreasonably attractive (e.g. its piece rate is too high or it is too easy), they can bid for that job. Competitive bidding by workers will reduce the extent of attractiveness of that job to the par level of other jobs. When some jobs become vacant, the competitive bidding is applied. Assignment to the vacant jobs is not determined by the management.

3. Engineers of new product development
3.1. Organization of new product development

China has become famous as the center of production of the world. And it is commonly understood that Chinese companies, whether they are genuinely local companies or foreign affiliated companies, are production organizations. But these days there are some Chinese companies that not only manufacture products but also develop new products themselves. Haier is one of these companies.
Haier has some 3000 engineers. They count nearly 10% of the total employees. They work at one of the following three level organizations of R&D. The top level is the central laboratory which has about 300 engineers. The second level organization is the technology development centers. There are eleven centers and one experiment room. The third level is the new product development centers which belong to seven product divisions. The company has 14 development centers. In the present paper we focus on the new product development center of the information product division. The center develops color TV sets. Haier has several affiliated R&D companies in which Haier has some ownership ranging from 100% to minority ownership. These affiliated R&D companies have about 2000 R&D employees. Thus, the total number of R&D employees of Haier amounts to 5000. (note 2)

In 1998 Haier developed 262 new products and launched 236 new products in the market. Its sales was 12 billion Rmb.. And the sales from the new products launched in the market in that year amounted to 74% of the total sales. The company has the goal that the sales of new products amount to more than 70% of the total sales. According to the definition by the company, new products are those products that are less than one year old after introduced in the market. This definition is very rigid. In the case of Japanese companies new products usually represent the products that are equal to or less than three years old. And the goal of 70% is also high. Haier has been successful in meeting this ambitious goal for the last several years.

3.2. Call for project managers
Development Support Department announces requirements or specifics of new products to be developed. The requirements include such items as technological performance, price (cost), period of development, expected sales of products. Engineers who want to become the heads of new product development projects bid for the position with new product development plans. The product development plans are evaluated by a review committee. The members of the review committee are managers of two departments, that is, the development support department and the development planning department. If his plan is accepted, he is appointed the head (called project manager) of the new product development project.

In April 2001 Development Support Department of Information Product Division announced the following result of a market research and the requirements of new color TV sets to be developed. The color TV sets (RGBTV-29FA and RGBTV-29TA) of Haier has not been well received in the market. Sales persons in Beijing, Wuhan, and Jinan complained high prices compared with the products of competitors. The 29 inch color TV sets of Konka and Changhong sold well since their prices were 3000 Rmb. that were substantially lower than the prices of 4000-5000 Rmb. of Haier’s products. Haier’s products had competitive advantages of more attractive appearance and better quality of pictures and
sound. But the price differences were too big to attract customers. Thus, it was necessary to develop new color TV sets that were price competitive with competing products while maintaining the competitive advantages of attractive appearance and high quality pictures and sound of the existing products.

Engineers applied for the new product development project (29F8A-T) of the color TV sets. The plan of Mr. Huibo Wang was accepted by the review committee. Mr. Wang became the project manager of the new product development project.

The project managers submit the plan of the new product development and the schedule of new product development. They make the contract of the new product development with Product Support Department. The cover page of the contract of the 29F8A-T project of Mr. Wang had the following descriptions.

Submission to: Product Development Department of Intelligence Co., Ltd. of Qingdao_Haier
Submission date: May 8, 2001, Deadline of the project: November 20, 2001
Head of the project: Huibo Wang
Members of the project: Deyue Du, Ping Jiang, Qinghai Jiao, Guoyong Hou
Name of the project: 29F8A-T (color TV set)
Reviewer: Liu Qiang (manager of the Product Development)
Manager of the Product Support Department: Xiaobo Song
Head of engineers in the Information Company: Yili Huo
Division manager: Qunli Sun (head of the Information Product Division)

The plan of the new product development had the following contents.

Reasons of the product design and the criterion of the acceptance of the plan
Technological specifics of the product
Budget and costs of the new product development
Details of the budget and costs of the new product development
Features of the new product
Requirements of the product design
Schedule of the product development

Any engineer can apply for the project manager position.

At Haier horse races without horse experts (Bai Le, in Chinese) are practiced. Engineers (horses) are not evaluated by experts (horse experts or Bai Le) of personnel department based on education, degree (bachelor, master or doctor), disciplines (chemistry, physics, mathematics, electronics, etc.), or previous
experiences. Engineers are evaluated by the results of their jobs (horse races). When they achieve good results (records of horse races), they get high evaluation and good job assignment.

