

Chapter 2

The Edo Period: Pre-conditions for Industrialization



Yomei Gate, Toshogu Shrine in Nikko

1. The Edo period: 1603-1867

From the late 12th century through the 17th century, Japan was ruled by samurais (military leaders) but its politics remained unstable. Internal wars and power shifts were very frequent, especially during the late 15th century to the end of the 16th century, which was called the *Sengoku* (warring) period.

Finally, Ieyasu Tokugawa unified the country after the decisive Battle of Sekigahara (located between Nagoya and Kyoto, and visible today from the Shinkansen) in 1600 and the attacks on Osaka Castle in 1615 where the rival Toyotomi family perished. Ieyasu established a new government in Edo and became the first shogun of the Edo Bakufu in 1603. Edo, a sleepy little town until then, was transformed into a huge political city by aggressive public works projects including land reclamation and artificial canals and water supplies. The Tokugawa family ruled the country for the next 264 years (15 shoguns in all). Ieyasu Tokugawa was deified and is still worshiped in Nikko Toshogu Shrine.

A particularly important development during the Sengoku and early Edo period was the removal of various middle-layer organizations such as Buddhist temples and sects, manorial owners and resident landlords which had existed since the ancient times and through the middle ages. Power decentralization and indirect rule were now replaced by direct and unified rule by the newly emerged *daimyo* (warlord) in each region. This was achieved by a number of policies and actions taken by Sengoku daimyos, especially Nobunaga Oda and Hideyoshi Toyotomi, the two most powerful military leaders before Ieyasu finally took power. Their policies included the military conquests of opponents, the liberalization of commerce, the prohibition of inter-regional custom duties, official land survey and registration (*kenchi*), the confiscation of all arms from non-samurai population (*katanagari*), the construction of a castle town in every region, the residential requirement of all samurais in castle towns, the relocation of markets to castle towns, and so on. From this time onward, samurais and farmers were strictly separated in profession and residence. Samurais who no longer protected their land became salaried urban officials. Daimyos began to rule land, farmers and samurai retainers directly. This movement which was started in the Sengoku period was continued and completed by the Edo government.

Table 2-1 Some Basic Terms of the Edo Period

Edo	—— The old name for Tokyo. Edo literally means the mouth of bay. Incidentally, Tokyo means eastern capital (the western, or the traditional, capital is Kyoto).
Daimyo	—— Regional samurai ruler. During the Edo period, it meant the head samurai of a local government (han).
Shogun	—— Originally, the supreme commander of a dispatched army. But it usually means the head of a central military government.
Bakufu	—— Residence of a military ruler. Later it meant the central government established by a military leader.
Han	—— A local government (like province or prefecture) in the Edo period.

We start the story of Japan's economic development from the Edo period because the pre-conditions for later industrialization and modernization were created internally during this period. Let us list these pre-conditions at the outset:

- (1) Political unity and stability
- (2) Agricultural development in terms of both area and productivity
- (3) The development of transportation and the emergence of nationally unified markets
- (4) The rise of commerce, finance and the wealthy merchant class
- (5) The rise of pre-modern manufacturing (food processing, handicraft, etc.)
- (6) Industrial promotion by local governments (sometimes successful but not always)
- (7) High level of education

These are the features of the Edo period which are commonly cited by many researchers. The remainder of this chapter examines them in detail. Note that these conditions are not met by some countries even today. We may even say that developing and transition countries equipped with all these conditions are relatively rare.

2. Features of the bakufu-han system

The Edo society can be characterized as follows.

- (1) It was a class society. The ruling class was the *samurai* (military

men who were permitted to carry a sword). The ruled included farmers (ranked no.2), craftsmen (no.3), and merchants (no.4). These four classes were called Shi-Nou-Kou-Shou (from top to bottom)¹. There was a big gap between the samurai class and other classes. Farmers were officially placed no.2 because they paid the rice tax, but they were not particularly respected. Below all of these classes, there were also outcasts (*eta* and *hinin*—see QAs at the end of the book).

(2) Politically, it was a centralized system. The bakufu (central government) had absolute political power over the fate of hans (local governments) and could even remove or abolish them. The shogun gave daimyos the land to rule. In return, daimyos pledged loyalty to shogun². Any sign of disobedience was met with the sternest punishment including *seppuku* (ritual suicide) and the termination of the family.

(3) Economically, it was more decentralized. The bakufu was not very capable of (or interested in) conducting consistent economic policies. Its policies were often unstable and myopic. On the other hand, each han could decide its internal policies including administration, taxation, education, industrial promotion, issuing paper money, and other economic regulations as long as it was not explicitly prohibited by the bakufu.

(4) The bakufu imposed the following expenses on hans.

- (i) *sankin kotai*, the bi-annual commuting of the han lord between home and Edo: every daimyo was asked to live in Edo in every other year and in his han the rest of the time. This cost a huge sum of money in travel and residence since a large number of retainers also moved with the daimyo annually;

¹ Historically, Vietnam also had the distinction of Si-Nong-Cong-Thuong (the Chinese characters are the same, only the pronunciation is different). The idea originally came from Confucius in ancient China, but the top ranking “si” in Vietnam meant scholars, not fighting men. Moreover, in China and Vietnam, the four-way classification merely indicated what type of people were respectable in society and had no political implications. The Edo government turned this idea into an ideology that legitimized a class society with samurai on top.

² Because of this relationship, the Edo period is sometimes characterized as feudalism. Many people (especially those in the Meiji period) also commonly recalled the Edo system as “feudal” with negative connotation. However, we prefer not to use this term in order to avoid ambiguity and unnecessary debate.

- (ii) the irregular assignment of public works such as building and repairing castles, moats, roads, reservoirs, canals, waterworks, etc;
- (iii) other ad hoc and arbitrary taxes and charges, for example, for celebrating the birth of a son in the shogun family. Imposition of these expenses on hans had the effect of weakening the financial capability of hans. Many hans sank deeply into debt and building up military forces to rebel against the bakufu became almost impossible.

3. Agriculture

The Edo society was agrarian, particularly at the beginning, with about 90% of the population being peasants although this ratio subsequently declined a little. The basic unit of production was the small family. Previously, one farming household often contained dozens of people with many families and their servants. But a series of official land surveys and registration (*kenchi*) conducted before and after the beginning of the Edo period dismantled the big family system into small farming units, with each family guaranteed (and obliged to cultivate) its portion of the farmland.

According to the law, peasants had no right to move and were tied to the land as a labor force and a tax base. But in reality, some farmers moved to new land, sometimes to avoid a high tax burden or unreasonable policies and sometimes to simply improve their life. Later, as rural income rose, many well-to-do farmers enjoyed village festivals as well as trips to Ise Shrine and other religious sites (officially for worship, but actually for fun).

Villages were well organized and permitted autonomy as long as they paid rice taxes as stipulated by the central or local government³. The rice tax was levied on villages, not on individual farmers. Village leaders, who were often themselves farmers, allocated the rice tax burden among villagers. In this sense, village leaders played the role of the lowest-level tax administration. Thanks to them, the bakufu and hans could raise tax revenues with little admin-

³ Each han separately decided the rice tax rate and the way to collect it. Similarly, the bakufu levied rice taxes from the areas directly ruled by it. Rice tax revenue thus belonged to each collecting government.

istrative cost. Keiichi Tanaka (2000), an Edo historian, argues that farmers were very dynamic and independent, and they often rejected bakufu officials and their policies which were considered inconsistent or unreasonable. Tanaka believes that the bakufu government generally had no long-term policy vision; most of its laws and regulations were *ad hoc* responses to ongoing historical changes which could not be stopped.

