

CIRJE-F-275

**The Role of Tradition in Japan's Industrialization:
A Perspective of "Indigenous Development"**

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April 2004

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Abstract

This paper explores Japan's industrialization from the perspective of "indigenous development", focusing on what may be identified as "traditional" or "indigenous" factors. First, we describe the typical indigenous development process by looking at a case study of one rural weaving industry. After that, we investigate the functions of various institutions supporting "indigenous development" in modern Japan. Through these, we conclude that the peculiar logic functioning on the supply side of the developmental trajectory was the key to understand the existence of "indigenous development" in Japan's industrialization process.

The existence of the household economy practicing a "rational" labour allocation strategy among household members within the framework of the traditional institution of the *ie* regulated behavior on the labour side. The measures and institutions run by the central and local governments supported the organization and market adaptation on the management side. Regional society also functioned to stabilize the relation between labour and management. All these factors worked to construct the system. Since each of the factors, including the intensity of labour inputs with relative low wages within peasant and small business households, and the benefits from a division of labour generated by this style of organization, contributed to competitiveness in the market, this system could have functioned as the basis of indigenous development.

The Role of Tradition in Japan's Industrialization: A Perspective of "Indigenous Development"*

TANIMOTO Masayuki

1. Statement of the problem

This volume explores Japan's industrialization from the perspective of "indigenous development", focusing on what may be identified as "traditional" or "indigenous" factors. The papers collected in this volume tackle the issue of industrialization from the perspective of industrial history. These papers, however, do not deal directly with the industrial sectors that have been commonly identified as the driving force of industrialization or the Industrial Revolution such as cotton spinning, railroads, and the iron and steel industries. Rather these papers argue that "traditional" or "indigenous" production systems also played a significant role in the industrialization of Japan.

Certainly, it cannot be denied that technology transfer from the industrialized western countries played a major role in Japan's early industrialization process. Technology transfer included the transplanting of factory-based production systems. For the Meiji government, which played a major role in directing Japan's early industrialization, importing the workshop equipped with modern machinery, i.e. the "factory system of organization," was a major part of its policy directed toward "catching up with and overtaking" western industrialized nations. The Meiji government actively promoted a variety of industrial sectors in the early 1870s. Government efforts focused not only on defense-related industries such as munitions and shipbuilding, but also on industries designed to produce consumer goods and inputs for both the domestic and export markets, including such industries as cotton spinning, silk-reeling, cement, glass and beer. These governmental-established factories were equipped with machinery imported from western countries and employed foreign engineers and skilled workers at high salaries to instruct Japanese workers in the manufacturing technologies and techniques necessary for the most up-to-date factory production.

During the 1880s, the Meiji government faced serious budget deficits and was forced to sell many of these factories to the private sector. But these ex-government factories eventually developed into major business operations, as exemplified by Mitsubishi Shipbuilding in Nagasaki and Kawasaki Shipbuilding in Hyōgo. Many of these factories became core units of what later became known as the "zaibatsu" group of capitalists. The

* This paper is a draft for introductory chapter of TANIMOTO Masayuki with Osamu SAITŌ eds. *The Role of Tradition in Japan's Industrialization* (Oxford, forthcoming).

factories were acquired at quite favorable terms by Japan's leading capitalist entrepreneurs since the purchase prices were considerably below what would have been the start up costs if one invested from scratch. The only early factories that remained under government control were munitions factories, which preserved their official status because of military considerations. Under a similar scheme, what was to become Japan's largest steel mill, the Yahata Steel Mill, was launched in the early twentieth century as a government operation. With the initial risk assumed by the government, these industries exemplified a typical form of industrialization based on the transfer of technology and production systems from more advanced industrialized countries.

A similar pattern can be found in the mechanized cotton spinning industry, although the initiative was taken by private entrepreneurs. Compared with the above-mentioned governmental cotton-spinning factories equipped with only one British spinning machine with the capacity of 2,000 spindles, one of the pioneering private cotton spinning companies – Osaka Spinning Company (Osaka Bōseki Kaisha) – started its operation in 1883 with more than 10,000 spindles, and became the first commercially successful cotton spinning company in Japan. During the late 1880s and 1890s, many more cotton spinning companies with tens of thousands of spindles were established as a great boom of investment in cotton spinning swept the nation. As a result, these companies drove English and Indian imported yarn out of the domestic market, and started to export to foreign markets, primarily Korea and China, as early as the late 1890s. Development of these cotton-spinning companies seemed to represent a major break with the indigenous industrialization process, since Japanese domestic textile production in the 1870s had made use of hand-spun cotton yarn produced by peasant households as a sideline industry.

There is still a question, however, as to whether the story of Japanese industrialization can be adequately covered by a focus only on technology transfer and the development of the modern factory system. One way to approach this question is to consider the relative contribution of the modern industrial sector to overall Japanese production. Since it is difficult to estimate the relative weight of the modern sector in value-added terms, we will use the contribution to employment as a way to approach this problem. The first national census was held in 1920, thirty years after the boom in the establishment of modern cotton spinning mills. Table 1 shows the proportion of the working population employed in different production units at the time of this census. The total working population engaged in manufacturing sectors was approximately 4,565,000. The breakdown of the total was 3,168,000 employed as workers, 236,000 as salaried workers, and 1,162,000 as “employers”. *Factory Statistics* in 1920, using a definition of “factory” as a workshop employing more than 5 workers, estimated that 1,647,000 people were working as “factory” workers. Therefore, 1,520,000 workers (3,168,000-1,647,000) were employed in workshops which are not usually regarded as factories. Adding to this, the greater part of those classified as

“employers” should be considered as “self-employed workers” working in non-factory workshops, since “The statistical charts of factories” suggests that there were only 45,806 “factories”. Even assuming that all salaried workers were employed in units that can be classified as “factories”, 62.9% of the total working population engaged in the manufacturing sector was working in non-factory workshops. The number of workers in the factories that employed more than ten employees was further limited.

How do these numbers compare with other industrializing nations? According to Kinghorn and Nye, the proportion of workers in factory units that employed less than 5 workers was 37% in France and 33% in the United States around 1910¹ (Kinghorn and Nye 1996, pp.106). France is usually regarded as one of the industrialized nations in which small-scale production played a major role (O’Brien and Keyder 1978). As we can see from these statistics, the proportion of small workshop workers in Japan was much higher than that of France. From this we can see that the western style factory system played a comparatively limited role in the process of Japan’s industrialization.

This evidence suggests that we need to look more closely at the role of small scale and indigenous industry in Japan’s industrialization. Recent research on Japan’s pre-modern (Tokugawa-era) economic history has shown that economic development had already started before the beginning of technology transfer from the west. Studies of price history have identified the long term, downward trend in price levels in the eighteenth century, and have shown that, with the re-coinage of Tokugawa government, this downward trend was reversed, with an upward trend in prices beginning in the late 1820s and continuing to the end of Tokugawa period. According to these studies, the re-coinage marked the beginning of sustainable economic development, initiated under the conditions of inflation. Another study has claimed that there was continued economic growth, defined as the continuous increase in output, from the end of eighteenth century to the middle of nineteenth century, based on an examination of estimated real money balances during the period. These evaluations have argued that there was macro-economic development in the late Tokugawa period (Hayami, A., Saitō and Toby, 2004).

Numerous micro historical researches have supported these views. Thomas C. Smith’s books (Smith1959, 1988), well known in the English reading world, are among the representative studies on these issues. Not a few Japanese scholars also have eagerly pointed to the evidence of industrial development – the development of commercial agriculture and non-agricultural production– in the late Tokugawa period². Table 2, based on the earliest

¹ The numbers are calculated by combining census date and industrial statistics. These were the earliest date available in western industrialized countries.

² Such research interests were originated in the controversy of “manufacture” in the early 1930s. The controversy speculated over the historical conditions in which Japan, unlike India and China, could be established as a nation state and achieved a capitalistic development in

production statistics on a national level compiled by the Meiji government - "Fuken Bussan-hyō (Table of industrial products by prefecture)"-, illustrates the achievement of these developments. It should be pointed out that the data in "Fuken Bussan-hyō" were presented not in value-added terms, but in terms of production turnout. Consequently, they may overestimate the presence of industrial products versus agricultural products, as the values of industrial products included many agricultural goods that were used as inputs. Given this bias toward industrial products, it should still be recognized that Table 2 suggests that "industrial" production occupied a significantly large portion of the total production activities, when compared to the number of people engaged in the industrial production shown in the demographic statistics by occupation (table2-□). As a matter of fact, a regional historical archive of the Bōchō district in 1830s, a relatively economically advanced region in western Japan, indicates that the ratio of non-agricultural income reached more than 50 % in not a few farming villages, calculated from the data in value-added terms (Smith 1988, Nishikawa 1987).

How should we understand these seemingly contradictory facts, i.e. industrial development in the Tokugawa era and the limited use of the western style factory system in modern Japan? As we have already seen, the modern factories developed in Japan had their origins in the direct transplantation of western technologies and production know-how. This means that there does not seem to be any direct line of development from the industrial development prior to the Meiji Restoration and the foundation of the modern factory system. The orthodox view, based on general theories of the development of capitalism, has assumed that the transfer of the modern factory system led to the collapse of indigenous systems of production. A typical argument along this line can be seen in the historical research on the cotton weaving industry. The reason why the development of weaving industries in the late Tokugawa era resulted mainly in a putting-out system, not in the factory system, was attributed to the severe competition caused by the influx of cheap British cotton goods after the opening of the ports in 1859 (Takamura1971, Ishii1985). Because these theories regard the putting-out system as a production form preparing the transition to the factory system, retaining the putting-out system meant the failure of this transition. The application of proto-industrialization theory to the Japanese case shares the same frame with this if the lack

the late-nineteenth century, when many of other Asian states and regions were apt to be incorporated into the empires as colonies. The debate was initiated by the writing of Hattori Shiso (Hattori 1933). In the late Edo period, argued Hattori, Japan had already reached to a point of what Marx termed the period of "manufacture," and this provided the conditions for Japan's full-fledged capitalization. Up until around 1960s when there were active debates on the "manufacture" controversy, many of the "Marxist" economic historians produced the papers that claimed the relatively high stage of economic development in the late Edo period. From this point of view, it is not a balanced view to claim that the "Marxist" perspective sees Japanese economy under the Shogunate system solely as a stagnated period (Hanley and Yamamura1977, Chapter 1 and 2).

of factory system in the process of Japan's industrialization was considered as de-industrialization or pastoralization.

A comparison of the predictions of what we would expect to happen, based on theory, and the actual experiences of the Japanese economy have raised a number of questions about how to interpret Japan's early industrialization. One of the first things we note is that the weaving industry revived and increased its production swiftly after the opening of the ports, as weavers began to make use of imported cotton yarn (Tanimoto 1992). Moreover, when we also consider the expansion of export markets, there is no question that the opening of the ports benefited the Japanese economy, at least at the macro level (Huber 1971). In fact, the development of raw silk export played a significant role to support the development of the weaving industry under the condition of influx of imported textile goods through the positive effect for the extension of domestic textile market (Saitō and Tanimoto 1989/2004).

A second set of concerns is related to general theories of proto-industrialization, which offer explanations on the links between proto-industrial development and demographic growth. The growth mechanism of proto-industry based on Franklin Mendel's formulation based on a case study of Flanders (Mendels 1972), suggested that proto-industrialization usually led to earlier marriage and an increase in the population. But historical demographic studies of the Tokugawa era have not found this in rural villages during the Tokugawa era. Furthermore, it has been shown that while rural industries did not accelerate population growth, grain-cropping agriculture did contribute to population growth (Saitō 1983).