3.3. Call for project members

The salary of a project manager is determined by the market performance such as market quality of the new product, cost of the new product and sales of the new product (which we will see in the next section of the paper). So, he is naturally responsible (or at least partially responsible) for not only the development of new product, but also for the production and the marketing of the new product. In order to reduce the costs of the new product he is required to pay attention to the purchasing of materials and parts of the product. In order to fulfill his responsibility he needs to recruit project members from various fields of functions including manufacturing, purchasing and marketing. The recruitment is done publicly. In other words, open competitive bidding is applied in the recruitment of project members. Any engineer can apply for the member of new project development project. The engineer can be a project manager of a certain product development project and a member of other projects at the same time. It is not uncommon that one engineer participates in multiple projects. The project 29F8A-T had the following four members in addition to the project manager; Mr. Wang. They were Mr. Deyue Du, Mr. Ping Jiang, Mr. Qinghai Jiao, and Mr. Guoyong Huo. There was division of labors as the following.

-Mr. Wang: head of the project and circuit design
-Mr. Deyue: mechanical design
-Mr. Ping: circuit design
-Mr. Qinghai: circuit design
-Mr. Guoyong: mechanical design

The contract made between the project manager and each of the other members of the project specified the rule of the distribution of the profit (to be more precise, total revenue, as we will see soon) from the new product. In the case of the project 29F8A-T the project manager received 35% of the profit, Mr. Deyue 15%, Mr. Ping 18%, Mr. Qinghai 17% and Mr. Guoyong 15% respectively.

4. Market salary of engineers

4.1. Market salary

We mentioned several points which characterize the management of workers at Shunde Haier. The management of new product development engineers shares most of these characteristics. However, there
is one important difference. It is the direct relationship between the salary of engineers and the market performance of the new product. Performance of the new product in the market determines salary and evaluation of engineers.

In the case of workers, their wages (including reward and punishment) do not have any relationship with market performance such as sales, product quality problems and profits. On the other hand, the salary of engineers is determined by the market performance of the new products that they develope. Thus, we may say that market economy principles are more thoroughly applied to engineers than to workers. Let us see in some detail how the salary of engineers is determined by the market performance of the new products.

Profit of the new product is calculated by the following formula (1).

(1) \[ \text{Profit} = (\text{cost of new product} - \text{cost of parts} \times 0.75) \times (\text{sales} - \text{minimum sales}) \]

The cost of a new product is the transfer price from manufacturing department to sales department. The cost of parts is the price at which purchasing department procures the parts from suppliers. To compensate for various costs of the purchasing department the manufacturing department buys (transfer) parts from the purchasing department at the price of (cost of parts \times 0.75). In order to make profit from the new product, they need to sell more than certain numbers of product. This minimum numbers multiplying the price of the product is the minimum sales.

The salary of project manager is determined not by the profit, but by the total revenue of a new product. The total revenue is the profit multiplying a certain ratio as it is shown in formula (2). The ratio is calculated by the formula (3).

(2) \[ \text{Total revenue} = \text{profit} \times \text{ratio} \]
(3) \[ \text{ratio} = \text{standard ratio} \times (1 + (\text{actual profitability} - \text{target profitability}) / \text{target profitability}) \times 1.5 \]

The salary of project managers and other project members are determined by the total revenue of the project. Usually, project managers receive 20-30% of the total revenue and project members receive remaining 80-70%. At Haier the salary of engineers is called market salary.

Let us see the case of a new product, a color TV set 29F8A-T.

The sales department purchases this product at the price of 2610 Rmb. from the manufacturing department. Thus, the cost of the new product is 2610 Rmb. The purchasing department purchases parts at the price of 1470.5 per product and sells (transfer) the parts to the manufacturing department at the price of 1960.67 (1470.5 \times 0.75).
The minimum numbers of product that must be sold is 240. The actual numbers of the product sold on May 1, 2002 (more accurately, numbers of products sold for the 24 hours between 14:00 on April 30 and 14:00 on May 1) was 340. This sales data is provided at 16:00 every day by the sales department.

