Introduction: Types of Female Labour and Changes in the Workforce, 1890–1945

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This book covers two periods of modern Japanese history: from the Meiji Restoration of 1868 to the end of the Second World War, and from 1945 to 1985. For women workers after 1945, the studies (chapters 1–3) present a relatively clear picture of the overall situation. For the pre-war period, however, the essays (chapters 4 and 5) focus on female workers in specific industries—silk-reeling and coal-mining—and on the occupations of the urban lower class, and do not attempt a comprehensive treatment.

Before 1945, the majority of women worked in the agricultural and extractive industries (fig. 1). The number of women in the primary sector dropped from 7 million (more than 70 per cent of all women workers) before the First World War to 6 million during the war years. After 1923, when it was at its lowest, however, their number increased steadily, reaching about 60 per cent of all women workers in the 1930s. Female labour in the tertiary (service) sector, especially sales, shows a steady increase, expanding from 8–9 per cent of the total female workforce before the First World War to 14–15 per cent after the war. Immediately after the financial crisis of 1927, the tertiary sector employed 18 per cent of all women workers, and in 1928 the figure exceeded that in manufacturing.

The number of women working in the industrial sector grew during the First World War and in the late 1930s, but declined or levelled off during the intervening period, remaining at around 15 per cent. If we define female labour broadly to include women working in family enterprises, before 1945 the vast majority were engaged in family enterprises, including farming and small business, in the primary and tertiary sectors. Only a very small number worked as hired labour in the manufacturing sector.

In the pre-war period, female hired labour bore the brunt of technological change. Only after 1945 were women in traditional family enterprises affected by technological innovation (see chapter 4). Here, the discussion will be limited primarily to female wage-labour. Three general methodological observations may be made.

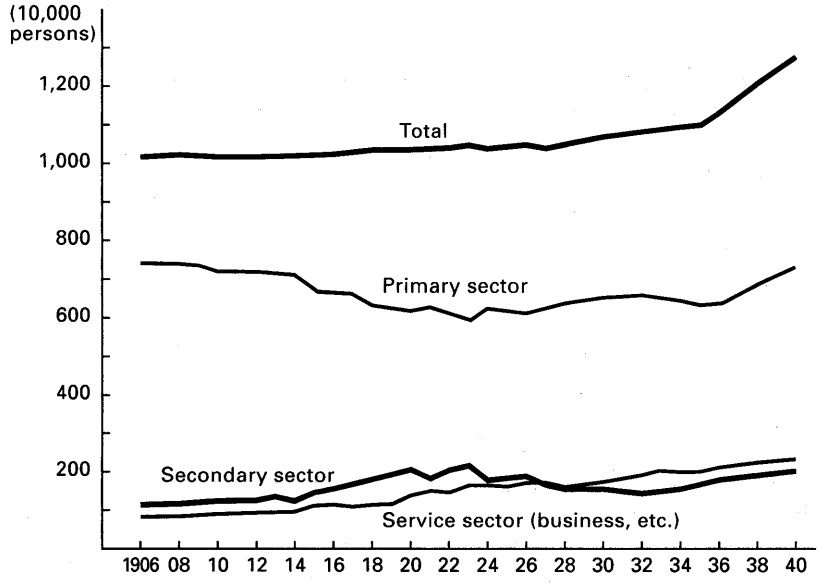

Fig. 1. Number of Women Workers by Industrial Sector, 1906–1940
Notes: Figures are estimations.
Source: Compiled from tables provided in Umemura Mataji, "Sangyōbetsu koyō no hendō: 1880–1940 nen" [Trends in Industrial Sector Employment: 1880 to 1940], *Keizai kenkyū*, vol. 24, no. 2 (1973).

First, female workers may be categorized in a number of ways, depending on one's theoretical and methodological assumptions. Here, I will classify women workers according to the form of production (labour and technology) and social supply of labour (labour market).

Second, I will look at the transformation, and in some cases dissolution, of each category of women workers in the course of the evolution of Japanese capitalism, attempting to identify the structural dynamics involved. To clarify this process, I divide the development of the female labour force into four periods: the industrial revolution (1880s–1907), the First World War (1914–1918), the inter-war period (1920–1936), and the Second Sino-Japanese and Pacific War period (1937–1945).

Finally, looking at female labour after 1945 we can obtain a comprehensive grasp of the continuities and discontinuities between the pre-war and post-war periods. As this paper focuses on the pre-war situation, the subject of continuity-discontinuity will be briefly touched on in the conclusion of this introductory chapter, providing a link to chapter 5.

I. The Industrial Revolution

Japan's industrial revolution took place in the 20 years before about 1907. The revolution was led by the cotton and silk industries. Cotton-spinning relied on imported cotton and spinning machines, and from the start production was large-scale and mechanized. The industry grew rapidly, displacing both hand-spun and imported cotton yarn. In 1897, yarn exports exceeded imports for the first time, indicating that capitalist production had transformed cotton-spinning into an export industry.

Silk-reeling, too, was mechanized but developed from a combination of Western and indigenous technology. Selling primarily to the North American market, silk yarn became Japan's main earner of foreign reserve revenue. Between 1906 and 1910, Japanese silk exports overtook even those of China, until then the world's largest silk-yarn exporter.

In contrast to cotton-spinning and silk-reeling, civilian machinery and equipment manufacturing remained in an incipient stage of development during the years of early industrialization. Machinery manufacturing acquired an abnormal structure heavily skewed by a surge forward in military-related development. Military procurement for the army and navy during the Russo-Japanese War (1904–1905), however, proved an important stimulus to civilian machine manufacture, and shipbuilding in particular advanced rapidly. By 1907, with the completion of the *Ten'yō maru*, Japan's first modern domestic-built steam vessel, the industry had risen to contemporary world standards. As Japan's capacity for self-sufficiency in shipbuilding increased, a number of large machine manufacturers emerged, and Japanese craftsmen began producing American-style machine lathes on their own.

By around 1907, the way seemed clear for the establishment of the machine and equipment industry, and the foundations for development of an independent national economy, based on the internal linkage between the consumer goods and industrial goods industries, took shape. In fact, however, this linkage remained extremely weak, and in the cotton and silk industry, for example, machine manufacturers could not satisfy domestic demand for spinning and reeling equipment until the 1930s. Industrial capitalism depended on imports for many heavy industrial goods, and these were paid for largely out of the earnings from raw-silk thread exports. The reeling industry, then, financed the machine imports essential for the development and expansion of industrial production in Japan.

These features of incipient Japanese capitalism are illustrated in the industrial structure. By 1909, the end of the industrial revolution, the spinning and weaving industry, including both cotton-spinning and silk-reeling, accounted for 51 per cent of the value of total industrial production and employed 64 per cent of the workforce (table 1). The metalworking and machine industries produced only 10 per cent of that value and hired a mere 8 per cent of the labour force. The industrial structure was lopsided, skewed heavily toward spinning and weaving.

