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*Innovation in Japan After the Financial Crisis:*  
The Transition from TechnoNationalism  
to TechnoRealism

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## Introduction

On April 1, 1998, the Government of Japan embarked on a three-year plan for financial deregulation known as the "Big Bang," presenting a strategy that could transform capital flows in the country. After years of recession and prospects for years more, and a growing recognition that the demands of a global economy were evolving, the Finance Ministry issued a 2,132 page report laying out wide ranging changes to simplify, liberalize, and make more transparent the regulations governing finance in Japan. Implementation of these regulations could have an impact on both the international presence in the economy as well as incentive affecting innovation. Other Ministries, charged more directly with science and technology, undertook measures to stimulate innovation, with a renewed interest in the high technology entrepreneurship that seemed to be driving emerging industries in the United States. The question addressed in this paper is how these changes will affect foreign linkages in the economy, and in particular, in innovation in science and technology.

The history of the post-war economy in Japan is marked by a strikingly low level of foreign participation. The general economic growth strategy of much of this era focused on catch up with the western nations to strengthen domestic capabilities to levels that would make them internationally competitive. Part of this strategy involved absorbing the best ideas and technologies from abroad while insulating domestic markets from direct competition, particularly in the early stages, to nurture domestic firms. As industries caught up and surpassed the international frontiers in the 1980s and 1990s, this policy strategy did not fundamentally change. This type of system reflects the features of "technonationalism." (Samuels)

As economic stagnation and financial problems persisted through the 1990s, business and government leaders continued to experiment with strategies to stimulate economic growth. One set of measure involved reforms to the financial system, reforms that also had an impact on the foreign role in innovation. These changes have substantial implications for innovation in Japan as they affect a fundamental incentive influencing corporate investments: the return on investment.

To aid these reforms, there is much that foreign partners have to offer. Foreign partners offer access to much needed capital for investment. They offer investment management expertise as international norms of financial accounting are increasingly adopted. They offer stock exchange and venture capital expertise that are scarce in Japan to advance venture enterprises.

With the changes occurring in financial and technology policies and the growing possibilities for investment and partnerships, a question emerges about whether and how the technonationalist model is evolving and what the implications are for U.S. policy and business communities. Three aspects of this issue will be examined: 1) how the changes will affect the flow of capital and foreign access to capital; 2) how changes affect industrial structure and foreign participation, and 3) how changes affect the government's influence over foreign participation in innovation.

On all three dimensions there appear to be growing incentives to allow, and in some cases promote, foreign participation in the economy, although not without strengthening domestic interests. In the area of capital markets, the basic economic incentives that firms face are changing. A greater emphasis on profitability and firm value presents a disincentive to market distorting practices such as protective industrial groupings. There is a more direct market penalty than in the past. Foreign firms are skilled in these areas and at the forefront of change.

The changes in capital incentives are leading to changes in industrial structure. In seeking greater efficiencies, options that are increasingly considered include mergers and acquisitions, spin-offs, and consolidation. In addition, freer equity and capital markets open greater opportunities for venture enterprises. Each of these changes provides additional opportunities for foreign investment and partnership.

Mergers and acquisitions involving foreign partners are on the rise and are likely to continue to be active in the period of structural readjustment. With a more open capital market than in the past and changes in law that facilitate these transactions, firms both foreign and domestic should be able to use M&A to position themselves for greater long-term competitiveness in the Japanese market. At the same time, the financial pressures for consolidation and spin off will make core industrial groups more competitive and provide increased opportunities for foreign buyers and partners.

With respect to emerging industries and venture enterprises, the creation of new stock exchanges and exchange rules which are friendlier to high technology start-ups are critical to enabling a vital venture capital industry. Foreign firms are also taking advantage of this as a means of expanding their operations in Japan. U.S. management lessons in this area may be as valuable to Japan as Japanese manufacturing and production management proved to be in the United States in the 1980s. However, human resource and management limitations are substantial so the extent to which this will flourish is not clear.

Despite these changes and contrary to other observers, a wholesale shift to an open economy and nondiscriminatory policies is not predicted. The changes occurring are not because of a philosophical shift to greater openness, but because of the necessity of making certain changes that take advantage of foreign assets or expertise. The Ministry of Finance has for years resisted the types of changes that the markets are forcing. The Minister of International Trade and Industry was an advocate of change when the powers of other Ministries are weakened, but is still slow to relinquish its own power.

The core industrial groupings are likely to become more efficient in this process, becoming more competitive rather than less. Technonationalism may remain strong at the heart of the conglomerates and within policy circles. Overall, however, the nation appears to be entering a new phase, one in which a technonationalistic approaches must adapt to the value gained by greater foreign participation: a shift to TechnoRealism. This

is “realism” in which policies and partnerships are rooted clearly in domestic self-interest and incorporate the value offered by a more internationally enriched economic structure.

### **Financial Reforms and Foreign Links in Innovation**

At the height of the economic bubble, in late 1989, the Tokyo Stock Market peaked at 611 trillion yen, at one point surpassing the New York Stock Exchange to be the largest in the world. The Nikkei 225 Average had surpassed 39,000 yen, two to three times its level a decade later. However, by the early 1990s, it became broadly evident that banks and many companies had over-leveraged their investments and that a process of unwinding was underway: in real estate, in excess capacity, and in diverse and often unrelated and unprofitable lines of business. Losses were growing and would put pressure on the existence of many companies.

After the stock market entered its decline there followed a subsequent fall in capital investment in industry which was followed by reductions in industrial research and then, to a lesser extent, in the production of patent applications. Figure 1 shows the propagating effect of the stock market decline. From 1992 through 1994 industrial research and development (R&D) growth was negative for the first time in the post-War period.

With the fall of the stock market, there was also a steady increase in bankruptcies. Bankruptcies grew from 6,653 cases in 1989 to 7,157 in 1990 to 11,767 in 1991, reaching 19,171 in 1998 and 15,460 in 1999. Total debt of these firms had risen from 1.146 trillion yen to 14.4 trillion yen in 1998 and 13.6 trillion yen in 1999, a 12-13-fold increase. The final three years of the 1990s were the worst three years for bankruptcies since the end of the Second World War. (Teikoku Data Bank 2000) By the mid-1990s, it was clear that some financial institutions were likely to collapse. In late-1997, Yamaichi Securities and Sanyo Securities, Japan’s fourth and eighth largest brokerage houses went under, as did Japan’s tenth largest bank, Hokkaido Takushoku.. Other large institutions would also go bankrupt including Nippon Enterprise Development, the Long Term Credit Bank, Tokuyo City Bank, and Nippon Credit Bank. As a result of the precarious situation in the finance industry, the number of businesses closing outnumbered those opening throughout the decade of the 1990s. (Management and Coordination Agency 1999)

By January 1998, the Ministry of Finance identified \$125 billion in nonperforming loans and \$500 billion loans in serious risk, equaling 15 percent of total bank loans. In February, seeking a way to restructure with minimum economic and political fallout, the Ministry announced a \$238 billion financial stabilization package to guarantee the savings of failing banks plus potential bail out of weak banks.

April 1, 1998 was the beginning of the Big Bang, a plan for financial reforms through 2001. The first set of liberalization measures was designed to address barriers to companies buying, selling, and offering investments in foreign currencies. The

government asserted that by 2001, it would be theoretically possible for Japanese and overseas-owned institutions to perform banking, insurance, stock brokering and investment services in yen or any currency with far reduced government regulation.

Some of the recent financial reforms that have had the effect of facilitating increased foreign investment included relaxation of foreign exchange controls, greater disclosure requirements, expansion of financial distribution channels, corporate-type mutual funds, delegation of investment management, licensing reforms including a lifting of the requirement for foreign investment advisors, and easing restrictions on off shore funds. These are summarized in Appendix 1.

### ***Foreign Investment Increases***

One goal on the road to recovery was increasing investment capital while at the same time providing incentives to shed unproductive investments. Achieving both could mitigate the societal dislocations about which policy makers were also concerned. Admitting foreign financial organizations promised to help achieve this goal.

At the height of the economic bubble, in 1989, the foreign investment presence in Japan was low. Foreign shareholders owned only 3.9% of the stock on the Tokyo Stock Exchange, and there were still no foreign investment trust management companies. Thus as the stock market ran up through the 1980s, foreign entities were not major participants.

However, in the 1990s foreign capital steadily increased. The percentage of shares held by foreigners in the Tokyo Stock Exchange (TSE) increased from 3.9 percent in 1989 to 12.4 percent in 1999, with rapid rise since 1994 (TSE 2000). Perhaps more significantly, the value of these shares increased from 4.2 percent of the market in 1989 to 18.6 percent of overall market value by the end of 1999 (almost 86 trillion yen). Whereas foreign investors accounted for 7.6 percent of value of trades made on the TSE in 1989, this increased to 28.6 percent by the end of 1999.