The profit of 29F8A-T is 64933 Rmb. as it is calculated as follows.

\[
\text{Profit} = (2610 - 1470.5 \times 0.75) \times (340 - 240)
\]

As it was mentioned earlier, the total revenue of the new product, 29F8A-T is the profit multiplying the ratio. The ratio of this new product is calculated as follows.

\[
\text{Ratio} = 0.6 \times (1 - (0.12 \times 0.10) - 0.10 \times 1.5)
\]

\[
= 0.78
\]

Then we can get the total revenue of this new product as follows.

\[
\text{Total revenue} = 64933 \times 0.78
\]

\[
= 506.48
\]

In the case of the product 29F8A-T the project manager received 35% of the total revenue and the other members received the remaining 65%. As the total revenue of May 1, 2001 was 506.48 Rmb., the daily salary of the project manager, Mr. Wang, was 177.268 (506.48 \times 0.35) Rmb. on May 1, 2001. The salary of engineers is calculated every day. Engineers receive their salary once a month.

As the salary of project managers and other project members is directly linked with sales and costs of the new products developed by them, they naturally try to increase sales and decrease costs. In order to increase sales they pay attention to the attractiveness of products in the market. They even try to design sales promotion campaign for the products. They are required to be sensitive to market conditions and customer demands. In order to decrease costs of products they try to find good suppliers so that they can purchase parts and materials which are cheap in price and good in quality. They also practice design-in in which suppliers are involved in the design activities of new product development at an early stage. An assembling company and parts suppliers jointly make effort to develop products at low costs.

4.2. Evaluation of engineers
Engineers involved in the development of new products are evaluated everyday based on the market performance of new products. The results of weekly evaluation are shown on the bulletin board of the office of the new product development centers.

The evaluation is done regarding the following three points; product quality, cost of products and sales of products. The product quality is evaluated regarding two items; the numbers of repaired products and the numbers of exchanged products which are done by the request of customers. The data of these two items are collected on the daily basis by the product quality improvement room. The data of sales of the product is provided by the sales department on the daily basis.

The project managers receive reward or penalty based on the evaluation. The project managers who have good scores receive reward of 50-200 Rmb.. Those with poor ranking receive penalty of 50-200 Rmb..

5. Why new Chinese management works.
5.1. Supporting current situations
The management of workers and engineers at Haier may be characterized as the management of a carrot and a whip. We may see some similarity between Haier’s management of workers and Taylor’s scientific management in the early days of capitalism in USA. Taylor’s scientific management encountered severe opposition of laborers and labor unions and thus was not so successful. Haier’s management has been well received by workers. Haier’s management has also been well received by product development engineers. It is considered as one of the key success factors of Haier. Why does Haier’s management work?

Two reasons can be pointed out.
First, Haier’s management is welcomed by Chinese people who have long been suppressed by the old management of socialism. In the period of centrally planned economy of socialism, management at national enterprises had the following characteristics.

Employment was guaranteed.
Wages and salary were not related with their performance.
Wages, wage increase, job assignment and promotion were not determined by open rules.
Nepotism widely existed. Those employees who had good relationships with managers at higher positions, or connections with communist party and regional relationships were able to expect favorable treatment.

Under the old management of socialism there was practically no achievement motivation, innovative capabilities and competitive attitudes of employees from the top to the bottom. The workers and the
engineers are now given opportunities to display their motivation, innovative and competitive attitudes and capabilities of such kinds under Haier’s management. Haier’s management is in contrast to the old management of socialism. The management at Haier may well be called the new Chinese style management. It is our view that the new management is well received by many who were almost choked under the old management of centrally planned economy.

The second point is the fear of unemployment. The new management is severe, but workers do not escape from it. Their employment opportunity is limited. It is practically impossible to find other employers. Most of workers at Shunde Electric are young female workers who came from remote rural areas. Their families depend on their wages. After some period of time (normally three years), they return to their home with money they saved. The money is enormous amount in terms of rural economy standard. It is often told that a house can be built by the money the girls earn. In rural areas there are practically no opportunities for employment. Thus, workers never quit the company. They endure severe work conditions. They welcome competitive evaluation system and wage system. The harder they work, the more they can earn.

Employment situation of engineers is better than that of ordinary workers. Thus the second point may not be so much important as in the case of workers.

5.2. Chinese cultural tradition

Is the new Chinese management at Haier based on Chinese cultural tradition or not? Importance of ‘face’ (to save face or to lose face) and human relationship are often pointed as characteristics of Chinese cultural tradition. (Sonoda, 2001) Haier’s management seems to challenge the two characteristics.

The results of the evaluation of workers and engineers are shown with individual names. It seems to us that workers and engineers of poor results lose their faces. This practice seems to contradict with the Chinese cultural tradition.