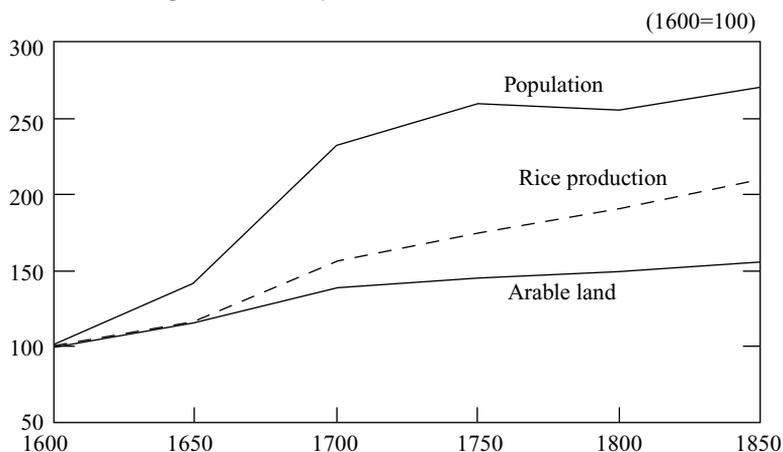
There were two ways to determine the rice tax obligation. The first was the *kemi* (inspection) system where an official inspector visited the village to check the actual rice yield every year. Naturally, village leaders treated the official with a lot of delicacies and gifts. Some officials only had drinking parties without actually going to the fields. The bribed official happily understated the crop yield, often substantially, greatly relieving the tax burden of the villagers. According to historian Shinzaburo Oishi (1977), this type of corruption was the main reason for the chronic revenue shortage of the governments at all levels. On the other hand, if the visiting official was arbitrary and uncooperative, he might inflate the tax obligation to the chagrin of the farmers.

The second method was the *jomen* (fixed amount) system, whereby the rice tax was unchanged for consecutive three or five years based on the average yield of the past years. Under this system, the government could secure a stable tax revenue while minimizing the inspection cost. Farmers faced a risk in the case of a crop failure, but the incentive to produce more was also greater if they worked harder, since additional output was all theirs. According to Tanaka (2000), farmers often preferred the *jomen* system because they did not want to deal with corrupt officials every year.

During the Edo period, the agricultural sector grew in two phases: quantitative expansion first, then qualitative intensification.

From the mid-15th century to the late 17th century, which includes the previous *Sengoku* (warring) period and the early Edo period, there was an enormous expansion of farmland (especially rice paddies). Earlier, rice was produced in narrow valleys where mountains ended and plains began, because this was the only place where constant water supply was available. But during this period, large-scale water management projects were carried out all over Japan by daimyos and influential farmers to control floods and use rivers for irrigation. As a result, land under cultivation expanded dramatically. The plains,

Figure 2-1 Population and Rice Production



Source: Hayami and Miyamoto, eds, 1988, p.44.

which had hitherto been uninhabitable marshlands, were turned into productive paddy fields. The population increased rapidly in a way rarely seen in a pre-modern society. Shinzaburo Oishi calls this “The Great Age of Opening Fields.”

By the late 17th century, land expansion came to a halt. The rapid growth of farmland in the previous period also brought some negative effects, including labor shortage, deforestation, and frequent occurrence of floods. From this period onward up to today, Japanese agriculture has emphasized intensive cultivation with large inputs of labor and technology rather than the quantitative expansion of arable land.

From the 18th century onward, the area of cultivation and population remained relatively stable, but rice output continued to grow thanks to increased productivity. Contributing factors included double cropping, new species of rice, fertilizer (dried fish was especially popular), and the introduction of new farming tools. Many guidebooks were published to teach farmers how to produce crops more effectively. Yasusada Miyazaki’s *Nogyo Zensho* (Encyclopedia of Agriculture) in eleven volumes, published in 1697 and reprinted many times subsequently, was one of them.

At the beginning of the Edo period (17th century), peasants produced mainly for family consumption. They ate what they produced and their living

standards were at subsistence levels. However, from the middle Edo period, productivity rose and agricultural surplus was created. Peasants began to sell their rice and other crops to the market which was often nationally integrated. Cash crops increased and commercial agriculture began.

Officially, all farmers were supposed to belong to (be tied to) the assigned land. But by the 19th century as landless farmers increased, the income gap among farmers widened. Large landowners who hired tenant farmers to cultivate their land began to emerge.

Farmers' uprisings frequently occurred, especially at the time of famine and toward the end of the Edo period. Rebellious farmers were unhappy with taxes, inflation, famine, corrupt officials, or government policies.

4. Budget and money

The bakufu's revenue sources included the following:

- Rice tax from the land ruled directly by the bakufu (areas not distributed to other daimyos)
- Monopoly on mining, foreign trade and minting money
- Direct control on major cities (Edo, Kyoto, Osaka, Nagasaki, Sakai, etc.)
- Financial contributions from merchants in exchange for monopoly and cartel rights

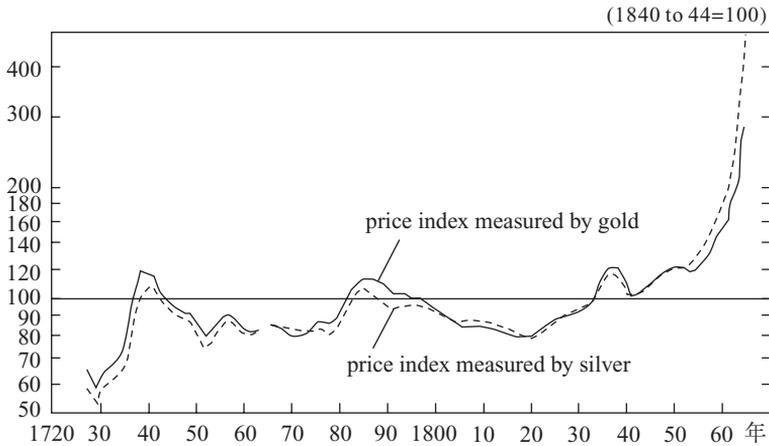
In addition, as noted above, the bakufu freely ordered hans to various public works, eliminating the need to have its own public investment budget. On the other hand, the han's revenue consisted of the rice tax from its territory and the revenues from promoting local industries (if it is successful).

The entire fiscal system was based on the rice tax. The fiscal unit of account was the "koku" (about 180 liters of rice). The han's economic size was measured in koku and samurai's salaries were also paid in rice (but of course they had to be cashed before buying things). Rice was actually collected from each village and transported to the major rice markets, then redistributed to the rest of the country. Osaka was by far the most important national rice market.

This rice-based economic system had the following consequences:

- (1) Since rice had to be physically shipped across regions, this tax system required a nationally unified transportation and distribution mecha-

Figure 2-2 General Price Levels



Source: Shimbo and Saito, eds, 1989, p.71.

Note: The general price index in Kyoto and Osaka, five-year moving average.

- nism. Private merchants provided the required services but the bakufu and han governments often regulated and supported them. As land transportation (by horse) was very costly and inefficient, water transportation on the sea, river and lake was mainly used.
- (2) The center of economic activity gradually shifted from subsistence farming to commercial agriculture and handicraft industries. But the government's tax base basically remained on rice. There were occasional attempts to levy on commerce but this did not become a reliable tax base. As time went by, the bakufu and han governments faced fiscal crises while farmers and merchants enjoyed increasing income and wealth.
 - (3) Faced with chronic fiscal deficits, the bakufu resorted to the following measures: monetary debasement (similar to printing money, which leads to inflation), spending cuts, tax increases, price controls and administrative reforms. Some commercial policies were tried in certain periods, including granting certain merchants with the exclusive right to market a product (i.e. monopoly) in exchange for financial contribution to the government. However, these measures cannot be considered a set of consistent policies supported by a long-term vision.

