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The Objective of Considering SMEs in the Context of Comparative Institutional Analysis in the Japanese Economy: Closing the Gap to the International Economy

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ABSTRACT

It would be difficult to overstate the importance of the recovery of the Japanese Economy, and Small and Medium Enterprises in Japan have constantly strived to overcome the structural recession. Japan's international competitive advantage is primarily value-added manufacturing and trade, and the recovery of the Japanese Economy is in relation to the exportation of electronics to China and automobiles to the United States. On the other hand, most Japanese SMEs are facing confusion in the structural reform in the fields of manufacturing, commerce and SME Finance.

Introduction

Comparative Institutional Analysis which was suggested by Aoki (1988) chiefly, sometimes applies the game theory illustrated by Maynard-Smith (1982) that may help to explain two different styles of economies; Hawk style (H-style) and Dove style (D-style) . According to this analysis, H-style is similar in economy to the United States and D-style is similar in economy to Japan. It seems that international economy is approaching

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to the market economy (H-style), so traditional enterprises must encounter some troubles for opportunism from time to time. This study aims to provide an empirical comparison of small and medium enterprises (SMEs) in the traditional Japanese economy and the international economy (new Japanese style); evidence from manufacturing, commerce and SME Finance and draws important lessons that should be of use for executive officers, academics, and regulators alike.

It would be difficult to overstate the importance of the recovery of the Japanese Economy, and SMEs have constantly strived to overcome the structural recession in Japan. Japan's international competitive advantage is primarily value-added manufacturing and trade, and the recovery of the Japanese Economy is in relation to the exportation of electronics to China and automobiles to the United States. On the other hand, most Japanese SMEs are facing confusion in the structural reform of the fields of manufacturing, commerce and SME Finance.

Traditionally, Japanese manufacturing has consisted of the subcontracting system, or in other words, '*Keiretsu*', and this system has mainly supported the automobile and the electronic industries in Japan; however, this mechanism has shown very few symptoms of changing. It requires certain subcontractors to be independent from parent companies.

With regards to commerce, it is noteworthy that most traditional shopping arcades are closed in the regional city centers. Most consumers tend to enjoy shopping in major supermarkets or franchised convenience stores, so it becomes a challenge for commercial SMEs to keep their stores open. They have to adapt their way of business to new circumstances.

Finally, the financial system and corporate governance for SMEs in Japan is gradually changing from banking accommodation to direct finance, and the changes in ownership structure for SMEs in particular are of much note.

Comparative Institutional Analysis for SMEs

Theory of complementarities is the core framework of comparative institutional analysis, that is, Aoki (1988) shows strategic complementarities and institutional complementarities. The Japanese economy is a coherent system which is regarded as distinct from the individual-oriented system; for instance, '*Keiretsu*', the phenomenon of corporate grouping brought about by mutual stockholding among major

firms, indirect finance, lifetime employment and seniority-order wage system (the long-term association of employees with the firm under the incentive scheme), and bureaucracy native to Japan. This is D-style. H-style is more aggressive (opportunistic) and will escalate conflict and continue until injured or until opponent retreats. D-style will display and retreat at once if opponent escalates the confrontation. If two opponents both escalate, it is assumed that, sooner or later, one is injured and forced to retreat. Thus V is the *gain* in fitness to the winner, losers do not have zero fitness, and injury reduces fitness by a cost, C., it is now possible to write down the 'payoff matrix' shown in Table 1. In this matrix, the entries are the payoffs, or changes of fitness arising from the contest, to the individual adopting the strategy on the left, if his opponent adopts the strategy above.

Table 1: Payoffs for the Hawk-Dove Game

	Hawk	Dove
Hawk	(V-C)/2	V
Dove	0	V/2

i. Hawk vs Hawk — Each a contestant has a 50% chance of injuring its opponent and obtaining the resource, V, and a 50% chance of being injured. Thus this expected gain is (V - C) / 2 . (Nash equilibrium)

ii. Hawk vs Dove — Hawk obtains the resource and Dove retreats before being injured. Thus the gain of Hawk is V, and the gain of Dove is zero.

iii. Dove vs Dove — Resource is shared equally by the two contestants. Thus this expected gain is V / 2. (Pareto efficiency)