Table 1. Amount of Production and Number of Workers by Industry, 1909–1940

	1909	1914	1919	1925	1929	1935	1940
Amount of production (1,000 yen)							
Spinning and weaving industries							
Silk-spinning	111,561 (14.0)[b]	166,438 (21.1)	846,527 (12.3)	937,139 (13.5)	864,353 (11.2)	484,587 (4.5)	956,383 (3.3)
Cotton-spinning	121,218 (15.2)	203,722 (14.8)	760,476 (11.0)	781,442 (11.3)	822,035 (10.6)	877,043 (8.1)	870,126 (3.0)
Silk textiles	46,234 (5.8)	55,151 (4.0)	453,122 (6.6)	275,324 (4.0)	248,503 (3.2)	237,513 (2.2)	606,062 (2.1)
Cotton textiles	61,975 (7.8)	117,485 (8.6)	795,350 (11.5)	709,211 (10.2)	485,393 (6.3)	641,148 (5.9)	388,214 (1.3)
Other textiles	403,452 (50.7)	660,175 (48.1)	3,514,386 (51.0)	3,479,416 (50.2)	3,323,137 (42.9)	3,497,652 (32.3)	4,976,151 (17.1)
Metalworking and machines/appliances	76,249 (9.6)	184,681 (13.5)	1,274,069 (18.5)	934,994 (13.5)	1,450,231 (18.7)	3,350,433 (31.0)	14,343,557 (49.3)
Chemicals	80,172 (10.1)	164,125 (12.0)	723,493 (10.5)	771,593 (11.1)	1,044,266 (13.5)	1,814,724 (16.8)	4,623,270 (15.9)
Processed food	147,240 (18.5)	221,246 (16.1)	742,997 (10.8)	1,102,313 (15.9)	1,163,314 (15.0)	1,168,479 (10.8)	2,465,196 (8.5)
Misc. manufacturing[c]	89,316 (11.2)	142,201 (10.4)	634,465 (9.2)	636,595 (9.2)	757,772 (9.8)	984,529 (9.1)	2,684,528 (9.2)
Total	796,429 (100.0)	1,372,429 (100.0)	6,889,410 (100.0)	6,924,911 (100.0)	7,738,720 (100.0)	10,815,817 (100.0)	29,092,702 (100.0)
Number of workers							
Spinning and weaving industries							
Silk-reeling	191,561 (24.5)	224,287 (23.8)	297,957 (18.6)	343,654 (19.1)	416,715 (22.9)	280,508 (11.9)	198,837 (5.2)
Cotton-spinning	89,781 (11.5)	112,858 (12.0)	187,707 (11.7)	210,997 (11.7)	179,558 (9.9)	168,800 (7.1)	138,203 (3.6)
Silk textiles	59,574 (7.6)	45,649 (4.8)	93,453 (5.8)	74,611 (4.1)	67,048 (3.7)	86,385 (3.7)	125,955 (3.3)
Cotton textiles	71,759 (9.2)	88,662 (9.4)	160,426 (10.0)	168,016 (9.3)	126,495 (7.0)	139,128 (5.9)	75,769 (2.0)
Other textiles	501,538 (64.3)	583,469 (62.0)	917,238 (57.1)	1,004,317 (55.7)	1,037,829 (57.1)	1,071,188 (45.4)	998,217 (26.1)
Machines and appliances	65,017 (8.3)	102,257 (10.9)	273,899 (17.1)	317,306 (17.6)	281,033 (15.5)	583,833 (24.7)	1,726,123 (45.1)
Chemicals	27,399 (5.3)	40,212 (4.3)	98,449 (6.1)	98,084 (5.4)	122,330 (6.7)	226,960 (9.6)	385,264 (10.1)
Processed food	71,313 (9.1)	76,856 (8.2)	104,772 (6.5)	170,648 (9.5)	142,998 (7.9)	158,125 (6.7)	222,483 (5.8)
Misc. manufacturing[c]	115,227 (14.8)	138,808 (14.7)	211,384 (13.2)	211,651 (11.7)	232,794 (12.8)	320,781 (13.6)	497,751 (13.0)
Total	780,494 (100.0)	941,602 (100.0)	1,605,742 (100.0)	1,802,006 (100.0)	1,816,984 (100.0)	2,360,887 (100.0)	3,829,835 (100.0)

a. Based on companies with five or more workers.

b. Numbers in parentheses are percentages.

c. "Misc. manufacturing" includes lumber and wood-processing, printing and bookbinding, ceramics, quarrying, and others.

Source: Compiled on the basis of data contained in documents in *Kōgyō tōkei go-jūnenshi, Shiryōhen 1* [Fifty Years of Industrial Statistics, Documents, vol. 1].

Table 2. Composition of the Female Labour Force by Industry

	1902	1907	1914	1919	1925	1929	1935	1940
Spinning and weaving industries	61,980 (79.4)[a]	68,273 (79.3)	100,460 (80.6)	175,873 (77.4)	199,372 (78.5)	185,280 (77.5)	205,725 (85.7)	188,783 (85.2)
Cotton-spinning	120,980 (93.8)	148,588 (94.9)	209,703 (95.0)	278,249 (93.4)	315,870 (91.9)	385,167 (92.4)	255,066 (92.0)	174,441 (92.2)
Silk-reeling	51,187 (86.6)	93,749 (87.2)	119,850 (85.2)	237,986 (81.6)	236,315 (81.2)	203,613 (81.2)	291,614 (82.3)	271,870 (83.2)
Weaving (A)[b]	730,213 (94.5)	726,232 (95.7)	575,797 (94.3)	951,834 (90.8)	539,015 (86.5)	454,467 (85.1)	492,777 (83.9)	?
Weaving (B)[b]	2,310 (75.3)	3,204 (71.7)	34,835 (69.2)	41,205 (52.9)	40,042 (47.8)	40,441 (44.4)	60,432 (44.7)	139,642 (58.9)
Other	983 (2.9)	2,395 (3.9)	4,184 (4.8)	16,561 (6.4)	19,623 (6.2)	19,995 (7.1)	48,219 (8.2)	175,293 (10.2)
Metalworking/machines								
Chemicals	43,683 (53.1)	22,386 (34.2)	28,101 (33.4)	56,248 (29.7)	48,464 (28.6)	53,348 (27.7)	98,792 (30.7)	126,448 (31.7)
Processed food	13,316 (44.2)	19,643 (40.8)	10,882 (18.6)	19,726 (18.8)	47,190 (27.7)	21,317 (14.9)	31,671 (20.0)	69,267 (31.1)
Misc. manufacturing	11,579 (35.8)	20,342 (38.4)	27,023 (34.3)	43,743 (30.6)	48,872 (28.4)	60,590 (29.9)	90,143 (31.1)	152,242 (30.0)
Total (including misc.) (excludes weaving (B))	313,269 (62.8)	385,936 (60.0)	535,297 (62.7)	870,797 (54.0)	955,827 (52.9)	969,835 (53.1)	1,081,702 (45.7)	1,298,059 (33.8)
Mining			67,291 (22.9)	111,849 (24.0)	72,321 (23.3)	55,104 (19.2)	25,389 (9.9)	55,240 (11.1)
Metals	?	?	14,893 (15.7)	15,167 (15.0)	5,895 (13.1)	5,077 (10.6)	6,433 (9.3)	18,358 (11.9)
Coal	?	?	51,400 (27.5)	95,283 (27.4)	65,402 (25.9)	49,277 (21.5)	17,847 (10.2)	34,431 (10.6)

a. Figures in parentheses show percentage of women workers *vis-à-vis* the entire labour force for that industry.
b. "Weaving (A)" means factory workers; "Weaving (B)" non-factory workers.
Source: Compiled from *Nōshōmu tokeihyō* [Statistics on Agriculture and Commerce Affairs], *Kōjō tōkeihyō* [Factory Statistics], *Shōkōshō tōkeihyō* [Ministry of Commerce and Industry Statistics], and *Honpō kōgyō sūsei* [Trends in Japan's Mining Industry].