Similarly, there has been an increase of foreign presence on the Over the Counter market. In 1989, foreigners accounted for 11.4 percent of the traded value on this market. This increased to 28.0 percent in 1998. Although dipping in 1999, In March 2000, foreigners accounted for 36.0 percent of the value of stock traded on the OTC market. (JSDA 1999, Tenta Toryoku 1999). Figure 2 shows the growth of foreign investor activity in the markets in recent years.

In certain sectors, the percentage of foreign ownership has increased substantially. As shown in Table 1, the percentage of foreign ownership has risen quickly in electronics, automotive, electronic components, pharmaceuticals, and casualty insurance: all major sectors in the economy.

With the promise of greater investment opportunities and liberalization regarding the participation of foreign firms in money management, the number of non-Japanese asset management firms has also increased over the past decade. In 1989, there were no foreign affiliated investment trust management companies in Japan. In 1990, the first

three firms entered this business, Jardine Fleming, Investco, and Warburg. By July 2000, the number of foreign investment trust management firms surpassed the number of domestic firms, 39 to 38. (Japan Investment Trust Management Association)

Non-Japanese investment houses also made a stronger push into the market, acquiring or pairing up with Japanese partners. Travelers Group purchased a \$1.59 billion stake in Nikko Securities in January 1998, attaining mutual capital participation and the creation of a joint venture between Nikko and Salomon Smith Barney. Merrill Lynch bought bankrupt Yamaichi Securities and Prudential bought out Mitsui Bank's stake in their joint trust company. Ripplewood Holdings led a foreign consortium to buy the Long-Term Credit Bank of Japan.

These financial partnerships are important not only for the foreign capital that they bring, which is much needed in the near term, but also for the influence that the foreign presence will have on the management of investments. To the extent investors in Japan give priority to their returns on investment, methods that emphasize value investing rather than relational investing should have an advantage. As indicated in Box 1, foreign investment firms have shown signs of success.

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#### Box 1. Rapid Rise of Foreign Investment Houses

Although large Japanese investment houses such as Nomura still dominate the volume of investment trust activity, foreign firms have exhibited some recent success. The Morningstar ranking of the top investment trusts over a 5 year period, 1996-2000, place Merrill Lynch at the top. Jardine is second and the next foreign firm, Investco is ranked tenth.

As many of these funds are rather new, they have had to grow against a backdrop of established firms. For example, the Fidelity Japan Fund began in 1992 with only \$2 million. At that time one of Japan's more popular funds, Nomura's Japan Fund had over \$400 million invested. By May 2000, the Fidelity Fund had increased to 36.3 billion yen (\$346 million), with the Nomura Japan Fund falling to 27.9 billion yen (\$266 million). The Fidelity Fund had grown to become the third largest in the country. (ITAJ 2000)

Other foreign funds grew quickly as well. Jardine Fleming's investment trust grew 58.2 percent between 1999 and May 2000, the highest among the top 29 companies. As of mid-2001, Fidelity funds ranked second and sixth in size. Other foreign firms have risen to occupy seven of the positions between the 11<sup>th</sup> and 20<sup>th</sup> rankings.

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Non-Japanese firms have been important innovators in other ways as well. Foreign firms have pioneered innovations such as online trading and after-hours trading. With deregulation of commissions, firms such as E-Trade are able to advance online trading in

the Japanese market. In October 2000, Goldman Sachs is leading a group of five online brokers in offering after hours trading to individuals.

As the pool of funds for investment in securities is expected to increase substantially in the next few years (see Appendix 2), foreign investors, with an emphasis on value and return, may play a significant role in helping to bring those assets to the market.

The practices of foreign securities firms will put more pressure on companies to consolidate their more productive assets, often related to their core business, and spin-off more peripheral subsidiaries and entities that are not well performing. This could have the effect of changing the innovation path by creating smaller, but more tightly knit core groups and a larger population of firms with less market captured by parents than in the past. These firms may have more potential flexibility: firms that may be more available for partnership with foreign counterparts.

As the analytic valuation methods used by foreign firms are being increasingly adopted by Japanese investment managers, advantages held by foreign firms may diminish, with some predicting that foreign houses will ultimately lose market share. (Cerulli 1999) However, whether the foreign share expands significantly or not, wider adoption of competitive valuation methods means a broader transformation of the incentives faced by all firms.

### **Structural Changes – Foreign Direct Investment (FDI), Mergers and Acquisitions (M&A) and the Emergence of Venture Enterprises**

Greater response to market incentives is bringing about several changes affecting foreign access to the industrial structure in Japan. Two such changes are in the areas of foreign direct investment and the rise of venture enterprises.

Foreign direct investment has traditionally been very low in Japan when compared with other advanced nations, as has the presence of foreign R&D in Japanese innovation. Both policy and industrial structure have in the past presented challenges to non-Japanese firms that might compete with the nation's core industries. Figure 3 shows the trend of FDI in R&D with a comparison to trends in other countries.

However the pressing need for capital, movement by firms to consolidate for greater efficiency, and policy changes have facilitated a substantial rise in foreign investment opportunities in recent years. Spin-offs and acquisition possibilities for undervalued assets set the stage for accelerated levels of mergers and acquisitions.

#### ***Cross shareholding—consolidation and spin-off***

One of the results of the shift to valuation is more pressure to unwind cross holdings within industrial groups. Goldman Sachs estimates that cross shareholdings have fallen from greater than 50 percent for the decade before 1994, to 39 percent by 1999 and are continuing to trend downward. (Matsui). Combined selling by cross shareholders was



3.0 trillion yen in 1998, nearly doubling to 5.8 trillion yen (\$55 billion) in 1999. In 2000, selling had reached 2.0 trillion yen (\$19 billion) by April.

It is anticipated that this trend will continue as firms place a higher priority on the performance of firms within the group. Parent firms have found that by absorbing higher performing subsidiaries and discarding lower performing units, they can increase their stock value. For example, Sony took advantage of the October 1999 revision to the Commercial Code allowing share swaps to turn three listed subsidiaries, Sony Music Entertainment, Sony Chemicals, and Sony Precisions, into wholly owned subsidiaries. Upon announcement, the share prices of all firms rose substantially. Overall, Sony is pursuing a strategy of more focused and more complete vertical integration in multimedia technologies. At the same time, Sony has drafted an ambitious plan to rationalize its factories and to spin-off units that are weaker performing or more peripheral to the evolving business strategy. (“Sony Kakumei” 2000)

Consolidation and spin-off is similarly being pursued in most of the major industrial groups in the country. Fujitsu is undergoing a restructuring that is expected to lead to spin-offs and IPOs of many of its subsidiaries. At Toyota, there is a real possibility that the conglomerate will spin off many of its suppliers, creating an IPO factory and driving a large volume of new listings on the stock market.

### ***Undervaluation***

In addition to the unwinding of cross-holdings are the opportunities that exist because of undervalued firms in a market still emerging from recession. According to Goldman Sachs, as of April 24, 2000, there were 97 listed and OTC registered firms whose consolidated net cash balances exceeded their market capitalizations. Further, many of these substantially under performed the Tokyo Stock Exchange Price Index (TOPIX) (an average of 58% for a sample of 24 of these firms), indicating that there was value to be unlocked through an effective merger or acquisition.

### ***Strengthening M&A***

The weakening of keiretsu links and cross share holding, the clearer identification of firm value, and policies promoting foreign direct investment are combining to heighten the possibilities of foreign firms achieving a stronger presence in Japan, in particular through mergers and acquisitions.

Previously a relatively minor aspect of the industrial economy in Japan, M&A has come to be viewed by policy makers as an important opportunity to achieve the efficiencies of industrial restructuring, and by companies as an opportunity to strengthen competitiveness. Prior to the period of the economic bubble of the 1980s, M&A cases were on the order of a couple hundred per year, with no cases of hostile take over and few cases of foreign takeover. There was a rise in M&A activity during the economic bubble which then subsided. In recent years, M&A has well surpassed the level of the bubble years, but is now driven by efficiency and opportunity rather than a surfeit of cash.

To attain the economic gains possible through M&A, numerous policy measures have been implemented in recent years. These measures are summarized in Appendix 3. A policy development that has been of particular relevance is a change in the Commercial Code, approved in October 1999, that reduces the costs and procedural requirements placed on M&As. A key element is the new ability to use stock swaps and stock transfers. Also, with the introduction of mark-to-market accounting for crossholding in April 2001, M&A activities are expected to further accelerate. (Matsui)

Figure 4 shows the recent increase of various types of M&A: in-in, referring to deals between two domestic firms; in-out, referring to the purchase of a foreign firm by one that is domestic; out-in, referring to the purchase of a domestic firm by one that is foreign; and out-out, referring to transactions among Japanese firms overseas and foreign firms. The figure shows a substantial increase in overall M&A as well as the foreign purchase of domestic firms. However, even at a record 10 trillion yen (\$95 billion) in 1999, M&A activity was only 2 percent of nominal GDP, compared with 21 percent in the U.S. (Kathy Matsui).