Money consisted of both gold and silver. Gold was popular in Edo



A scene from Tokaido "Highway" (photograph by Felice Beato)

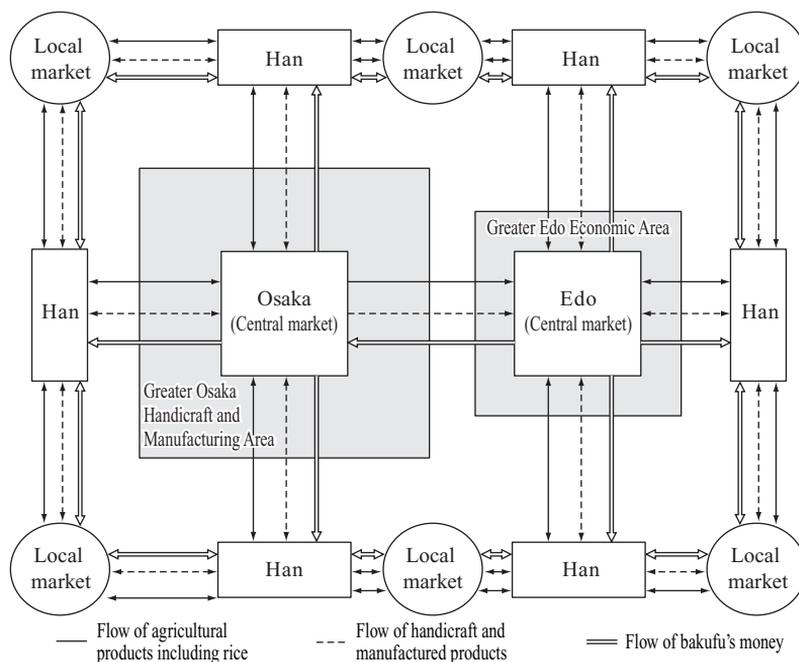
(Eastern Japan) and silver was mainly used in Osaka (Western Japan). Copper coins were also used for small transactions. Hans were also allowed to issue local paper money. Inflation rose at the time of famine and accelerated towards the end of the Edo period, especially after international trade was resumed.

5. Transportation and commerce

The bakufu designated five official highways and opened major sea-lanes. But private inns, restaurants, shippers, baggage carriers, etc. provided necessary services. As part of non-tax obligation, farming villages near the highway were required to provide horses at the time of heavy travel needs. *Sankin kotai* (daimyos' bi-annual commuting between Edo and their hans) further stimulated the development of the road system. At the same time, out of military concern, the bakufu did not permit the free movement of people and merchandise. At strategic points, *sekisho* (passport controls) were created. Some rivers were intentionally left without bridges, to block the march of a potential enemy to Edo. Hans were not allowed to build military ships or maintain navies.

As noted above, from the beginning, the Edo tax system presupposed a nationally unified rice market. The development of cash crops and handicrafts also expanded nationwide commerce. Osaka was the commercial center with a

Figure 2-3 Inter-regional Economic Linkage in the Late Edo Period



Source: Miyamoto and Uemura, 1988, p.285.

large number of wealthy merchants and money lenders, while Edo was the political center as well as a large city with consumers. Naturally, the sea lane between the two cities was well-developed. In Osaka, even the futures market in rice was established. This is said to be the first futures market in the world.

The bakufu's policy towards commerce and industry was variable and inconsistent. Sometimes the central government tried to control and tax private businesses, while at other times a free economy was encouraged. Cartels were sometimes imposed and other times prohibited. Economic historians still debate whether the Edo economy was more dynamic under the free market policy or under the pro-cartel policy. According to Matao Miyamoto and others (1995), the sound development of the market economy depends on a number of institutions and customs such as the bill of exchange and credit provision to facilitate transaction. From this perspective, the authors defend the cartels in the Edo period as a private mechanism to generate such services. From the viewpoint of historical institutional analysis⁴, Tetsuji Okazaki (1999) also tries to show that

estimated GDP grew faster during the time when cartels were permitted than when they were banned. He argues that trade cartels were a positive factor for the development of the Edo economy rather than an impediment. However, the available data and his regressions may be too crude to draw a strong conclusion.

Toward the end of the Edo period, many hans and local cities reached a relatively high level of economic development. As a result, direct trading among them without the intervention of Osaka merchants began. The center of economic activity gradually shifted eastward, from Kansai (Osaka, Kyoto) to Edo and Eastern Japan. In addition to rice, a large number of products were traded in nationally integrated markets.

6. Industry

As agriculture and commerce grew, pre-modern manufacturing such as handicrafts and food processing also began to develop. Each region created specialized products which were marketed all over Japan. For example, tea, tobacco, wax, indigo, salt, knives, sword, pottery, lacquer ware, silk, cotton, soy sauce, sake, paper, stone cutting, medicine, and chemicals were traded widely. In order to enrich the local population and increase the tax revenue, many hans promoted local industries, and some even succeeded (Nishikawa and Amano, 1989). Here are some examples:

Tokushima han (indigo): Farmers produced indigo along the Yoshino River and their output gradually grew. But indigo distribution was monopolized by Osaka merchants who imposed high interests on loans. In order to protect local farmers and encourage local merchants, the han government created an indigo exchange and provided financial and distribution services. The bakufu objected to this move, prohibiting official bodies to engage in such activity. In reality, the bakufu wanted to protect Osaka merchants who contributed financially to its coffer. In response, the han privatized the indigo exchange and other services.

⁴ According to Okazaki, historical institutional analysis is “a research program that conducts theoretical and empirical analyses on important problems in economic history such as the role, the reason of existence, and the mechanism of emergence and transition of institutions by the application of game theory.” (Okazaki, 1999, pp.5-6)

Takamatsu han (sugar): The Takamatsu government issued han's paper money to promote various industries but its attempts generally failed, and its money depreciated. After many such failures, the han finally succeeded in pilot production of sugar from sugar beets and commercializing the technology. As sugar production greatly increased, the han encouraged inter-han trade to expand the market. But again, the bakufu intervened to discourage such trade not brokered by Osaka merchants.

Satsuma han (military technology): This han in southern Kyushu imported new technology from the West and produced blast furnace, cannons and western ships. It was also engaged in illegal trade with Ryukyu (Okinawa), which was very profitable. By increasing wealth and military capability, Satsuma han later played the key role in toppling the bakufu government and establishing the Meiji government.

These are just a few examples. Many other hans were engaged in industrial promotion including Choshu han (paper, wax), Yonezawa han (safflower and lacquer), Akita han (silk and silk dress), Hizen han (pottery, coal), Higo han (lumber, silk), and so on. But we should not forget that there were also other hans which were less successful and fell deeply in debt. They borrowed a large amount of money from private merchants but never repaid.

7. Education

The popularity of education in the Edo period is often cited as the cause of fast industrialization in the later periods. Education in the Edo period ranged from the recondite study of ancient Chinese philosophy and literature at public schools to children's basic education at private schools. Education fever was not just in such large cities as Edo, Osaka and Kyoto but also a nationwide phenomenon. Here, the four main types of learning institutions are introduced.