The overwhelming majority of workers in the spinning and weaving industry were women, and most women in the labour force were employed in this sector. During the industrial revolution (surveyed in 1902 and 1907), female workers accounted for between 94 and 95 per cent of those employed in silk filatures, 79 per cent of the workers in cotton mills, and 87 per cent of factory weavers (table 2). A closer examination of the categories in table 2 shows the composition of the female working population to be more complex than it first appears. The extremely large number of women working in domestic manufactures ("Textiles (B)")—roughly 700,000—worked for putting-out operations controlled by *toiya* agents. The chemical industry hired between 20,000 and 40,000 women, and processed food and "miscellaneous manufacturing" each employed between 10,000 and 20,000. Women accounted for between 35 and 40 per cent of the workers in each of these industries.

In the chemical industry, women workers concentrated in the match factories. In the manufacture of food, beverages, and tobacco, most worked in tobacco factories, and in "miscellaneous manufacturing" they engaged mainly in straw-plaiting and the weaving of figured rush mats (*hanagoza*). According to a 1902 survey by the Ministry of Agriculture and Commerce (Nōshōmushō), women comprised 77 per cent of workers in the match industry and 86 per cent of those in the tobacco industry.[1] Although there are no confirming statistics, we may suppose that the coal industry, too, employed large numbers of women during the period of the industrial revolution.

Most of the women engaged in these activities (coal-mining was an exception) were under 20 years of age (table 3). With the exception of tobacco, all

Table 3. Age Composition of the Female Workforce, 1901 (percentages)

	Under 14	15–19	Over 20
Cotton-spinning[a]	11.4	41.6	47.0
Silk-reeling[b]	18.3	47.9	33.8
Textiles[c]	16.7	39.9	43.4
Matches[d]	18.6	40.3	41.1
Tobacco[e]	6.7	43.5	49.7

a. 19,344 workers in 16 factories in the Kansai area.
b. 12,519 workers in 205 factories in Nagano Prefecture.
c. 63,701 workers in weaving factories in Hachioji (Tokyo), Tango (Kyoto Prefecture), Sakai (*dantsū*) (Osaka), Ashikaga (Tochigi Prefecture), Nakajima (Aichi Prefecture), Fukui Prefecture (silk-weaving), and Fukuoka Prefecture (*kurume gasuri*).
d. 3,996 workers in 14 factories in Osaka.
e. 4,958 workers in 10 factories.

Source: Nōshōmushō Shōkō Kyoku Hen [Commerce and Industry Bureau, Ministry of Agriculture and Commerce], ed., *Shokkō jijō* [Conditions in the Textile Industry] (1903).

of the goods produced by these industries were for export.[2] Young female labour, concentrated in the leading export industries, formed a crucial link in the reproductive cycle of early industrial capitalism in Japan. Below, we shall summarize the main features of the female labour force in each sector, focusing on labour and technology (forms of production) and the social supply of labour (the labour market).

1. Cotton-spinning

The majority of female cotton-mill operatives were unmarried and less than 20 years old (table 3). In 1901, 59 per cent of the workers in England's spinning industry were women, and 60 per cent of these were over 20—and many of them were married.[3] The unusually high proportion of unwed adolescent women in the workforce is one of the distinguishing features of Japan's early cotton industry. This branch was able to absorb so many young women because of the introduction and rapid spread in the late 1880s of ring spindles, which were easier to operate than the more exacting mule spindles. Japan's quick switch to the technically advanced ring spindle gave it a technological edge over England, which relied exclusively on the mule, and this difference probably explains the larger proportion of older women in English cotton mills.

In the early stages of the industrial revolution, impoverished urban families and poor peasant producers on the periphery of urban centres provided cotton mills with female labour. But as the demand for labour expanded, factories cast recruitment nets wider, and by the late 1890s most operators were the daughters of poor peasants and tenant farmers who came to the cities from the rural hinterlands to find seasonal work (*dekasegi*).[4] The labour contracts these young women signed with the factories that hired them overwhelmingly favoured management. The "agreements" prohibited the worker from leaving before the specified period of employment was up and allowed the company to fine violators. Management, however, was free to dismiss workers as it pleased.[5] Such arbitrariness was determined by the fact that recruits, who were poor, were advanced a sum to cover travel and outfit expenses at the time of employment. This money had to be repaid out of wages and effectively bound the worker to the factory. Women in the cotton industry were in effect bonded workers, and as a result they were not independent sellers in the labour market. Under this system of employment, female mill operatives were forced to work a double shift extending far into the night, and for lower wages than their counterparts in colonial India.[6]

2. Silk-reeling

The silk filature industry developed rapidly on a traditional foundation to which foreign technical implants were added. Silk-reeling machinery combined the best features of Western and indigenous technology. But reeling

machines remained sophisticated tools dependent, as in the past, on the nimble fingers and dexterity of their female operatives. For this reason, small-scale factories hiring between 20 and 40 women for skilled manual work formed the core of silk-reeling operations.

Silk-reelers, like cotton-spinners, were the daughters of poor peasants who emigrated to the cities to take seasonal jobs. As industrialization proceeded, they came from remote areas throughout Japan.[7] Unilateral labour contracts and the practice of advancing travel funds indentured these workers, like their counterparts in the cotton mills, to the filature factories. Operatives received low wages based on a specially graded wage system and were obliged to work long hours, an average of 13 to 14 hours a day, and sometimes as many as 17 and 18 hours.

3. Textiles

Although in some areas weaving had progressed beyond handicraft factory production, the putting-out system was prevalent: a large merchant house or enterprising peasant family, the *orimoto*, advanced yarn and money and loaned looms to smaller domestic producers, who were paid piece-rates for their output. Most weavers were farm women who wove cloth at home in their spare time or during the slack season to supplement income from agriculture.

A 1903 Ministry of Agriculture and Commerce report noted that: "Local women prefer to remain at home and work for piece-rates than to be bound to a factory for long periods of time. Moreover, female factory workers are looked down on."[8] For this reason, textile manufacturers found it difficult to recruit from nearby areas and were forced to recruit from more distant regions.[9] It took women factory workers between four and five years of training to learn how to operate a mechanical hand loom properly, so most enterprises had an apprenticeship system.