When we put all these facts together—growth in the rural weaving industry after the opening of ports, the stimulus from new export markets for the products of “traditional” industries, and the fact that proto-industry did not produce the same effects in Japan that it had in Europe—it becomes clear that we must find new explanations for Japanese modern industrial growth that incorporate the small scale industrial sector. It is not enough to just look at the heritage of proto-industrialization as the foundation of the factory system. It is necessary to place the non-factory production system on the extended line of economic development linking developments in the late Tokugawa and the early Meiji era.

The concept of “balanced growth” proposed by Nakamura Takafusa was the first attempt to try to incorporate these perspectives (Nakamura 1971/1983). Nakamura divided the industries developed in modern Japan into two types, “modern industry” and “indigenous industry”. This recognition overlapped the dichotomy of the production system described above. Nakamura's work emphasized the large proportion of the workers engaged in the indigenous industries and their significant role in producing the relatively high growth rate of Japanese GDP during the late 19th and the early 20th century. As his work concentrated mostly on the analysis of the quantitative macro level data, the process of industrial development itself was not fully investigated. However, inspired by his work, various monographs exploring in detail individual “indigenous industries” have been published since

the 1980s. These monographs showed that various “indigenous industries” had continued to develop even in the late 19th and early 20th century. There has been much discussion of the roles of government policies and institutions in the development of these industries. The essays included in this volume grow out of this richly developed research tradition. Building on this research, this book brings together studies with a rich empirical base, focusing on small-scale industry as a central feature of Japan’s industrialization process. As this pattern was based on “traditional” or “indigenous” factors, we call this pattern of development “indigenous development”. This indigenous development pattern co-existed along side the development of the transplanted western style factory system, and it was this combination which was characteristic of the modern Japanese economy.

This theoretical framework draws on a comparative historical perspective. On one hand, it aims to compare the history of industrial development in Japan with that of other developing countries. The fact that the direct importation and use of the western factory system partly drove the industrialization of Japan may suggest the existence of a dual economy divided between “modern” and “traditional” sectors, similar to those that can be seen in contemporary developing countries. It should, however, be noted that the “duality” emphasized in this volume does not refer to the conventional theoretical framework that sees the division between the modern industrial sector and the traditional agricultural or so-called informal sectors³ (Boeke1953, Lewis 1954 etc.), but rather to duality existing between the “implanted” sectors and other “indigenous” sectors within the nonagricultural sectors (or formal sector that is separate from the concept of informal sector). The focal point of these papers therefore lies in the development of non-agricultural, industrial sectors in response to the market economy. Though small in scale, productive activities in these sectors were maintained as business operations, and should not be identified simply as an informal sector. The exploration of the industrialization process and its internal logic in Japan should also shed new light on our understanding of the industrialization process in other non-Western, developing countries in which both the dual economy and the formation of informal sectors have been observed.

On the other hand, the recent re-evaluation of Britain’s Industrial Revolution has argued that the extent of the factory system was rather limited even in the British industrialization process (Crafts1985). This re-evaluation suggests that a quantitative analysis of macro level data is not enough to argue for special characteristics of the industrialization process. That is, a simplistic comparison of the industrialization processes solely focused on the emergence of the factory system has gradually lost its ground. At the same time, there is another line of research that focuses on the regional industrialization process based on small-scale business in Continental Europe. These studies examine the industrialization process of small-scale

³ Non agricultural works done in self sufficient purpose are included here as well.

business in comparison to American or British “mass production” systems, and look at the case studies of Japanese industrial development as exemplifiers of the former style of development (Piore and Sabel 1984). In these studies, the existence of production systems other than “mass production” is seen as characteristic of the Japanese industrialization process. Since it is our intention not only to note the similarities of the production forms but also to deepen the comparison to the patterns of industrialization, it is necessary to investigate the inner logic and conditions for industrial development based on the consideration of specific industries on a micro level. With such diverse views on what is supposed to be “advanced” industrialization process in Europe and the United States, in addition to the comparisons with attention to the specific characteristics of developing stages, the theoretical perspective of industrial history needs to construct a framework that deals with typological differences of industrialization processes.

In this introductory essay I will describe the typical indigenous development process by looking at a case study of one rural weaving industry. The third section of this essay will discuss the institutions supporting development, and the last section tries to place the implications of the argument in a far broader perspective.

□ Production organization of small businesses: from a case study of the weaving industry

British cotton industrial districts around Manchester were characterized by a concentration of mechanized factories not only in cotton spinning, but also in other branches of the textile industries such as weaving and processing. As we have already noted, a similar production pattern can be observed in the cotton *spinning* industry in Japan. But, when it comes to the cotton *weaving* industry, producers were divided into two different categories. One category included the weaving mills attached to cotton spinning companies. Such companies were equipped with British power looms and employed many young female workers, just as in the cotton spinning mills. This type represents the factory system directly transplanted from western countries. It should, however, be noted that this production system produced, at maximum, only about one third of the total cotton fabric in 1914. The rest of the cotton weaving was carried out in regional industrial districts (“sanchi”) where clothiers and other manufacturers were worked together in areas characterized by a highly concentrated presence of merchants dealing in products and materials (Abe1989: pp.24). Table 3 shows the number of workers in the weaving industry in 1905. The number of workers in “factories” – production units employing more than 10 employees – took up only 12% of the total number of workers in the whole industry. The table also shows that 30% of the workers were employed at workshops with less than 10 workers, and that 50% of the workers were working in workshops organized under the putting-out system. On top of this, the average number of workers at these workshops was less than two. As similar industrial structures

could also be found in prefectures such as Osaka and Aichi in which the cotton spinning companies concentrated their factories, it may therefore be assumed that many of cotton cloth producers in the regional industrial districts operated in small-sized workshops. Indeed, even in 1914, the power loom ratio (the number of power looms divided by the total number of looms) remained as low as 16% (Abe1989, pp.46). Since we can identify continuity in both technology and production systems, the weaving industry can be seen as one of the typical industries that express the pattern of indigenous development. A case study will be introduced to explore the logic of this pattern of industrial development in the following sections⁴

Adoption of the putting-out system

As was indicated in table 3, the largest category among workers of the weaving industry in the early 20th century was “wage-weavers”. “Wage-weavers” were workers organized by the clothiers through such means as supply of raw materials. Putting-out seems to have been the major production system in the weaving industry during this period.

The putting-out system is often seen as the classical form for organization of production in the age of proto-industrialization (Mendels 1972). Indeed, it could be found in some form in the cotton weaving districts in the late Tokugawa period. Recent studies, however, show that the putting-out system came to play a dominant role in Japan’s weaving industry only after the 1880s (Abe 1999 surveys such studies). The primary form for organization of production in the weaving district in Iruma, Saitama prefecture, which we will take up in the following section, into the 1870s was the “kaufsystem”. In this system, rural factors buy up the fabrics produced by peasants’ as sideline work, and sell them to local wholesalers at the local distributing center for fabrics. From the 1880s, some of the factors were transformed into putters-out (clothiers). These clothiers started to buy cotton yarn – imported yarn at the beginning, and domestic, machine-made yarns later – from the cotton yarn merchants in the distributing center, then had the yarn dyed and warped, and supplied the warped yarn to wage-weavers.

This transformation from the kaufsystem to putting-out was triggered by competition in the market. The market shrank through the recession in the early 1880s (the so-called Matsukata deflation), intensifying competition among the weaving districts. Although the market began to expand again in the late 1880s, the fierce competition continued with new districts entering the market. At the same time, the economic boom during the period increased income levels so that more and more consumers were able to exercise their more sophisticated demand for products (Tamura 2001). Since cost reduction through the

⁴ The historical facts proposed in this section are extracted from the several chapters in Tanimoto (1998).

introduction of power looms was not a feasible choice because imported power looms were too expensive, it became vital for clothiers to enhance their competitive edge through the improvement of the quality of their products. Under such circumstances, the putting-out system based on the supply of yarn served to improve the quality through the use of standardized materials. Adding to that, the clothier was able to provide the wage-weavers with detailed market information such as texture and design of the fabric through the supply of dyed, warped yarn, which played a pivotal role in the evaluation of product quality. The introduction and implementation of the putting-out system should then be seen as an adaptation strategy to emerging market conditions.

Wage-weavers and the peasant household

How did the clothier relate to the wage-weaver in the putting-out system? For Stephen Marglin, who argued that the emergence of the factory system represented a form of organization based on control of labourers who had been “deskilled” as a result of changes in the division of labour, the putting-out system was based on a similar principle: the weaver who had been the direct producer was organized and controlled by the clothier virtually as a labourer. Indeed, the producers –the wage-weavers– in Iruma district organized under the putting-out system were not autonomous workers who were able to operate independently because of their high skills. However, this does not mean that the clothier could freely mobilize the wage-weavers according to his needs. Figure 1, which shows the quantity and wage of the wage-weavers subcontracted by a reputed clothier of the Takizawa family in Iruma, suggests that there were substantial seasonal fluctuations in the volume of output and the wages provided by the clothier. While the subcontracted volume was drastically reduced during the period from May to July, it increased during the periods from March to April and from September to January. On the other hand, the wages paid at piece rates decreased in winter to the extent that the wage in January was less than half of that in June. If the demand for weaving labour determined the wage, the wage level should have increased in winter, one of the peak periods of production. Figure 1, however, shows that the highest wage was recorded in the slack period of production, i.e. in June. It follows that the labour demand in this region was influenced largely by factors other than those inherent to weaving labour.

In Iruma, the period from May to June coincides with the peak period of barley harvesting, tea making and sericulture. Within the household of the wage-weaver, female labour tended to be allocated to agriculture-related activities, which consequently reduced the available labour supply for weaving. At the same time, this was a period when the clothier attempted to increase the volume of cloth. Since market competition positioned the fabrics of Iruma as winter clothing, the sales of fabric by the Takizawa family was heavily concentrated in autumn as we can see from Figure 1. Thus for the clothier, it was desirable to increase production during this period in order to reduce the necessary inventories preparing

for the sales in autumn. The high level of labour demand for weaving on the one hand, and the seasonal shrinking of labour supply on the other, caused the relative hike in the wage rate during this period. The wage-weaver, therefore, should not be deemed as a source of labour freely mobilized at the will of the clothier. Indeed, Figure 1 shows that the subcontracted volume of the clothier exceeded that of sales in the period of March – April. As it was difficult to increase orders to the wage-weavers during the summer, the clothier had to do that earlier, which resulted in a heavy financial burden placed on the clothier.

Thus, within the peasant household, which also supplied labour for wage weaving, we can assume that the level of labour supply was determined in relation to that of labour demand for agricultural activities. A detailed look at the mechanism can be obtained through a case study of a peasant household in Izumi district – a weaving district where the putting-out system was widely practiced. As we can see from Table 4, the head of household was fully devoted to agricultural production. To cope with the labour demand for agriculture during the two peak periods, however, he had to mobilize the labour of his “wife” and “old mother.” As a result, a limitation was placed on the amount of time the wife could allocate to weaving. This is vividly illustrated by the fact that the amount of labour of both the “wife” and the “daughter” spared to weaving production added up only to the labour-days equivalent to 1.5 year. At the same time, it should be noted that there was a mechanism that served to increase the amount of labour spared to weaving. The labour of the “old mother” relieved the burden of agricultural labour required of the “daughter,” which then enabled the “daughter” to devote all her available labour (except for necessary housework) to weaving. Even in housework, the “old mother” could cover a relatively heavy burden of “cooking” and reduce the labour demands for the “wife” and the “daughter.” Moreover, the “old father,” over seventy-years-old, was mobilized to participate in yarn winding, and an eleven-year-old son was also assigned a portion of housework: baby-sitting. The members that were difficult to be mobilized as full-fledge independent members of the family labour force for agricultural or industrial production, elder or younger family members, were assigned portions of auxiliary labour or housework so that the surplus labour increasingly could be spared to weaving.