Let p = frequency of H strategists in the population,
EU_H, EU_D = expected gain of Hawk and Dove

$$EU_H = \frac{P(V - C)}{2} + (1 - P)V$$

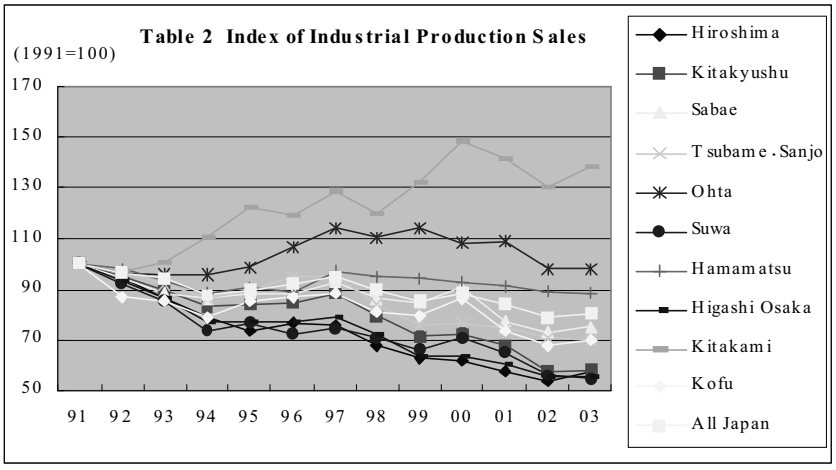
$$EU_D = \frac{(1 - P)V}{2}$$

That is to say, if it is worth risking injury to obtain the resource, H-style is the only sensible strategy. The second point that requires clarification is that D-style is more desirable if there are no H-style economies in the world because of V / 2 > (V-C) / 2, V>0, C>0. If two economies could choose D-style as their strategies, it results in Pareto improvement which is preferable to both economies.

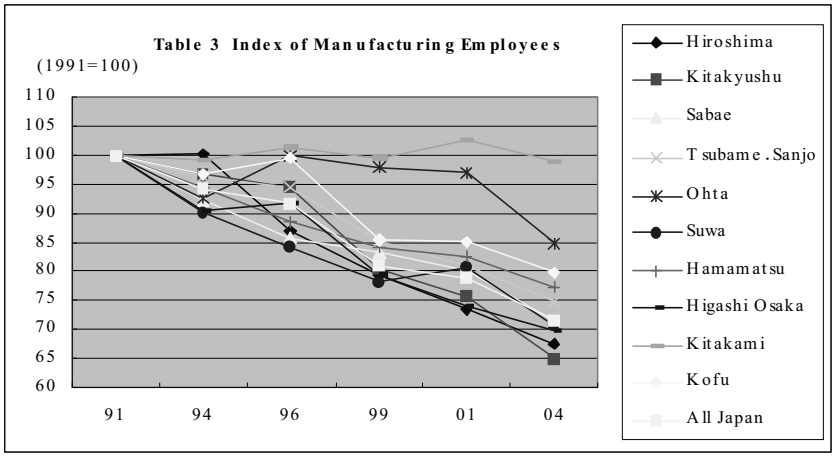
D-style is desirable for SMEs in Japan because it is Pareto efficiency however they are facing Nash equilibrium such as the above theory. This study discusses their transitions from D-style to H-style as the panorama empirically.

Manufacturing for Independent Subcontractors

There are many subcontracting systems in the whole country as well as Tokyo and Nagoya areas. According to Census by the Civil Service, there are ten manufacturing areas in Japan. As to manufacturing in regional industries, there are declining trends of industrial production sales in eight areas (see Table 2), and of manufacturing employees in nine areas (see Table 3). Because it takes the subcontracting system into consideration, it is important to note the means of getting over the separation from the parent company, so it seems that the primary consideration in the forefront of manufacturing should be the structural change for the subcontracting system in Japan. In Hiroshima, Miwa



Source: Ministry of Economy, Trade, and Industry, 'Census of Manufacturers'.



Source: Ministry of Internal Affairs and Communication, Statistics Bureau, 'Establishment and Enterprise Census of Japan'.

Co., Ltd. has been a subcontractor of MAZDA[1]. It has taken eight patents[2] and applied for nine patents[3], so this subcontractor tends to be independent of the parent company. In Suwa, SEIKO-EPSON, is well-known for subcontractors asserting their independence. In Hamamatsu, HONDA declared the transfer of the motorcycle factory to Kumamoto prefecture in Sept. 2006. On the other hand, it is very interesting case in Kitakyushu. That is University Spinouts.