"An apprentice contract is made under the name of trainee weavers. Even when these trainees become regular employees no fixed wage is stipulated. The contract stated that an apprentice allowance would be paid only after the term of apprenticeship expired."[10] Contracts were extremely unilateral, severely limiting the freedom of weavers, as with labour contracts in the spinning and silk-reeling industries.[11]

4. Match Manufacturing

Most of the match production process was handled by female manual factory labour, though, later, matchstick alignment came to be done by indigenously developed machines. Some work, including matchbox-making, was left to people working at home through the medium of *toiya* agents. Virtually all match factory employees and home workers were the daughters of poor urban families living near the factories.[12]

5. Tobacco Manufacture

Female workers in the tobacco industry were engaged mainly in sorting and rolling tobacco leaves for cigars, rolling and wrapping leaves for cigarettes, and packaging. In the course of the industrial revolution, the work of cigarette-rolling and wrapping was gradually mechanized, as it was recorded that "[the work] once belonged solely to the realm of manual labour, but now that machines are used, it is the work of many female factory workers."[13] Mechanization not only changed the content of female labour but also brought about a decline in *toiya*-mediated tobacco-rolling on a piece basis, done by women at home.

> Piece-basis rolling at home was once a widespread practice. There was even a certain firm that set up branches and agents' offices at many places in the neighbouring prefectures to organize large amounts of hand-rolled tobacco done at home. As more of this work is now being done in factories, hand-rolling as a cottage industry is on the ebb. The introduction of machines, which makes hand-rolling unnecessary, has produced intense competition among tobacco-makers, who cannot survive without using machines.[14]

Generally, female workers in tobacco manufacturing commuted to nearby factories located in the cities. As indicated by a record which states that "their character is nobler than that of match-manufacturing workers",[15] the tobacco workers presumably came from a stratum of the poor (then called *saimin*) one rank higher than the poor of the urban slums.

6. Straw Mats and Other Products

Straw-plaiting (*sanada*) and weaving of figured rush mats (*hana-mushiro*) were done by farmers at their homes as a side job, under the control of *toiya* agents. There were signs for a while of emerging factory production in this realm too, but ultimately the agent-mediated home manufacturing prevailed. "The rise or fall of the *sanada* and *hana-mushiro* industry is dependent upon vigorous or inactive foreign trade. Partly for lack of foreign-trade know-how and partly because of a shortage of capital it often happens that the scale of business has to be either drastically expanded or drastically reduced. An incorporated enterprise system would not be flexible enough for that drastic adaptation."[16] The insecurity of relying on foreign trade was the condition that allowed *toiya* home manufacturing to survive.

7. Coal-mining

In coal-mining during the industrial revolution period, most mining processes continued to rely on manual labour using simple tools, although hoisting whims were in use for the main shafts. A working pattern in which a mar-

ried couple worked as a unit, with the husband (*sakiyama*) digging out the ore and the wife (*atoyama*) assisting him by carrying away the coal, became widespread. Unlike in the industries discussed thus far, married women made up most of the female workforce in the coal-mining industry. Many left their native villages with their whole families to live near the mines where they worked. The *naya* or "stable" system emerged to supervise these miner families. This was an indirect labour-management system with the *naya* chief as an agent, who recruited miners, had them live in the bunkhouses he provided, and supervised their daily lives. Money borrowed in various forms from the chief kept the miners in bondage to him.

The above outlines the main features of female labour in seven industries. We can now categorize female workers during the industrial revolution period in terms of technology/labour (production form) and source of worker supply (labour market) into six types as follows:

- Type 1: Imported modern industry (large, mechanized factories) and seasonal work (cotton-spinning).
- Type 2: Manual factory manufacturing and seasonal work (silk-reeling and part of the textile industry).
- Type 3: *Toiya*-mediated home labour in rural areas (weaving, straw-plaiting, and rush-mat making).
- Type 4: Mechanized industry and urban poor (*saimin*) workers (tobacco manufacturing).
- Type 5: Manual factory manufacturing, *toiya*-mediated home labour, and urban-slum (*hinmin*) workers (match manufacturing).
- Type 6: Hard labour by families who had left their villages (coal-mining).

Overall, the female workers of the industrial revolution period lacked the independence of modern wage-earners, and displayed the features of premodern, agrarian-style, poor urban workers.

II. First World War Period

The First World War gave an unprecedented boost to Japanese capitalism. With the withdrawal of European countries from the Asian market and with the boom in the United States, Japanese exports of cotton goods and silk expanded, while the decline in import pressures led to remarkable progress in heavy and chemical industries. The rate of self-sufficiency in machines and appliances rose from 62 per cent in 1909 to 90 per cent in 1919, and that for steamships exceeded 100 per cent.[17] The post-First World War development of the heavy and chemical industries pushed up the proportion of metal-working and machines in total industrial output from 14 to 19 per cent in the period 1914–1919. The proportion of factory workers in those industries also increased from 11 to 17 per cent during the same period (table 1). The ratio of factory workers in the spinning and textiles industry, on the other hand, decreased from 62 to 57 per cent, though their actual number did

rise. Nevertheless, reflecting the country's vigorous exports, the ratio of the textile industry's output remained at 51 per cent, the same as ten years earlier, and even showed a slight increase compared with 1914. In spite of marked advances in heavy industry during the First World War, textiles still accounted for most of the country's industry, both in output and in the number of factory workers.

The change in the industrial structure affected the composition of the female labour force (table 2). Mirroring a relative decline in the textile industry, the proportion of women workers in the entire factory workforce fell by 9 percentage points in the 1914–1919 period. Yet as of 1919 their proportion was still 54 per cent.

The content of the female workforce also changed in several ways. First of all, Article 2 of the Factory Act of 1916 (promulgated in 1911) prohibited the employment of boys and girls under the age of 12. Article 2 had a provisory clause to the effect that "the Act does not apply when workers who are over the age of ten at the time of enforcement of the Act continue to be employed." So, among existing workers it was only those under the age of ten who actually had to be taken off their jobs. The Act made it difficult to employ very young workers, and female workers under age 13, who made up not a small percentage of the workforce during the industrial revolution, quickly began to disappear (table 3).

A second change was in female labour in the textile industry, which before the industrial revolution was at the handicraft stage, centring around handlooms. Power looms were introduced in the early 1910s, and by the time the First World War broke out the industry as a whole was machine-dominated; this tendency grew even stronger with the drastic rise in textile exports during the war. The shift to power-loom factories prompted a realignment of labour. Relatively fewer workers worked in weaving, where female labour was concentrated, while the dyeing, printing, and finishing processes, in which male labour was dominant, grew in importance. As shown in "Textiles (A)" in table 2, the ratio of female workers decreased from 87 per cent in the industrial revolution period to 85 per cent in 1914, and to 82 per cent in 1919. Furthermore, because manual skills were rendered unnecessary by the power looms, the apprenticeship system collapsed. Clear evidence of this change is the transforming of the "allowance" that was at the core of the apprentice system into monthly wages. The final factor bringing about the demise of the apprenticeship system was the imposition of legal restrictions. The aforementioned Factory Act prohibiting the employment of boys and girls under 12 years old, and Article 22 of the enforcement ordinance (1916) of this law, which stipulated that "the wage for workers shall be paid in monetary form at least once every month," signalled the end of apprenticeship practices based on the employment of young children and payment in kind ("apprentice allowance" paid after the expiration of the term of service.)[18]