A solution of the managerial problems

As described above, the adoption and the duration of the putting-out system can be regarded as the clothier’s adaptation to the fabric market and the labour market. Because the wage levels of wage-weavers were relatively lower than those of factory workers,⁵ the adoption of the putting-out system also could reduce labour costs. However, because of the

⁵ Several studies provide the wage data that confirm the lower wage level of wage weavers (Oshima1985, Matsuzaki1997, Tanimoto 1998).

dispersed nature of the workshops, managerial problems were more or less inherent in the putting-out system. David Landes (Landes 1969) and others have suggested that the difficulties of controlling the outworkers might have led to the decline of this system. In fact, these problems appeared in the forms of “embezzlement of raw materials” and “delay in delivery terms” in the Iruma district, and the clothiers had to cope with them. Were the clothiers able to overcome such managerial problems?

Figure 2 shows data concerning “the embezzlement of raw materials”. At least during the period 1908 – 1917, the yield rate of weaving production at the clothier (Takizawa), measured by the product weight divided by the weight of yarn supplied as raw materials, showed a reverse correlation to the volume of the production. That is, the yield rate went down at times of boom, and went up at times of recession. This meant that the clothier had to hand extra materials to the wage weavers when the competition to find the weavers became severe. It may therefore be assumed that the practice of weavers’ “reserving yarn” was done with the knowledge of the clothier. The problem of “the embezzlement of raw materials” turned into a form of negotiation strategy on the part of the weavers, and the deterioration of yield rate meant the increase of “payment in kind”. A downward trend was also found in “the days required for weaving,” i.e. “the delivery terms.” Thus the behavior of Takizawa may exemplify the methods used by putting-out masters who were trying to solve, at least temporarily, the inherent “managerial” problems of the putting-out system of production.

One of the features that made such a solution of managerial problems possible was the effort to build a close relationship between the clothier and the wage weavers. From 1896 to 1925, Takizawa placed production orders with a minimum of 60 wage weavers, and a maximum of a little less than 200 weavers per year. It can be seen that Takizawa repeatedly “hired” and “fired” the weavers in response to market fluctuations. However, it should be noted that there were a group of core wage weavers to whom Takizawa ordered weaving continuously for more than five years. Such repeated transactions may have constricted the moral hazard of the wage weavers.

Further, although the Takizawa’s business grew in scale, the geographic coverage of his order list tended to concentrate in specific localities. While there is no written evidence indicating the motivation behind this narrowing down of suppliers, we may assume that it was designed to allow close communication with core suppliers, thereby ensuring that the delivery terms would be met. This would also have allowed them to be assured that his core suppliers would continue to work for him in a situation characterized by severe competition for wageworkers. In the case of the Takizawa firm these strategies-continuous transactions and geographical concentration-incorporated in its putting-out system may have served to overcome the managerial problems inherent to the system, and to sustain a relatively long, and prosperous period for the putting-out system in the region.

3 The institutional basis of the “indigenous development”

As we noted earlier, the putting-out system played a dominant role in the indigenous weaving industry in modern Japan. This production organization was composed of the wage weaver and the clothier. The wage weaver was the supplier of labour and the clothier was the one who coped with the fabric market. It was the combination of the work of these two that gave birth to the particular pattern of industrial development in Japan. In the following parts, we will elaborate on the points discussed in the previous section as we consider the institutional basis of “indigenous development”.

Labour supply of peasants and small businesses

As was seen in the typical case of wage weavers above, the putting-out system depended on domestic work, that was labour utilized within the household unit. This labour force usually consisted of the head of the household (employer) and his family. An international comparison shows that modern Japan had a higher percentage of its work force involved in such domestic work than any of the other countries in the comparison.

Table 5 shows an international comparison of self-employment ratios – the estimated number of self-employed workers divided by the total number of workers – in each country, based on the assumption that the sum of “employer” and “family worker” was equivalent to the total self-employed labourers⁶. The table suggests that Japan had conspicuously higher ratios than other countries. It is true that these higher ratios could be attributed to the large agricultural population – a typical form of self-employment – in Japan. It should, however, be noted that the proportion of the agricultural population in Japan was about the same as that of Italy around 1930, and was lower by 10% than that of Mexico. When compared with countries with similar per capita GDPs such as Hungary in the 1930s and Mexico and Portugal in the 1950s, Japan is still seen to have had higher self-employment ratios. Similar traits can be found in the high self-employment ratios of Germany and France in comparison to those of Britain and the United States. This international comparison should suggest that the self-employment ratio does not only reflect the degree of economic development, but also mirrors a specific employment pattern in each country.

The comparison of specific industrial figures tells us that the Japanese industrial structure was characterized by its overwhelming ratio of self-employment in the agricultural sector. Japan is the only country in the table that recorded more than a 90% self-employment ratio in that sector. Britain exemplifies the extreme opposite with its agricultural sector in

⁶ As is pointed out in the statistical charts used in Table 3, the statistical coverage of family employee varies in each country, making it difficult to carry out accurate comparative analysis such as this one. It should be noted that the figures used here are rough indications, and leaves room for more statistically accurate comparison in the future.

which the self-employed workers occupied only 30 – 40%, and all the other workers were employed labourers. In the United States, Germany, France, Italy and Mexico, the agricultural ratio in each country reached up to the order of 70%, which indicates that the agricultural labour in those countries was supplied primarily by self-employed labour. Even in those countries, however, about one fourth of the total agricultural labour was supplied by employed labour.

It is widely known that the landlord system achieved rapid development in modern Japan, and that more than 40% of cultivated land in the early twentieth century was under tenancy, that is the land was managed by those other than the landowner (Waswo1977). It should then be clear that the possession of the land was monopolized by a small number of landowners. A look at the scale of the farming, however, reveals that the average size of the land lot remained as low as less than 1 ha, and only 15% of the total-farming households had land lots larger in size than 1.5 ha. In other words, in the agricultural sector in Japan, there hardly existed large-scale enterprise based primarily on employed labour; the sector was characterized by the prevalence of small-sized farming households of both owners and tenant farmers. Moreover, the dispersion of farm size gradually contracted, i.e. peasant households with land lots of about 0.5 to 1.5 ha increased in proportion in the twentieth century.

This trend, which is called “the standardization of middle-sized farming” in the field of Japanese agricultural history, should then be seen as a developmental trajectory of the peasantry that combined owned and tenanted lands (Numata 2000). While responding to changes in the market, the peasantry did not dissolve into farmers and wage labourers, but developed into a sophisticated form of the peasant household. This is exemplified by the fact that the development of commercial agriculture and sericulture, or the increased agricultural income that included these sectors, functioned to confine the domestic labour within the household (Saitō 1988). It should also be pointed out that there were some tenanted peasants that invested their non-agricultural income in their agricultural activities (Nishida 1997).

“Domestic industry” and other sideline business opportunities should then have been integrated into the maintenance and development strategy of the peasantry. Since the household needed to guarantee access to a supply of seasonal agricultural labor, “domestic industry” was one way of doing that by providing other income-generating opportunities at times when the labour was not employed in agriculture. At the same time, because the job opportunity incorporated within the household created a variable form of work, “reproductive labour” (such as housework) could be allocated well within the household. The incorporation of “domestic industry” within the peasant household, especially by labour-intensive farming in Japan, should then be seen partly as a “rational choice” of job opportunity.

However, it should be noted that this rationality assumed the preservation and the reproduction of the peasant household itself. The always present possibility of the peasantry

shifting to non-agricultural household employment cannot be denied since industrial development in modern Japan produced many opportunities for non-agricultural work. The Japanese pattern of development seems quite different from what we know about European development. In fact, the literature on European proto-industrialization often notes that there was a division between households that chose specialization in agricultural and those that chose non-agricultural pursuits. The emergence of full-time small-scale weavers, who specialized in non-agricultural work, has also been reported in the development process of a contemporary Indonesian weaving district (Mizuno 1996, 1999). In the Japanese case, involvement in non-agricultural activities within the peasant household was based on the strong intention of Japanese peasants to preserve the farming household.

Involvement in non-agricultural activities led to an increase of the labour input within the household. This feature was relevant to the so-called labour intensiveness of the Japanese peasant households. Hayami Akira has argued that the Japanese peasant experienced an “Industrious revolution” during the period of peasant formation in the Edo era (Hayami, A. 1979/2001)⁷. In fact, working hours of peasant households had been increasing during the pre-Second World War period in spite of the increase of income (Saitō 1998). “The standardization of the middle-sized farming”, the concept explained above, was also based on the assumption of the labour intensiveness of the peasant household. Since it is assumed that the tenant-peasants were striving to purchase the leased lands based on their accumulation of savings, intensive labour input of the household members must have been practiced as a way to accumulate the funds for purchase of land. In this context, it is clear that Chayanov’s well-known theory of peasant economy in which he assumed equilibrium of labour inputs and family consumption and believed that there would be a decline in labour inputs in proportion to the decline of the consumption unit, cannot be fully applied to explain the behavior of Japanese peasants (Chayanov 1925/1986).

These points suggest the need to investigate the factors that prescribed peasants’ behavior from a different analytical frame. Sociological studies on the rural community, which paid strong attention to the family system called *ie*, suggest one approach to this problem. For instance, Ariga Kizaemon, a representative sociologist of this field, characterized the Japanese peasant family as the stem-family with the single inheritance custom of lineal male descendant. Ariga argued that this system was made to conform to the succession of the *ie* (Ariga 1972). The fact that the number of farming households had remained constant around 5.5 million from the 1890s to the 1930s suggests the correctness of this assumption (Namiki 1955). If the *ie* was established as the subject of inheritance, a choice to sell lands and to abandon farming could not be made by a single generation. As a

⁷ The ideological basis of peasant’s morale was clarified by Yasumaru Yoshio’s works (Yasumaru 1974). His recent paper applied this argument to the urban small businesses

result, the household gave first priority to farming and the labour supply to non-agricultural work was determined in view of the labour input to agricultural work. This argument can be applied to the landless tenants as we recall to mind the long-term stability of the relationship between the landowners and the tenants in modern Japan (Sakane 1999). The structure of the division of labour among the household members should also be noted. As was shown in the division of labour by gender, managerial work was usually assigned to men and manual labour to women, with the householder holding the power and authority to allocate a certain kind work to a certain member of his “labour force” over the preference of each member. If this power were guaranteed by social consent, the peasant household could not be regarded simply as the set of individualistic economic subjects. That is, the Japanese peasant household was an institution with very specific characteristics, integrating a peculiar family system, the *ie*, and division of labour by gender. The development of domestic industries should be recognized with reference to this peculiar institution of the peasant household.

Then, is it possible to extend this argument to the non-agricultural sectors such as urban small businesses? Table 5, which we have referred to before, provides a clue by answering this question. In the manufacturing sector in Japan, slightly less than 40% of the work force were categorized as self-employed during the 1930s, which was the highest figure among the countries listed in the table. The ratios in Britain and the United States during the same period fell under 10%. In France and Germany, the figures were around 20%. Around 1950, the ratios in West Germany and France were around 12 – 13%, and those in Britain and the United States were less than 5%. This means that the manufacturing sectors in those countries were basically composed of those hired as labour. Similar patterns of decline in the ratio can be found in other countries. During the same period, the ratio in Japan fell to approximately 20%, about the same figure as that of Italy. When looking at the long-term shift until 1970, we can identify the distinctive trajectories of industrial structures among these countries. As is shown in table 5-2, Japan’s self-employment ratio in the non-agricultural sector (including manufacturing) increased 1.67 times (1.7 times in the manufacturing sector only). On the other hand, the ratios in Germany and France decreased during the same period, and that of Italy only slightly increased. Indeed, recent international comparisons of generational social mobility show that Japan’s inward mobility ratio from other forms of employment to self-employed during the 1970s and 1980s is significantly higher than those in other countries in Europe and the United States. Based on these findings, Ishida Hiroshi argues that non-agricultural, self-employed labour in Japan is characterized by its distinctive generational stability and self-reproduction (Ishida 2001).