Globally, cross-border M&A's share of global FDI outflows have grown year after year from 55.5 percent in 1995 to 64.0 percent in 1996, to 70.4 percent in 1997 to 90.4 percent in 1998. In Japan, the percentages are lower, but continue to increase. FDI inflows to Japan were \$10.47 billion in 1998, with approximately half in the form of out-in M&A. In the first nine months of 1999, however, out-in M&A activity exceeded \$16 billion and was closer to 90 percent of all inward FDI. (JETRO 2000)<sup>1</sup> In 2000, FDI into Japan grew to 3.12 trillion yen (\$29 billion), which was 37 percent of all Japan-related FDI activity, inward and outward.

Some of the higher visibility recent examples of out-in activities include GE Capital's acquisition of Japan Leasing Corporation for \$6.57 billion in March 1999, Renault's acquisition of a \$5.39 billion stake in Nissan Motor in June, and British Telecom and AT&T's acquisition of a \$1.83 billion stake in Japan Telecom in September 1999.

The case of Nissan provides one example of how consolidation and spin-off in the current economic environment can accelerate the international presence in the economy. See Box 2. The dramatic financial turnaround, from years of losses to a \$2.7 billion profit in three years has certainly caught the attention of the business community. Although other

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<sup>1</sup> With this rise in M&A possibilities, firms are now emerging in Japan which specialize in taking financially distressed, undervalued, or spin off companies and rebuilding them. In FY 1998, there were 650 restructuring announcements, 996 in FY 1999, and 298 in the first three months of FY 2000. (Matsui) An example of one firm that has entered this market Advantage Partners. By 2000, after two years of operation, Advantage Partners had invested in eight companies across many sectors: electronic equipment, software, information systems, pharmaceutical, financial, and food service. Three of these companies were spin offs from parent companies due to reorganization and five needed financing help for expansion or rescue. After acquisition and restructuring, Advantage's average IRR has been 70 percent.

transitions may not be as dramatic, many firms are examining consolidation as a means of adding much needed strength to their competitiveness. The potential for an increased foreign presence appears to be high.

However, as a caveat, these changes are recent and the base of foreign investment has been slow. Ostrom has taken a macroeconomic view of the corporate restructuring issue and found that such changes are still modest. (Ostrom 2000) The pace of change is still unclear and there are many skeptics regarding the ultimate extent to which change will occur.

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## Box 2. Nissan Consolidation Aiding Further Internationalization

When Renault bought a controlling interest of 36.2 percent in Nissan in 1999, the Japanese automaker was in deep financial trouble. Nissan had lost money in seven of eight years leading up to 1999. The new President sent from France, Carlos Ghosn, announced a revitalization plan that would call for dramatic changes in the firm. His goal was to take the company years of loss and an overcapacity of 30-40 percent, to a consolidated operating profit of 4.5% of sales in 2002. To accomplish this he called for the closure of five domestic plants, laying off of 21,000 people (14 percent of Nissan's workforce), spinning off assets, and seeking greater integration with the parent firm, Renault.

Not surprisingly, Ghosn's moves met with stern criticism. He noted in his announcement of the Revitalization Plan that maintaining keiretsu ties was "not an objective ... The question is whether suppliers will commit to 20 percent cost reductions for Nissan in a credible way." But this change will not come without a struggle. The same day, Hiroshi Okuda, Chairman of Toyota Motor Company and Chairman of the Japan Federation of Employers' Associations (Nikkeiren) sent a letter to all Nikkeiren companies warning that they should not resort too easily to large-scale layoffs. (Koyama 1999) Nonetheless, Ghosn's plans moved forward.

The first two measures attracted the greatest amount of press in Japan as these kinds of dramatic moves have been resisted by many companies. However, it is the later two initiatives, the spin-offs and the integration, that are expanding global ties to Japan. Mr. Ghosn's plan is to reduce the number of parts and materials suppliers from 1145 to 600 in three years. The overall goal is to have over 90 percent of the suppliers able to serve both Nissan and Renault.

In addition, the Revival Plan calls for closer integration with Renault's global operations, both in production and in research and development. Beginning in 2002, two car platforms will be in common between the firms for Nissan's Micra and Cube models. By 2010, the plan is to share 10 platforms.

Research and development will be reorganized to create a more globally integrated organization. R&D budgets at Nissan have not changed much during this period of

reform, but there is a plan to give more responsibility for R&D to the regions, focus central R&D on core technologies, and give priority to R&D for cost reduction. This trend of reducing central R&D and spinning off responsibilities to the regions is common when corporations retrench. What is different in the Nissan case is that this will be done in coordination with the R&D program at Renault. Ghosn notes: The objective here is not to merge Renault and Nissan R&D organizations, but to make a precise and swift division of tasks and projects, avoid duplication, and support early adoption of common standards and common suppliers.” (Motor Trend) “Nissan Unveils Revival Plan,” October 26, 1999.

Asset sales also involve substantial international interests. Table 2 summarizes Nissan’s asset sales between March 2000 and April 2001. About half of the sales, 12 of 23, involved foreign organizations.

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### **Promoting Venture Enterprises**

Another area in which international activity may see substantial increases is in the rise of venture enterprises. Foreign firms will have greater avenues for investment, partnership, and for the establishment of subsidiaries.

The rapid rise of venture enterprises in the U.S. through the 1990s was seen in Japan as an important factor in America’s economic recovery. In both the U.S. and Japan, smaller entrepreneurial firms create more patents per employee and create more new jobs than the large established firms. Policies to stimulate high technology entrepreneurs also provide windows for further integration of foreign firms. Whether the overall effort to stimulate entrepreneurship will be successful or not, however, is still unclear.

Underlying the argument to support venture enterprises and venture capital is evidence that these types of firms were highly innovative and important contributors to employment and economic growth. Data from the Japan Patent Office indicate that small firms tend to have the highest output of patent applications per employee. Whereas large firms (over 1,000 employees) generated 2.5 patent applications per 1,000 employees, small firms (50-100 employees) generated 40.6 patent applications per 1,000 employees in 1997. (Chusho Kigyo Cho 2000) In terms of contribution to employment, firms that listed on the OTC exchange between 1995 and March 1998 reported an increase in employment of over 25%, versus 2% for all businesses (Ishiguro).

This is consistent with analysis of the innovative output of U.S. venture enterprises by Lerner and Kortum. Studying patenting between 1982 and 1992, they found that although venture capital amounted to just 3 percent of corporate R&D spending, it accounted for 15 percent of industrial innovations. (Kortum 1998).

### ***Demand Side – New Exchanges***

In the United States, it is widely recognized that the market pull of the NASDAQ has played a critical role in advancing promising venture capitalists and venture enterprises, a

role has been important in spurring new industries such as those related to software and the Internet. As noted by a partner with premier venture capitalist, “Without the NASDAQ we would be dead.”

Since 1963, the Over the Counter market managed by the Japan Association of Securities Dealers has been the primary exchange for small and medium sized firms. However, for most of its history, this exchange was dominated by mature small and medium firms. The average number of years of operation before listing on the order of 30 years. By comparison, firms listing on the NASDAQ are on average 5 to 7 years old. This market was not primarily seen as a vehicle for expanding rapidly growing firms, but for trading firms that were too small for the Tokyo Stock Exchange. Some of the harsher critics note that the OTC has also been a place for firms delisted from the larger exchanges or as a form of tax management for company founders seeking to address inheritance tax concerns. (Shibata 2000)

Through the mid-1990s, neither the OTC nor the Tokyo or Regional Stock Exchanges were suited to promoting young, higher risk, high technology firms. One of the key differences with the NASDAQ has been that the exchanges in Japan do not allow firms to list that have not sustained a profit. Loss producing firms can list on the NASDAQ, and this has been critical in fostering capital development for firms in new and emerging sectors such as biotechnology and the Internet. It has been estimated that among the 1,200 plus biotechnology firms in the United States, less than a dozen show a profit.

All exchanges in Japan required that a listing firm show a profit for several years, with the average registering firm typically well above the threshold. For example, JASDAQ required that firms registering on the Over the Counter market have over 20 million yen in current profit and over 200 million yen in net assets. In practice, the norm is for firms to be significantly larger. In 1997 the registering firms possessed a mean current profit of 1.8 billion yen and mean net assets of 6.9 billion yen.

In 1995, a second section was established on the OTC exchange for research intensive firms. This system would allow the firms to value their research as part of their assets, thus allowing firms still operating at a loss to register for public trading. However, only three firms registered on this section of the market in the first 18 months of its operation, and without critical mass to attract trading, it quietly folded at the end of 1998.