Another notable change during the First World War period is that the number of female workers in the metalworking and machine industry rose

to over 10,000 for the first time (1916), and their percentage of that industry's workforce increased from 3–4 per cent during the industrial revolution period to more than 6 per cent in 1919. Owing to a rapid rise in labour demand caused by the brisk economy during the war, female workers were absorbed into the heavy industries sector on an unprecedented scale. A contemporary report states: "The merit of female workers is that they are more meticulous and find it less bothersome than men to do jobs that require careful work in electric motor production, such as coil winding and insulator manufacture."[19] Women workers in the machine/appliances industry were presumably employed in such jobs as required only semi-skilled work, mainly in the sector of newly emerging electric appliances. For example, in Mitsubishi's Nagasaki Shipyard, one of Japan's leading heavy industrial firms at that time, female workers increased in number from 1916 onward (449 women as of 1918), and an overwhelming proportion of these women were engaged in electric motor manufacturing.[20] Although female workers in the machines/appliances industry constituted a negligible share in numerical terms, they nevertheless deserve mention as the prototype of female labour seen later during the Second World War.

III. Inter-war Period

In the spring of 1920, Japan experienced a financial panic in reaction to the war boom earlier than in other countries, and a series of crises followed every few years. A second crisis ensued from the Great Kanto Earthquake and Fire of 1923, and another financial panic occurred in 1927 (the Shōwa Panic). The Shōwa Depression of 1930 arrived before Japan's capitalist system was able to regain relative stability. Even in the chronic recession of the 1920s, urban investment and electrification rose, facilitating the growth of the new heavy and chemical industries such as electric power, related industries (electric appliances, wire), organic synthetic chemicals, and automobiles. Despite the rapid advance of these new industries, heavy and chemical industry as a whole did not show much growth, partly because of mounting import pressures (as European products began to flow back into the Asian market after the end of the First World War), and partly because of reduced military demand stemming from the arms reduction resolutions Japan signed at the Washington Conference of 1921–1922. For example, the metalworking and machine industry produced only 19 per cent of total industrial output in 1919–1929, and the proportion of factory workers in this industry declined slightly from 17 to 16 per cent. The chemical industry showed almost the same pattern during the same period (table 1).

By contrast, the cotton and silk-thread industries were among the few thriving sectors during the chronic recession. The former was invigorated by increased cotton cloth exports to new Asian markets, and the latter by a rise in silk exports to the United States accompanying the boom in the US economy in the 1920s. As a result, though the textile industry's output ratio

decreased in the late 1920s, its share of the factory labour force remained high at 56–57 per cent throughout the 1920s (table 1). The continuity of the textile industry-led industrial structure is also reflected in the high proportion of women textile workers in the total factory labour force: 53 per cent in the 1920s, about the same level as in 1919 (table 2).

Drastic change came to the textile industry-led structure following the Shōwa Panic and the Manchurian Incident of 1931 (which led eventually to the outbreak of the undeclared war between Japan and China that lasted from 1937 until the end of the Pacific War). The former struck an unprecedented blow to the silk-reeling industry, which had relied heavily on exports to the United States for growth. The decline of the industry that had been the country's greatest foreign currency earner destroyed the international balance of payments, and was partly responsible for the embargo Japan placed again on the export of gold. The embargo sharply lowered the foreign exchange rate and markedly raised the level of self-sufficiency in the heavy and chemical industries. Fiscal policy too, especially the increase in military spending, introduced by Takahashi Korekiyo (who became Finance Minister in December 1931), imparted a temporary impetus to expansion of the domestic market in the heavy and chemical industries immediately after the Manchurian Incident, leading to the subsequent growth in these industries. Moreover, expanded investment in the economic development of Manchuria brought about a sharp rise in the export to Manchuria of heavy and chemical industrial products.[21]

The above-described factors combined to cause heavy and chemical industry to emerge rapidly as a key industry in the Japanese capitalist system (table 1). In 1936 the metalworking and machine industry surpassed the textile industry in output, marking a decisive shift in Japan's industrial structure from reliance on textiles to heavy industry. Reflecting this change, the proportion of female workers in the total factory workforce fell below 50 per cent for the first time in 1933, and dropped further to 46 per cent in 1935 (table 2).

The inter-war period saw the progressive dissolution and/or transformation of the six categories of female workforce that had been created during the industrial revolution. Given the present level of research, it is impossible to give a full picture of each of the six types, so here I intend to discuss briefly the situation in four main industries: cotton-spinning, silk-reeling, textiles, and coal-mining.

1. Cotton-spinning

With the promulgation in 1923 of the revision of the Factory Act (which came into force in 1926), the delay in late-night work prohibition was shortened from a period of 15 years after the law's enforcement to a period of three years after enforcement of the revised Factory Act. This provided the incentive to rationalize the cotton-spinning industry, whose rapid growth had depended upon the late-night work of female workers. Rationalization

was achieved at first by increasing the number of spindles operated by the individual worker. From around the time of the Shōwa Panic technological rationalization was sought by remodelling equipment—for example, the independent operation of electric-powered spinning machines, more rapid spindle speed achieved through better-quality rings and improved spindle designs, the shortening of the three-stage roving process through the introduction of high-draft machines, and the unification of the ginning processes into one through linked machine operations.[22] As the shift from mule to ring spindles had already taken place during the industrial revolution period, there was little room for technological improvement in the spinning machines. Technological rationalization therefore concentrated on the pre-spinning processes. In the course of the rationalization, young female workers again increased their share in the spinning industry's workforce. The proportion of women workers, which had stayed at around 78 per cent for a while until 1929, rose to 86 per cent by 1935 (table 2). The proportion of young female workers aged under 20 also increased, from 64 per cent in 1927 to 67 per cent in 1930, and then to 72 per cent in 1933.[23] This increase was notable in the jobs where there were technological improvements, such as roving and ginning,[24] prompting the replacement of male with female workers.

Also, improved technology required suitably able workers. The main concern of management gradually shifted from indiscriminate hiring to the strict screening of applicants using aptitude tests.[25] This change discouraged the traditional arrangement of hiring linked to the advance of funds that had straitjacketed workers in the past. According to a 1927 survey of 34 spinning mills, there were only five in which more than 30 per cent of the women workers had borrowed money at the time of employment. In 11 factories there were none who had done so.[26]

2. Silk-reeling

The technological rationalization that occurred in silk-reeling in the 1920s was generally partial and moderate, consisting of a nationwide standardization of silkworm species, a shift in cocoon-drying methods from heating to steaming, and division of labour between cocoon-boiling and silk-reeling. After the start of the Shōwa Depression of the 1930s, as America's demand for silk declined, there was a decisive change in silk demand from textiles to stockings, leading to the rapid spread of the multiple-spool reeler that enabled the reeling of the refined, high-quality silk required for stockings.[27] Ironically, then, in the very process of its decline, the silk-reeling industry in Japan underwent a shift from the manual-based to the machine-based factory system.