Micro level approaches to non-agricultural small or petty-scale businesses are also in progress. Takeuchi Jōzen shows that it was small or petty-scale businesses which engaged in

(Yasumaru 1999).

the individual processes of manufacturing sundries after the breakdown of the early factories in that industry (Takeuchi, forthcoming). Suzuki (forthcoming) described the activities of small-scale workshops of machine manufacturing, which were run by skilled mechanics. The quantitative overview of non-agricultural small businesses can be seen in Matsumoto's paper (forthcoming). These studies suggest that "non-employed" labour, such as the employer or members of his family, played a significant role in labour supply in small-scale businesses even in the non-agricultural, urban sectors. In fact, the analysis of municipal census of Tokyo revealed that the ratio of workers in petty manufacturing workshops, including workshop masters, reached 69% of all the gainful workers in manufacturing sector in 1908. The municipal census also shows that the number of petty manufacturing workshops and retail shops increased from 1908 to 1920 (Tanimoto 2002). The patterns of their activities seem to be more similar to the peasants in the countryside than to the employed factory workers. Thus, the pattern of indigenous development based on the household economy and the *ie* undoubtedly existed in fields unrelated to the agricultural sectors.

The institutions supporting small and petty-scale businesses

Did small and petty-scale businesses also engage in distinctive managerial practices? Let us consider the managerial practices of the entrepreneur such as putters-out. Japanese putters-out tended to remain as small size enterprises. In the weaving industry, for example, it was often the case that the clothiers, who were equivalent to putters-out, lived in the farming village where they organized the wage-weavers who resided in the same or neighboring villages. They sold the fabrics they had gathered to the wholesale merchants in the local distributing center. Compared to the typical cases described in the proto-industrialization literature on European experiences in which the organizers of the weavers were prominent urban merchants, the size of Japanese clothiers could be characterized as small businesses. Keeping the scale of the enterprises in mind, our studies examine the significance of the institutions and policies that supported the development of the industries.

Firstly, we can point to some measures executed by the government in this context. The Ministry of Foreign Affairs, together with the Ministry of Agriculture and Commerce, actively surveyed overseas markets. Outcomes were summarized as ministry reports and widely distributed for use by the enterprises of any scale (Tsunoyama ed. 1986). The Meiji government, which had participated in international exhibitions in the 1860s and 1870s, opened the first large-scale domestic exposition as early as 1877, recognizing the positive effects of exhibitions for promoting industries. From that time onward to 1903, the central government held five domestic expositions with tens to hundreds of thousands of exhibits. In addition to these nationally-sponsored exhibitions, local governments and non-government

organizations held numerous exhibitions and trade fairs. As experts examined exhibits and commented on them from the technological point of view, the exhibitions are presumed to have had considerable effects on the distribution of technological information together with the promotion of technological development (Kiyokawa1995). Such exhibitions were particularly significant for indigenous industries whose capacity for technological development was supposed to be limited.

Along with the programs supporting production, the industrial schools (Jitsugyō Gakkō) also played significant roles. In the weaving districts, for example, the knowledge and skill of weaving or dyeing processes taught and practiced in the schools contributed to advance the technological level of the weaving districts through the clothiers' sons who attended the schools in the district (Takeuchi1982, Hashino2000). Yamada (forthcoming) shows that various types of schools, from polytechnic to vocational schools, functioned to absorb and adapt western technology in the traditional pottery industry. Experimental stations and laboratories run by local governments for the development and marketing of products also played important roles, as we can see from a number of detailed case studies (Yamazaki 1969, Abe1989, Sawai 1999). These measures, planned and financed by the central and local governments, can be regarded as the construction of the infrastructure of information (Sugihara1995). This infrastructure formed a favorable environment for the entrepreneurs who promoted indigenous development.

However, it should be pointed out that these measures only had their intended effects because of the systematic efforts from the industry side to take advantage of the opportunities created by such efforts. In fact, local industrial circles played an important role in founding the industrial schools, and the activities of the experimental station were strongly linked to those of the local association in the same trade. These associations often executed undertakings to support industries. Joint purchasing of raw materials like yarn were common undertakings among weaving districts and some of them eventually operated joint factories for the finishing process (Abe 1989). Ōmori (forthcoming) is a detailed analysis of these activities, such as common purchase and sales, taking examples from pottery industry and straw works industry.

Still, we should be aware that the original purpose of founding trade associations (*Dōgyō Kumiai*), the principal executor of these undertakings, was to regulate the activities of traders concerned. In the beginning, the Meiji government had made a negative assessment of such regulations based on the principle of "the freedom of trade". The order to dissolve the *kabu-nakama* in 1872, a kind of guild from the Edo era, was a typical measure based on this principle. As the traders, however, often complained about market disorder, the government enacted the law permitting the revival of the organizations of traders concerned

in 1884 and revised it in 1900 to strengthen the enforcement power to eliminate outsiders⁸. The focal point is the function latent in this regulatory policy. There is no question that these regulations may have functioned to distort the distribution of profits. The control of wage rates by the clothiers' association was an example that might have led to exploitation of wage-workers (Ōshima 1985). However in the case of Iruma, the weaving district discussed above, wage control did not function as well as the successful measures to prevent wage-workers' embezzlement of raw materials (Tanimoto 1998). The latter measure is relevant to the quality control problem, which was one of the major issues the trade association tackled. Ōmori (forthcoming) shows that product inspections conducted by the trade associations were essential to control the quality of products. His paper also introduces a trial, undertaken by the pottery association, to restrict design imitation by endowing exclusive rights to original designers. This measure, which put the brakes on production of inferior goods, and also stimulated the development of designs and techniques to maintain the reputation of product brands, was indispensable to restricting the opportunistic activities of concerned traders. Thus, the regulation measures of trade associations included factors that may have served as the basis of industrial development.

Industrial districts and regional society

Lastly let us consider the *place* in which industries operated. From the viewpoint of industrial location, it is notable that many of the industries discussed above were located in relatively limited spaces, forming a kind of cluster. For example, in the weaving district of Iruma, which we discussed in the previous section, the actors in the industry such as local wholesalers, clothiers, and wage-weavers resided within a radius of ten kilometers of the distributing center of Tokorozawa. However, this centripetal structure had not formed yet when market oriented production had started in the late Edo era. Fabrics produced in villages were shipped to various towns such as Hachioji, Ōme and Kawagoe, all of which were located further than ten kilometers from Tokorozawa. In the case of the clothier Takizawa, a typical putting-out master in this district, sales routes to Ōme maintained a certain ratio until the latter half of 1890s. However, Takizawa's sales came to concentrate in Tokorozawa around 1900. By 1900 almost all the local wholesalers of fabrics, who sold products in a nationwide market through the wholesalers in central distributing centers such as Tokyo and Osaka, and the distributors raw materials who mediated the sale of yarn between clothiers and yarn merchants in Tokyo, had settled in this town. The wholesalers became the leaders of the district and even founded a bank to cover the financial needs of the industry. Tokorozawa

⁸ Differed from the traditional guild, *Kabu-nakama*, trade association could not legally limit the membership. The way to eliminate outsider was to have all the traders concerned under the control of the association. To strengthen the validity of mandatory participation to the association was the measure to accomplish this purpose.

thus established its position as the distributing center for this district. On the other hand, the clothiers still resided in the countryside and maintained close relationships with the wage-weavers in peasant households. These clothiers had been trying to form an association together with the merchants in Tokorozawa, and this trial was settled at the beginning of the 20th century, covering the whole area neighboring Tokorozawa. The fabrics inspected by the trade association had begun to be recognized as special products produced in the Tokorozawa region. This was certainly a process in which the Tokorozawa region was located as an *industrial district* providing goods to nationwide market.

According to Alfred Marshall's well-known description, it is natural for traders in a common commodity to gather together in concentrated geographical regions since such clusters of economic activities generate positive externality (Marshall 1920). However, industrial districts should be distinguished from the general geographical concentration of economic activity. The industrial district as a unit participated in market competition and that unit could not be workable without the characteristic structure of production and distribution. The structure was based on organized activities such as the putting-out system or trade associations. The putting-out system can be characterized as the vertical organization of the subjects located at different levels of the structure of the division of labour, the trade association as the horizontal organization of the leading actors in the production and distribution system who are located at similar levels⁹ As the chapters of this volume indicate, indigenous industries tended to form industrial districts, and those industrial districts became the units that confront the severe competition in the market. These phenomena can be understood when we remember that the small scale of individual businesses was a central feature of these industries. In other words, the formation of industrial districts, as well as the organization of cooperative organizations, were distinctive features of indigenous development. Thus, it is important to evaluate the function of industrial districts in the process of industrial development in comparison with other forms of production systems, such as the large-scale factory system or the clusters of strongly independent artisans. The latter comparison may relate to the typology of industrial clusters since the artisans' workshops also were inclined to concentrate within small geographical areas. Some chapters in this volume discuss issues related to this problem.

Simultaneously, the reason why not a few industrial districts in Japan could be organized well is also an important question from the point of view of comparative history. In fact, the studies on the deployment of industrial districts in contemporary Italy have been conscious of this point (Brusco 1982, Lazerson 1990). The existence of managerial problems in organizing wage-weavers (vertical organization) has already been mentioned. The

⁹ It is notable that the clothiers in the villages and local wholesalers in Tokorozawa formed the united trade association.

regulatory measures, introduced by the associations, also suggest that conflicts sometimes arose as a result of differences between individual and collective interests. The joint enterprises run by associations may also have contributed to conflicts among the members over the costs that had to be shared. How could they overcome the private interests of individual firms to secure collective goals promoted by the association? By asking questions about the *place* where industrial districts developed we may be able to find clues that will help us answer this question. Industrial districts did not develop in vacuums, but in regional societies that had distinctive historical backgrounds. How did the specific characteristics of a given regional society influence the development of an industrial district?

“Saving transaction costs” is a factor that should be considered as one of the economic functions of the region. If we look at recent theories in development economics, we discover the idea that one of the functions of the community was to restrict the moral hazard of individual members (Hayami, Y. 1999, Aoki and Y. Hayami 2001). Ohno Akihiko and Kikuchi Masao have applied this framework to contemporary weaving industries in Asian countries and insist that the existence of the community had a positive effect on the deployment of the putting-out system (Ohno and Kikuchi 1998). In fact, it has been the common understanding in the field of rural history that Japanese villages, even in the modern period, could be characterized by the intensity of human relations. Sakane Yoshihiro compared the tenant system of agriculture in modern Japan to that of contemporary Bangladesh and concluded that the long-term relationships between tenant and landowner characterize the Japanese tenant system. In contrast, frequent turnovers of tenants undermined the tenant system itself in Bangladesh. Sakane attributed this difference to trust among the inhabitants of the local community and added that this frame could be applied not only to the tenant system but also to the putting-out system deployed in industrial districts (Sakane 1999). The web of ties that characterized regional society in modern Japan may have enhanced the organizational capability of industrial districts through the alleviation of “internal contradictions of the (putting-out) system” (Landes 1969 p.58).

Another point is that the existence of “regional society” may have affected industrial development by providing the entrepreneur or the man of property with motivations besides profit maximization. Yamauchi (forthcoming) provides an example in which the association of the silk weaving industry heavily depended on the wealthy farmers for both finance and management of the associations. Although they were not engaged in the weaving industry, they were urged to devote funds or energy to the industry because of the assumption that men of a certain social status should be responsible for the development of regional society. Matsuzaki Hisami also argued the behavior of certain economic actors in the regional society-- such as wholesalers in a local distributing center, clothiers, and local banks—utilizing the concept of “social capital” which existed within the region (Matsuzaki, forthcoming). According to R. Putnam, “social capital” refers to features of social

organization, such as trust, norm, and networks that can improve the efficiency of society by facilitating coordination actions (Putnam, 1993, pp.167). Matsuzaki, however, also point out the negative aspect of the social capital, and tried to evaluate the function of the social capital inclusively in the concrete industrial history. The argument about the characteristic investment activities of such individuals shows a similar understanding (Tanimoto, forthcoming). In spite of the high risks and low expectations for returns, the men of property in the region tended to invest their funds in enterprises that had some connection to the regional community. Tanimoto assumes that the motivation for this investment had come from the desire to acquire a higher reputation in the region.

