

Economic Development and Small Businesses in Japan*

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Japan's economy lost most of its industrial production force as a result of World War II. However, from 1955 onwards, Japan has achieved rapid economic growth, joining the group of the world's most developed countries by the early 1970s. The period from 1955 to the early 1970s is generally regarded as a period of High Economic Growth. There are various opinions regarding the factors that enabled Japan to attain such high economic growth, referred to as the Economic Miracle. It can be said that Japan's post-war economic development was the result of advancements in technological innovation on the basis of financial assistance from the United States, which established Japan's position in the world economy, loans from the bank, and the introduction of technology from abroad. Needless to say, the "high growth of post-war Japanese capitalism has not been achieved only by giant companies alone. On the contrary, without small businesses, especially in their roles as subcontractors, it would have been impossible to achieve such high growth, which has drawn attention internationally" (Nomura, 1981, p. 126). The purpose of this presentation is to make clear the role of small businesses in the process of economic development.

Keywords: economic development, subcontractor, innovation, small and medium-sized enterprises (SMEs)

Introduction

In the autumn of 2017, a television drama called "Rikuo" drew attention from the Japanese public. This drama is based on the story of a "Tabi" (Japanese socks) manufacturer which was founded 100 years ago. Due to the market for "Tabi" (Japanese socks) decreasing, the manufacturer tried to utilize their skills to create a new business selling/manufacturing running shoes. The small business of around 20 employees managed to raise the necessary funds, despite facing difficulty when trying to borrow from financial institutions due to having no provable track record in the area of running shoes, as well as problems sourcing materials. In addition, it had to compete with global sport brands. However, the business finally managed to overcome such difficulties and developed a new model of running shoes and ultimately became successful. The spirit of "never giving up" of the management of the business and the employees' dedication to the products had impressed many viewers.

* **Acknowledgement:** This paper is aimed at reviewing the problem consciousness and has made substantial corrections based on the presentation at *the Nepalese Academy of Management*. The writing of this paper owes much to the teaching of our honored Professors, Professor Noguchi and Professor Nakayama. Jin Yu, Yutaka Takakubo, Pei Xiong, Katsuhiko Hirasawa (2017). Economic Development and Small Businesses in Japan. In Dhruva Kumar Gautam and Dakshata Rana (Eds.), *Knowledge Transfer and Transformation* (pp. 362-371).

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As Japan's "Craftmanship" is regarded as a very important part of society, television dramas which tell the story of small and medium-sized enterprises (SMEs) such as "Downtown Rocket" are popular. It is believed that the popularity and prevalence of these kinds of TV dramas is rooted in the fact that Japan is considered the home of the SMEs.

According to the Small and Medium-sized Enterprise Basic Act (Small and Medium Enterprise Agency, 2016), the definition of an SME should be as follows: For an entity which is engaged in the manufacturing industry, its capital does not exceed 300 million yen and with less than 300 employees. For an entity which is engaged in the wholesale trade, its capital does not exceed 100 million yen with less than 100 employees. For an entity which is engaged in the service industry, its capital does not exceed 50 million yen with less than 100 employees. For an entity which is engaged in the retail trade, its capital does not exceed 50 million yen with less than 50 employees. According to the 2016 White Paper on Small and Medium Enterprises, the total number of SMEs was 3,809,000 companies in 2014, accounting for 99.7% of all enterprises. Moreover, the proportion of employees of SMEs in the overall Japanese economy is about 70% (33.61 million), and the added value is around 55% (113.2 trillion yen) of the total.

It can be seen from the above that SMEs have made a significant contribution to the economic development of Japan. Certainly, the heavy chemical industry, which requires a huge amount of funds, has played an important role as a large enterprise. However, among traditional industries such as "Rikuo" and the fields related to people's livelihood, the existence of SMEs should not be neglected. In "Rikuo", the focus is on the story of the traditional skill of "Tabi" manufacturing which was adapted to the production of running shoes. It can be also seen that the traditional skills of SMEs support our daily lives.

Of course, the role of SMEs in the field of traditional industry and people's livelihood can be seen not only in Japan but also in other countries. The unique characteristics of SMEs in Japan are thought to exist in the relationship between large enterprises and SMEs. "Downtown Rocket" is a television drama which tells a story about SMEs with high technical skill in rocket development to provide components to major enterprises. It does not only tell the story on the research and development in SMEs but also tells a story that can understand various difficulties of SMEs which supply components as subcontractors.

For research on Japanese SMEs, an important topic has been to clarify as to why the number of SMEs in Japan is enormous (Mitsui, 2009)¹. Komiyama (1941) examined the huge number of SMEs from the perspective of utilizing low-wage workers and questioned as to what kind of business organizes these workers. Furthermore, he pointed out that there are two forms of SMEs in Japan: "independent form", such as manufacturers that produce finished goods, as exemplified in the television (TV) drama "Rikuo", and "subordinate form", such as subcontractors, as shown in the TV drama "Downtown Rocket". In response to this understanding of Komiyama, Fujita (1943) regarded the significance of SMEs in the Japanese economy as a problem.