The female labour that sustained the vigorous growth of the silk-reeling industry consisted mainly of the daughters of poor tenant farmers in the 1920s, as it did during the industrial revolution.[28] Hiring practices, however, were considerably modernized, at least formally, owing to the establish-

ment of the labour protection laws. Already during the First World War, forcing workers to pay breach-of-contract damages was banned in the 1916 enforcement ordinance of the Factory Act, which removed items regarding "advance payment" from the employment contract and made the contract simply a mutual employment agreement. After promulgation of the Factory Act revision in 1926 (Article 27 [4]), which required that the owner of a factory with 50 or more workers prepare and submit to the authorities a document laying down the employment-related regulations of the factory, labour conditions began to emerge in clearer relief.[29] The unilateral contract that had been binding only on workers disappeared, and labour contracts moved into the modern age.

3. Textiles

In the textile industry in the 1920s, as the domestic market for narrow-width cloth remained sluggish, attempts were made to shift to production of wide cloth for export, and power looms for wide cloth were introduced. From 1924 the number of narrow-cloth power looms started to decline, while that of wide-cloth looms rose throughout the 1920s. In 1925 the latter exceeded the former.[30] But only in a few regions was the shift to wide-cloth production for export using new looms successful. Many textile-producing regions did not undergo such a shift of production, and textile production grew, levelled off, or actually declined.[31] The decrease in the number of workers in the weaving industry in the 1920s (table 1) reflects this reorganization of production regions. The disintegration of the apprenticeship system that had begun during the First World War went even further in that process of change.

4. Coal-mining

The ban on late-night or underground work for women and young people included in the 1928 revision of the miners' protection regulations added impetus to a thoroughgoing technological rationalization of the coal-mining industry. Long dependent on the team labour of married couples, the new regulations forced the industry to establish new systems of production technology, and around the time of the Shōwa Depression longwall-type coal-extracting machines and conveyer equipment were introduced.[32] Coal-mining thus entered a process of change from the manual labour phase that relied on mandrels and shovels to the phase of machine extraction. The introduction of new technology put many women miners out of work. The proportion of female labour in the mine workforce had stood at 26 per cent in 1925, but decreased to 22 per cent in 1929, and to 10 per cent in 1935 (table 2).

Introduction of the new technology also destroyed the *naya* system. Joint work by many miners (made possible by the adoption of the longwall-type coal-extraction method) and mechanization of coal extraction rendered

meaningless the function of the *naya* foremen as guides and supervisors of the isolated, manual work based on the married couple. The mines also required better-qualified miners than could be assembled by the indiscriminate hiring of the *naya* heads. Toward the end of the 1920s, the *naya* system was rapidly done away with in the major mines in Kyushu.[33]

Thus, with modernized employment achieved through labour protection laws and with a qualitative improvement in workers impelled by the adoption of new technologies, the types of female labour characteristic of the industrial revolution period either disappeared (as in the case of coal-mining) or underwent major changes (as in cotton-spinning, silk-reeling, and weaving) in the inter-war period, most notably around the time of the Shōwa Depression.

IV. The War Period (1937–1945)

Following the outbreak of the Sino-Japanese War in July 1937, the government tightened its control over all economic activities in the country. Wartime economic controls began with promulgation in September that year of the Extraordinary Funds Adjustment Law and the Extraordinary Export and Import Measures Law restricting investments and the purchase of industrial goods from abroad. They were made more or less complete when the National General Mobilization Law (April 1938) was enforced to mobilize both human and material resources for prosecution of the war. The main aim of the economic control was quickly to turn the industrial structure into one which, centring on munitions production, would enable Japan to overcome its relative inferiority in heavy industry productivity and continue fighting a modern all-out war. Indeed, a series of control laws, including the above-mentioned three, aided by massive government spending of public funds in the munitions industry, stimulated further progress in the heavy and chemical industries. In 1940, as shown in table 1, the proportion of metalworking and machines/appliances made up 49 per cent of total production and accounted for 45 per cent of all factory workers, whereas only 17 per cent of the production and 26 per cent of factory labour was in spinning and textiles.

The rapid advancement of the heavy and chemical industries resulted in the reduction of the proportion of women in the total factory workforce to 34 per cent in 1940. The composition of female labour, too, underwent a new, decisive change during the war period, with the rapid expansion of female labour in metalworking and machine/appliances manufacturing. The number of female workers in this sector surpassed 100,000 in 1938 and rose further to 175,000 in 1940 and over 200,000 the following year. It surpassed the number of women workers in silk-reeling in 1940 and in cotton-spinning in 1941. Also, the proportion of female labour in the total workforce in that sector rose above 10 per cent for the first time in 1939. As of March 1942,

Table 4. Number of Female Workers by Industry and Age (metalworking and machines, as of end of March 1942)

	Age 12–19	Age 20–59	Total	Proportion in total workforce
Metal-refining materials	13,868 (44.0)[a]	17,648 (56.0)	31,516 (100.0)	10.6
Other metal-working	19,394 (35.8)	34,850 (64.2)	54,244 (100.0)	15.3
Motors, machine-tools	10,505 (46.2)	12,210 (53.8)	22,715 (100.0)	11.2
Electric machines, appliances	36,432 (50.2)	36,178 (49.8)	72,610 (100.0)	24.6
Train cars, ships	7,448 (49.9)	7,486 (50.1)	14,934 (100.0)	6.5
Cars, airplanes	31,118 (52.6)	28,062 (47.4)	59,180 (100.0)	11.8
Measuring instruments, precision machinery	12,820 (52.5)	11,613 (47.5)	24,433 (100.0)	21.1
Other machine appliances	34,428 (43.4)	44,847 (56.6)	79,275 (100.0)	14.6
Total	166,013 (46.3)	192,894 (53.7)	358,907 (100.0)	14.1

a. Figures in parentheses are percentages.
Source: Health and Welfare Ministry's Labour Bureau, *Dai-5-kai rōmu dōtai chōsa kekka hōkoku* [The Report of Results of the Fifth Survey of Workers], data as of end of March 1942.

the largest numbers of women workers in the sector of metalworking and machines, as table 4 shows, were engaged in electric machines and appliances manufacturing and automobile and airplane making. Also, the proportion of women workers in each industry's workforce was highest in the electric machines and appliance industry and in measuring instruments and precision machinery, where it stood at 21–25 per cent. Presumably women workers performed relatively simple jobs that required little or no training. A notice, entitled "Re: Employment of Female Workers upon the Implementation of the Labour Mobilization Plan," sent from the Health and Welfare Ministry's Occupation Department chief and Labour Bureau chief to regional commissioners in October 1939, indicated three categories of work appropriate for women workers: "relatively easy and simple work"; "physically light work mainly using hands and fingers"; and "work that people with little or no training can perform." It listed 14 specific types of jobs suitable for women: draftsmanship, casting, lathing, turret lathing, milling, press, (small) machine assembling, finishing, electric appliance assembling, winding, insulating, electric wire wrapping, inspection, and analysis.[34] The

Table 5. Number of Female Workers by Job in 45 Machine Factories under the Jurisdiction of the Tokyo Metropolitan Police Office

Type of job	1937	1938	1939
Lathing	344	1,224	3,051 (16.4)
Inspection	1,962	3,870	3,669 (19.8)
Assembling	892	1,405	2,190 (11.8)
Recording	752	1,339	918 (4.9)
Misc. work	787	1,248	914 (4.9)
Winding	564	822	841 (4.5)
Finishing	157	311	846 (4.6)
Turret lathing	13	39	809 (4.4)
Grinding	191	356	430 (2.3)
Milling	59	168	635 (3.4)
Total (including other)	7,794	13,658	18,570 (100.0)

Source: Shōwa Kenkyūkai [Shōwa Research Society], *Rōdō shintaisei kenkyū* [Study of the New System of Labour] (Tōyō Keizai Shimpōsha, Tokyo, 1941), p. 234.

number of women working in these jobs in 45 machine factories under the jurisdiction of the Tokyo Metropolitan Police Office is shown in table 5.