In June 1998, NASDAQ announced that it would open an exchange in Japan. With that announcement change began to occur more quickly. In July 1998, an announcement was made by JASDAQ that the OTC exchange as a whole would be reformed to better accommodate venture enterprises. In November 1998, JASDAQ announced several measures including the introduction of a market maker system similar to that of NASDAQ, relaxed registration standards, a 24 hour transactions system, pricing based on a book building system rather than an auction system. Then in November 1999, the Tokyo Stock Exchange opened the Market of the High-Growth and Emerging Stocks (Mothers) with 2 companies listing. NASDAQ Japan finally opened in June 2000. One

additional advantage of all three was that unlike the Tokyo Stock Exchange, cross shareholding was not a major issue.

The listing requirements of all three exchanges are substantially less stringent than had existed before, with NASDAQ offering the stricter requirements of the three. A basic comparison is provided in Table 3.

In the first six months of 2000, 71 companies listed on the various exchanges in Japan: 39 on OTC, 10 Mothers, 5 Nasdaq. 52 of the 71 are venture companies. By mid-2001, NASDAQ Japan had grown to 56, and Mothers to 34 firms.

In addition to assisting domestic venture enterprises, these exchanges are also possible platforms for foreign firms wishing to expand subsidiaries in Japan. Although there have been foreign sections of the existing exchanges, activity on these exchanges has steadily decreased over the decade. On the new markets, foreign headquartered firms can set up subsidiaries to trade on the same section as Japanese companies. For example, foreign headquartered firms that raised capital on these exchanges include Yahoo, Oracle, E Trade, Morningstar, Value Click, and Liquid Audio. During the Internet fever, Yahoo's stock increased by over 1000 percent after its listing. Similarly, Oracle's stock shot up 73 percent on its first day on the OTC, with its value subsequently rising enough for the company to switch to the Tokyo Stock Exchange.

Although the OTC market in Japan has expanded substantially in recent years, it is still only a fraction the size of the NASDAQ. At the end of 1999, the OTC had 868 registered companies, whereas NASDAQ had 4,829. The market capitalization of the OTC firms was 27.4 trillion yen (\$261 billion) versus \$5.2 trillion on the NASDAQ. (Nihon Shokengyo Kyokai 2000)

In looking ahead, one cannot discount the danger of important glitches along the path. Although the new markets opened with a lot of publicity, poor performance of the stocks or high levels of volatility could still pose a problem. On the MOTHERS exchange, seven of the first 10 issues were trading below their initial offering price by June 2000. Some of the high brand stocks have been hit hard. Internet Research Institute, for example, was down 87 percent within six months from its peak in January of 77.41 million yen. In addition, all of the markets continue to struggle with problems of volatility because of low liquidity. A listing requirement that traded units have a minimum value of 50,000 yen aggravates this challenge.

One of the drawbacks of the lax listing requirements has been that the exchanges are more subject to exploitation by deceptive firms. Within its first few months of operation, for example, the Mothers exchange was embroiled in some controversy regarding a firm strongly suspected of ties to the Yakuza.

### ***Supply Side – Filling the Pipeline***

On the other side of the pipeline, the salient need is for successful firms. Even with a greater downstream incentive, the challenges here are many. Capital has been difficult to acquire, particularly in the early stages; management experience is not readily available; recruiting talented personnel is difficult; and the industrial structure is often difficult to penetrate. However, reforms are opening up investment possibilities and opportunities for foreign involvement.

### ***Acquiring start-up capital***

Although venture capital financing activities have been in operation since the mid-1960s, this industry has only had modest success until very recently. Early venture capital financing supported entrepreneurs that were primarily small supply firms, and subcontractors to larger companies, not high growth firms. In the 1970s a few venture enterprise success stories emerged with the launch of firms such as ASCII Corporation and MEITEC Corporation, as well as the venture capital finance firm, Japan Associated Finance Company (Jafco), which grew to become the dominate venture capital finance firm over the coming decades, however the industry as a whole still did not prosper. As noted in the next section, an important part of the reason for the slow development of venture capital was a conservative approach toward these markets by the Ministry of Finance.

Because of the absence of an active venture capital industry in Japan, small and medium-sized entrepreneurial firms historically looked to other sources of financing. The main sources of funding have been loans from banks, personal capital and capital from family. Table 4 illustrates differences between Japan and the United States regarding which sources are tapped to support venture enterprises. (Ishiguro)

The reliance on bank financing has been particularly limiting for venture enterprises in Japan as banks tend to be conservative in offering loans. The loans tend to be provided in the later stages of development and with collateral requirements. For start-up high technology firms, particularly related to the Internet, there is often little capital to offer as collateral at the start.

Even when working with a venture capitalist, however, entrepreneurs have found them to also be conservative. Part of the reason is that the majority, 74 percent, of venture capitalists are affiliated with banks, securities houses, or insurance companies. Only 12 percent are independent. In 1988, 81 percent of the venture capital distributed was in the form of loans. (Nakagawa 2000) In 1992, 46% of the annual income of venture capital firms derived from interest on loans, 22% from capital gains from publicly traded stocks, and 17% from stock dividends. (Ono 1995).

Nakagawa notes that when venture capital firms use debt financing from banks or VC subsidiaries of banks or security houses, these entities often require the entrepreneur to provide personal guarantees against household assets on loans. If the company goes bankrupt, the entrepreneur goes bankrupt as well. In these cases professional bankruptcy also means personal bankruptcy. (Nakagawa 2000)

By 1998, this trend had shifted considerably with only 18 percent of the support coming in the form of loans, and 82 percent in some form of investment. Even with this shift, however, the investments of venture capital firms in Japan still tend to focus on late stage investments. This shift is illustrated in Figure 5.

In an effort to make more seed capital available and to move technologies into the pipeline, MITI has initiated several programs. MITI has made it easier to form limited partnerships for venture capital, created a program modeled on the small business innovation research program in the United States, and developed tax incentives for various categories of venture investors. To draw more research toward commercialization, MITI strengthened university-industry technology transfer through the establishment of Technology Licensing Offices. These and other measures are summarized in Box 3.

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Box 3. Measures to Strengthen Venture Enterprises in Japan.

Small and Medium Size Enterprise Creation Law (1995).

- Strengthening the Small Business Investment Corporation to provide for direct equity and debt financing and loan guarantees through semi-governmental and prefectural organizations.

Law for Facilitating the Creation of New Business (1998)

- Limited Partnership Act for Venture Capital (1998). To promote high technology limited partnerships for greater venture capital investment. The Law improves the incentives offered to build up the needed human resources and capital as well as securing needed assistance from outside specialists such as consultants and programmers. MITI simplifies approval procedures when qualified limited partnerships have invested with an “active hands on style.” (MITI approval still required) These firms gain an increase in the upper limit on stock options, expand the range of people who can receive stock options to include individuals outside of the company, ease issuance conditions for non-voting shares, and receive special use of the Credit Guaranty Association guarantee framework and investment and debt guarantee by the Industrial Foundation Development Fund (14.5 billion yen 1999 (\$13.8 billion)). The Japan Small Business Corporation can now invest in VC funds as a limited partner.
- Angel Tax Incentive (1997). Individuals investing in start up venture can receive a tax deduction for up to three years on any loss resulting from the investment
- In 1999 the Small and Medium Enterprise Technological Innovation Scheme was launched using the authority of this Act. Modeled on the Small Business Innovation



Research program in the U.S., agencies are now contributing funds toward small business research grants.

Act for Promoting University-Industry Technology Transfer (1998).

- To promote the commercialization of patents held by professors this law was passed in the spring of 1998 that authorized the formation of Technology Licensing Offices at the national universities. In addition to authorizing the TLOs, which help professors register and market their intellectual property, the new law provides for cost-shared support for up to the first five years, and establishes grants to encourage university-industry cooperation at these centers. Early efforts have been established by a group of professors at the University of Tokyo, who established a Technology Incubation Company with 10 million yen of their own funds in start up capital., Hokkaido University (the Ambitious Fund), Nagoya University (Entrepreneur Supporting Investors' Association), and Tokyo Institute of Technology (Frontier Research Center). A key point is that participation is entirely voluntary by the professors.