Research on Japanese SMEs will develop on the basis of this controversy but Komiyama and Fujita considered the backwardness of Japanese SMEs problematic. Conversely, Itou (1957) perceived the issues in SMEs as a product of a modern economy. On the basis of Itou's opinion, Kitahara (1960) pointed out that the survival of SMEs was a result of the progress of social labor divisions in association and the diversification of production departments with the development of big businesses. Using these theories, Nakayama (1983) ascertained the existence of a wide range of SMEs as a form of economic concentration; the subcontracting system can be said to be a typical form of economic concentration.

¹ For recent surveys for SME research in Japan, see Mitsui (2009) and Watanabe (1997).

It is already well known that during the second oil crisis at the end of the 1970s, the Japanese economy achieved relatively high economic performance compared to other developed countries. This was due to the subcontractor system which had attracted worldwide attention. The discussion on the subcontractor system has influenced the argument for Lean Production and Supply Chain. Of course, the subcontractor system in Japan is not just the system of supplying components, it is built on the premise of high level of skills and know-how of SMEs which was represented by Asanuma's (1997) argument.

The focus of this paper is mainly on the period of rapid growth, based on the economic development of the Japanese economy after the Second World War, and how division of labor as a subcontractor system benefited the large enterprise. It aims to clarify the structure of the division of labor system. Based on these considerations, factors which affected sustainable economic activities will continue to be clarified in the future. Therefore, the author of this paper would like to respond to such issues based on the objective description of historical facts in this paper. The following aspects will be discussed:

- (1) A general view of the factors influencing the rapid growth of the Japanese economy after World War II and related observations;
- (2) To clarify that SMEs have been incorporated into the production system of large enterprises;
- (3) To take a general view of the changes of SMEs under production systems of large enterprise;
- (4) To consider SME workers as a factor supporting the production system of large enterprise.

The Economic Miracle After World War II and Small Businesses

In 1956, the Economic Planning Agency published a statement that said, "The post-war period is over", and summarized Japan's post-war economic development. This was announced because in 1955, Japan's Gross National Product exceeded that of pre-war Japan.

Japan's economy had lost most of its industrial production force as a result of World War II. In fact, the production of crude steel reached 8.63 million tons in 1943, its highest level ever recorded during the pre-war period. Due to the impact of air raids on the Japanese mainland, that level dropped to 560,000 tons in 1946, the year immediately after Japan's defeat. However, it rose to 9.4 million tons in 1955, which exceeded the pre-war level, which was characterized in the comments "The post-war period is over".

Taking this 1955 event as a starting point, Japan then achieved rapid economic growth, joining the group of the world's most developed countries by the early 1970s. The period from 1955 to the early 1970s is generally regarded as a period of High Economic Growth. In fact, during this time, the economic growth rate was recorded to be an average 10.6%, and real Gross National Production increased 4.3-fold. As a matter of course, during this time, Japan experienced changes in its economic climate, in particular in 1965, the Japanese economy suffered from the worst recession of the post-war period and some large companies went bankrupt. In general, the high economic growth period is divided into two periods: the first period of high economic growth and a second period of high economic growth, with the 1965 recession being considered an epochal point in time.

There are various opinions regarding the factors that enabled Japan to attain such high economic growth, referred to as the Economic Miracle. Let us consider the basic factors behind this.

First and foremost, it is necessary to point out American support in terms of politics and economics. One result of World War II was that the United States gained a central position in the capitalist camp. Along with the end of World War II, in order to dismantle Japan's militarism, the United States promoted democratization, including the dismantling of conglomerates (the dissolution of Zaibatsu) and Agrarian Reform (Land Reforms).

However, with the start of the Cold War, American policy was diverted and they began to focus on developing the Japanese economy and provided enormous assistance. American economic assistance ended in 1951; however, the Korean War, which broke out in 1950, also contributed greatly to the development of the Japanese economy.

Under these conditions, the huge amount of capital invested in the Japanese economy led to economic development. Most of this capital investment was directed towards the fields of automobiles, steel and electric machinery and advancing the heavy and chemical industrialization of the Japanese economy. When examining the contents of this capital investment, it can be seen that most was used for the introduction of the latest technology and equipment. Moreover, most of the introduced equipment and technologies came from the United States. From 1965, American multinational enterprises played an important role in expanding their businesses in Japan.

Exports expanded because of the special demands caused by the Korean War, and the introduction of technology by Japanese companies advanced in this occasion. This enormous capital investment has led to the development of the Japanese economy. Of course, the introduction of technology did not progress in a linear fashion. Nakamura (1979, p. 97) said the process of technological innovation after the Second World War could be categorized as follows: (1) period of iron, coal and hydropower from 1950 to 1954; (2) period of rapid development of the durable consumption sector from 1955 to 1961; (3) period of large scale up, introduction of new methods, new products from 1962 to recession during 1965/1966; and (4) period of huge, massive and labor-saving². Most of this capital investment was directed to fields such as automobiles, steel, electric machinery, etc., which had promoted the heavy and chemical industrialization of the Japanese economy. Looking at the content of capital investment, most was the introduction of technology and equipment from the United States. It was the American multinational corporation which had played an important role since that time.

According to Tsuruta (1981), competition among companies became intense due to the dismantling of the Zaibatsu after World War II, and because markets rapidly expanded due to rapid economic development, forming new industries one after another, the motivation to invest was high among large companies. Moreover, because targets were set for market shares, rather than profit ratios, there was rapid technological innovation.