It is not only for Kitakyushu but also for other regions to accept the policy of industry-academic-government coalition in Japan. The matter in question in this argument is the problem of patent rights between university researchers and political offices. Patent rights is one component of intellectual property rights, and it seems that the first sensible approach to the problem is *Public Law 96-517, Patent and Trademark Act Amendments of 1980*, alias *The Bayh-Dole Act* in the United States[4]. In Aug. 1998, a law was enacted to promote technology transference from universities to enterprises in Japan[5], and it expanded into the *Revised Industrial Revitalization Law* in Oct. 1999[6]. That laid the foundation for 42 Technology Licensing Organizations (TLO) in many regions in Japan. The list of 42 TLOs appears in Table 10.

Table 4: The List of 42 TLOs which Appear in Japan

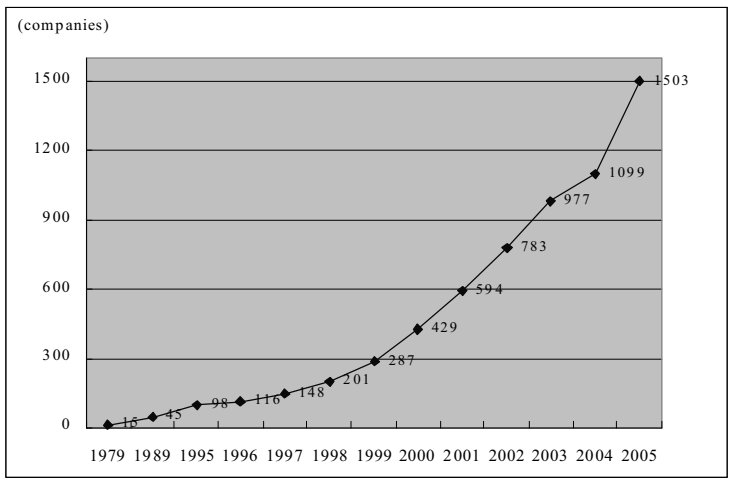
TLO	Leading University	Approval
CASTI	Tokyo	4-Dec-98
Kansai TLO	Kyoto, Ritsumeikan	4-Dec-98
Tohoku Technoarch	Tohoku	4-Dec-98
NUBIC	Nihon	4-Dec-98
ILC	Tsukuba	16-Apr-99
W.T.L.O.	Waseda	16-Apr-99
The Circule for the Promotion of Science and Engineering	Tokyo Institute of Technology	26-Aug-99
Keio University Intellectual Property Center	Keio	26-Aug-99
Yamaguchi TLO	Yamaguchi	9-Dec-99
Hokkaido TLO	Hokkaido	24-Dec-99
NIRO	Kobe, Kwansei Gakuin	19-Apr-00
Nagoya Industrial Science Research Institute	Nagoya, Gifu	19-Apr-00
Kyushu TLO Company, Limited	Kyushu	19-Apr-00
Center for Research Collaboration	Tokyo Denki	14-Jun-00
Yamanashi TLO	Yamanashi	21-Sep-00
Tama TLO	Tokyo Urbantech, Toyo, Tokyo Metropolitan	4-Dec-00
Meiji University Intellectual Properties Center	Meiji	25-Apr-01
Yokohama TLO	Yokohama National, Yokohama City	25-Apr-01
Shikoku TLO	Tokushima, Kagawa, Ehime, Kochi	25-Apr-01
The Foundation for the Promotion of Industrial Science	Institutional of Industrial Science (Tokyo University)	30-Aug-01
Osaka Industrial Promotion Organization	Osaka	30-Aug-01
Kumamoto TLO	Kumamoto	30-Aug-01
TUAT-TLO	Tokyo University of Agriculture and Technology	10-Dec-01
Niigata TLO	Niigata	25-Dec-01
STLO	Shizuoka (in Hamamatsu)	17-Jan-02
FAIS	Kyushu Institute of Technology	1-Apr-02
Mie TLO	Mie	16-Apr-02
KUTLO	Kanazawa, Ishikawa National College of Technology	26-Dec-02
Campus Create	Electro-communications	19-Feb-03
NMS-TLO Center	Nippon Medical, Nippon Veterinary and Life Science	19-Feb-03
Kagoshima TLO	Kagoshima	19-Feb-03
Shinshu TLO	Shinshu, Nagano National College of Technology	18-Apr-03
Miyazaki TLO	Miyazaki	16-May-03
Oita TLO	Oita	26-Aug-03