- (1) Bakufu schools—The bakufu schools mainly taught Confucianism, an ancient Chinese philosophy started by Confucius in the 6th to 5th century BC. It emphasized social order, proper rituals, the way of good political leadership, and respect for the elderly and superiors. The Edo government vigorously promoted Confucianism as an ideology to legitimize and maintain the class society. Seika Fujiwara, Razan

Table 2-2 Examples of Private Professional Schools (Late Edo Period)

School & location	Teacher & year of establishment	Main teaching	Prominent students
Shokason Juku (Hagi, Choshu Han)	Shoin Yoshida 1855 (until 1857)	Social and political philosophy	Shinsaku Takasugi (anti-bakufu fighter) Genzui Kusaka (anti-bakufu fighter) Hirobumi Ito (prime minister) Aritomo Yamagata (prime minister)
Teki Juku (Osaka)	Koin Ogata 1838	Dutch language & Western medicine	Yukichi Fukuzawa (founder of Keio Univ.) Masujiro Omura (military reformer) Sanai Hashimoto (Western studies) Keisuke Otori (bakufu & Meiji statesman)
Narutaki Juku (Nagasaki)	Philipp F. B. von Siebold (German) 1824	Western medicine	Choei Takano (Western studies) Genboku Ito (medical doctor) Keisuke Ito (medical doctor and botanist)
Kangien (Hita, Bungo Han)	Tanso Hirose 1817	Confucianism & ancient Chinese literature	Choei Takano (Western studies) Masujiro Omura (military reformer)

Hayashi and Hakuseki Arai were the leading bakufu scholars. Students had to memorize and interpret ancient Chinese books. How to modify this foreign doctrine to fit the Japanese reality was one of the important theoretical questions. There were also bakufu schools for the European language (Dutch) and technology (medicine, navigation, military technology, etc).

- (2) Han schools—Hans also established schools to educate their young samurais. The curriculums were basically the same as those of bakufu schools, with Confucianism at the center of learning. Toward the end of the Edo period, han schools were expanded to emphasize practical skills such as military training and foreign language. Some even accepted non-samurai students. Many han schools were transformed into education institutions in the Meiji period which followed.
- (3) Private professional schools—Eminent scholars often set up their own private schools and recruited students. Depending on the instructor, various subjects were taught: Confucianism, “national studies” (research on ancient Japanese literature which later led to nationalism and an anti-foreigner movement), Western languages (Dutch, later also English), medicine, science, technology, and so on. These schools accepted both samurai and non-samurai students. In the late Edo period, they often attracted talented and passionate young people with the

desire to contribute to the country. Their eyes were opened to the international situation and Japan's precarious position in it. A large number of national leaders in the late Edo period and the early Meiji period came from such professional schools.

- (4) *Terakoya* (private primary schools)—These schools were run by local teachers to teach the 3Rs (reading, writing, and arithmetic which meant abacus) to small children. Initially, *terakoya* was typically a charity organization but later evolved into a profit-seeking entity charging tuition fees. Normally one teacher taught a few dozen children who received individual assignments. There was no regulation on schooling age, but most children entered *terakoya* at the age of seven or eight and stayed until the age of twelve or thirteen. As the public realized the importance of studying letters and arithmetic, a large number of *terakoya* were established from urban to rural areas contributing to the high literacy rate among the general population.

Proto-industrialization and population dynamics

Economic historians have noted that certain areas of Europe, such as Flanders in Belgium and Lancashire in England, were “industrialized” in the 17th and 18th centuries even before the Industrial Revolution took off in the United Kingdom. This industrialization was characterized by rural, family-based production of textiles and garments without modern machinery and was often brokered by urban merchants.

The concept of *proto-industrialization* was proposed to explain why this happened, and why it was observed in certain areas only (*proto* means primitive or early). The proponents have advanced a hypothesis to explain rural industrialization from the unique interaction among agriculture, population and commerce. Population growth is often regarded as given in economic modeling. But in the hypothesis of proto-industrialization, population dynamics is a crucial endogenous element. F.F. Mendels and P. Deyon, who proposed this idea, define proto-industrialization as a phenomenon satisfying the following three conditions:

- It is a manufacturing activity for market sales, not for home consumption.
- It is undertaken by peasants in a rural area where soil is poor and plots are small.
- It is located near an area of commercial agriculture with large farm size and high productivity.

Proto-industrialization begins as a side job in villages where agricultural productivity is low. They can sell cloth and garments to nearby rich villages where agricultural productivity is high. It is a sort of specialization (division of labor) within a relatively small geographical area: villages with fertile soil produce farm products and villages with poor soil produce manufactured goods, and they exchange output with each other. They sometimes also sell their products to larger markets.

Furthermore, the hypothesis of proto-industrialization assumes certain demographic dynamics in the following sequence:

- (1) For some reason, villages with poor soil face a population increase, leading to food shortages.
- (2) Poor peasants engage in the production of garments for sale to relieve the population pressure.
- (3) This increases their income, which prompts them to get married sooner and have more children.

- (4) Population growth continues to keep the peasants just as poor as before, even though they are more “industrialized.”
- (5) The supply of cheap labor is thus increased, and rich farming villages and urban merchants continue to accumulate wealth. (This widening income gap may possibly generate capitalists and landless farmers leading to industrialization under full-fledged capitalism in the Marxian sense. However, this historical linkage is not convincingly proven empirically.)

According to Osamu Saito (1985) of Hitotsubashi University, the Japanese data in the Edo period does not support the hypothesis of proto-industrialization. There is no evidence of systematic population increase in the areas where peasants engaged in pre-modern manufacturing. On the contrary, it is said that farmers practiced birth control, sometimes even killing new-born babies, to manage the population pressure.

Proto-industrialization seems to assume a rather peculiar population dynamics which may be applicable to certain European regions in certain periods, but not in the rest of the world or other times. However, the idea of population growth responding to the process of early industrialization is an interesting one.

Chapter 3

Meiji (1) : Key Goals of the New Government



Two of the remaining *odaiba*, the bakufu's fortified square-shaped islets, are visible.

1. The opening of ports and the fall of the bakufu

From 1639, the bakufu government banned any foreign contact except in a very limited way at Nagasaki's *Dejima* (tiny artificial island) under strict official control. In other words, the bakufu monopolized foreign trade. Korea and Ryukyu (Okinawa) had diplomatic relations with Japan while Chinese and Dutch merchants were allowed to trade with Japan. All other transactions were strictly prohibited. No Japanese were allowed to go abroad or come home from abroad. Under this isolation policy, the only channel for absorbing Western knowledge, mainly medical and scientific information, was through Dutch books and products.

But from the end of the 18th century, foreign ships began to approach Japan with an intention to trade. The Russians and the British were particularly eager but the bakufu refused to talk to them. Meanwhile, the news of the Opium War (1840-42), in which Britain defeated China, took possession of Hong Kong and forced China to open its ports, was a big shock to the bakufu.

Finally, four American military ships ("Black Ships") led by Commodore Matthew C. Perry entered Edo Bay in 1853. The bakufu was forewarned about their coming but did nothing to counter it. This was a well-planned mission for which the negotiating strategy with Japan had been carefully designed. Perry was convinced that the show of force, not peaceful diplomacy, was most effective with the Japanese. Firing powerful cannons, Perry demanded a "friendship" treaty which allowed American ships to use Japanese ports. The Americans left, saying that they would return to hear the answer the next year¹. All of Japan was thrown into chaos and a fierce debate began as to whether Japan should open its ports or repel foreigners. When Perry and his troops returned to Edo Bay the next year, the bakufu agreed to sign the friendship treaty with the United States and opened Shimoda and Hakodate for foreign ships. Similar treaties were also concluded with the Europeans.