It was the existence of enormous funding that supported the motivation for large companies to invest and led to this technological innovation. When we divided these funds into company's internal funds and external funds, many of them were external funds in Japan's case. Until the beginning of the high-growth period, demands for funds were mostly fulfilled by raising funds from the bank as a loan. In the second half of the high-growth period, as a result of high profits in large companies, the role of internal funds, such as funds due to depreciation, increased.

In this way, it can be said that Japan's post-war economic development was the result of advancements in technological innovations on the basis of financial assistance from the United States, loans from the bank, and the introduction of technology from abroad which established Japan's position in the world economy. Needless to say, the "high growth of post-war Japanese capitalism has not been achieved only by giant companies. On the contrary, without small businesses, especially their roles as subcontractors, it would have been impossible to achieve such high growth, which has drawn attention internationally" (Nomura, 1981, p. 126).

² According to Ueda (2004, p. 58), SMEs are said to be "a large amount of subcontractors after the period of high growth", "The subcontracting relationship was not formed smoothly as soon as it entered the period of rapid economic growth". In that sense, the period after 1962 is considered an important focus in this paper.

Table 1

Development of Manufacturers According to Number of Employees (1955-1967)

Employees	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
4-9	81,861	82,792	88,458	84,621	82,659	91,869	91,729	94,368	188,888	192,438	188,699	201,906	206,322
10-29	68,962	77,257	78,394	80,313	82,269	88,179	92,773	98,204	92,361	88,069	96,125	101,680	103,667
30-99	18,494	22,438	22,735	22,964	25,388	27,651	29,312	32,927	36,334	36,285	36,283	37,216	37,232
100-299	3470	4,367	4,488	4,400	5,102	5,660	6,534	7,543	8,216	8,524	8,548	8,941	8,989
300-999	938	1,087	1,081	1,133	1,299	1,460	1,807	2,060	2,264	2,319	2,336	2,406	2,463
1,000 and above	355	409	409	395	438	498	629	665	722	726	704	734	764
Total	174,080	188,350	195,565	193,826	197,155	215,317	222,784	235,767	328,785	328,361	332,695	352,883	359,437

Note. Source: Watanabe (1981, p. 172f). Statistics methods have changed since 1963.

Table 1 shows the trend of the number of companies in accordance with the number of their employees from 1955 to 1967. During the period of high economic growth, the number of companies which had 300 employees or more increased year on year, and at the same time, the number of small businesses with 299 employees or fewer also increased. In general, even the number of small businesses which had nine or fewer employees increased, although they were thought to have declined as the economy developed. Among them, the trend of family business employees was notable. From 1965, they showed “a 31.2% increase in three years” (Nakayama, 1972, p. 43). These small businesses with nine employees or fewer also increased in the period of economic stagnation in the 1970s and drew attention as a result of their economic vitality.

During the time of high economic growth, the use of small businesses as a means for expanding production and market shares was promoted, and the use of small businesses by large companies was promoted in the wake of the recession of 1965. Small businesses in Japan contributed to the development of its high economic growth, while being incorporated into the system of division of labor of large enterprises.

Capital Competition and Small Businesses

The establishment of a capitalist economy is based on the assumption of the concentration of wealth going to producers. The concentration of wealth to the producers promotes not only the trade of goods in the market, but also competition among manufacturers over the trading of products. Manufacturers pushed forward with price reductions in search of higher profits. Furthermore, manufacturers attempted to introduce new technology to reduce prices. The introduction of new technologies enabled reductions in production costs, therefore making it possible to lower prices. If manufacturers could not cope with this price reduction, they would be pushed out of the market. The introduction of new technologies and the expansion of production scale enabled reductions in production costs, and helped large enterprises to establish an advantage over their competitors. These are facts to be considered when focusing on price competition.

Due to free competition, production costs were lowered through the expansion of production scale and the introduction of new technology, which helped large companies to establish an advantage over the competition and eradicated small-scale manufacturers. However, the development of the capitalist economy also created a variety of additional production areas, including divisions in large production processes and new production departments. Moreover, because competition pushed forward unevenly, it created fields where some small manufacturers who were exceeded by their competition were able to survive, and those manufacturers that lost

ended up entering these new fields. In this way, the development of competition created large-scale enterprises and also new fields where surviving small businesses were able to stay active. Thus, along with economic development, small businesses were not just driven out; rather, they remained in a variety of areas and contributed to economic development.

With the development of the capitalist economy, small businesses which were less competitive were basically driven out. Economic development also promoted the social division of labor and created new fields for production, which enabled medium-sized enterprises to survive. Japan was no exception, and small businesses remain. However, unlike other developed countries, Japan's economy developed in a way that allowed small businesses to survive. In Japan, after World War II, under the United States' economic assistance, the introduction of new technology was facilitated especially in large companies. As enormous funds were required for such modernization, large companies took advantage of the production capacity of brilliant small businesses, instead of investing in their own new equipment. They promoted the use of small businesses to avoid the risks associated with investment.

In any case, small businesses were incorporated into the production system of large companies. However, due to the swift introduction of new technologies and the intensification of competition associated with it, small businesses incorporated into such production systems of large companies were required to cope with new technology and cost reductions due to the intensified competition. In fact, Toyota, in order to reduce the costs of their components, was able to get several brilliant small businesses to join an organization to gain cooperation with production, and gave them financial assistance and technological guidance (Iwao, 1961).