Certainly, it is not easy to measure the effects of the favorable functions of regional society on industrial development. It might have been possible to prevent the embezzlement of raw materials through tighter managerial control exercised by the clothiers: for example, they could have chosen to limit the number of wage-weavers who worked for them. As for “peculiar motivation”, Matsuzaki himself also shows us an example in which the adherence to the “communitarian principle” sometimes led to the failure of the business in market competition. However, the arguments above at least show us the existence of the vector from regional society to industrial development. The effect of repeated transactions might have been enhanced in cases in which there was low mobility among the peasants as a result of the general characteristics of peasant households in Japanese villages (Nojiri 1943). Profit motives were often not enough in the case of risky investment in new business opportunities that were unfamiliar. Under the conditions of imperfect information, genuine *homo-economicus* often fails to capture the promising opportunities. The regional society, which was still characterized by many traditional factors, may have functioned to complement the market economy that generated industrial development. In that sense, regional society was one of the institutional bases of indigenous development.

4 The features and the implication of “indigenous development”

The discussion thus far has treated the organization of peasant or small business through the formation of the putting-out system as an important feature of indigenous development. If we take this discussion as the starting point, then we need to ask where other systems of production stand in the overall picture of industrial development.

For instance, table 3 showed that the total numbers of workers belonging to “factory” and “workshop” were twice as large as “wage-weavers” under the putting-out system in Kyoto prefecture. The fact that there were equal proportions of male and female workers was also a feature that distinguished Kyoto from other prefectures. This was a reflection of the production system in Nishijin, which had been the major high quality silk weaving district since the 16th century. Organized in an apprentice system, the juvenile male work force was

trained to become skilled weavers under the supervision of a master. Thus, master, skilled weavers and apprentices worked together in workshops with several scores of workers (Yamaguchi 1974, Nakaoka et al. 1988). Individual workshops maintained their independence in part because of the scarcity of skills. A similar production system was seen in the metal processing or machine making industries. As Suzuki Jun shows, workshops with several to scores of workers played significant roles in these industries (Suzuki, forthcoming, also see previous table 1). Since the workers already operated tool machines, it was not the traditional skill of metal processing that the skilled workers embodied. However, under a quasi-apprentice system, in which the members of the work force were recruited at a young age and were trained on the job (Hyōdo 1971, Gordon 1985), the necessity of relatively high skill in the manufacturing process led to the reproduction of the production forms analogous to those of the traditional artisan.

On the other hand, table 3 shows that the ratio of wage-weavers under the putting-out system was no more than 10% in Fukui prefecture, which specialized in production of a plain-woven silk fabric called Habutae. The level of skill required to weave Habutae was not so high compared to other fabrics. However, since the fabric, was utilized as an intermediate good in the United States, which was the largest market for Japanese Habutae, uniform quality was demanded (Kandachi 1974). The demand for uniform quality also was seen in the case of the silk reeling industry. The silk weaving industry in the United States, which provided the largest market for the Japanese silk reeling industry, swiftly introduced power looms after the 1880s. Since the uniformity of the raw silk affected productivity in the weaving process, the weaving enterprises demanded a uniform product. The industrial actors that corresponded thoroughly to this requirement were Japanese silk reeling firms, especially the enterprises in Suwa district (Nakabayashi, forthcoming). The keys to Suwa's success included concentrating juvenile female labour in a workplace where their work could be closely monitored, and making use of standardized raw materials, especially cocoons, and unified working environments. In this developing trajectory, silk reeling enterprises in Suwa could produce highly uniformed raw silk based on manufacturing technology of handiwork level.

Thus, deployment of independent workshops or workplaces with concentrations of workers was relevant to the peculiar skill or demand for each product. From this point of view, the specific characteristics of products produced by the putting-out system also become clear. The products of the Iruma district included a wide-variety of finished goods. However, the level of weaving skill was far lower than Nishijin, so it was still possible to train workers within the household workshop. Mothers passed on the weaving skills to their daughters in the peasant households, and the transfer of weaving skills between households was driven

frequently by marriage¹⁰. Thus we can see that the putting-out system was adopted in weaving districts whose product did not require either high levels of weaving skill or consistent uniformity of the products. It is important to note that these kinds of products targeted the popular market whose volume of demand was the largest. In fact, the workers ratio in Nishijin or Fukui was not high, as can be seen from table 3. These facts suggest that the deployment of artisanal independent workshops or concentrated workplaces were rather limited in the industrialization process of non-transplanted industries in modern Japan. Even in Nishijin, with the deterioration of skill levels caused by the introduction of the power loom in the 1920s, a considerable number of wage-weaver household with one or two power looms came to use female family labour and were organized in the putting-out system (Hareven 2002). In the field of heavy industry as well, the putting-out system could be seen in industries manufacturing relatively simple products such as certain kinds of metal processing (Tokyo municipal office, 1936)¹¹. The range of activities for the artisanal independent workshops was rather small.

Similar things can be said with regard to the organization of work within concentrated workplaces. Although the raw silk was commonly used as an intermediate goods, raw silk for the European market continued to be produced within the putting-out system during the late 19th and into the early 20th century. Even in the Suwa district, according to Matsumura (forthcoming), alongside the development of large scale factories we can see small and medium size raw silk enterprises together with the sideline reeling workers who were organized under a putting-out system which targeted the domestic market. Certainly, the silk reeling factories standing together in large numbers were one of the limited examples that indicate the transformation from domestic production to factory system in a continuous development process in Japan. However, large-scale factory production only developed in the case of production of raw silk for the specialized market of the United States, where consistent quality control was important.

The fate of the factories established in the early stage of transplanting new industry is also interesting in this context. The transplantation of cotton spinning factories was apparently very successful. The development of a modern pottery company might be an example of factor-based development observed even in a traditional industry (Yamada, forthcoming). However, many of the factories established during the early stages of transplantation later failed. Takeuchi's paper named these factories "the early factory". While he recognized the significant role these factories played in transplanting knowledge and

¹⁰ There also existed the cases that the skill of wage-weavers was formed during the years being employed in the centralized workshops or factories in the silk weaving districts as Kiryū, whose products were ranked as upper medium level in quality (Ichikawa 1996).

¹¹ This investigation included the reports about several metal related industries as follows. Tin toy, electric bulb, radio, parts of bicycle.

technology, Takeuchi argued that these factories were overcome by the evolution of another production form similar to the putting-out system (Takeuchi, 1991, forthcoming). Not only traditional industries, but also a number of other kinds of industries were carried on by the industrial actors formed by a non-factory production system.

Some scholars have assumed that one of the reasons for this pattern was the continued preference for traditional products (Nakamura 1971/1983). Fabrics for example, were usually tailored to Japanese style clothes, Kimono, up until the 1930s. Pottery and porcelain, brewed products such as sake and shoyu (soy-sauce) were also linked to the Japanese traditional life style. Thus, a view that traditional patterns of consumption functioned as the basis of the continuity of indigenous production forms certainly contains some truth. According to Takeuchi, however, various export-oriented industries adopted the putting-out system organizing small-scale businesses. Therefore, considering the fact that western markets were significant markets for these industries, we should refrain from attributing too much to this assumption, even though there may be room to argue for the similarity of demand between traditional Japanese markets and the Asian region (Kawakatsu 1994, Sugihara 1996).

. Thus, factors on the demand side are not a sufficient explanation for the development patterns we have seen. A wide range of products were produced in these system based on small-scale production units. We can also not explain these developments with arguments about the levels of manufacturing skills or with arguments about the differences in intended use of the intermediary or finished products. The argument of this chapter is to point out the factors besides the characteristics of demand or product that formed the basis of indigenous development. That is the peculiar logic functioning on the supply side of the developmental trajectory: namely, the existence of the household economy practicing a “rational” labour allocation strategy among household members within the framework of the traditional institution of the *ie* regulated behavior on the labour side. The measures and institutions run by the central and local governments supported the organization and market adaptation on the management side. Regional society also functioned to stabilize the relation between labour and management. All these factors worked to construct the system that has been identified in the papers in this volume. Since each of the factors, including the intensity of labour inputs with relative low wages within peasant and small business households, and the benefits from a division of labour generated by this style of organization, contributed to competitiveness in the market, this system could have functioned as the basis of indigenous development.

Starting from this standpoint, we can see the differences between Japanese cases argued so far and what has been said about small-scale business on the basis of the experiences of industrialization in western countries. Those arguments used the concept of “flexible specialization”, mainly based on examples from Continental Europe, to describe craft production that had the ability to respond to a differentiated and changing market (Sabel

and Zeitlin 1985, 1997). As we can sense from the use of the term “craft”, the point of this view was to set skill as the decisive factor in the production system. As we have seen in the discussion on the Japanese experience, there were other factors besides skill that account for the existence of indigenous development. It is obvious that a simple application of the “flexible specialization” argument is not sufficient to understand the Japanese case. Similarly, although the arguments that deal with the development of various production forms during the British industrial revolution proposed an overlapping view (Berg 1994), the difference in the foundation for the processes of industrialization, for example the lack of a peasant system in Britain, leads to very different production forms besides the factory system in the whole economy and society¹². Thus while there may seem to be a similarity in production forms, in fact we need to look at the differing structures at the micro level.

In addition to the flexible specialization arguments, there are a number of studies that have examined the development of non-agricultural and non-transplanted industries in contemporary developing countries (Mizuno1996, 1999, Kikuchi1998, Ohno2001). In this field, Japanese experiences of indigenous development have often been referred to for clues to generalize the data from empirical research (Hayami,Y. ed. 1998, Francks 2002). Through these studies, both points in common and of difference have been revealed. The existence of various production forms is commonly observed, while the social structures sometimes show great divergence, even among the Asian countries. A clear understanding of the logic of indigenous development is required for this field as well. This volume not only introduces the argument in the context of Japanese economic history, but also intends to provide materials for comparative study.

At the same time, the specific features we have observed have provided a fundamental framework for understanding the economic and social structures of contemporary Japan. In the weaving industry the system of domestic manufacturing organized under the putting- out system was sharply in decline during the 1920s, and power-loomed, mechanized manufacturing was spreading even into the rural industrial districts. The shift may be viewed as the beginning of the full-scale industrialization process. It should not, however, be judged as a process in which the pattern of indigenous development simply faded away, and was totally replaced by a unified pattern of “modern” industrial development. With regards to the pattern of labor supply, Sasaki has shown that in the factories built near farming villages, the supply of wage labor was still influenced by the farming cycle and/or the housework in the peasant household (Sasaki, forthcoming). Even in

¹² In the studies of Continental Europe, peasant household was often discussed being relevant to the supply of labour in the context of proto-industrialization (Medick 1976, Braun 1978, Pfitzer 1989,1992). However, the attempts to enhance the perspective of these arguments to the age of industrialization are limited (Quataert 1988, Kriedte, Medick and Schlumbohm1993).

a factory, we can identify an organizational pattern of labor that had links to the patterns of “domestic production” examined in this paper. It was pointed out in another study that rural factories were generally small or medium sized, and that the managerial development of these businesses was manifested as a sophisticated form of the industrial district (Abe 1989). The progress of mechanized manufacturing in these cases, therefore, should be perceived as the mechanization of small and medium scale firms, not of large ones. This phase of industrialization was seen as the pre-history of the economic growth of the post Second World War period that was heavily dependent on the thick accumulation of small and medium scale manufacturing firms. It should at least be claimed that the carry-over of the pattern of indigenous industrial development formed a part of the foundation of the economic and social structures of contemporary Japan.