¹ When the American black ships left, the bakufu ordered the Administrator of Izu to quickly build odaiba, several fortified islets, off the coast of Shinagawa. Today, the two remaining odaiba can be seen from the Yurikamome train near Rainbow Bridge. Apparently, these tiny forts were not enough to stop the Americans.

In 1858, the bakufu government asked for an imperial permission to sign comprehensive commercial treaties with the major powers but it was not granted. However, the bakufu signed them anyway without imperial permission. Politically it would have been more advisable to first hear the views of various domestic groups, especially influential daimyos, before signing these treaties but the bakufu did not do that. Naturally, the bakufu's unilateral action was severely criticized. Naosuke Ii (bakufu high official, something like Prime Minister) responded by arresting and executing the political opponents. However, Ii was assassinated one year later, in 1859, by samurais infuriated by the bakufu's oppressive policy.

With the conclusion of the friendship and commercial treaties, foreign diplomats and merchants began to settle in Japan. However, they were permitted to live only in designated foreign settlements and travel only in their vicinities. Free contact with the Japanese public was prohibited. The largest foreign settlement was Yokohama, a city newly created for this purpose.

The opening of Japanese ports led to significant social and economic changes.

- (i) Foreigners brought new ideas, technology, industry and systems, and the Japanese began to absorb them very rapidly. But they were also afraid of the superior military power of the West.
- (ii) Silk and tea suddenly found huge overseas markets. The rising output and soaring prices of these commodities enriched farmers who produced them².
- (iii) Enriched farmers began to buy clothes made in England instead of wearing homemade or secondhand clothes.
- (iv) A new merchant class, called the *Yokohama merchants*, emerged to link domestic producers and markets with foreign merchants. As noted

² Some development economists regard international integration and free trade as the engines of growth. However, in reality, a sudden opening of developing economies often leads to enterprise bankruptcies, de-industrialization, rural impoverishment and the widening income gap. *The Least Developed Countries Report* of the UNCTAD (2004) states that a consistent domestic development strategy is the prerequisite for poverty reduction without which export promotion alone will not have desired effects. In this context, the Japanese experience in which the exports of silk and tea enormously enriched the farmers in the late Edo "port-opening" period is extremely interesting (chapter 5).

above, foreigners were not permitted to travel outside the foreign settlement.

- (v) As inflation surged, samurais and the urban population were impoverished. The entire price structure was transformed after the opening of ports. Old industries and merchants declined and new ones emerged.

The commercial treaties which the bakufu signed with the West were unequal treaties in the sense that (i) Japan had no right to decide tariffs; and (ii) the Japanese court could not judge foreign criminals in Japan. After a while, Japanese import tariffs were set uniformly at about 5 percent (this situation continued until 1899 when the tariff rights were partially restored). Inability to indict foreign criminals was considered to be great national humiliation. The opposition blamed the bakufu for signing defective treaties. They also criticized the bakufu for economic turmoil, including inflation, and yielding to foreign pressure without national consensus or imperial permission.

After the opening of ports, severe political fights ensued for about fifteen years. The details are too complicated to describe here, but events unfolded over the following three key issues:

- (i) Open door policy versus anti-foreigner nationalism
- (ii) Upholding the emperor versus supporting the bakufu
- (iii) Fighting for political control among strong hans (especially Satsuma and Choshu)

Anti-foreigner nationalism was very strong at first, but people gradually realized the impossibility of repelling the foreigners by force; the West was too modern and powerful. The political fight finally centered on who would remove the bakufu and establish a new government. In a series of relatively minor battles (one of the fiercest was fought where Ueno Park now stands), the bakufu forces were defeated and the new Meiji government was established in 1868. The emperor moved from Kyoto to Edo, which was renamed Tokyo (meaning eastern capital).

2. The Meiji government and its goals

The Meiji government was established and run by young samurais from strong hans in Western Japan (especially Satsuma, Choshu, Tosa, and

Hizen) and a few influential noblemen. The emperor was elevated to the head of state for legitimacy and as a unifying symbol of the new regime. The Meiji government had a very clear and determined policy objective: rapid Westernization and modernization of Japan. At first, the biggest external challenge was to avoid being colonized by the West. But this fear subsided in the early Meiji period as Japan began to aggressively absorb Western systems and technology while retaining national unity and identity. For the rest of Meiji and beyond, the top national priority was to catch up with the West in every aspect of civilization, i.e., to become a “first-class nation” as quickly as possible.

After a “long, peaceful sleep” (international isolation), Japan suddenly discovered that Europeans and Americans were greatly advanced in technology and industry while Japan was a backward agricultural country. This was a big shock to Japan. The acute recognition of backwardness and shattered pride was the psychological driving force behind Japan’s industrialization during the Meiji period.

The national slogan was *fukoku kyohei* which means “rich country, strong army.” In order to modernize Japan, the Meiji government had three goals:

- Industrialization (economic modernization)
- Introducing a national constitution and parliament (political modernization)
- External expansion (military modernization)

These were shared goals among all politicians, officials and even people. While there were many political struggles among Meiji leaders, they fought over the method of and prioritization in achieving these goals. For example, a politician might oppose his rival who advocated the invasion of Korea, but when the rival was ousted, the same politician might send troops to Taiwan (this actually happened in 1873-74). Similar flip-flop of positions was observed over many other political and economic issues.

The biggest headache for the Meiji government in its early years was the resistance from conservatives who disliked radical reforms. The previous samurai class, now deprived of their rice salary and the privilege of carrying swords, were particularly unhappy with the new government which was established, ironically, by young samurais. But step by step, the new government

succeeded in reducing their influence and consolidating power. It abolished the samurai class and offered them government bonds as a compensation whose value rapidly depreciated under inflation. Local autonomy under the han system was replaced by a centralized government and prefectures whose governors were appointed by Tokyo. A new land tax at the initial rate of 3 percent of the land value replaced the old rice tax which was levied on annual yield.

In 1871-73, a high-level official delegation called the *Iwakura Mission*, which included about half the cabinet ministers, was sent to the US and Europe for nearly two years. As it departed from Yokohama, the mission members counted 107 including the students dispatched abroad. Its purposes were to (i) conduct preliminary negotiations for revising the unequal treaties; and (ii) study Western technology and systems. They failed in the first objective because the West would not treat Japan equally as long as its institutions remained highly “backward.” But the mission succeeded in gaining insights in their second objective. The mission was warmly welcomed wherever they went.

3. Industrialization

Among the members of the Iwakura Mission, Toshimichi Okubo was particularly impressed with Western technology. Returning to Japan, Okubo vigorously promoted industrialization as the Minister of Finance (later, as the Minister of the Interior). His policies included hiring foreign advisors, the hosting of domestic industrial fairs, and the construction of roads, railroads and agricultural research centers. Many state-owned model factories were established in military production, silk spinning, shipbuilding and mining (most mines were rehabilitated mines from the Edo period). New systems, such as metric weights and measures, the Western calendar, a new monetary system, banking, and joint stock companies, were introduced. Okubo was assassinated in 1878 but his supporters, especially Kiyotaka Kuroda and Shigenobu Okuma, continued his policies.