Moreover, Toyota and Nissan pushed forward with the reorganization of their subcontractors, along with the transition to an open economy. For example, Nissan drew up "the basic policy on the development of subcontractors" and sorted their subcontractors based on the quality of their delivered products and their capabilities for research and development. Subcontractors that did not satisfy the requirements of Nissan were excluded from transactions. In the case of Daihatsu, they selected several companies (to be their primary subcontractors) out of the 230 companies they were dealing with. After that, they only placed orders with those selected companies. The primary subcontractors were responsible for the quality management of the components delivered to them, and furthermore, they were responsible for the procurement of materials, the management of products and even the inspection of the products. In this way, a hierarchical structure of subcontractors was established.

Figure 1 shows the division of labor in Alps Electric's Furukawa Establishment in the late 1970s. Although the Furukawa Establishment was responsible for the design and procurement of raw materials, some processes concerned with the machining of components and preparation and assembly were entrusted to their subcontractors. Moreover, work that had been entrusted to Furukawa's primary subcontractor was further delegated to other subcontractors or even as side jobs for people working from home. In this way, small businesses were incorporated into the division of labor systems of large companies, and this supported the development of large companies.

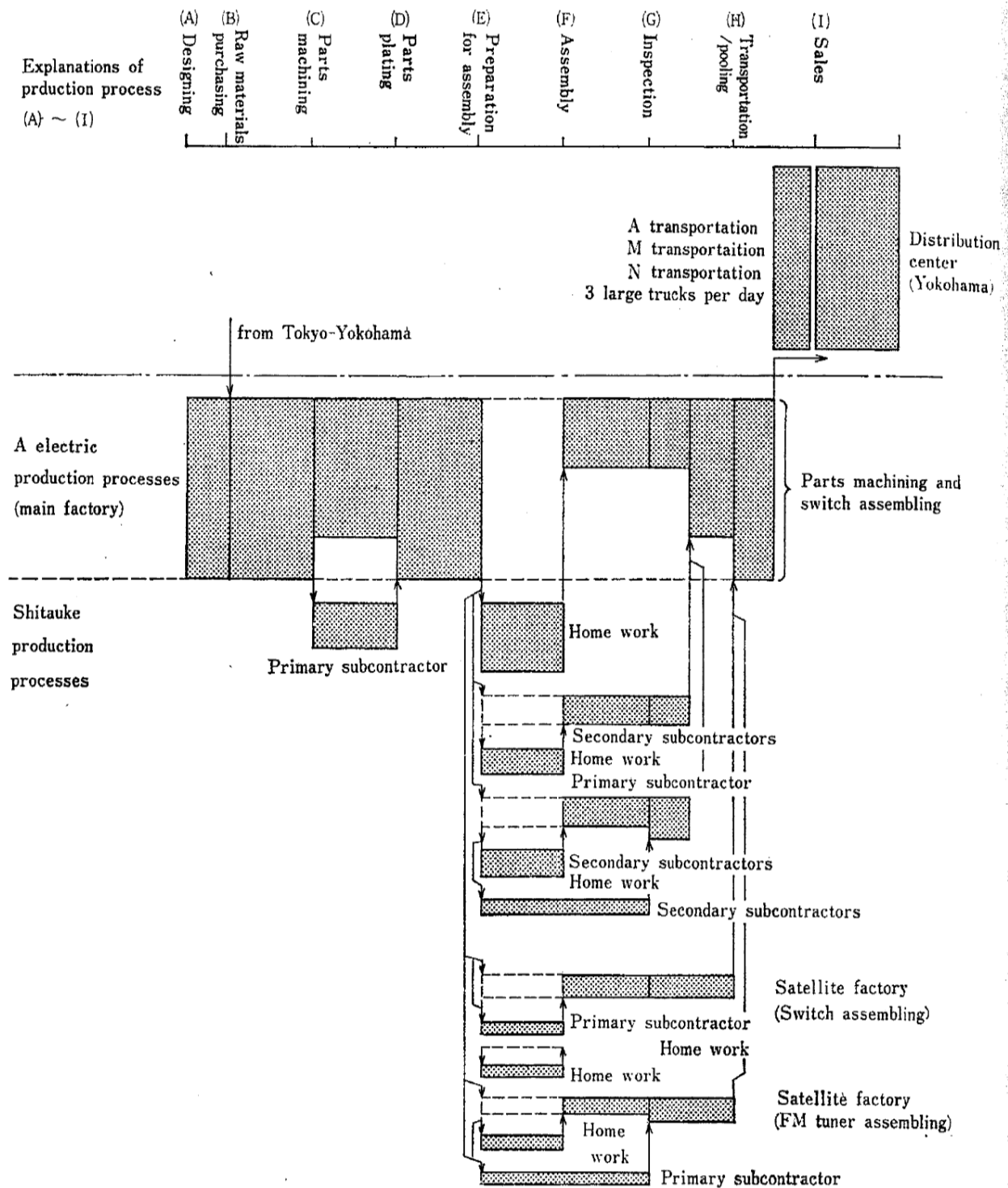


Figure 1. Division of Labor in Alps Electric's Furukawa Establishment. Source: Nagayama and Yamanaka (1988).