(*continued*)

(*continued Table 4*)

TLO	Leading University	Approval
RIDAI SCITEC	Tokyo University of Science (in Tokyo, Suwa and Yamaguchi)	30-Sep-03
Hiroshima Industrial Promotion Organization	Hiroshima	9-Oct-03
Okayama Prefecture Industrial Promotion Foundation	Okayama	28-Apr-04
Nagasaki TLO	Nagasaki	15-Oct-04
OMNI Institute Corporation	Nagaoka University of Technology, Hyogo	24-Feb-05
Saga University TLO	Saga	7-Jul-05
Toyohashi Campus Innovation	Toyohashi University of Technology	5-Sep-05
Organization for Academic-Industrial Collaboration and Intellectual Property	Chiba	7-Jul-06

Table 5: University Spinouts



Source: Ministry of Economy, Trade and Industry.

Based on Table 4, there are TLO companies in the metropolitan areas around famous universities in Japan. It has become possible to see a lot of venture business originating from universities in recent years (see Table 5). Of course, it is one of the accomplishments of the industry-academic-government coalition. The top runner is AnGesMG, Inc. from Osaka University established in Dec.1999 which has been listing on Mothers (the junior market in Tokyo Stock Exchange) since Sept. 2002.

This is the first listing enterprise from a venture business born in a Japanese university, and the third aggregate market value of listed stock among small and medium pharmaceutical enterprises in Japan.

Commerce Adapts

Commerce is gradually changing in Japan. Formerly, the Japanese had their own traditional commercial customs, and the language contains many words for traditional businesses. For example, *Yaoya* means greengrocery, *Uoya* means fishmonger, *Sakaya* means liquor store, *Okomeya* means rice shop, and *Gyoushounin* means merchant.

Table 6: The Number of Retail Stores (thousand, %)

Store Scale	1991	1994	1997	1999	2002	2004
1-2 employees	847.2 (53.2)	764.8 (51.0)	709.0 (49.9)	685.0 (48.7)	603.4 (46.4)	568.8 (45.9)
3-4 employees	416.9 (26.2)	370.9 (24.7)	350.3 (24.7)	317.2 (22.5)	297.6 (22.9)	284.1 (22.9)
5-9 employees	214.0 (13.4)	222.5 (14.8)	212.4 (15.0)	226.8 (16.1)	218.7 (16.8)	207.7 (16.8)
10-19 employees	71.9 (4.5)	89.6 (6.0)	93.5 (6.6)	111.9 (8.0)	114.8 (8.8)	112.4 (9.1)
20-49 employees	33.1 (2.1)	42.0 (2.8)	43.3 (3.0)	51.9 (3.7)	50.7 (3.9)	50.2 (4.1)
50 or more	8.1 (0.5)	10.1 (0.7)	11.2 (0.8)	14.1 (1.0)	14.9 (1.1)	14.9 (1.2)
Total	1591.2	1499.9	1419.7	1406.9	1300.1	1238.0

Source: Ministry of Economy, Trade, and Industry, 'Census of Commerce'.

However, most Japanese aren't familiar with those words nowadays because of our changing commercial customs. While traditional shopping districts still exist in some places, they are overshadowed in small and medium cities by more modern conveniences, though traditional districts still generate excitement in metropolitan areas.

According to Table 6, smaller scale stores (1-4 employees) are on the decrease while medium-to-large scale stores (10 or more employees) are gradually increasing. Equally, the number of employees in those smaller scale stores is rather decreasing, and the number of employees in the

medium-to-large scale stores (10+ employees) is gradually increasing (Table 7). In addition, the medium-to-large scale stores (10+ employees) held 58.7% of the annual sales of all retail in 2004, compared with 40.6% in 1991 (see Table 8).