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### ***Capital management***

One of the outcomes of conservative financing is that it reinforced the tradition of the patrimonial enterprise, in which the head of a company expects to have close control over its direction. Nakagawa terms this the “sushi-shokunin” attitude: a desire not to expand a company beyond one’s ability to personally oversee it; which is also a desire not to be challenged by equity holders. (Nakagawa)

In the United States, venture capital firms bring value not only in funds but in management expertise, with the later being at least as important as the former. In Japan, until 1995, the Japan Fair Trade Commission interpreted a 1972 Antimonopoly Law to prevent non-bank investors--venture capitalists-- from sending representatives to help run inexperienced companies in which they have invested. Without a seat on the Board, venture capital investors had little leverage on the management of venture enterprises. Venture capital firms could still offer advice, but in 1996, only 25% of venture capital firms had consulting groups to assist enterprises with management. (Ono)

As a result of this history, when compared with U.S. venture capital firms, Japanese venture capitalists spread less money around a larger number of firms, invest late in the pre-IPO phase, and because they are assuming less risk, leave more of the responsibility for the company to the founder. They behave more like Angel investors. The number of enterprises receiving venture capital investments in the United States and Japan are summarized in Table 5. The average Japanese venture capital fund invested in 30 companies versus an average of six for U.S. firms, with an average investment amount of 45 million yen (\$400,000) versus \$4.9 million in the United States. Even leading high technology venture capitalists such as Softbank have also tended to follow the Japanese practice, although they are moving toward more hands-on management. Already

invested in over 300 companies, Softbank's Investment Fund at one point intended to increase this to 1,000 firms and 280 billion yen. By early 2001, Softbank claims to be actively managing 50 percent of its investment.

As a consequence of these differences, the volume of venture capital investment in Japan has been substantially lower than in the U.S. In 1998, the 170 venture capital firms in Japan invested approximately \$1.1 billion dollars, whereas the 700 plus venture capitalists in the United States invested \$16.7 billion. This small role played by venture capital firms in providing seed funding to catalyze promising ideas caused former MITI Vice Minister Katsuhiko Nakagawa to observe: "At this time (1999), Japanese venture capitalists do not play a significant role in providing risk/seed money to early stage entrepreneurs." (Nakagawa)

The performance of non-Japanese venture capitalist investors in Japan indicates that they may offer some comparative value added. Professor Hamao at the University of Southern California has conducted analyses of recent IPOs in Japan and found that performance was higher when the supporting venture firm was foreign. Whether the IPO was supported by its securities underwriter, keiretsu bank, or Japanese angel, there was little difference in performance and the equity value after three years was often just below the initial offering price. However, in the case of foreign backed ventures, the equity value was up over (27 percent) over this same period. (Hamao 2000)

Foreign venture capital expertise may prove valuable as the investment possibilities increase. In 1997, regulations were relaxed to allow pension funds to invest in venture capital. In the United States the portion of pension fund investments going to venture capital increased from 2-3 percent in 1980 to nearly 10 percent in 1997. This accounted for 38 percent of the money invested in venture capital funds. Businesses accounted for 24 percent, universities and foundations 16 percent and individuals 12 percent. By contrast, in Japan pension funds had no investments in venture capital in 1997. MITI has noted that if 2-3% of Japan's pensions were applied to venture investments, this would equal 5 trillion yen of venture capital, more than 5-6 times that currently available. (Ishiguro)

Despite the challenge, the near-term prospects for the growth of venture enterprises continues to appear positive. According to a March 2000 survey by Teikoku Databank, 162 firms plan to go public in 2000, up 50 percent from the previous year's total of 107. They are projecting this number to increase to 208 in 2001. (Reuters 2000)

### ***Challenges – human resource and societal***

Aggravating the shortage of venture enterprise managers is the lack of a personnel pipeline. There are only a small number of professional business schools and experienced entrepreneurs to nurture firms. In a MITI survey of venture firms, human resource recruitment ranked as the second most prevalent challenge, next to financing, noted by 71.4% of firms. In 1999 firms were planning to grown an average of 13.6% in staff size. Where these individuals will come from is a question.

Management training in Japan has been typically provided on the job. The absence of job mobility has led to a small market for professional business managers and the career path of the typical company employee would not bring exposure to venture business management. Typically, management that is appropriate for large, steadily moving corporations in slowly evolving markets is not the type of management that is appropriate for high technology entrepreneurs who must not only develop the technologies, but also their markets. Thus, even if Japan achieved greater midcareer mobility, it's not clear that these individuals bring the right skills.

Foreign firms that move quickly to position themselves are finding a good match with this gap in Japan. U.S. management consulting firms such as Anderson Consulting and McKinsey & Company note that this area of business is expanding rapidly. Also venture firms are aggressively recruiting their consulting staff to get the management expertise. Some U.S. venture capital firms are also targeting this gap. Goldman Sachs, Wit Capital, Patricoff, Draper-Fisher, and Carlyle have all recently set up venture capital activities in Japan.

A second ongoing challenge is the societal aversion to failure in Japan. If an individual takes the risk of joining a venture enterprise and it fails, it is difficult to then secure a good job. At major corporations, lifetime employment system practices are still in place, with limited opportunities for mid-career hiring. Until the employment system is more accommodating of mobility and failure, this will continue to point individuals away from taking the risk of moving to a venture enterprise.

### **Not a Japan Open**

With greater avenues for foreign participation reflected in investment, mergers and acquisitions, and increasing high technology ventures, one question that arises is whether this is a reflection of a wholesale policy shift to ride the wave of globalization. It will be of little surprise to those who study Japan that this is probably not what is happening. Instead, many of the reforms occurred only after substantial pressure and only one layer at a time. Ministries were eager to reform other Ministries but less enthusiastic about compromising their own power. Change was driven a step at a time by need. One result of this rise in the foreign presence is a growing need in technology policy to address will address the question of "who are we?"

In 1996, Prime Minister Hashimoto announced the government's intention to undertake major reforms in the financial sector, and other sectors as well, in order to rekindle the economy. However, the Ministry of Finance did not rush to embrace changes that would reduce their influence over industry. Historically, there has been guarded enthusiasm regarding foreign participation in the securities markets in Japan. Among the concerns were worries that trading by foreign investors tends to increase volatility, domestic investors would lose to the more sophisticated tools employed by foreign investors, and foreign investors would be short-term investors. Although subsequent research brought

into question these dangers, regulation over the financial markets reflected the desire to protect markets from foreign investors. (Hamao 1995)

Since early in the post-war period, MOF officials adopted policies that emphasized the health and stability of domestic markets. It was felt important that bankruptcies or other negative business results not be allowed. Like MITI, MOF acted to prevent “over-competition” and to use administrative guidance to encourage firms to merge before they failed. A bias developed in favor of firms with experience and clear profitability.

The Ministry of Finance preferred to minimize downside risks in its regulation of the markets. For example, as part of an effort to stop stock prices from dropping too far after the burst of the economic bubble, MOF used administrative guidance in 1992 to sharply curtail the number of initial public offerings allowed. For several months all new issues were barred. In early 1993, three firms a week were allowed to list on stock exchanges and two a week to register on the Over The Counter market. Although this restriction was relaxed over time and eliminated by April 1995, MOF continued to be wary of promoting venture businesses. In negotiations with MITI to open the investment environment for venture investors and entrepreneurs, MOF was cautious about making changes. (Choy 1995)

However, continued poor economic performance, policies that only seemed to lead to weaken financial structures, and problems with high visibility scandals involving Ministry of Finance bureaucrats acted to increase pressure on the Ministry to implement reforms. (Shibata) While much of the pressure came from outside of the government, there was also substantial pressure for reform from within.

MITI played a significant role in adding to the pressure for change by noting the impact of a financial industry in disarray on manufacturing and service industries. In issuing recommendations for policy changes, MITI stepped directly into the jurisdiction of the Ministry of Finance. By the early-1990s, for example, MITI was in active discussions with the Ministry of Finance regarding the establishment of rules that would enable young venture enterprises to raise capital on an exchange. A central observation was that high technology entrepreneurial firms have neither profit nor assets, and that without either the firms could not list on exchanges to raise equity for expansion nor gain loans from banks for this purpose. At first, MOF resisted these changes. But the continued recession strengthened MITI’s hand. MITI also stepped on MOF turf by calling for the creation of portable pensions, allowing pensions to invest in venture enterprises, and allowing for options and board representation by investors. And MITI did not stop with MOF. MITI also pressed the Ministry of Education to loosen its grip on public universities to allow for more direct interaction with industry.

MITI also played a central role in a shift in policy positions regarding direct foreign investment, where a policy shift in policy seemed to clearly occur in the 1990s. In the early 1990’s, the Government of Japan was very reluctant to take up the issue of foreign access to direct foreign investment as requested by the U.S. The Government of Japan was not enthusiastic about promoting foreign investment. Instead, the Government of

Japan diverted discussions, noting that it had issued policy statements welcoming foreign investment in 1990 and pointed to measures taken in 1992 to streamline procedures for direct investment and to provide low-interest loans and tax incentives. These measures were viewed as largely cosmetic by the U.S. Government, which wanted stronger commitments. Because of Japan's stance, bilateral discussions typically turned to high land, facility, and personnel costs and the shortage of Japanese speaking Americans.