It may also be possible to look at the decline of the pattern of indigenous development as a source of influence over the formulation of later industrial development. One of the features of indigenous development was the creation and expansion of “partitioned” labor markets profoundly affected by the behavior of peasant and small business households. The labour supply in this field, however, started a continuous decline in the 1920s, speeding up the decline during the period of rapid economic growth after the Second World War. In the mean time, more and more laborers came to be employed by large factories. This process brought about a labor market that was characterized by its particular form of labour relations, the so-called Japanese style of industrial relations. Thus it should be seen that the emerging contemporary labour markets reflect the decline of self-employed labour or labour employed in small and medium scale firms, i.e. the decay of indigenous development. To look at it from the other side, indigenous development draws an outline of “contemporary Japanese society” in its waning process.

(References)

- ABE Takeshi, *Nihon niokeru Sanchi Men'orimonogyō no Tenkai* [The Development of Rural Cotton Weaving Districts in Japan] (Tokyo, 1989)
- ABE Takeshi, "The development of the putting-out system in modern Japan", in ODAKA, Kōnosuke and Minoru SAWAI eds., *Small Firms, Large Concern*, (New York, 1999)
- AOKI Masahiko and Yūjiro HAYAMI ed., *Communities and Markets in Economic Development*, (New York, 2001)
- ARIGA Kizaemon, *Ie* [The Family] (Tokyo, 1972)
- BERG, M. "Factories, workshops and industrial organization", in FLOUD, R. and D. McCLOSKEY, *The Economic History of Britain since 1700*, vol.1 1700-1860 second edition, (Cambridge, 1994)
- BOEKE, J.H., *Economics and Economic Policy of Dual Societies as Exemplified by Indonesia*, (New York, 1953)
- BRAUN, R., "Protoindustrialization and demographic changes in the canton of Zurich", in TILLY, C. ed. *Historical Studies of Changing Fertility*, (Princeton, 1978)
- BRUSCO, S., "The Emilian model: productive decentralization and social integration", *Cambridge Journal of Economics* 1982-6 (Cambridge, 1982)
- CHAYANOV, A.V., *The Theory of Peasant Economy*, (Madison-Wisconsin, 1986, Originally published in Moscow in 1925)
- CRAFT, N.F.R., *British Economic Growth during the Industrial Revolution*, (Oxford, 1985)
- FRANKS, P., "Rural industry, growth linkages, and economic development in nineteenth-century Japan", *The Journal of Asian Studies* 61-1 (2002)
- GORDON A., *The Evolution of Labor Relations in Japan: Heavy Industry 1853-1955*, (Cambridge -Massachusetts, 1985)
- Hanley, S.B. and Kozo YAMAMURA, *Economic and Demographic Change in Preindustrial Japan 1600-1868*, (Princeton, 1977)
- HAREVEN T.K., *The Silk Weavers of Kyoto □ Family and Work in a Changing Traditional Industry*, (Barkley and Los Angels, 2002)
- HASHINO Tomoko, "Orimonogyō niokeru Meiji-ki 'sosei ranzō' mondai no jittai"[Technology and the quality problem of the weaving industry in the Meiji period], *Shakaikeizaishigaku* 65-5 (2000)
- HATTORI Shisō, "Meijiishin no kakumei oyobi han-kakumei [The revolution and the counterrevolution of Meiji Restoration]" in *Nihon Shihonshugi Hattatsushi Kouza*, vol.1 *Meijiishin* (Tokyo, 1933)
- HAYAMI, Akira, "Kinsei nihon no keizai hatten to' Industrious Revolution' [Industrious Revolution and the economic development of early modern Japan]" in SHINBO Hiroshi and Yasukichi YASUBA eds., *Kindai Ikō-ki no Nihon Keizai*, (Tokyo, 1979)
- HAYAMI, Akira, "Industrial Revolution versus Industrious Revolution", *Journal of Japanese*

- Trade and Industry*, 20-6 (2001)
- HAYAMI, Akira, Osamu Saitō and Ronald TOBY eds., *Economic History of Modern Japan* vol.1 *Emergence of Economic Society* (Oxford, 2004, The Japanese original version was published in 1988/9)
- HAYAMI, Yūjirō ed., *Toward an Alternative Path of Economic Development*, (Washington, 1998)
- HAYAMI, Yūjirō, *Development Economics: From the Poverty to the Wealth of Nations*, (Oxford, 1999)
- HUBER J.R., “Effect on prices of Japan’s entry into world market after 1856”, *Journal of Political Economy*, 79-3 (1971)
- HYŌDŌ Tsutomu, *Nihon niokeru Rōshi Kankei no Tenkai*[The Deployment of the Industrial Relations in Modern Japan] (Tokyo, 1971)
- CHIKAWA Takamasa, *Nihon Nōson-kōgyōshi Kenkyū*[A Study on the History of the Rural Industry in Japan] (Tokyo, 1996)
- ISHIDA, Hiroshi, “Industrialization, class structure, and social mobility in postwar Japan”, *British Journal of Sociology* 52 (December): 579-604 (2001)
- ISHII Kanji, “Ishin henkaku no kiso katei”, [The Basic Process of the Meiji Restoration], *Rekishigakukenkū* 560 (1986)
- KANDACHI Haruki, *Meijiki Nōson Orimonogyō no Tenkai* [The Development of Rural Weaving Industry in Meiji Japan] (Tokyo, 1974)
- KAWAKATSU, Heita , “The emergence of a market for cotton goods in East Asia in the early modern period”, in LATHAM A.J.H and Heita KAWAKATSU eds., *Japanese Industrialization and the Asian Economy* (London, 1994)
- KIKUCHI, Masao “Export-oriented garment industries in the rural Philippines”, in HAYAMI, Yūjirō ed., op.cit. (1998)
- KINGHORN, J.R. and J.V. NYE, “The scale of production in western economic development”, *The Journal of Economic History* 56-1 (1996)
- KIYOKAWA Yukihiko, *Nihon no Keizai Hatten to Gijutsu Fukyū*[The Spread of Technology in Japan’s Economic Development] (Tokyo, 1995)
- KREDTE,P., MEDICK, H. and SCHLUMBOHM J., “Proto-industrialization revisited: demography, social structure, and modern domestic industry”, *Continuity and Change* 8-2 (1993)
- LANDES, D.S., *The Unbound Prometheus*, (Cambridge, 1969)
- LAZERSON, M.H., “Subcontracting in the Modena knitwear industry”, in PYKE, F., G.BECATTINI and W. SENGENBERGER ed., *Industrial Districts and Inter-firm Co-operation*, (Geneva, 1990)
- LEWIS, W. A., “Economic development with unlimited supplies of labor”, *Manchester School of Economic and Social Studies*, 22 May (1954)
- MARGLIN, S.A., “What do bosses do? : the origins and functions of hierarchy in capitalist

- production”, *The Review of Radical Political Economics*, 6-2 (1974)
- MARSHALL, A., *Principle of Economics* 8th. Edition. (London, 1920)
- MATSUMOTO Takanori, “The place of traditional industries in the development of the national economy” in TANIMOTO, Masayuki with Osamu SAITŌ eds. *The Role of Tradition in Japan’s Industrialization*, (Oxford, forthcoming)
- MATSUMURA Satoshi, ”Dualism in the silk reeling industry in Suwa, Nagano from the 1910s to the 1930s” in TANIMOTO, Masayuki with Osamu SAITŌ eds. op.cit (Oxford, forthcoming)
- MATSUZAKI Shigemi, “Naraken nōson orimonogyō no suitai katei” [The collapse of rural weaving industry in Nara prefecture], *Shakaikeizaishigaku* 52-6 (1987)
- MATSUZAKI Shigemi, ”The development of a rural weaving industry and its social capital” in TANIMOTO, Masayuki with Osamu SAITŌ eds. op.cit (Oxford, forthcoming)
- MEDICK, H., “*The proto-industrial family economy*”, *Social History*, 3 (1976)
- MENDELS F., “*Proto-industrialization: The first phase of the industrialization process*”, *Journal of Economic History* 32(1972)
- MIZUNO, Kōsuke, *Rural Industrialization in Indonesia, A case Study of Community-based Weaving Industry in West Java* (Tokyo, 1996)
- MIZUNO Kōsuke, *Indonesia no Jibasangyō* [The Regional Industry in Indonesia] (Kyoto, 1999)
- NAKABAYASHI Masaki, ”The rise of a factory industry: silk reeling in Suwa district” in TANIMOTO, Masayuki with Osamu SAITŌ eds. op.cit (Oxford, forthcoming)
- NAKAMURA, Takafusa, *Economic Growth in Prewar Japan*, (New Haven, 1983, The original Japanese version was published in 1971)
- NAKAOKA, Tetsuro et al., “Textile history of Nishijin: East meets West”, *Textile History* 19-2 (1988)
- NAGANO Hiroko, *Nihon Kinsei Gender-Ron* [Gender Issues in Early Modern Japan] (Tokyo, 2003)
- NAMIKI Shōkichi, “Nōgyō-jinkō no sengo 10 nen” [Population of farming households during ten years after the Second World War], *Nōgyōsōgōkenkyū*.9-4 (1955)
- NISHIDA Yoshiaki, *Kindai Nihon Nōmin-Undōshi Kenkyū* [The Study on the Movement of Peasants and Farmers in Modern Japan] (Tokyo, 1997)
- NISHIKAWA, Shunsaku, “The economy of Chōshū on the eve of industrialization”, *Economic Studies Quarterly*, 38-4 (Tokyo, 1987)
- NOJIRI Shigeo, *Nōmin Rison no Jisshōteki Kenkyū* [The Empirical Research on the Emigration of Peasants] (Tokyo 1943)
- NUMATA Makoto, *Ie to Mura no Rekishiteki Isō* [The Historical Phases of the Family and the Village] (Tokyo, 2001)
- O’BRIEN, P. and C. KEYDER, *Economic Growth in Britain and France 1780-1914*, (London,

- 1978)
- OHNO, Akihiko, “*Market integrators for rural-based industrialization: the case of the hand-weaving industry in Laos*”, in AOKI, Masahiko and Yūjirō HAYAMI ed., op.cit. (2001)
- OHNO, Akihiko and Masao KIKUCHI, “*Organizational characteristics of rural textile industries in East Asia*”, in HAYAMI, Yūjirō ed., op.cit (1998)
- ŌMORI, Kazuhiro, “How local trade associations and manufacturers’ associations worked in prewar” in TANIMOTO, Masayuki with Osamu SAITŌ eds.op.cit (Oxford, forthcoming)
- ŌSHIMA Eiko, “Kenmen-kōshokumono sanchi no keisei katei” [The emergence of the weaving district specialized in silk-and-cotton fabrics], *Shakaikeizaishigaku* 50-5 (1985)
- PFEITZER, U., “Work roles and family structure in proto-industrial Zurich”, *Journal of Interdisciplinary History*, 20-1 (1989)
- PFEITZER, U., “The proto-industrial household economy. Towards a formal analysis”, *Journal of Family Economy* 17 (1992)
- PIORE, M.J. and, C.F.SABEL, *The Second Industrial Divide: Possibilities for Prosperity*, (New York, 1984)
- PUTNAM, R.D., *Making Democracy Work* (Princeton, 1993)
- QUATAERT J.H., “A new view of industrialization: ”protoindustry” or the role of small-scale, labor-intensive manufacture in the capitalist environment”, *International Labor and Working-Class History* 33(1988)
- SABEL,C. and Jonathan ZEITLIN, “Historical alternative to mass production”, *Past and Present* 108 (1985)
- SABEL,C. and Jonathan ZEITLIN ed., *World of Possibilities*, (Cambridge, 1997)
- SAITŌ, Osamu, “Population and the peasant family economy in proto-industrial Japan”, *Journal of Family History*, Spring, (1983)
- SAITŌ, Osamu, “The rural economy: commercial agriculture, by-employment, and wage work” in JANSEN, M.B. and G.ROZMAN, eds. *Japan in Transition: from Tokugawa to Meiji*, (Princeton, 1988)
- SAITŌ Osamu, *Chingin to Rōdō to Seikatsusuijun* [Wage, Labour and Standard of Living] (Tokyo,1998)
- SAITŌ, Osamu and Masayuki TANIMOTO, “The re-organization of indigenous industries”, in HAYAMI, Akira, Osamu Saitō and Ronald TOBY eds. op.cit. (2004, The original Japanese version was published in 1989)
- SAKANE Yoshihiro, “Nihon niokeru jinushi kosaku kankei no tokushitsu”[The characteristics of tenant-landowner relationship in Japan], *Nōgyōshikenkyū* 33 (1999)
- SASAKI Jun “Factory girls in an agrarian setting circa 1910” in TANIMOTO, Masayuki with Osamu SAITŌ eds.op.cit (Oxford, forthcoming)
- SAWAI, Minoru, “The role of technical education and public research institute in the