Table 7: The Number of Retail Employees (thousand, %)

Store Scale	1991	1994	1997	1999	2002	2004
1-2 employees	1381.3 (19.9)	1240.0 (16.8)	1146.0 (15.6)	1035.1 (12.9)	966.3 (12.1)	906.8 (11.7)
3-4 employees	1404.5 (20.2)	1256.1 (17.0)	1186.6 (16.1)	1076.0 (13.4)	1011.4 (12.7)	962.4 (12.4)
5-9 employees	1336.9 (19.3)	1405.2 (19.0)	1342.5 (18.3)	1448.8 (18.0)	1404.5 (17.6)	1334.9 (17.2)
10-19 employees	948.2 (13.7)	1187.2 (16.1)	1248.3 (17.0)	1503.8 (18.7)	1543.0 (19.4)	1516.5 (19.5)
20-49 employees	956.4 (13.8)	1200.9 (16.3)	1232.2 (16.8)	1470.3 (18.3)	1439.8 (18.1)	1421.6 (18.3)
50 or more	909.2 (13.1)	1094.7 (14.8)	1195.1 (16.3)	1494.6 (18.6)	1607.9 (20.2)	1620.1 (20.9)
Total	6936.5	7384.2	7350.7	8028.6	7972.8	7762.3

Source: Ministry of Economy, Trade, and Industry, 'Census of Commerce'.

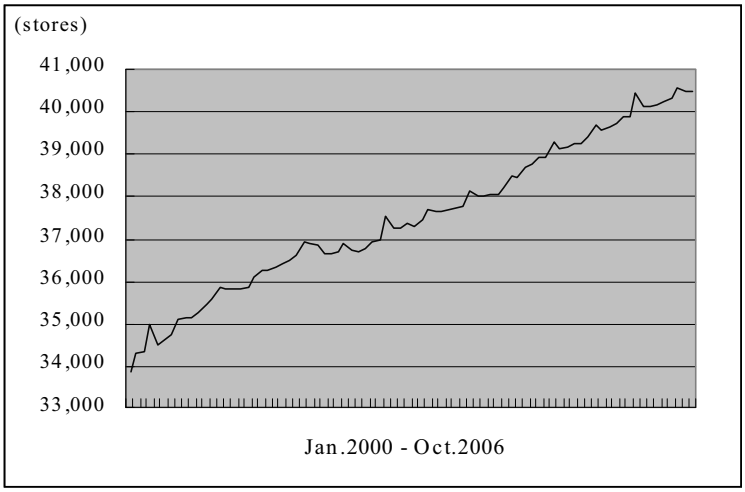
Table 8: The Amount of Annual Sales (billion yen, %)

Store Scale	1991	1994	1997	1999	2002	2004
1-2 employees	15224 (10.8)	13332 (9.3)	12485 (8.5)	10830 (7.5)	8816 (6.5)	8411 (6.3)
3-4 employees	23006 (16.4)	20054 (14.0)	19573 (13.2)	15464 (10.8)	13457 (10.0)	12646 (9.5)
5-9 employees	28878 (20.5)	28999 (20.2)	28558 (19.3)	26305 (18.3)	24398 (18.1)	23395 (17.6)
10-19 employees	21409 (15.2)	23826 (16.6)	26051 (17.6)	27050 (18.8)	26510 (19.6)	26253 (19.7)
20-49 employees	21151 (15.0)	23919 (16.7)	25198 (17.1)	25774 (17.9)	24223 (17.9)	24445 (18.3)
50 or more	30971 (22.0)	33194 (23.2)	35878 (24.3)	38409 (26.7)	37706 (27.9)	38128 (28.6)
Total	140639	143325	147743	143832	135109	133279

Source: Ministry of Economy, Trade, and Industry, 'Census of Commerce'.

This tendency is against the background of changing purchasing behavior patterns among the Japanese; for example, from walking or using public transport to buying and using a private car; from enjoying the shopping experience and local shopping districts to just shopping for necessity; from enjoying shopping with family to enjoying shopping alone or with friends. The style of stores is also changing from individually managed shops to medium-to-large scale stores or to franchised convenience stores. All customers are sure to be satisfied by affiliated stores because of their expectations of uniform services. These stores are managing stocks and inventories by the POS system (Point of Sales System), so all the stores in the group are efficiently controlled by their distribution centers. Larger stores respond quickly to customers' demands; that is to say, it is more difficult for smaller scale stores to meet the needs of younger shoppers in particular.

Table 9: The Transition for the Number of Convenience Stores in Japan



Source: Japan Franchise Association.