Modernization of Small Businesses

As we have discussed, the formation of a capitalist society and the development of free competition were accompanied by the growth of large enterprises and a shakeout of companies which were less competitive. However, due to the development of social division of labor accompanied through the consolidation of production forces, the formation of new areas of production, and the survival of fields which required traditional skills, small businesses were able to remain. In Japan, due to the rapid introduction of new technology after World War II, a demand for a large amount of funds was associated with it, and along with further intense competition among companies, large companies pushed forward with the use of small businesses.

Since competition among the companies was intensified in association with the progress of the post-war rapid economic growth and open economy, the selection of subcontractors began to be promoted by large companies. As a result, large companies terminated transactions with subcontractors that could not satisfy their demands and made deals with primary subcontractors. The primary subcontractors were responsible for managing their own secondary subcontractors with respect to production, quality, and delivery time. In this way, a hierarchical structure of subcontractors was developed.

While the use of small businesses was promoted by large companies, small businesses also pushed forward with the modernization of management, which complied with requests from large companies. During this process, the introduction of production equipment particularly became important. Immediately after the war, small businesses were able to cope with general business, but in accordance with the technical innovation of large companies, they were also required to introduce machinery. Most of the machinery installed in small businesses was secondhand. In fact, in the automobile and parts industries, 86.5% of the lathes used in small businesses were in used condition in 1955, and the percent was 85.3% even in 1957. Small businesses obtained machinery that was "already obsolete and inefficient" (Iwao, 1961, p. 165) in large companies, and then they made full use of it in order to respond to requests from their parent companies. In that sense, the skill sets of workers in small businesses mattered a lot. In fact, they often had technical discussions with large companies.

After World War II, although most of the machinery was secondhand, small businesses actively promoted the introduction of machinery which consequently required funds to be invested, even if it was for old machinery. In Japan, the demand for these funds was satisfied by borrowing money from banks, rather than raising it from the stock market. In particular, the majority of the capital needed by small businesses was supplemented by loans from banks. The method of borrowing by small businesses during the first half of the high economic growth period was as follows: operating capital was borrowed from commercial and regional banks in most cases, whereas in most cases, investment capital was borrowed from the Japan Finance Corporation for Small and Medium-sized Enterprises.

The Japan Finance Corporation for Small and Medium-sized Enterprises was a government-related financial institution established to satisfy the demand for long-term financing for capital investments for small businesses. In that sense, the survival of small businesses and the introduction of machinery equipment to them so as to develop the Japanese economy were supported by the policies of the government and by loans from financial institutions. Moreover, with regard to the lending interest rate, a big difference has been identified between SMEs and large enterprises. Table 2 shows the difference between the real lending interest rates of SMEs and large enterprises. The real lending interest rate for SMEs was 12.4%-16.4% while that for large enterprises was 9.3%-10.9%. In addition, the loan period for SMEs is shorter than that for large enterprises.

Table 2

Disparity of Real Lending Interest Rate Between Large Enterprises and SMEs

	1960	1961	1962	1963	1964	1965
Large enterprise	9.3	9.4	10.3	10.9	10.8	10.8
SMEs	16.4	12.4	14.5	12.8	15.2	13.7

Note. Source: Small and Medium Enterprise Agency (1966, p. 207).

As a result, even in SMEs, although there was a big gap between SMEs and large enterprises in terms of financing, the borrowing of SMEs from banks had increased. However, in order to receive financing from a bank, it is necessary to prove the objective financial situation and profitability to the bank and book keeping is the means to prove that. According to Shikita and Kanda (1960, p. 183), “enterprises which do not have book keeping at all” accounted for 50% and “enterprises which do not separate the book keeping of company sales and private households” accounted for 82%, and it can be said that the practice of book keeping was not widespread until the period of rapid growth. However, looking at the survey of the Small and Medium Enterprise Agency from 1957 (see Table 3), 60% of companies with 1-3 employees did not use book keeping, but 35% of the total number of SMEs had used double-entry book keeping, and for enterprises with more than 30 employees, more than 90% of companies have used double-entry book keeping (Small and Medium Enterprise Agency, 1957).

Table 3

Introduction of Bookkeeping by Company Size

	Total	1-3	4-9	10-19	20-29	30-49	50-99	100-199	200-299
Double entry bookkeeping	35%	10%	45%	71%	86%	92%	95.8%	98.4%	99.4%
Single entry bookkeeping	30%	30%	35%	24%	12.5%	7.4%	4%	1.4%	0.6%
Not available	35%	60%	20%	5%	1.5%	0.6%	0.2%	0.1%	0%

Note. Source: Small and Medium Enterprise Agency (1957, p. 169).

In this way, the introduction of book keeping progressed in many SMEs during the process of rapid growth, enabling them to undertake corporate activities and cost accounting was introduced as a result. According to a survey conducted by the Tokyo Metropolitan Government in 1958, 265 companies replied to the questionnaires which were distributed to 1,000 companies, of which 148 companies had used cost accounting. “There were only 27 companies that have done cost accounting seriously” (Shikita & Kanda, 1960, p. 193). Cost accounting is an important method to reduce costs in intense competition, but in reality it is impossible for SMEs to do cost accounting. Cost accounting is still being done only when “the parent company and buyers request cost information” (Shikita & Kanda, 1960, p. 200). In this way, the parent enterprises can understand the activities of the subcontractor in a countable manner.