However, by the mid-1990s momentum emerged behind these measures after a policy group on direct investment chaired by the Prime Minister issued findings that were clear in their endorsement of the value of FDI in Japan's recovery. A report released in 1995 by this Council began with the following passage:

“Increased foreign direct investment in Japan contributes to structural reform of Japanese economy, such as enhancement of Japanese economic vitalization, creation of new business, reduction of the disparities between international and domestic prices, import expansion, through introduction of the new technology, management know-how and various kinds of competition among domestic and foreign firms. Also it will benefit Japanese consumers, bringing a supply of less expensive and better goods and services and greater selection. Moreover, it further opens Japan's economy, society, and culture.” (Japan Investment Council 1995)

By 1997, Japan's position appeared to come full circle, with the two governments reaching agreement on measures to support direct investment in Japan. One negotiator from the State Department noted that they change in philosophy in the government of Japan greatly simplified the closure of the negotiation.

### ***Who are we?***

The growth of the foreign presence has not come without policy challenges, and its success presents MITI with a new policy issue, the need to reconsider its position regarding “who are we?” Traditionally, all foreign headquartered firms were considered foreign, no matter how large or long the presence in Japan. IBM Japan, for example, was unambiguously seen as a U.S. company. However, the rise of foreign ownership in stalwart Japanese firms makes this a more complex issue. The case of Nissan is a prominent example.

Here MITI has a real dilemma. MITI's own experience has shown that complete insulation from foreign partnerships is not the path to success. A good example is seen in MITI's failed attempts to simulate a software industry.

Despite numerous national programs and extensive investments by companies in software development, a merchant software industry never developed in Japan to the scale that it did in the U.S. Some of the government-promoted software-related R&D programs include the Real World Computing Project, 5<sup>th</sup> Generation Computing Project, TRON Project, Computer Aided Logistics/Electronic Data Interchange R&D programs, and a variety of other software development initiatives.

The lack of an entrepreneurial software industry, the desire of corporations to keep software development in house, an educational system that changed slowly to recognize the new technology, and national technology programs of very mixed impact contributed to Japan's software industry being in a still underdeveloped state. Despite concerted technology programs to strengthen software, it continues to be a net import in technology trade for Japan. This is shown in Figure 6.

But will technology policy open to greater foreign participation? Although foreign firms have participated in government R&D projects on occasion over the past decade, there is little evidence that of any clear policy shift in this regard. Pre-project consultations between government and industry to set priorities and shape agendas still do not involve foreign firms. The level of foreign participation continues to be very low. There are no statements or other evidence of change.

However, if foreign owned firms continue to grow in Japan, policymakers will have to confront this issue as has been the case in the United States. After a decade of discussion in the U.S., this issue is still not clearly settled, although consensus seems to be forming around the concept of "substantial benefit to the economy." How Japan will deal with this question remains to be seen.

Overall, opportunities for gaining substantial value from greater foreign participation are emerging through the economy. However, policy shifts are still occurring a step at a time. Relinquishing power does not come quickly. Japan may continue along this path, or it may reverse. Although the momentum today is toward greater liberalization, it is not the case that policy approaches and industrial structure will be open to the world anytime soon.

## **Conclusions**

The extended recession of the past decade and the rise of new industries beyond Japan's borders, again putting it in a mode of catch-up, have presented strong incentives for reform. The serious threats of financial collapse prompted reforms that have increased possibilities for greater levels of foreign participation in innovation in the economy. The financial crisis has put a dent in technonationalism.

- The foreign presence in the financial sector is on the rise.
- Foreign investments through mergers and acquisitions are on the rise.
- Foreign involvement in stimulating high tech venture entrepreneurship is also on the increase.

Changes in the management of capital are having a major effect on the investments that industries are making. Each step toward more transparent accounting and valuation, in line with international practices, is providing a catalyst for change. There is ongoing restructuring in many sectors, with consolidation and spin-off increasing opportunities for

foreign partnerships and foreign counterparts in mergers and acquisitions, although the absolute levels are still low by international standards. Because these changes affect the basic incentives of the market and business performance, the impact is more likely to be widespread and not easily reversed.

Policies to reinvigorate the economy through push and pull mechanisms affecting venture capital and venture enterprises also provide windows of engagement for foreign investment and expertise. Foreign management approaches for venture firms could provide the same industry-wide value that Japanese production management did in the United States during the 1980s. However, even with foreign help, the human resource and societal barriers here remain significant.

One of the greater implications for changes in innovation policy is the growing question of “who are we?” If finance drives an increasingly multinational innovation base, technology policy makers will encounter some of the same issues that are imperfectly dealt with in other countries, trying to distinguish between “them” and “us,” as well as the question of whether this distinction is even useful as one tries to promote both economic competitiveness and growth in employment. There is not yet evidence of a fundamental shift in philosophy underlying policy in this regard. This issue will likely be a growing point of policy discussion in Japan.

Overall, the importance of the changes that are occurring are that they are infrastructural, the changes affect the basic incentives of how money flows and how tightly relationships can be held. There appears to be an understanding that the old structures of industrial growth will have to evolve, that policies will have to reflect more of the reality of global markets and global competition: a shift from TechnoNationalism to TechnoRealism.

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## **Appendix 1. Summary of Financial Reforms Affecting Foreign Investment**

*April 1, 1998 began Big Bang reforms*

- Relaxation of Foreign Exchange Controls. Numerous restrictions on capital movements in and out of Japan were lifted. Non-banks can now conduct foreign exchange transactions and prior approval is longer necessary.
- Partial Liberalization of Brokerage Commissions. Commissions for transactions over 50 million yen were deregulated. Commissions were further deregulated in 1999.
- Adoption of a System of “Prompt Corrective Action.” Banks are subject to greater disclosure requirements with a greater possibility of being shut down due to insufficient financial strength, resulting in a higher priority placed on transparency and the performance of investments.

*Financial Systems Reform Law, enacted June 5, 1998 with provisions in effect on December 1, 1998.*

- Expansion of Distribution Channels. Banks and other financial institutions can distribute shares of domestic Investment Trust Companies and off-shore funds. Previously, this was limited to the securities houses.
- Corporate type Mutual funds. Corporate-type mutual funds could be offered, which are similar to U.S. mutual funds. Previously contractual-type funds under a trust deed were solely used, typically having a limited existence.
- Delegation of Investment Management. Investment trust managers will be able to delegate discretionary investment authority to subadvisers. This would provide foreign companies engaged in investment trust activities in Japan the ability to use services of their overseas affiliates in servicing Japanese investment trusts.
- Shift from Licensing to Registration System. Investment advisers and investment trust management companies in Japan can be certified through a registration process rather than a licensing process.
- Lifting of licensing requirement for foreign investment advisors. Foreign advisers organized under foreign law and licensed to provide discretionary investment activity in a foreign country, no longer needs to be licensed by MOF.
- Easing Restriction on Sales of Offshore Funds. Rules relaxed so that off-shore funds now need not only have a majority of their assets in securities.
- Glass-Steagall Type Reform. On April 1, 1998 a 50-year ban on financial sector holding companies was lifted. After December 1, 1988, a single company will be

permitted to conduct investment trust management, investment advisory, and broker-dealer businesses.

Also, market value accounting takes effect from 2001 (this is intended to stop the practice of valuing holdings at purchase price rather than the market price). Previously, book value accounting which was common before the Big Bang allowed hiding losses.

## **Appendix 2. Capital on the Horizon**

With a focus on valuation and maximizing returns, investment houses have an increased possibility for attracting looming reservoirs of resources to the financial markets. At the heart of this resource are aggregate personal savings which are estimate to be in the area of 1,300 trillion yen (\$12.4 trillion). At the end of 1998, the average family in Japan had only 3.8% of their household savings in stocks. Other baskets for household savings include postal savings accounts (19.8 percent), banks (25.0 percent), and life insurance accounts (32.7 percent), all modes of savings with low interest returns. (Japan Almanac 2000) This contrasts with U.S. households, in which shares and equities account for the largest share of financial assets at 36.6 percent, and insurance and pension reserves next at 31.4 percent. Currency and deposits account for only 10.1 percent. (Bank of Japan 2000; Federal Reserve Board 2000)

Some of the changes on the horizon that may unlock these funds for investment in the stock market are maturation of postal savings accounts, the availability of 401K plans in April 2001, funds freed due to ownership limitations, equity shifted to pension accounts, and greater equity carried by Japan's investment trusts.

In 1998, there was 252.6 trillion yen (\$2.4 trillion) deposited in postal savings, about 28.4 trillion yen (\$270 billion) in ordinary deposits and 222.6 trillion (\$2.12 trillion) in fixed term deposits. Approximately 106 trillion yen (\$1.0 billion) in postal savings will mature between 2000-2001, with it estimated that roughly 28 percent will leave the postal savings system. Goldman Sachs estimates that one-third of these funds are likely to be reinvested in equities. (Matsui) This would mean that 10 trillion yen (\$95 billion) of additional funds could be invested in equities in these two years.