Most state-owned enterprises (SOEs) were commercially unsuccessful, but they had strong demonstration effects on emerging Japanese entrepreneurs. These factories also trained a large number of Japanese engineers who later worked in or established other factories. Subsequently, these SOEs were



The Iwakura Mission in San Francisco. Tomomi Iwakura (mission chief, in Japanese dress) sits in center. Others are in Western clothes. Okubo is sitting on the right.

privatized except those producing military goods. They were sold “cheaply” to influential businessmen such as Tomoatsu Godai (see below), and this caused a political scandal in 1881. However, many of the previously loss-making SOEs were restored to profitability through restructuring and new investment by the new owners. It may be unfair to criticize these businessmen for stealing state assets.

The government sometimes confused businesses with inconsistent policies. But more often, it strongly supported the emerging private sector to establish domestic industries and drive out foreign rivals. This policy was called *yunyu boatsu* (import substitution). With official assistance, big business groups started to form. Politically well-connected businessmen were called *seisho* and their business groups were called *zaibatsu*. Some of them, for example Sumitomo and Mitsui, date back to the Edo period, but many others such as Mitsubishi, Furukawa, Yasuda, and Asano emerged during the Meiji period. Some big names included the following:

Yataro Iwasaki—He was a businessman from Tosa who started a maritime transportation company. Okubo’s government gave him support and monopoly so that he could drive out foreign shippers. Iwasaki made a huge profit with an exclusive contract with the government to provide military



Tomoatsu Godai was a seisho in Western Japan



Yataro Iwasaki, the founder of Mitsubishi Group

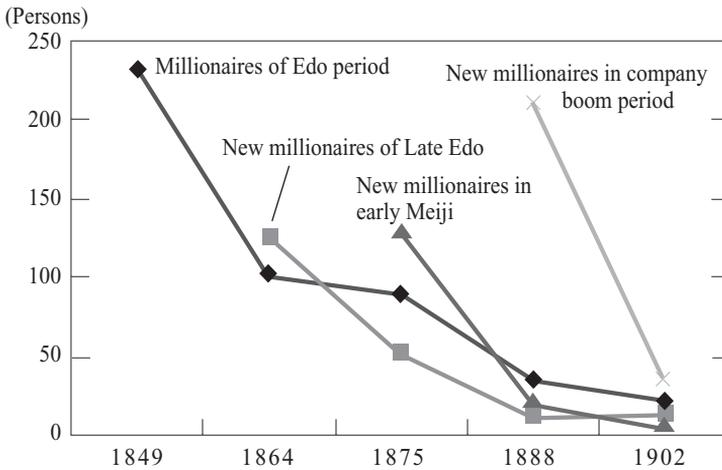
transport to Taiwan in 1874. Iwasaki was the founder of the Mitsubishi Zaibatsu whose business empire expanded to include coal mining, ship-building and, later, virtually everything.

Eiichi Shibusawa—Born in Saitama, first he was a bakufu retainer serving the last shogun, then an energetic official of the finance ministry of the new government, and finally a super coordinator of Japanese industries. Shibusawa helped to establish hundreds of joint stock companies such as Imperial Hotel, Nippon Usen, Nippon Steel, Bank of Tokyo, Osaka Spinning and Sapporo Beer, and economic and cultural institutions such as the Tokyo Chamber of Commerce, Imperial Theater, Japan Women’s University and Central Charity Association. However, unlike Iwasaki, he did not form his own zaibatsu.

Tomoatsu Godai—Godai was a business coordinator from Satsuma. Like Shibusawa, he also contributed to the creation of many companies and business organizations in Osaka.

Mitsui Zaibatsu—The Mitsui was a big merchant family in the Edo period. Its original business was trade in *kimono* (Japanese dress) and money-changing. In Meiji, the Mitsui family gained the status of a treasury depositary of the central government, which was very profitable, and succeeded in internal organizational reform. Banking, coal mining and trading (“Mitsui

Figure 3-1 Survival of Millionaires in the Late Edo and Meiji Period



Source: Computed from Miyamoto, 1999, p.53. Each line shows how many of the new millionaires emerging each period survived in later periods.

Bussan”) became the main business areas.

Sumitomo Zaibatsu—The Sumitomo group operated Besshi Copper Mine in Shikoku (Western Japan) during the Edo period. The old copper mine was modernized in Meiji. The business expanded to include coal mines, banking, electrical cables, fertilizer, etc.

Thus, the Meiji period saw the births of many business groups and enterprises which survived and prospered into the current period. At the same time, and somewhat contradictorily, the ups and downs of enterprises were extremely volatile from the late Edo to Meiji period. Economic shocks such as the beginning of international trade, demand shifts, foreign institutions and technology, and the great transformation of relative prices led to the replacement of old enterprises with new. Even influential merchants and large producers in the past failed to survive these shocks unless they could undertake bold reforms or build linkage with the emerging merchant class.

Figure 3-1 depicts the attrition of millionaires calculated from the national data in Miyamoto (1999). It is clear that the new rich of the late Edo to early Meiji period declined very quickly. The speed of disappearance seems even faster for the millionaires which emerged in the later periods. Among the 231 millionaires in the Edo period, only 20 survived into the late Meiji period.

This proves, at least in terms of the number of rich families, that the main driving force of Meiji industrialization was not the rich merchants from the Edo period.

4. The Constitution and Parliamentary Government

Politically, the establishment of a Western style parliament and constitution was a nationally-shared goal. This was considered absolutely necessary in order for Japan to be treated equally by the West. But different opinions over the timing and contents of the proposed constitution caused a lot of political turmoil.

With respect to timing, from 1873 onward, many political groups outside the government demanded a constitution as soon as possible. Political oppositions, intellectuals, and rich farmers joined this Freedom and People's Rights Movement, which spread to the entire nation. The government cracked down on this movement and the advocates of an early constitution also at times turned violent. Meanwhile, the majority of the top government officials wanted to go slow. They thought that the Japanese people were only "semi-developed" and that careful preparations were necessary.

As to contents of the constitution, an acute debate arose on the choice between a more advanced British-style democracy and parliamentary system and a less democratic German-style constitutional monarchy. Many intellectuals and progressive politicians favored the British system, but conservatives in the government preferred the German model. The latter feared that if too much freedom was allowed when people's political views remain primitive, violence and instability would result. They pointed to the violence that occurred in the aftermath of the French Revolution as a thing to be avoided at all cost.

In this regard, the difference of opinion between Toshimichi Okubo and Yukichi Fukuzawa is worth attention. After coming home from the official mission to America and Europe, Finance Minister Okubo submitted the *Proposal on Constitutional Politics* to the government in 1873 whose key arguments can be summarized as follows:

Democracy and monarchy each has merits and demerits. Ideally, there is no

doubt that democracy is far superior. But the actual working of democracy often falls into party politics, and even the tyranny of majority over minority in the worst case. On the other hand, monarchy functions well if the people are unenlightened and the monarch is excellent, but the citizens will suffer enormously if corrupt officials pursue their personal interests under a cruel ruler. In comparison with Britain, Japan still remains semi-developed and cannot rid itself of feudal customs. Monarchy is a thing of the past, but we are not yet ready for democracy. Moreover, the central government must have strong authority for the time being to carry out bold reforms. Thus, the most practical system Japan can now adopt is a constitutional government based on gradualism that matches the speed of social change. This means constitutional monarchy.