Until the early years of rapid growth, SMEs had acquired obsolete and inefficient machines (Iwao, 1961, p. 165) from large enterprises by making full use of them to respond to the demands of parent companies. During the process of rapid growth, many SMEs still relied on the use of secondhand machines, but in the field such as press, most of the companies had introduced new machines. However, in other fields, it was impossible to introduce sufficient machinery and equipment due to lack of funds. Whether trying to introduce new machinery and equipment or not, the quality of components produced by SMEs would be questioned under the division of labor system from parent companies.

In the SMEs with fewer staff, “the skilled worker familiar with each process will be responsible for the final process and judge the product” (Miyagawa, 1960, p. 55). Moreover, guidance is given to SMEs from parent companies, concerning the quality of products to be delivered. In this way, the subcontracting system in Japan is not merely a division of labor between parent companies and subcontractors, but the activities of subcontractors are controlled by the management of parent companies.

Small Businesses and Workers

As we have discussed, the economic development of Japan after the Second World War was mainly advanced by the introduction and establishment of mass production system in large enterprises, with the economic assistance and financial aid of financial institutions from the United States. In “the process of rapid growth, it brings along with it the rapid expansion of the market and the multifaceted development of social division of labor” (Watanabe, 1972, p. 129), it led to the survival and growth of SMEs. However, the characteristic during the Japan’s economic growth was that many SMEs have been incorporated into the production system of large enterprises. In fact, during the period of rapid growth, many SMEs were established as the subcontractors of parent companies. Therefore, many SMEs have contributed to the development of large enterprises.

Even though SMEs were incorporated into the production system of large enterprises, the management of SMEs was not stable (see Table 4). SMEs have always been influenced by the entry of large enterprises into SME’s fields, competition with large enterprises such as devaluation of contract price, and reorganization of distribution and production systems. In fact, even during the process of rapid growth, many SMEs were culled. In 1967, many SMEs went bankrupt due to the influence of a tight-money policy. Bankruptcy was a social problem at that time and under these circumstances, the workers in the field had supported the management of SMEs. They used machines to meet the demand of large enterprise and maintain an efficient production system. Indeed, workers in SMEs had utilized lathes by making use of jigs and processed various machines.

After the Second World War, the working population in Japan increased by about 8 million, due to the withdrawal of the troops and also repatriation from overseas. The agricultural industry had taken up enormous numbers of workers. It led to a huge surplus of labor in the field of agriculture. However, along with the development of the Japanese economy, the excessive labor force was taken up by secondary and tertiary industries. On the other hand, the agricultural population decreased. Indeed, the labor force in agriculture decreased by 1.35 million during the period of 1950-1955, while there were increases in secondary and tertiary industries. Yet, the increase in the number of employees was not in large enterprises but in SMEs.

Table 4

Development of Sales Profit Ratio (%)

	1961	1962	1963	1964	1965	1966	1967	1968	1969
Big business	3.8	3.4	3.6	3.1	2.7	3.2	3.6	3.6	3.8
SMEs	2.4	2.1	2.0	1.9	1.9	1.9	2.2	2.3	2.8

Note. Source: Small and Medium Enterprise Agency (1965, p. 20).

In addition, along with the beginning of rapid growth and progress in technological innovation, the labor demand of large enterprises was directed towards graduates from high schools and junior high schools who were able to adapt to new technologies. Therefore, SMEs, which originally depended on the low wages of young workers, suffered from labor shortage due to the rapid growth. The labor demand shifted to the aged workers who had moved from other enterprises or female workers who generally received lower wages when compared with male workers.

As previously mentioned, most machinery installed in SMEs were secondhand machinery. Workers who moved from other enterprises to SMEs had responded to requests from parent companies by making full use of these machines. It can be said that the existence of SMEs has been supported by the high skill level of the workers. By examining the following case study, it is possible to ascertain how those workers acquired the necessary skills.

Kiyoshi Ikeda is a manager who runs a small processing machinery company in Ota, Tokyo. His factory is well-known in terms of technology which had been taken up by *the Financial Times* from the United States. In fact, a large enterprise placed an order with a Taiwanese company in order to lower the cost, but the Taiwanese company could not meet the required standards of quality, so the client had re-ordered at Kiyoshi Ikeda's factory to ensure a higher level of quality.

K. Ikeda worked at the National Railways after graduating from school, but he was discharged during the Red Purge and was employed by a subcontractor in Tokyo. In this company, he learned the fundamental skills on the milling machine and lathe. After quitting this company, he worked for more than 10 enterprises using various machines. After that, he worked as a dispatched worker under subcontract at a shipbuilding company's subcontractor and he learnt to use a new type of machine at that company. However, as the shipbuilding industry was experiencing a recession, he went to another subcontractor to gain knowledge regarding manufacturing and assembling machines. After that, in order to earn a living, he purchased a lathe and set up a factory in Tokyo. By accumulating experience in various companies in this way, the workers of SMEs have become much more skillful.