The launch of a 401k pension fund option in April 2001 is also expected to attract a substantial volume of new investment into the equities arena. In the United States, for example, the 401k option grew quickly over the past decade. In 1991, 401(k) accounts held \$46 billion in assets and by 1999 it was estimated to be more than \$777 billion, a 17-fold increase. (Mutual Fund Fact Book 1999)

Another source of funds results from ownership limitations that arise with the merger of financial firms. Banks are not allowed to own more than 5 percent of a company and financial holding companies no more than 15 percent. In the merger between Sumitomo Bank and Sakura Bank in 1999, which created Japan's second largest bank with 7.6 trillion yen (\$72 billion) invested in the equity market, the new company would be forced to sell holding in companies in which the combined stakes are greater than 5 percent. In March 1999, there were 144 nonfinancial firms in which the combined ownership exceeded this level. Mizuho Bank, a financial holding company combining Daiichi Kangyo, Fuji Bank, and the Industrial Bank of Japan, could hold up to 15 percent of a company's stock. With 12.1 trillion (\$115 billion) invested in equities in Japan, it was the largest single stock investor in the country. The company announced in 1999 that it

did not intend to own more than 10 percent of any single firm, and as of March 1999, it held more than 10 percent in 76 nonfinancial firms.

Yet another growing source results from the need for companies to address under funded pensions. Under a new pension accounting system established in fiscal year 2000, many companies will be using trust accounts to contribute cross-held shares to their pension schemes. Firms can thus maintain control over these shares and address their pension funding needs. Fujitsu, for example, plans to transfer as much as 420 billion yen of cross holdings into a trust account, Mitsubishi Heavy Industries 180 billion yen, Mitsubishi 100 billion yen, and Toshiba 85 billion yen. Keidanren estimates that under the trust account method, at least 10-20 trillion yen of cross-held shares could potentially be used to fund pensions. (Matsui)

There also appears to be more room of Japanese Investment Trusts to carry stock. In December 1989, 78 percent of the holdings in Investment Trusts were equities. In June 2000, the percentage was 27 percent.

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### **Appendix 3. Measures Facilitating M&A Activities**

- Consolidated accounting. This was fully introduced in 1999. Companies now must include affiliates over which they have effective control. This makes it more difficult for companies to hide problems in accounts of the group. As a result, there is more pressure on companies to shed or improve the performance of unprofitable business subsidiaries.
  - Simplified merger procedures. Revisions to the Commercial Code in 1997 and the Antimonopoly Law in 1998 simplified merger procedures and eased reporting requirements and abolishing the need for two shareholders meetings.
  - Lifting the ban on holding companies. Revisions to the Antimonopoly Law in 1997 provides the ability to establish holding companies. These companies can facilitate mergers and acquisitions.
  - Corporate spin-off system. Revisions to the Commercial Code in May 2000 allow the introduction of a corporate spin-off/de-merger system which will also companies to more easily spin off divisions or separate business units into subsidiaries.
  - Industrial Revitalization Law. Provisions of this law, enacted in 1999, are intended to facilitate corporate restructuring. Some of the main provisions include simplified asset inspection requirements at the time of corporate spin offs or merger and acquisition, lowering registration taxes, and raising upper limits on the amount of preferred stock to facilitate management buyouts. Interest is reported to be strong, with 41 firms taking advantage of this law within the first 6 months of its enactment.
  - Bankruptcy law reform. In April 2000, the Civil Reconstruction Law was passed which, modeled on Chapter 11 of the US Bankruptcy Code, provides a more effective means of reorganization. This allows firms to restructure their debt yet continue operating after declaring bankruptcy.
  - Stock Option System. The Commercial Code was revised in 1997 to allow all companies to introduce stock-option schemes to reward management.
  - Under funded Pension Obligation Reporting. In fiscal year 2000, new rules are coming into effect that force companies to disclose their under funded pension obligations.
  - Real Estate losses. Beginning 2000, companies are obliged to report valuation losses on real estate assets for sale.
  - Market-to-Market Accounting. Companies are now required to mark their financial assets to market value. In 2000 this applies to tradable securities and in 2001 to cross holdings. This is projected to accelerate the unwinding of cross holdings.
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Table 1. Growth of Foreign Stock Ownership in Selected Sectors (Kamiyama 2000)

	1995	1999
Electronics	12.7	20.4
Automotive	13.3	30.9
Electronic components	20.2	28.1
Pharmaceuticals	11.1	23.3
Casualty insurance	13.7	23.6
Securities companies	9.1	27.5



Table 2. Nissan Motor Company's asset sales in 2000-2001

When	What	To Whom	Nissan Sold	Retains
March 2000	Fuji Heavy Industries, maker of Subaru cars	GM (U.S.)	4%	0%
April 2000	Nissan's aerospace division	Ishikawajima-Harima Heavy Industries (Japan)	100%	
April 2000	Ichikoh Industries, maker of automotive lighting	Valeo (France)	20.60%	0%
June 2000	Japan information systems operations	IBM (U.S.)	100%(*)	
Aug 2000	Ikeda Bussan, seat maker	Johnson Controls (U.S.)	38%	0%
Aug 2000	Plastic fuel-tank business	Solvay (Belgium)	100%(*)	
Aug 2000	Driveshaft operations	GKN (England)	100% (*)	
Sept 2000	Nissan Digital Process, software unit	Fujitsu (Japan)	100%	
Sept 2000	Yorozu, maker of chassis, suspension parts	Tower Automotive (U.S.)	17%	N.A.
Oct 2000	Nippon Plast	Dalphi Metal (Spain)	14%	12.60%
Nov 2000	Estech, noise, vibration, harshness testing and consulting	Mechanical Dynamics (U.S.)	70%	0%
Dec	Xanavi Informatics, maker of audio	Hitachi (Japan)	49%	0%

2000	and navigation electronics			
Jan 2001	Vantec, a parts logistics company	Management, 3I Group (Japan)	66.7%	0%
March 2001	Nissan Builnet, building management services	Kyoritsu Maintenance (Japan)	100%	
March 2001	Kasai Kogyo, maker of interior trim	Nagase & Co. (Japan)	6.5%	14.7%
March 2001	Saga Tgekkosho, maker of specialty bolts	Piolax (Japan)	18.5%	14.9%
March 2001	Piolax, maker of precision springs and resin fasteners	Saga Tekkosho (Japan)	13.75%	0%
March 2001	Site of former aerospace plant	Urban Development Corp (Japan)	100%	
April 2001	Niles Parts, switch maker	Ripplewood Holdings (U.S.)	40%	0%
April 2001	Tennex, filter maker	Mahle Filtersysteme (Germany)	33.3%	23.4%
April 2001	Nissan Transport, vehicle logistic services	AID Japan Partners (U.S.), Tokyo Marine Capital	100%	

Note: N.A. = not available \*Outsourcing arrangement

Source: Automotive News, July 10, 2001

For the fiscal year ending on March 31, 2001, Nissan posted a consolidated net profit of \$2.7 billion, or 4.75 percent. Ghosn had exceeded his target of 4.5 percent a two years<sup>0</sup> ahead of schedule.

Table 3. Comparison of Selected Listing Requirements of OTC, NASDAQ-Japan, and Mothers Exchanges

	OTC	NASDAQ-Japan	Mothers
Profit/Shareholder Equity	None	Pre-tax income of 75 million yen; or shareholder equity of 400 million yen	None
Market Capitalization	Over 500 million yen	Above or 5 billion yen	Over 500 million yen
Number of Free Float Stocks	None	1,000 (over 500 million yen)	None
Minimum Years of Operation	1 year	3 years	None

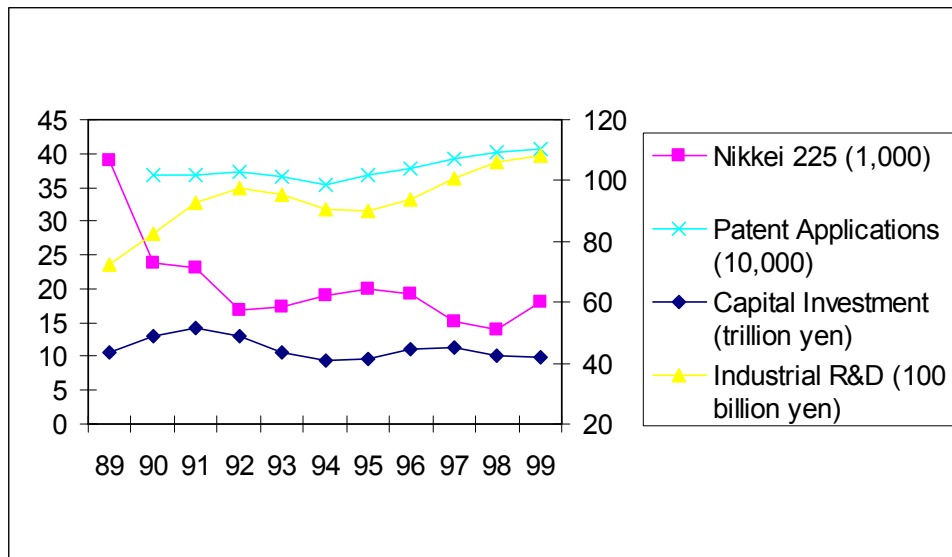
Table 4. Sources of Financing Used by Venture Enterprises