- development of small and medium enterprises”, in ODAKA, Kōnosuke, Minoru SAWAI eds., op. cit.,(1999)
- SMITH, T.C., *The Agrarian Origins of Modern Japan*, (Stanford, 1959)
- SMITH, T.C., *Native Source of Japanese Industrialization 1750-1920*, (Berkeley and Los Angeles, 1988)
- SUGIHARA Kaoru, “Keiei hatten no kiban seibi”[The equipment of the basis of business development]in MIYAMOTO Matao and Takeshi ABE eds., *Nihon-Keieishi 2 Keiei Kakushin to Kōgyōka* (Tokyo, 1995)
- SUGIHARA Kaoru, *Asia-Kan-Bōeki no Keisei to Kōzō* [The Formation and the Structure of Intra-Asian Trade] (Kyoto, 1996)
- SUZUKI Jun, “The humble origins of modern Japan’s machine industry” in TANIMOTO,Masayuki with Osamu SAITŌ eds.op.cit (Oxford, forthcoming)
- TAKAMURA Naosuke, *Nihon Bōsekigyōshi Josetsu*[The Introduction to the History of the Cotton Spinning Industry in Japan]part 1□2 (Tokyo,1971)
- TAKEUCHI Jōzen, “Tsuru senshoku gakkō”[Tsuru school of weaving and dying]in TOYODA Toshio ed., *Wagakuni Ririku-Ki no Jitsugyō Kyōiku* (Tokyo, 1982)
- TAKEUCHI Jōzen, *The Role of Labour-intensive Sectors in Japanese Industrialization*, (Tokyo, 1991)
- TAKEUCHI Jōzen, ”The role of "early factories" in Japanese industrialization” in TANIMOTO Masayuki with Osamu SAITŌ eds.op.cit (Oxford, forthcoming)
- TAMURA Hitoshi, “Zairai orimonogyō no gijutu kakushin to ryūkō sijō”[The fashion market and the technological development of indigenous textile production], *Shakaikeizaishigaku* 67-4(2001)
- TANIMOTO, Masayuki, “The evolution of indigenous cotton textile manufacture before and after the Opening of the Ports”, *Japanese Yearbook on Business History* 9 (1992)
- TANIMOTO Masayuki, *Nihon niokeru Zairaiteki Keizai Hatten to Orimonogyō* [The Weaving Industry and the Indigenous Economic Development in Japan] (Nagoya, 1998)
- TANIMOTO Masayuki, ”Kindai Nihon no toshi shōkeiei [Urban petty businesses in modern Japan]” in NAKAMURA Takafusa and Nobuyuki FUJII eds.*Toshika to Zairaisangyō* (Tokyo,2002)
- TANIMOTO Masayuki, “Capital accumulation and the local economy: brewers and local notables” in TANIMOTO, Masayuki with Osamu SAITŌ eds.op.cit (Oxford, forthcoming)
- TOKYO-SHI [Tokyo municipal office], *Tonya-Sei Shōkōgyō Chōsa* [Industrial Investigation on Small Manufacturing and Processing Workshops under the Putting-out System] (Tokyo,1936)
- TSUENOYAMA Sakae, *Nihon Ryōji Hōkoku no Kenkyū* [The Historical Study on the Japanese Consul Reports] (Tokyo, 1986)
- WASWO, A., *Japanese Landlords*, (Berkeley and Los Angeles, 1977)

- YAMADA Takehisa, "The export-oriented industrialization of Japanese pottery: the adoption and adaptation of overseas technology and market information" in TANIMOTO, Masayuki with Osamu SAITŌ eds. op.cit (Oxford, forthcoming)
- YAMAGUCHI Kazuo, *Meiji-Zenki Keizai no Bunseki* [The Analysis of the Japanese Economy of Early Meiji Period] (Tokyo, 1956)
- YAMAGUCHI Kazuo, "Nishijin orimonogyō no hattatsu" [The development of Nishijin weaving industry] in YAMAGUCHI Kazuo ed., *Nihon Sangyō Kinyūshi Kenkyū, Orimono Kin-yū Hen* (Tokyo, 1974)
- YAMAUCHI Futoshi, "Communal action in the development of regional industrial policy---A case study of the Kawamata silk weaving industry" in TANIMOTO, Masayuki with Osamu SAITŌ eds. op.cit (Oxford, forthcoming)
- YAMAZAKI Hiroaki, "Ryō-taisenkanki niokeru Enshū men-orimonogyō no kozō to undō [The structure and the movement of Enshū cotton weaving industry in inter-war period]", *Keieishirin* 6 -1·2(1969)
- YASAUMARU Yoshio, *Nihon no Kindaika to Minshū Shisō* [The People's Thought in Japanese Modernization] (Tokyo, 1974)
- YASAUMARU Yoshio, "'Tsūzoku dōtoku' no yukue" [The future of Japanese "popular moral"], *Rekishikagaku* 155(1999)

table1

Table 1 Structure of labour in manufacturing sector (1920)

	(A to E: thousand persons)				Factory with > 5 employees		(%)
	Occupied population A	(Breakdowns) Wage worker B Salaied worker C Employer D			Wage worker E	Number of factory F	Ratio of occupied population at the workshops < 5 employees (B+C-E+D-F)/A
Manufacturing Sector Total	4,565	3,168	236	1,162	1,647	45,806	62.9
Breakdowns							
Textiles	1,381	1,107	55	219	819	18,098	39.4
silk reeling	381	345	14	22	299	3,461	20.5
spinning	217	202	13	2	186	331	14.0
weaving	474	351	13	109	262	10,333	42.4
Metal,Macinery and Tools	815	618	65	132	366	6,245	54.4
Chemicals	432	314	35	83	165	5,509	60.5
Foods and drinks	536	313	40	183	134	7,771	73.6
Miscellaneous	1,309	753	38	517	140	7,838	88.7

Source)

The Cabinet Statistical Bureau, *The National Census 1920, vol. 2 (Occupation)*, The Ministry of Agriculture and Commerce, *The Statistical Charts of Factories 1920*, The Cabinet Statistical Bureau, *The Statistics of Imperial Japan 1920*

table2

Table 2-(1)

Agricultural and non-agricultural products in Japan (1874)

Field of industry	Sum of production (Thousand yen)	(%)
Agricultural products	227,287	61.0
Manufacturing products	111,892	30.0
(Breakdown of manufacturing products)		
Textiles	30,994	
fabrics	17,159	
raw silk	6,165	
Foods and drinks	46,945	
breweries	31,080	
Other industries (over 2 million yen)	33,953	
oil	5,443	
Paper	5,167	
Machinery and tools	3,061	
Fertilizer	3,057	
Pottery	2,092	
Forestry products	14,565	3.9
Stock farm products	7,478	2.0
Fishery products	7,276	2.0
Mining products	3,809	1.0
Total	372,307	100.0

Source) Naimusyō ed. *Fuken bussann-hyō* (1874)

[Table of industrial products by prefecture]

Table 2-(2)

Number of gainful workers by industry and occupation (1874)
(Classified by the Meiji government)

Occupation	Number of workers (Thousand people)	(%)
Agriculture	15,657	77.2
Miscellaneous	1,922	9.5
Commerce	1,358	6.7
Manufacturing	749	3.7
Employee	418	2.1
Fishery	27	0.1
Others	152	0.7
Total	20,283	100.0

Source) Yamaguchi (1956) pp.37-8

table3

Table 3 Production forms of the weaving industry in Japan (1905)

		Number of working population of weaving					Ratio of female labour
		Total	Factory	Domestic workshop	Clothier	Wage-weaver	Total (%)
Total	(person)	767,423	91,279	229,446	58,591	388,107	95.3
	(%)	100.0	11.9	29.9	7.6	50.6	
Sum of twelve prefectures*	(person)	512,115	65,219	115,421	45,931	285,544	94.7
	(%)	100.0	12.7	22.5	9.0	55.8	
Kyoto	(person)	44,374	12,458	12,468	6,201	13,247	63.9
	(%)	100.0	28.1	28.1	14.0	29.9	
Fukui	(person)	25,820	9,111	13,431	374	2,904	97.8
	(%)	100.0	35.3	52.0	1.4	11.2	
(Average number of working population per each working place)							
Total	(person)	1.7	29.5	1.7	4.1	1.3	
Sum of twelve prefectures	(person)	1.8	37.4	1.8	5.1	1.3	
Kyoto	(person)	5.1	35.3	4.6	23.3	2.4	
Fukui	(person)	4.9	20.5	6.3	1.8	1.2	

Source) *The 22th Statistical Charts of the Ministry of Agriculture and Commerce* (1905)

Note)*"Twelve prefectures" includes the prefectures that had more than twenty thousands of working population of weaving.

The name of twelve prefectures in order of the number of weaving population are as follows.

Aichi, Ehime, Wakayama, Kyoto, Saitama, Osaka, Gunma, Tochigi, Nara, Niigata, Fukui, Fukuoka.