Ikeda's case can be said to be a typical case of "founding model" which is clarified from the survey of the machinery industry done by Watanabe in the Johnan and Johtou regions (South and East part) of Tokyo. According to Watanabe (1981), during the rapid growth period, employees working in SMEs often engaged in independent work and started up new businesses by undertaking work originally done by subcontractors and acquaintances of companies where they were working. In the case of Ikeda, not only were the employees of SMEs independent, they had also gained different skill sets while experiencing various kinds of work with different companies. Then, based on the research of the Ohara Institute for Social Research, let us look at the situation of the labor market in the rapid growth period.

Based on the research by the Ohara Institute for Social Research, the Japanese labor market is like a Dual Economy which is divided into a large enterprise's internal labor market and an SME's mobile labor market. Regarding the recruitment of fresh graduates, both large enterprises and SMEs approached schools and employment security offices. However, as labor demand increases with rapid growth, recruitment of college graduates was concentrated in large enterprises. As a result, labor demand for SMEs, especially small businesses, mainly relied on mid-career recruitment.

However, contracted workers were seen not only in large enterprise but also in SMEs, but when looking at the re-employment position of the contracted workers, many of them were in SMEs. According to a survey conducted by the Ohara Institute for Social Research, the number of employees in SMEs who resigned and were given an offer at a large enterprise was about 10% of the total, whereas those who received an offer in SME was over 70% (Ohara Institute for Social Research, 1966, p. 29). In this way, it can be said that in SMEs, there were many job-changes of employees among SMEs. Moreover, in SMEs, there are 50% or more workers who had "worked in a position which is the same as before entering the company" (Ohara Institute for Social Research, 1960, p. 85).

As seen in the case of Ikeda, SMEs' workers have gained skills through various kinds of work in the same field in SMEs and from large enterprises. Based on these skills, they were able to meet various requests from parent companies. In that sense, the development of the Japanese economy has been supported by the high skill level of SME workers, and it can be said that these skills have been formed through actual work experience in many companies. However, it is necessary to note that at that time, "instability of management and poor working conditions had promoted the labor migration" (Ohara Institute for Social Research, 1960, p. 95).

Figure 2 shows the monthly earnings of workers in 1965 by company size, age and gender. In general, the wage in Japan is based on the annual salary increase system so the correlation with age becomes stronger. However, according to the figure, in the case of males in their 20s, the earnings are more or less the same regardless of company size. Consequently, the gap of earnings widens from late 30s for males. SMEs' labor demand was shifted to from new graduates to middle-aged because wages of those workers are relatively lower than those of large enterprises. Therefore, SMEs which are less competitive have depended on middle-aged workers with low wages to maintain management. On the other hand, monthly earnings of female workers do not increase with age regardless of company size and it is generally lower than that of males.