The rapid increase in the numbers of women workers was a product of the labour shortage, as men were drafted in increasing numbers for the war. The series of labour mobilization policy measures designed to cope with the male labour shortage, prompting the replacement of men workers by women, is noteworthy. It is started with the above-mentioned notification of October 1939. In November 1941, a Patriotic National Labour Cooperation Ordinance was promulgated to organize patriotic labour corps (*kinrō hōkokutai*) to assist the national general mobilization campaign. Women aged between 14 and 25 were required to join the corps, and the number mobilized by this means was 1,343,000 in 1942, and 1,868,000 in 1944.[35]

In January 1943, the Cabinet agreed upon an "Outline of Emergency Measures of Labour and Production Increase," which established a quota for female employment in the types of industries and jobs where women could replace men, effectively limiting or banning male employment in these areas.[36] In September of the same year, a meeting of vice-ministers of the Health and Welfare Ministry adopted a resolution, "Re the Acceleration of the Mobilization of Women Workers," to organize female "volunteer corps" (*teishin tai*) and mobilize women for work in airplane-related factories, government workshops, and other places of work that required female labour as the result of the limiting or banning of male labour.[37]

In 1944 mobilization of women for labour was accelerated. In January, an "Outline of Emergency National Mobilization Measures" (Cabinet decision) demanded that the volunteer corps system be further activated and a target rate of female labour required by industry and job sites specified.[38] Then, with the "Outline of Emergency Measures for Decisive Battles"

Table 6. Minimum Rate of Female Employment by Industry (decided upon by the Cabinet in 1944) (percentages)

Metal industry		Airplane engine parts	45
Light metals	30	Propellers	35
Springs	50	Optical machines/tools	60
Screw	50	Firearms, bullets, other arms	40
Machine and appliances industry		Bearings	50
Ship motors	30	Valves, cocks	35
Electric machines/tools	40	Chemical industry	
Electric communications machines/tools	50	Medicine manufacture	60
Electric bulbs, tubes	60	Industrial chemicals, dyestuffs, fertilizers	20
Measuring instruments	30	Paints, pigments	30
Electric wires	40	Explosives	50
Electric batteries	50	Oil and fat	25
Machine tools	35	Rubber products	50
Tools, measuring tools	40	Leather	30
Industrial machines	30	Leather products	50
Train cars	25	Dry film plates	50
Automobiles	35	Ceramic industry	
Steel ships	20	Fire bricks	20
Airframes	40	Glass products	40
Airframe parts	40	Asbestos products	40
Airplane engines	30		

Source: Labour Ministry, *Rōdō gyōseishi* [A History of Labour Administration], vol. 1 (1961), pp. 1120–121.

adopted by the Cabinet in February and the "Outline of Measures for Strengthening the Female Volunteer Corps System" in March, women were forced to join the corps.[39] To provide the legal basis for the corps, the Women's Volunteer Work Ordinance was issued in August.[40] In the same month, the Cabinet also adopted "Controls on the Placement of Male Workers," determining the minimum female employment rate, as shown in table 6, so as to limit the hiring of men.

With implementation of the above-mentioned labour mobilization measures, a huge number of women were presumably working in heavy industries at the end of the war. Some features of heavy-industry female labour became greatly pronounced during the war. First of all, as table 4 shows, 46 per cent of female workers were under 20 years of age. In three industries, electric machines and appliances, automobile and airplane manufacturing, and measuring instruments and precision machines, more than half the female workforce consisted of girls under 20. It may also be assumed that most of the workers in the 20–59 age bracket were young women in their early twenties. According to a 1939 Health and Welfare Ministry survey, those aged 25 or more made up only 18.4 per cent of 123,000 female work-

ers in the machines industry.[41] The high proportion of young female workers is not unrelated to the labour mobilization measures reflecting the government's basic stance in favour of the traditional family (*ie*) system. The November 1941 patriotic cooperation ordinance excluded officially or unofficially married women from those whose duty it was to join the patriotic labour corps. The January 1944 outline of emergency mobilization measures limited the mobilization of women as far as to say that "the country's family system, female characteristics, and the necessity of strengthening the national power have to be taken into consideration in promoting and expanding the labour mobilization of women." The March 1944 outline for strengthening the women's volunteer corps, too, removed "those playing a vital role in the family" from among the women to be forced to join the volunteer corps. Thus, the existence of an overwhelming proportion of young women workers must be understood in the context of the weight the government gave to the family system.

Female labour in the heavy industries during the war period and in the spinning and textile industries before the war was similar in that young workers formed the core of the workforce. They differed considerably, however, as far as academic background and social class are concerned. There are no data available concerning the educational background of women workers during the war, so we must be content to judge from the results of a 1936 survey (table 7). The survey data clearly indicate a contrast between the relatively longer education of women workers in heavy industry and the relatively shorter education of female labour in spinning and textiles. Of women workers in machines and appliances manufacturing, shipbuilding, conveyances, and precision machines, around 55 per cent were graduates of upper elementary schools (5th–7th grade) or more advanced schools. (Only 20 per cent of female workers in spinning and weaving industries had the same educational background.) Because it is unlikely that the educational background of women workers in heavy industry changed significantly after the war started (in 1937), we may assume that women workers in heavy industry in the war period were relatively better educated.

The marked difference in school education between female workers in heavy industry and spinning/textiles suggests that the former were from a higher social class. The kinds of jobs female workers in wartime heavy industry held previously or, if they had not previously held a job, the jobs of their household heads, are shown in table 8. Of those previously employed, 38 per cent had worked in manufacturing and 14 per cent in offices, totalling 52 per cent. Only 14 per cent had been engaged in farming. The two main occupations of the household heads of those who had not previously held jobs were also in manufacturing or office work, totalling 36 per cent. Farming household heads made up only 14 per cent. This indicates that a new type of female labour, which may be described as "heavy industry, urban labour," appeared as the cities supplied female labour to heavy industries during the war, as compared with the spinning and textile industries, whose main source of labour was rural villages.