As we previously mentioned in this paper, the evaluation is determined by some rules. Their superiors and managers in the personnel department can not influence evaluation. There is no room for discretionary evaluation by them. Thus, we may say that the new management contradicts with the cultural tradition of China which emphasizes human relationship.

None of family member of Mr. Zhang Ruimin, who is the de facto founder and the CEO of the Haier Group is not employed in the Haier Group. At Shunde Washing Machine Company no family member of Mr. Zhao Zhenzhong, who is the general manager of this company, is working. These facts are supporting evidences of anti nepotism of Haier’s management.
On the other hand, we may argue in the opposite way. The new Chinese management is based on the Chinese cultural tradition. States, provinces, cities, villages, families and individuals had a long history of severe competition. Competition is an important cultural tradition in China. Competition is an essential factor in Haier’s management.

Another important characteristic of Chinese tradition is the development of commerce. (Hara, 2000) Merchants played important roles in Chinese society for a long time. Before the industrial revolution in eighteenth and nineteenth centuries, China was probably one of the centers of the world trade. This gave the Chinese people economy oriented thinking (money oriented thinking), materialistic thinking (not abstract thinking or metaphysics), the tradition of competitiveness and individual aspiration.

The management practiced at Haier may be described by such words and phrases as money, rewards, penalties, individuals, competition, openness, quantitative approach, instantaneous evaluation, competitive bidding, arithmetical evaluation rules, anti nepotism. These key words and phrases are compatible with the cultural tradition of the long history of competition and development of commerce in China.

When we pay attention to these characteristics of cultural tradition of China, we easily see that the new management has the background of Chinese cultural tradition.

Overseas Chinese in Southeast Asia is also interesting in pursuing this research theme. Chinese have been playing a central role in the economy of Southeast Asian countries like Taiwan, Hong-Kong, Singapore, Malaysia, Thailand, and Indonesia. We may say that Chinese in main land China have begun to demonstrate their capabilities under the open market economy of China. Chinese in Southeast Asian countries and in main land China are the same people. They share the common cultural tradition of China. The difference between the main land China and the Southeast Asian countries was the macro economy system. Now, the main land China and the Southeast Asian countries share the same market economy system. Then, we may well expect that Chinese in main land China have begun to behave in a similar way as Chinese in Southeast Asian countries. Overseas Chinese in Asia are well known for their aptitude for commerce and industry, entrepreneurship, high achievement aspiration, pro competition attitude, money oriented thinking, and materialism.

6. Comparison with Japanese and American management
6.1. Japanese management and Chinese management

By comparing Japanese management with Chinese management at Haier it is revealed that these two management styles are totally different. We may say that Chinese management is almost an opposite of Japanese management as we see below.
We pointed nine characteristics of Haier's management. Japanese management has the opposite characteristics as follows.

First, Japanese companies put emphasis on team work or group performance. Japanese management has been characterized as group oriented management. Japanese companies encourage group performance rather than performance of individuals. A person with ability is expected to show his ability through good group performance. To stand out individually is often regarded unfavorable since it has bad influence on team work. We have the common saying that he who stands out gets picked upon.

Second, the results of one's performance as well as the inputs and the processes of his jobs are evaluated. In Japanese companies effort, attitudes such as team-work spirit and cooperation, discipline and loyalty to companies are also evaluated.

Third, rules, processes and the results of evaluation are only partially opened. Workers and engineers have limited information of evaluation system and its application. In Japanese companies personnel departments have strong voices in the evaluation of managers, engineers, professionals and ordinary employees.

Fourth, competitive bidding system is rare in Japanese companies. Employees submit their requests on a job assignment. Personnel department consider their requests and determine a job assignment. If employees do not want to accept the job assignment, they can claim to them. But this kind of acts sometimes has negative effects in their careers in the company. Rejecting a job assignment practically means to lose any hope for promotion in the company in the future.

Fifth, qualitative approach is also important besides quantitative approach in Japanese companies. Attitudes, effort, discipline and loyalty to companies are evaluated.

Sixth, managers and personnel department have discretionary power in evaluation. Wages and salary are not arithmetically determined by the formula of market mechanism as at Haier.

Seventh, non-monetary reward and punishment have some significance in addition to monetary reward and punishment in Japanese companies. Reward is often nominal in terms of amount of money. Those engineers who develop excellent technology or new products successfully are only moderately rewarded in terms of money. Non-monetary rewards like the award by the president, admiration by the employees are also important.