By contrast, prominent educator Fukuzawa argued basically as follows in his *Outline of the Theory of Civilization* (1875): Countries can be classified into civilized, semi-developed and barbaric, and Japan belongs to the second group. Democracy and monarchy each has merits and demerits. The highest priority for Japan at present is to avoid being colonized by Western powers and remain independent [up to here, his views are the same as Okubo's and hardly unique]. To achieve this great objective, Fukuzawa urges Japan to throw away past traditions and customs and vigorously introduce Western civilization. There are two aspects, physical and spiritual, to civilization. Physical is easy to copy while spiritual is difficult to internalize. In adopting these, Fukuzawa proposes to "pursue the difficult first and the easy later; by first reforming people's mind, then change politics and laws, and finally introduce tangible objects."

In other words, Okubo's strategy is to design new policies and institutions by taking people's backward spirituality as given, while Fukuzawa wants to transform the spiritual structure of the nation as a matter of priority. The contrast between the pragmatism of Okubo, the high official, and the idealism of Fukuzawa, the enlightenment thinker, is remarkable. Their debate is far from outdated today since it contains a fundamental question about the sequencing of economic development versus political modernization (democratization) in latecomer countries.

Under mounting popular pressure, Emperor Meiji declared in 1881 that a parliamentary government would be established within 10 years. To study and prepare the contents of the proposed constitution, Minister Hirobumi Ito

went to Europe for more than a year to consult German and British legal experts. After returning to Japan, his team drafted a constitution based on the German model while partially incorporating foreign advisors' opinions such as K.F.H. Roesler's. The final draft was submitted to the Privy Council, an organ newly created to study this draft, and debated in detail in closed sessions. The Meiji Constitution was promulgated in 1889 and, after an election, the first imperial parliament was convened in 1890. Japan became the first non-Western country with a functioning constitution (among the non-Western countries, Turkey also had a constitution but it was shortly suspended).

5. Foreign policy

The most important diplomatic goal in Meiji was to revise the unequal treaties with the West which lacked tariff rights and the right to judge foreign criminals. This was needed to regain national pride and join the ranks of the "first-class countries." But to succeed, westernization of Japanese society was considered necessary. To show that Japan was westernized, the government even built *Rokumeikan*, a state-run ballroom, and invited foreign diplomats and business people for evening balls³. This "excessive westernization" was criticized by nationalists and political opposition groups. Nevertheless, over time as Japanese modernization and industrialization proceeded in substance, treaty renegotiation became possible and the revision was accomplished. Tariff rights were partially regained in 1899 and completely restored in 1911. The court rights were regained in steps during 1894-99.

Another feature of Meiji diplomacy is expansionism. To protect political independence and national interests against Western intervention, it was considered necessary to construct a zone of influence around Japan. The government was eager to "open up" Korea, which was maintaining its closed-door policy, as Japan did previously, and conclude an unequal treaty in Japan's favor, just like the West did to Japan before. Naturally, Korea resisted. In 1873,

³ This western style ballroom was located in Hibiya, near where the Imperial Hotel now stands. Since foreign diplomats and business people lived mainly in Yokohama, the government even prepared a special late-night train from Shimbashi to Yokohama to bring them home after the ball.

military invasion of Korea was proposed but rejected within the Japanese government. In the following year, the government sent troops to Taiwan over an incident in which Okinawa fishermen were killed by the Taiwanese. These external expeditions were often planned to deflect the anger of former samurais who were deprived of rice salary and the privilege of carrying a sword.

In the 1880s Japan became more aggressive in its attempt to place Korea under its influence. Japan's rival was China (Qing Dynasty) which considered Korea as its protectorate. Japan started to intervene in Korea's internal politics and stage military provocation. This eventually led to the Japan-China War of 1894-95.

Soseki Natsume's lecture

Soseki Natsume (1867-1916) was and is the most popular novelist in Japan. His life largely coincided with the Meiji period. He was an expert in both English and ancient Chinese literature. His early novels were comical ("I am a Cat," "Bocchan") and sometimes romantic ("Sanshiro") or pedantic ("Kusamakura"). But his later novels exposed a dark side of modernized Japan, especially individuals who struggle under human limitations in modernized life without success ("Sorekara," "Mon"). Desperate love triangles were his favorite theme.

In his famous lecture, "Development of Modern Japan" (1911), Soseki warned his fellow Japanese against newly emerging complacency. In late Meiji when this lecture was delivered, Japan already had a parliamentary government and had recently won a victory over Russia, and industrialization was proceeding rapidly. But Soseki said that Japan's modernization was superficial.

Since Japan opened its ports to foreigners, Western impact transformed Japan completely. But all these influences originated in the West, and Japan only copied them passively without really digesting and internalizing them. The arrival of Western waves was too fast for the Japanese to make them their own. Forced absorption of foreign ideas and systems would make the Japanese nervous and unhappy, but there was no good solution to this problem. This was the essence of Soseki's message whose excerpts are quoted below. Soseki touched on the fundamental dilemma of Japanese identity which remains unsolved even today. In the 21st century, Japan is sometimes ill at ease in the company of the advanced Western nations, while unable to build true trust and friendship with its Asian neighbors.

"Development in the West is *endogenous*, while Japan's development is *exogenous*. Here, *endogenous* means emerging naturally from within, like a bud blooms into a flower in an outward motion, and *exogenous* means being forced to take a certain form because of external influences..."

"Western societies are evolving naturally but Japan after the Meiji Restoration and foreign contact is quite different. Of course, every country is influenced by its neighbors, and Japan was no exception. In certain periods, Korea and China were

models for us. But overall, throughout history, Japan was developing more or less endogenously. Then suddenly, after two centuries of isolation, we opened up and encountered Western civilization. It was a big shock we never experienced before. Since then, the Japanese society began to evolve in a different direction. The shock was so severe that we were forced to change directions...”

“Western tides dominate our development. Since we are not Westerners, every time a new wave arrives from the West we feel uneasy like a person living in someone else’s house. Even before we can grasp the nature of the previous wave, a new wave arrives. It is as if too many dishes are brought in and soon removed before we can start to eat. In such circumstances, people will inevitably become empty, frustrated, and worried.”

(Source: Yukio Miyoshi, ed, *Soseki's Writings on Civilization*, Iwanami Bunko, 1986)

Chapter 4

Meiji (2): Importing and Absorbing Technology



The first steam locomotive made in Japan

1. The preview of Meiji industrialization

At the outset let us list the three salient features of Meiji industrialization:

- Very strong private sector initiative supported by appropriate official assistance
- Successful import substitution in the cotton industry
- Parallel development of the modern sector and the indigenous sector

These will be discussed more fully in this and the following chapters.

As noted in the previous chapter, one of the principal policy objectives of the Meiji government was rapid industrialization. While the official policies of introducing western institutions, building infrastructure, hiring foreign advisors, education and training, establishing SOEs and research centers, organizing trade fairs, assisting zaibatsu and so on were all important, it should be stressed that private sector dynamism was even more essential. At the top of the private sector, such powerful business men as Shibusawa, Iwasaki and Godai provided leadership, and large zaibatsu began to form. At the grass-roots level, new and old merchants, skilled engineers, proud craftsmen and rich farmers all over the country became the driving force of broad-based technical absorption. Without this private sector capability, even good policies would have failed to produce results.

It should be remembered that many contributing factors to industrialization were inherited from the previous Edo period. They included nationally unified markets, transportation and distribution networks, a strong merchant tradition, the development of financial services, a well-educated population, and a history of industrial promotion by local governments.

The cotton industry was one of the leading industries of the world in the 19th century. At first, British products dominated the global market. In Asia, India was the main producer. But Japan absorbed textile technology very rapidly and effectively. After the opening of ports, Japan first imported British cotton clothes. Later, it imported cotton yarns and wove clothes for the domestic market. By around 1900, Japan began to export cotton yarns while importing raw cotton. In the early 20th century, Japan became a major exporter of cotton clothes. Since today's dominant view in development economics discredits

import substitution as a failed policy, Japan's brilliant success as a latecomer more than a century ago is all the more striking.