Suppose a storekeeper is proud of his own business and loyal customer base. He may feel negative about joining a franchise system. This article suggests the idea that the storekeeper should strive for the management of both his own store and a franchised store. In a different place (specifically a better location), the storekeeper could open a franchised store and learn new skills such as stocking, stocktaking,

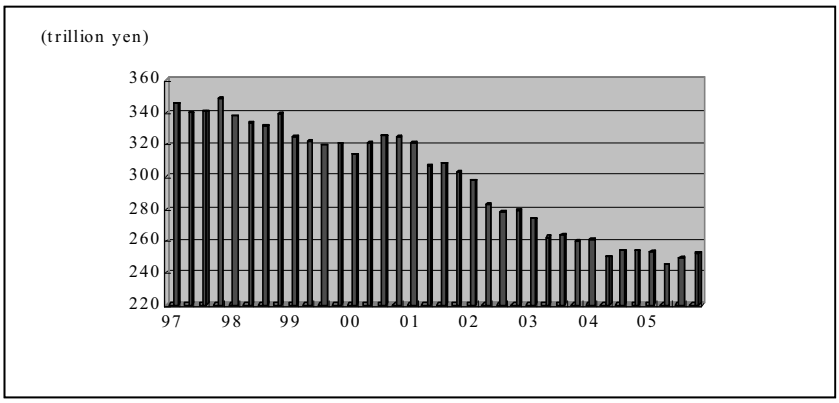
sales, marketing, and CRM (Customer Relationship Management). With the franchised store, the shopkeeper would have flexibility for goods, and on the other hand, he would maintain his own store and goodwill of the local customers.

SME Finance

The financial structure is gradually changing to direct finance in Japan. Customarily the Japanese do not like to take risks, so traditional employment practices have included lifetime employment and a seniority-order wage system. Ordinary households have also held onto bank-based finance in order to feel secure. Notwithstanding, there are 1,300 trillion yen in financial assets in Japan. This section will examine what factors are necessary for the Japanese economy to take advantage of the direct financial system.

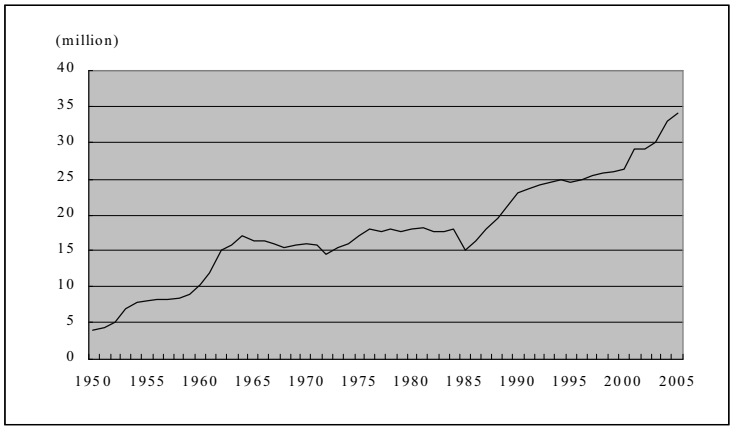
The mechanism of indirect finance (a bank-based system) contributed the period of high economic growth (1950s-70s) because it needed the intense investment for important industries when the Japanese economy had to catch up with developing countries. (Germany also had a similar mechanism known as the housebank system composed of Deutsche Bank, Dresdner Bank, and Commerzbank, but recently they have adopted a universal banking system which suits the international trend of direct finance.)

Table 10: The Lending for SME Finance in Japan



Source: Bank of Japan, 'Financial and Economic Statistics Monthly.'

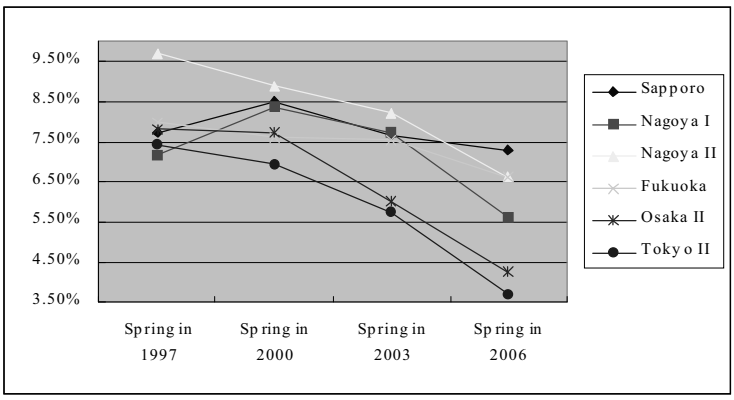
Table 11: The Transition for the Number of Individual Shareholders in Japan



Note: Survey has been conducted on a "Unit-of-Share" basis since 1985 Survey.
Source: TSE, OSE, NSE, FSE, and SSE, '2005 Shareownership Survey.'