Eighth, mid-long term evaluation is more common than instantaneous evaluation in Japanese companies. As Japanese management is often described as the management of seniority or long-term service, pay increase and promotion is a gradual process which takes time. It is a common practice that salary of employees differs only a little for several to ten years since the start of their career in the company.

Ninth, wage of workers and salary of engineers are basically fixed. Piece rate wages and salary are applied to exceptional people such as some sales persons and financial experts like dealers.
Tenth, wages and salary, and also posts are stable in Japanese companies. Demotion of engineers and managers are rare. On the contrary at Haier demotion is regularly practiced. The company has the policy of regular demotion of fixed rate of inferior persons. The persons in the worst 5% range are demoted automatically every year. When the company lays off workers, it first lays off workers who belong to the inferior category, trial workers. 

It may be worth-while to mention that at Haier practically all employees are contract employees. Even managers and engineers are mostly contract employees. The period of contract is between one year and five years. The period of contract of workers is usually three years. Most of them are young female workers from rural areas and they return to their villages after the contract period. They do not extend the contract period. There are many engineers whose contract is one year.

On the whole, Japanese management is only marginally based on the market principles of economics. We may say that Japanese management is more based on the theories of psychology and sociology.

During our interview we had episodes that show the difference between the new Chinese management and Japanese management. Some Chinese managers and graduate students told us an interesting story. Japanese companies in China are like Chinese state owned enterprises. Haier and other growing Chinese companies are more capitalistic than Japanese firms. This kind of opinion is widely found among Chinese young people. (Kuroda, 2001)

Let us add one more episode. Chinese graduate students, scholars and businessmen living in Japan think that Japanese elementary schools are not good for their sons or daughters. Japanese schools are too easy going for Chinese pupils. Homework is small in amount and competition among pupils is very limited. Chinese children who are educated in Japanese schools will have difficulties in adjusting to competitive Chinese life.

6.2. Comparison with American Management
Management of workers in American companies is different from that at Haier. Wages of American workers are not piece rate wages. Wages are fixed. When workers are laid off, workers with less seniority are the first to be laid off. Seniority system works. Their wages, job assignment and promotion are not so much influenced by the evaluation of their jobs. At Haier the worst 5% persons (managers, engineers and professionals) are automatically demoted. When the company fire workers, it fires in the order of evaluation records. There is no seniority system in the company. Age, sex, education and period of service in the company do not have any meaning in determining their wages and salary. We may say that pure merit system exists in the company.

In American companies stock option is popular among top management. In some companies it is open to ordinary employees. The stock option is practiced among top management at Haier Group. Haier Group
itself is not a listed company, but one of its subsidiary companies, Qingdao Refrigerator Company, is listed at Shanghai Stock Market. Its stock is used for the stock option.

American style of management represents the management based on market principles of economics. It has become a common understanding that Chinese management is more similar to American Management than to Japanese management. (Kuroda, 2001) We share this understanding. We want to go farther than this argument. Our examination of Haier’s management in this paper reveals that market principles of economics is more thoroughly applied in Haier’s management than American style of management. We may say that Haier is more capitalistic than American companies.

7. Conclusion and future research tasks
7.1. Market economy model of management
Wages of workers are determined in the fictitious market of the factory at Shunde Haier just like the prices of goods and services are determined in the real market. Salary of engineers who develop new products at Haier is determined by the market performance (profits) of the new products. Evaluation of workers and engineers is individualistic, instantaneous, quantitative, monetary, results-oriented, competitive and open. Management of workers and engineers at Haier may well be characterized as straightforward application of market principles of economics. Thus, we want to summarize our analysis by saying that management at Haier is the market economy model of management.

7.2. Future research tasks
There are many research tasks to be done in the future. The followings seem important.
First, it is necessary to broaden research subjects. In the present paper we only treated workers at a factory and engineers of new product development. Top management and managers in charge of corporate staff jobs are our next targets.
Second, problematic or dysfunctional aspect of Haier style management need to be analysed. We don not treat the dark aspect of newly born Chinese management that is based on economic market principles. At the present time the new Chinese management works well at Haier. But there must be problems and limits. Will the Haier’s management last for long?
Third, spread of Haier’s management among Chinese companies also is an important research topic.

Notes
Our description of SST wage and OEC management is based on our earlier work. (Ou-Yang, 2002 A)
Based on the OHP sheets prepared by Lee, Chun-li, who is Associate Professor of Aichigakuin University, for the presentation at the 9th Annual Meeting of the Japan Academy of International Business Studies (JAIBS), held at Kobe University of Commerce on 13 October 2002.

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