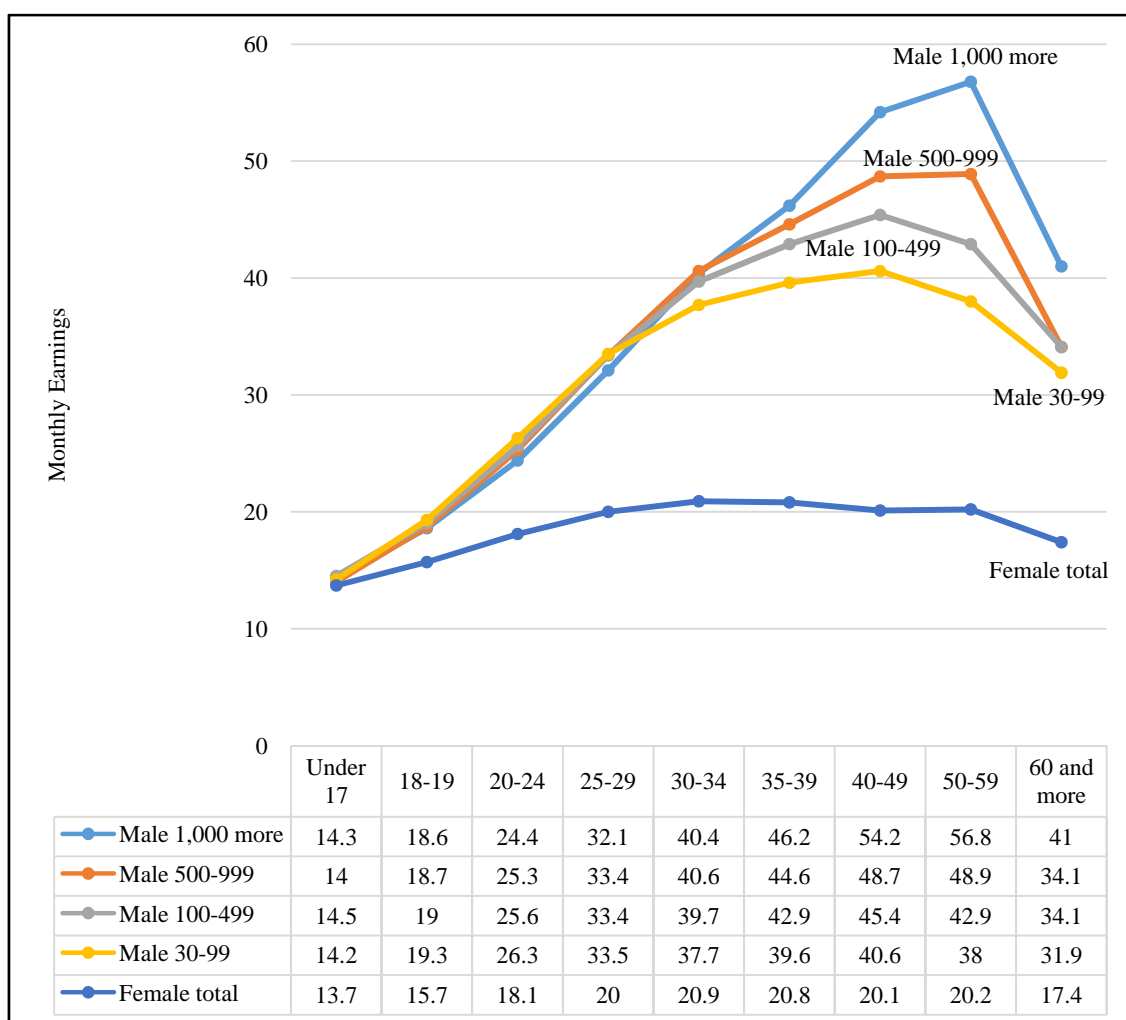


Figure 2. Monthly earnings based on company size and age of employees in 1965.

Regarding the prescribed working hours, there is not much difference between SMEs and large enterprises. Thus, as the working hours of SMEs are generally long, the relative wage is considered to be even lower. Due to the low wage and working conditions of SMEs, employees will then establish new companies independently to raise their standard of living.

However, the income of small enterprise's entrepreneurs is not as high as we expect and their income is said to be the same as that of workers. Although many of the family employees were employed by other companies before, when they work in small enterprise which is their family business, they are often unpaid and work with the entrepreneurs to maintain the livelihoods.

Nevertheless, the income of small enterprise's boss is not necessarily as high as we expect, and their income is said to be the same as that of workers. Moreover, the low income of the boss is linked with the instability of management. Attention should be paid to the trend of family employees. The number of family employees has increased sharply since 1965 and increased by 31% in the three years after 1965 (Nakayama, 1972, p. 43). Among the increase, "Trader Lady" should be focused. Though many trader ladies were employed by other companies before, they were often unpaid in small enterprises to work with the boss to maintain their livelihoods. In fact, in the survey conducted in 1982, over 40% of trader ladies worked unpaid, and depending on the type of industry, sometimes they are required to work for a long time in addition to the housework (Watanabe, 1983). The instability of small enterprises' management can be said to be supported by family labor.

Conclusions

As introduced in the beginning of this paper, in recent years, television dramas which tell stories about SMEs have become popular in Japan. "Rikuo" broadcasted in 2017 is a story about traditional "Tabi" (Japanese socks) manufacturers entering the manufacturing of running shoes, "Downtown Rocket" broadcasted in 2015 is about an SME which supplies components for large enterprise to develop rockets. These two television dramas corresponded to independent form and subordinate form that Komiyama categorized in order to elucidate the facts of SMEs.

According to Komiyama (1941, p. 7), an independent form is an SME that "completes a production process independently, carries out machine production, market production, capitalist production" like the "Tabi" (Japanese socks) manufacturer, while the subordinate form is just like the subcontracting system in "Downtown Rocket". As we have discussed, SMEs have been eliminated due to competition with large enterprises. However, SMEs still remain in areas with poor efficiency for large enterprise and new industrial fields. SMEs that have survived have been supplying components to large enterprises. Similar systems can also be seen in Western countries. Whether SMEs are in an independent form or a subordinate form, although it can be found in many other countries, the characteristics of Japan can be found in subordinate form as symbolized by the Lean Production argument. The objective of this paper was to clarify the formation of subcontracting division of labor system and its characteristics.

As we have already discussed, after the Second World War, the Japanese economy underwent economic recovery under assistance from the United States, but it was the introduction of new technology which drove economic development in Japan. However, large enterprises which could not respond to technological innovation alone due to increased demand utilized the production capacity of SMEs. In addition to the expansion of such subcontracting transactions, in order to rationalize production, as a selection of trade companies, parent companies had intervened in the production of SMEs. In this way, the hierarchical structure of subcontractors was formed. It can be said that the sub-contractual division of the labor system in Japan is a product of rapid growth.

Of course, even if an SME was incorporated into the division of labor of large enterprises, management of SMEs was not stable. Under the subcontracting system, the workers of SMEs have responded to the demands on quality management and cost reduction from parent companies. Though SMEs adopted new machinery and equipment at the time of rapid growth, most of the machines introduced to SMEs were secondhand. It was the older workers of the SME who utilized those used machines and responded to the requests of large enterprises. They were able to acquire those high levels of skills while experiencing a variety work requiring skill such as lathes and milling and making ingenuity and ingenuity in doing such work in different companies. However, as represented by micro enterprises, their wages are low and working conditions are poor. It can be said that they were placed in a very unstable working environment.

Japan's SMEs supported the production of large enterprises as a subcontractor. What made this contribution possible was the skills of managers and workers of SMEs. They acquired the foundation of technology at the factory and then improved the skills by doing various kinds of work. However, since the collapse of the bubble economy in the early 1990s, the number of SMEs had decreased due to recession and the shortage of successors. It also means a dismantling of a high level of skills. Under these circumstances, the Japanese government has made training of skilled workers an important issue. However, is it possible to create a high level of skills based on experiences with just education and training?

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