Table 7. Academic Background of Female Workers, 1936 (percentages)

	Metals industry	Machines and appliances	Shipbuilding, conveyances	Precision machines	Spinning and weaving
No school education	3.9	0.9	1.6	0.4	1.2
Lower elementary school leaver	4.8	1.8	2.3	0.8	1.7
Elementary school graduate	50.2	39.3	34.3	38.0	69.3
Upper elementary school leaver	3.8	4.5	3.4	5.4	7.8
Upper elementary school graduate	31.7	42.1	31.4	43.7	17.4
Vocational schools and middle schools[a]	5.6	11.4	27.0	11.6	2.5
Total	100.0	100.0	100.0	100.0	100.0
Actual numbers	(13,851)	(23,239)	(5,306)	(6,783)	(618,900)

a. Includes those who left before completing their studies.
Source: Statistics Bureau of the Cabinet, *Rōdō tōkei jitchi chōsa hōkoku* [Report of Labour Statistics Field Survey], no. 5.

Table 8. Previous Jobs of Female Workers Employed in Metals/Machines Industries over the Past Six Months (or, in the case of workers without a previous job, their household heads' jobs)

Previous job	Previously employed	Previously unemployed (or job of household head)
Offce work	6,034 (13.6)[a]	4,405 (8.4)
Technical work	264 (0.6)	357 (0.7)
Manufacturing	16,786 (37.8)	14,500 (27.5)
Mining	158 (0.4)	195 (0.4)
Commercial	2,386 (5.4)	3,541 (6.7)
Transport, communications	632 (1.4)	479 (0.9)
Household employee	4,753 (10.7)	3,017 (5.7)
Farming	5,971 (13.5)	7,305 (13.9)
Fisheries	217 (0.5)	409 (0.8)
Other job	4,881 (11.0)	4,781 (9.1)
No job or unknown	2,283 (5.1)	13,649 (25.9)
Total	44,365 (100.0)	52,638 (100.0)

a. Figures in parentheses are percentages.
Source: Health and Welfare Ministry's Labour Bureau, *Dai-3-kai rōmu dōtai chōsa kekka hōkoku* [Report of Results of the Third Survey on Workers], data as of the end of March 1941.

V. Conclusion: Female Labour before and after 1945

The sections above outline the historical development of female labour in Japan from the industrial revolution to the end of the Second World War. The various types of female labour organized during the industrial revolution either disappeared (coal-mining) or were transformed (cotton-spinning, silk-reeling, textiles) in the inter-war period, and a new type—what I have called the "heavy industry, urban labour" type—came into being during the war period. If the range of examination is expanded to include the post-war period, this new type of female labour can be seen as a prototype of the young female labour in the metals and machine industries that emerged during the rapid economic growth period after the war. Continuity between pre-war and post-war labour patterns among women is detectable here.

However, even during the war period, when Japan suffered a severe labour shortage, middle-aged married women, in conformity with the demands of the traditional family system, did not join the labour force. The post-war reforms included the dissolution of this old family system, and the break-up of that system provided the historical premise upon which the vigorous post-war growth of Japan's economy could unfold. With the rapid growth of the consumer durable goods industry (home appliances), which produced labour-saving devices that shortened household tasks, middle-aged married women were released into the labour market in large numbers. This represents a marked discontinuity between pre-war and post-war

female labour, and suggests that the social structure of a given country, the degree of its economic maturity (the degree of growth of its consumer durables industry), and the impact of these two factors on household labour have a decisive effect on the flow of women into the labour market.

Notes

1. Commerce and Industry Bureau, Ministry of Agriculture and Commerce, *Shokkō jijō* [Conditions of Workers], vol. 2 (1903), pp. 129, 186.
2. Among Japan's export items as of 1902, silk ranked first (making up 28.3 per cent of total exports), followed by silk fabrics (10.3 per cent), cotton yarn (7.3 per cent), coal (6.4 per cent), copper (3.9 per cent), tea (3.9 per cent), and matches (3.0 per cent) (*Yokohama-shi shi* [A History of Yokohama City], Shiryō-hen [Documents], part 2, 1962). Exports of straw plaiting were low that year, but the degree of this product's dependence on the foreign market (export amount divided by output) was over 100 per cent.
3. Sumiya Mikio, Kobayashi Ken'ichi, and Hyōdō Tsutomu, *Nihon shihonshugi to rōdō mondai* [Japanese Capitalism and the Labour Issue] (Tōkyō Daigaku Shuppankai, Tokyo, 1967), p. 91.
4. Takamura Naosuke, *Nihon bōsekigyōshi josetsu* [Introduction to the History of the Japanese Spinning Industry], vol. 1 (Hanawa Sholbō, Tokyo, 1971), pp. 135, 303.
5. Commerce and Industry Bureau, *Shokkō jijō*, vol. 1, p. 65.
6. Takamura Naosuke, *Nihon bōsekigyōshi josetsu*, p. 339.
7. Ishii Kanji, *Nihon sanshigyōshi bunseki* [An Analysis of the History of the Japanese Sericulture Industry] (Tōkyō Daigaku Shuppankai, Tokyo, 1972), pp. 261–264.
8. Commerce and Industry Bureau, *Shokkō jijō*, vol. 1, p. 240.
9. Ibid., p. 240.
10. Ibid., p. 285.
11. Ibid., pp. 252–260.
12. Commerce and Industry Bureau, *Shokkō jijō*, vol. 2, pp. 129, 136.
13. Ibid., p. 187.
14. Ibid., p. 188.
15. Ibid., p. 188.
16. Ibid., p. 260.
17. Takamura Naosuke, *Nihon shihonshugishi ron—sangyō shihon, teikokushugi, dokusen shihon* [A History of Japanese Capitalism: Industrial Capital, Imperialism, and Monopoly Capital] (Mineruva Shobō, Tokyo, 1980), table VIII–5.
18. For details on the collapse of the apprenticeship system in the textile industry, see Furushō Tadashi, "Ashikage orimonogyō no tenkai to nōson kōzō-'kata' no hensei to sono hōkai" [The Development of the Textile Industry in Ashikaga, and the Structure of Rural Society: Organization of "Forms" and Their Disintegration], *Tochi seido shigaku*, vol. 86 (1980): 13–15.
19. Shiraki Taiji, *Zōsenjo rōdō jōtai chōsa hōhokusho* [A Survey Report on Shipyard Labour Conditions] (a report of a school trip in summer 1991, Tokyo Higher Commercial School), p. 23.
20. Mitsubishi Nagasaki Shipyards, *Nenpō* [Annual Report] (1916–1919).
21. For more details, see Uno Kōzō, ed., *Kōza teikokushugi no kenkyū* [Studies on Imperialism], vol. 6 (Aoki Shoten, Tokyo, 1973), chap. 3, and Hashimoto Juro,

Daikyōkō-ki no Nihon shihonshugi [Japanese Capitalism during the Great Depression] (Tōkyō Daigaku Shuppankai, Tokyo, 1984), chap. 4.

22. Moriya Fumio, *Bōseki seisanhi bunseki* [An Analysis of the Cost of Cotton-spinning Production], enl. and rev. ed. (Ochanomizu Shobō, Tokyo, 1973), chap. 2, section 2; Izumi Takeo, "Taishō-ki menbō no rōdō jijō to gōrika" [Taishō-period Labour Conditions and Rationalization in Cotton-spinning], in *Senshū keizaigaku ronshū*, vol. 10, no. 2 (1976).
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