	Japan	US
Personal capital	80.1	8.3
Family, etc.	55.9	6.6
Individual investors	4.8	40.0
VCS	1.5	15.0
Financial institutions	59	11.7
Others	7.2	18.4

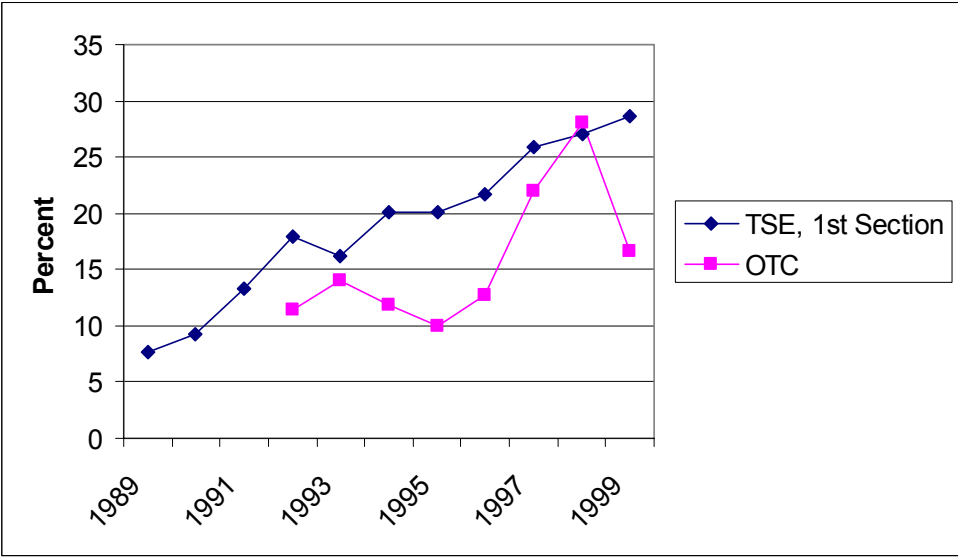
Table 5. Companies newly receiving venture capital (MITI, Ishiguro)

	1994	1995	1996	1997
Japan	1,491	1,977	2,174	2,547
US	465	624	1,046	1,298

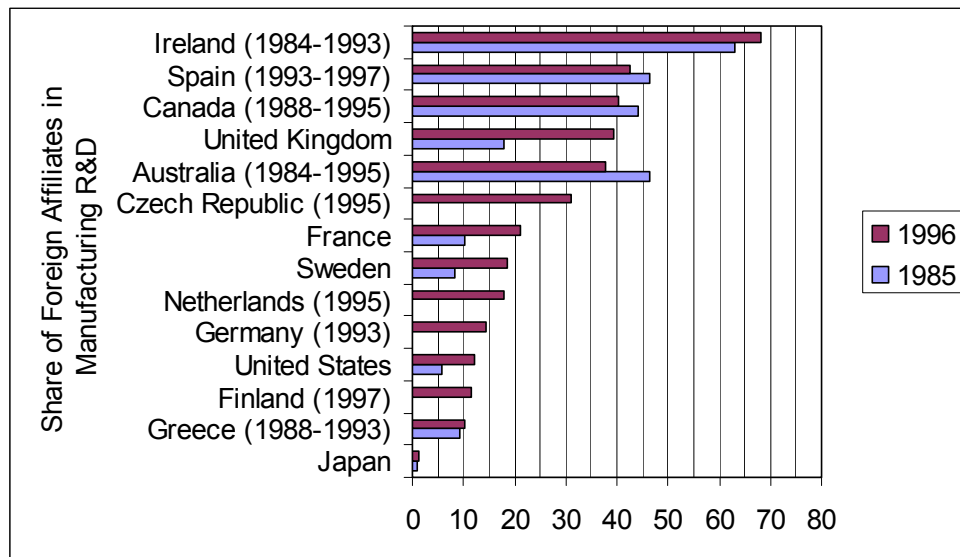
**Figure 1**  
**Stock, Investment Equipment, R&D,**  
**and Patent Application Trends**



**Figure 2**  
**Growth of Foreign Investors on the TSE and OTC Markets**  
**(Percent of Total Trading Value)**

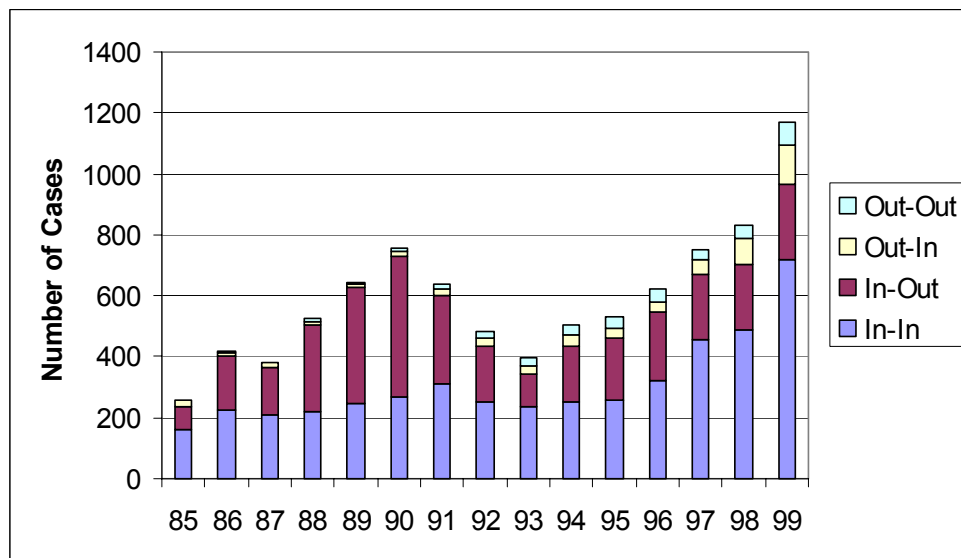


**Figure 3**  
**R&D Expenditure on Foreign Affiliates**

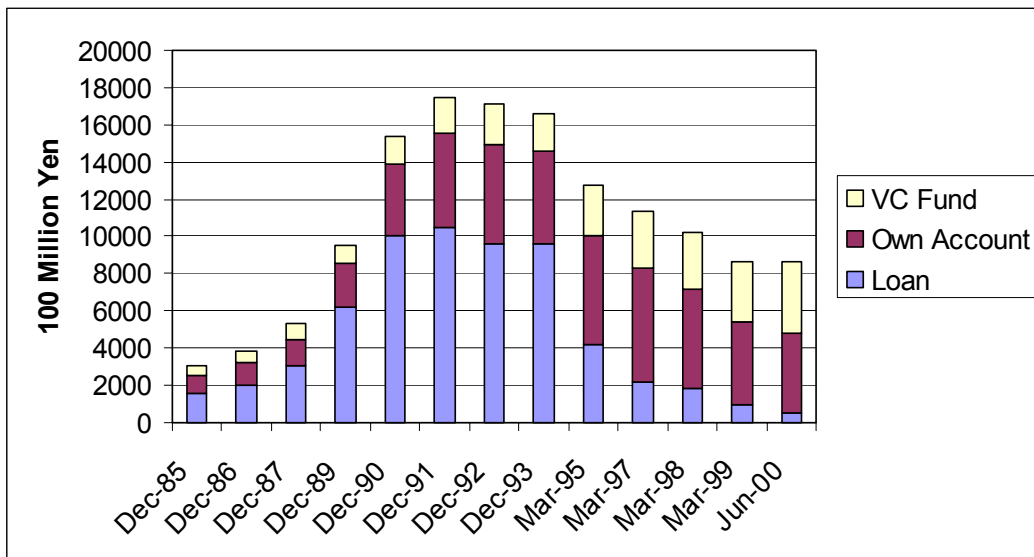




**Figure 4**  
**Trends in Mergers and Acquisitions in Japan**



**Figure 5**  
**Venture Capital Finance in Japan**



**Figure 6**  
**Japan's Export and Import Software**