figure1

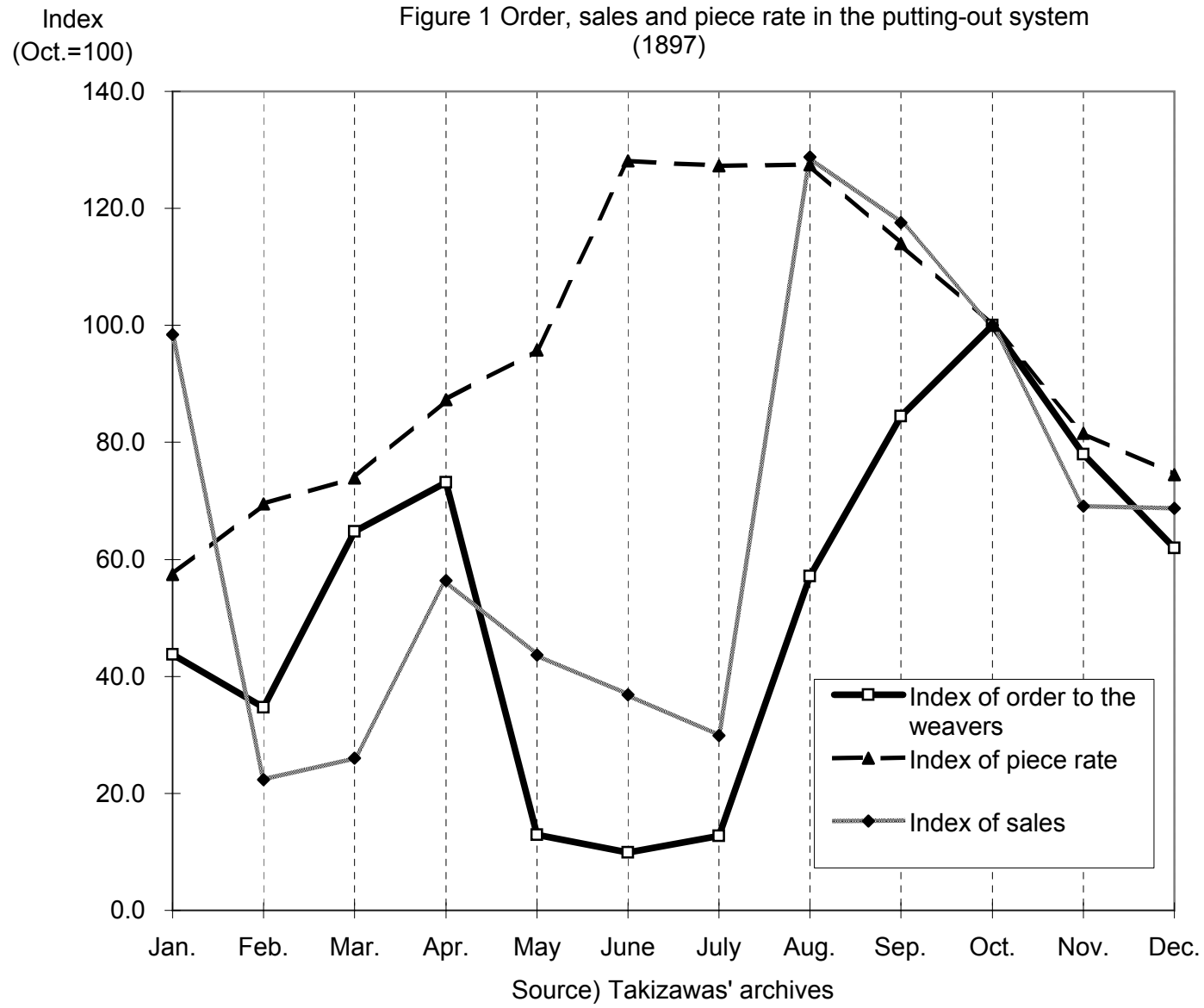


table4

Table 4 The apportion of labour among the peasant's household (1901, in Senpoku-gun, Southern part of Osaka prefecture)

Cultivated acreage	7 hectear odd			
Holding	under 6 hectear			
	Apportion of labour			
	agriculture	housework	weaving	straw work etc.
Old father (75)			yarn winding	
Old mather (59)	part time	cooking,sewing,washing		
Householder (38)	full tiime			part time
Wife (35)	part time	sewing,washing	part time	
Daughter (14)		sewing,washing	full time	
Son (11)		baby-sitting		
Son (9)				
Daughter (5)				
Daughter (3)				
Total amount of labour	239.1(persons)*		540 days	
Total amount of woven fabrics			2160 pieaces	

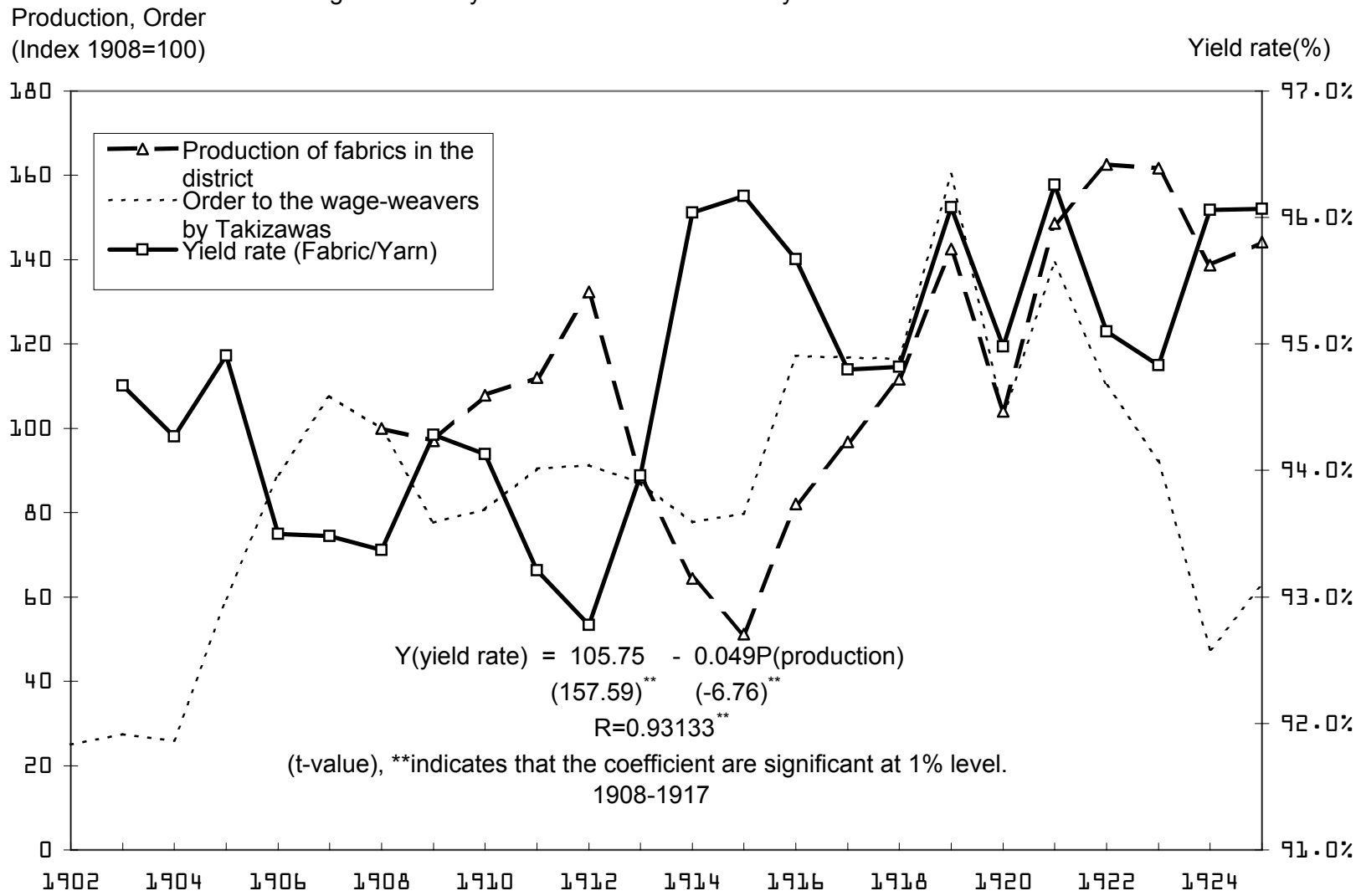
Source) Agricultural organization of Osaka prefecture ed. *Economic investigation of peasant's household* (1904)

Note) * one day work by one person = one person

The number in parenthesis is an age.

figure2

Figure 2 The yield rate and the business cycle



Source) Takizaws' archives and production data of trade association

table5-1

Table 5-(1)
Ratio of Self-employed Workers ("Employers""Workers on own account" + Family Employees) to Total Workers

Country	Year	Ratio of Self-employed Workers					Distribution of Workers			Ave. GDP per capita	
		All industries	Agriculture	Non-Agriculture	Manufacturing	Commerce	Agriculture	Non-Agriculture	Manufacturing	(1990 price, dollar)	
(around 1930)											
JAPAN	1930	67.6	95.1	40.8	39.6	68.8	49.4	50.6	16.0	1,780	1930
POLAND	1931	64.7	84.7	27.7	30.1	67.4	65.0	35.0	16.9	1,994	1930
ITALY	1936	48.4	72.2	26.3	22.6	63.3	48.2	51.8	28.6	2,854	1930
FRANCE	1931	44.6	72.0	25.7	24.9	48.0	36.3	63.7	31.2	4,489	1930
HUNGARY	1930	42.1	60.9	20.8	25.3	41.5	53.0	47.0	23.2	2,404	1930
CZECHOSLOVAKIA	1930	36.4	70.5	15.2	14.0	44.2	38.3	61.7	34.3	2,926	1930
GERMANY	1933	32.9	71.7	17.1	13.9*		28.9	71.1	40.4*	4,049	1930
U.S.A	1930	29.2	71.3	17.3	6.0	27.0	22.0	78.0	29.4	6,220	1930
U.K	1931	13.7	40.3	11.9	8.5	27.7	6.4	93.6	38.3	5,195	1930
(around 1950)											
JAPAN	1950	60.7	94.1	29.2	21.8	64.0	48.5	51.5	15.9	1,873	1950
MEXICO	1950	53.5	70.3	30.1	31.9	74.3	57.8	42.2	11.7	2,085	1950
ITALY	1955	41.1	74.4	23.1	23.2		35.2	64.8	22.1	3,425	1950
FRANCE	1954	35.3	77.0	19.3	13.6	42.9	27.7	72.3	26.2	5,221	1950
WEST GERMANY	1950	29.2	77.9	14.5	12.7	37.8	23.2	76.8	30.8	4,281	1950
PORTUGAL	1950	26.8	38.6	15.7	17.6	43.5	48.4	51.6	18.8	2,132	1950
SWISS	1950	25.0	76.3	14.9	13.2	25.4	16.5	83.5	38.2	8,939	1950
SWEDEN	1950	23.2	70.2	11.2	9.1	22.1	20.3	79.7	31.5	6,738	1950
U.S.A	1950	17.8	72.3	10.2	4.6	19.1	12.2	87.8	26.8	9,573	1950
U.K	1951	7.4	32.9	6.0	2.3	16.8	5.0	95.0	37.6	6,847	1950
(around 1970)											
THAILAND	1970	85.4	96.9	35.1	34.2	79.8	81.4	18.6	3.2	1,596	1970
INDONESIA	1971	62.9	76.8	40.1	47.2	86.2	62.2	37.8	7.4	1,239	1970
MEXICO	1970	37.7	51.0	29.0	23.2	52.5	39.2	60.8	16.7	3,774	1970
POLAND	1970	35.0	87.3	2.1	2.7	1.7	38.6	61.4	24.9	4,428	1970
JAPAN	1970	34.9	95.1	20.7	15.4	36.9	19.1	80.9	25.5	9,448	1970
ITALY	1972	28.1	62.4	20.9	15.7	55.1	17.5	82.5	31.1	9,508	1970
SPAIN	1970	24.9	55.4	14.8	8.5	39.3	24.8	75.2	25.5	7,291	1970
FRANCE	1972	19.9	80.4	11.5	5.7	29.8	12.3	87.7	26.3	11,558	1970
WEST GERMANY	1971	16.1	87.2	9.7	5.8	19.7	8.2	91.8	38.8	11,933	1970
SWEDEN	1972	10.6	66.7	5.9	2.9	11.8	7.7	92.3	28.5	12,717	1970
U.S.A	1972	9.2	61.8	6.9	1.3	10.4	4.2	95.8	23.6	14,854	1970
U.K	1966	7.1	42.1	6.0	1.3	13.3	3.1	96.9	34.7	10,694	1970

Source) I.L.O Year Book of Labour Statistics 1939, 1956, 1973

Angus Maddison Monitoring the World Economy 1820-1992, OECD 1995

Note) Agriculture includes forestry and fishery industry.

Bold letters indicate the countries whose per capita GDP level are similar to JAPAN.

table5-2

Table 5-2 Sectorial Transition of Self-employed Workers

(1950 = 100)

Country	Year	All Industries	Agriculture	Non-Agriculture	Manufacturing	Commerce
Mexico	1970	110	77	219	162	124
Japan	1970	86	60	167	170	159
Italy	1972	65	39	109	90	n.a.
France	1972	64	53	82	47	79
West Germany	1971	67	48	97	70	98
the United States	1972	77	43	109	36	107
Britain	1966	108	91	113	57	101

Source) Same as table 5-1.