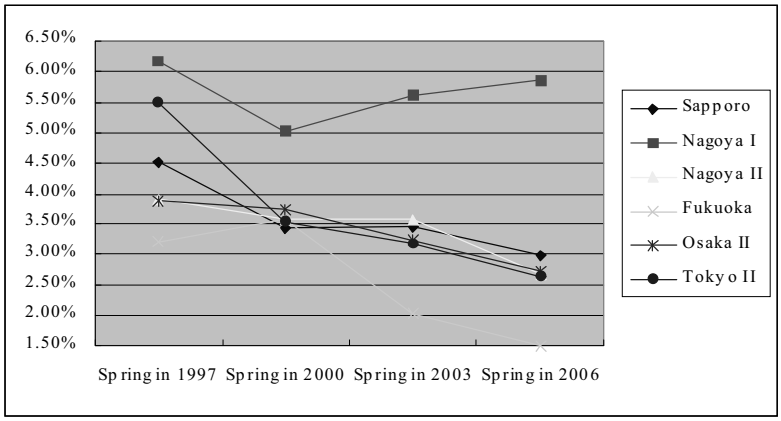
It is straightforward to determine structural change by checking the amount of lending for SME Finance and the transition for the number of individual shareholders in Japan. The lending for SME Finance (see Table 10) has been decreasing by degrees, most sharply from the beginning of 2001 to the middle of 2004, which showed a 28.2% decrease even though the Bank of Japan accepted a zero interest rate policy from Feb.1999 (The target of short-term rate of interest became 0.25% in July of 2006). On the other hand, the number of individual shareholders is increasing over the same time period (see Table 11); that is to say, some households are showing an interest in direct finance.

Table 12: The Bank Share Holdings for SMEs in Japan



Furthermore, the ownership structure for SMEs varies from traditional to international style. The bank share holdings are reducing in all regional markets (see Table 12), and institutional investors which are including life and non-life insurance company and trust bank, are reducing in five securities markets for SMEs (see Table 13).

Table 13: The Institutional Investors Holdings for SMEs in Japan



The local stock exchange is cultivating SMEs to go public in Japan. Fukuoka stock exchange especially contributes to the local SMEs (see Table 14); for example, this exchange investigated 1,050 enterprises and held 60 seminars from June 2000 to May 2006. Nagoya stock exchange has conducted seminars for supporting the establishment with some local banks, universities, governments, or securities companies.

Table 14: The Number of Investigations and Seminars by Fukuoka Stock Exchange for the Local Enterprise

Prefecture	Yamag-uchi	Fukuoka	Saga	Naga-saki	Oita	Kuma-moto	Miya-zaki	Kago-shima	Okinawa	Others	Total
Investigations for local enterprises	56	419	45	75	100	108	50	66	30	101	1050
Seminars	0	38	2	5	4	2	1	6	0	2	60

Additionally, the Sapporo stock exchange held six meetings for the future strategy of the Sapporo stock exchange from July to December in 2003. The local stock exchange has a role to actively contribute to SME Finance.

Conclusion

The objective of considering small and medium enterprises is to defend a lot of employees from economic hardship, so it is indispensable to expect the henceforth improvement of SMEs in Japan. The argument should concern the present condition, so this article focused on manufacturing, commerce and finance studied as the panorama. They are facing Nash equilibrium in the framework of comparative institutional analysis.

Evidence that the market discipline gradually comes over SMEs can be seen in Japan, and the conflict of SMEs is severe competition with international economic trends; however, it should be emphasized that the role of enterprises is for the hospitable as well as complementary matching of supply to demand. Basic to the argument is the proposition that all employees in SMEs have their security, safety and stability to work and attain their self-actualization.

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