However, the introduction of modern Western technology did not necessarily drive out traditional technology from the Edo period. In the cotton industry as well as in other industries, traditional production methods existed side-by-side with modern machines and factories. Sometimes the two sectors produced differentiated products for different markets. At other times they were vertically related with one sector producing inputs for the other. New technology influenced traditional methods, but local requirements also modified imported technology.

By the end of Meiji (1912), which was shortly before the outbreak of WW1, Japan was successfully industrialized in light industries, especially textiles. But heavy and machinery industries were still embryonic. The vigorous development of these industries started later, during and after WW1.

2. The macroeconomy and the industrial revolution in light industries

The Japanese economy underwent several stages after the opening of ports in the late Edo period. Let us briefly review this process.

- (1) *Initial impact of foreign trade (1850s-)*: foreign technology and products flowed in and shifts in relative prices and industrial structure occurred. Inflation was high.
- (2) *Monetary confusion and inflation (late 1870s)*: inflation accelerated due to the printing of paper money to finance a civil war initiated by Takamori Saigo's uprising in Kyushu in 1877. As the prices of rice and other agricultural products rose, farmers and landlords got rich while former samurais were generally impoverished.
- (3) *Matsukata Deflation (early 1880s)*: Finance Minister Masayoshi Matsukata adopted a deflationary policy to end inflation and introduce a modern monetary system. This included the establishment of the Bank of Japan as a central bank in 1882. Rural income declined and the number of landless farmers increased¹.
- (4) *First "company boom" (late 1880s)*: After inflation subsided and mod-

ern banking was installed, there was a rush to establish joint stock companies in the private sector. Exchange rate depreciation, easy money and low interest rates also encouraged their emergence.

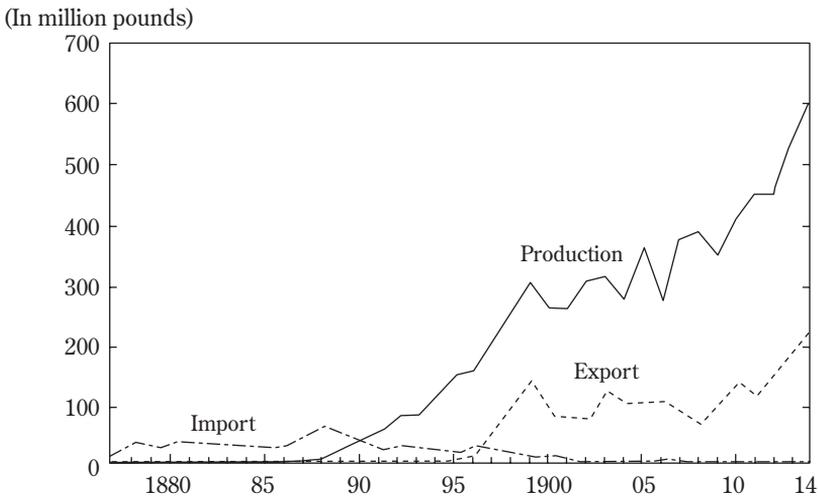
- (5) *Continued waves of company booms (1890s-1910s)*: A great number of additional joint stock companies were established in the late 1890s, late 1900s and during WW1 interrupted by occasional recessions. At first, these were concentrated in the textiles and railroad industries. Later, company creation spread to all sectors.
- (6) *Two wars (Japan-China 1894-95; Japan-Russia 1904-05)*: After each war, fiscal activism was adopted. Public investment was undertaken to build, for example, railroads and the national telephone network. Military spending was kept up even during peacetime. Economic management of Taiwan, a colony acquired in 1895, also began through institution-building and public investment. Local governments issued foreign-currency denominated bonds in order to invest in infrastructure for water supply, roads, education, and so on. As a result, the size of general government (the sum of central and local governments) expanded and the balance of payments deficit widened. Gold reserves (i.e. international reserves) were gradually lost, and the estimated debt-to-GDP ratio rose to about 40 percent. Roughly half of the public debt was denominated in foreign currency.

From the late Meiji period onward, the government of *Seiyukai* promoted fiscal activism. *Seiyukai* (full name: *Rikken Seiyukai*) was a political party established in 1900 with Hirobumi Ito, drafter of the Meiji Constitution and the first Prime Minister, as the party leader. *Seiyukai*'s main support base was rich farmers and landowners who desired active public investment in rural areas. But fiscal overspending led to mounting balance-of-payments pressure. Macroeconomic belt-tightening was felt necessary.

In reality, this macroeconomic crisis was suddenly overcome by the outbreak of WW1 rather than orthodox fiscal austerity. As the European powers

¹ Using an old-fashioned language, we may say that Matsukata Deflation created the basis of Japan's coming capitalism and industrial revolution by bringing out the proletariat class detached from production capital and establishing the modern banking system which is the basis of financial capital.

Figure 4-1 Development of the Cotton Industry



Source: *The National Statistics of Meiji and Taisho*, Toyo Keizai Shimposha, 1975.

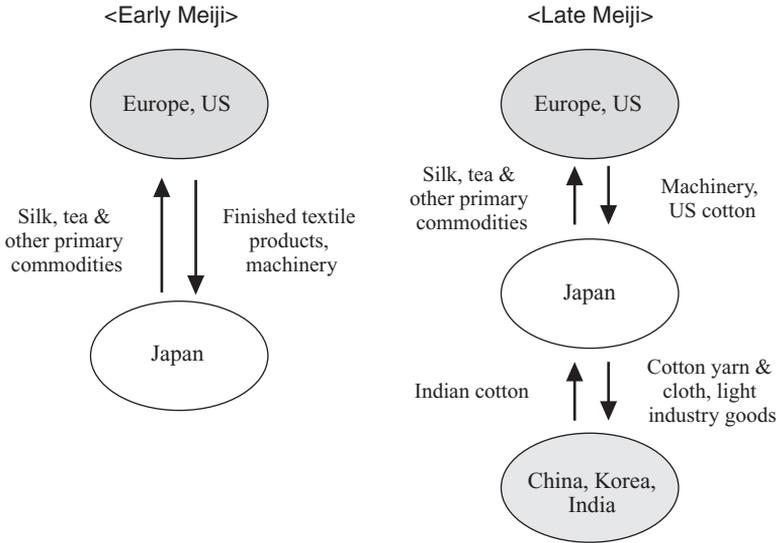
were engaged in military confrontation, they stopped exporting to the rest of the world. Suppressed world demand was directed to Japanese products, allowing the Japanese economy to enjoy an enormous export-led boom. But this occurred in the following Taisho period which will be discussed more fully in chapter 7.

No reliable GDP statistics exist for this period, but we have some estimates. According to them, output was very bumpy and the average growth rate was 2 to 3 percent. By today's standards, this is not a particularly high growth rate for a developing country although there may be a serious problem of data quality. As for the employment structure, the share of agricultural employment was dominant, at about 70 percent in the early Meiji period, but it gradually declined.

3. Developments in international trade

Regarding trade structure, silk—silk yarn rather than finished silk products—dominated Japan's exports followed by tea, cereals, seafood, minerals and coal. Clearly, Meiji Japan was a primary commodity exporter. Raw silk remained the top Japanese export not just during the Meiji period but in the entire pre-WW2 period. The largest importer of Japanese silk and tea was the

Figure 4-2 Trade Structure

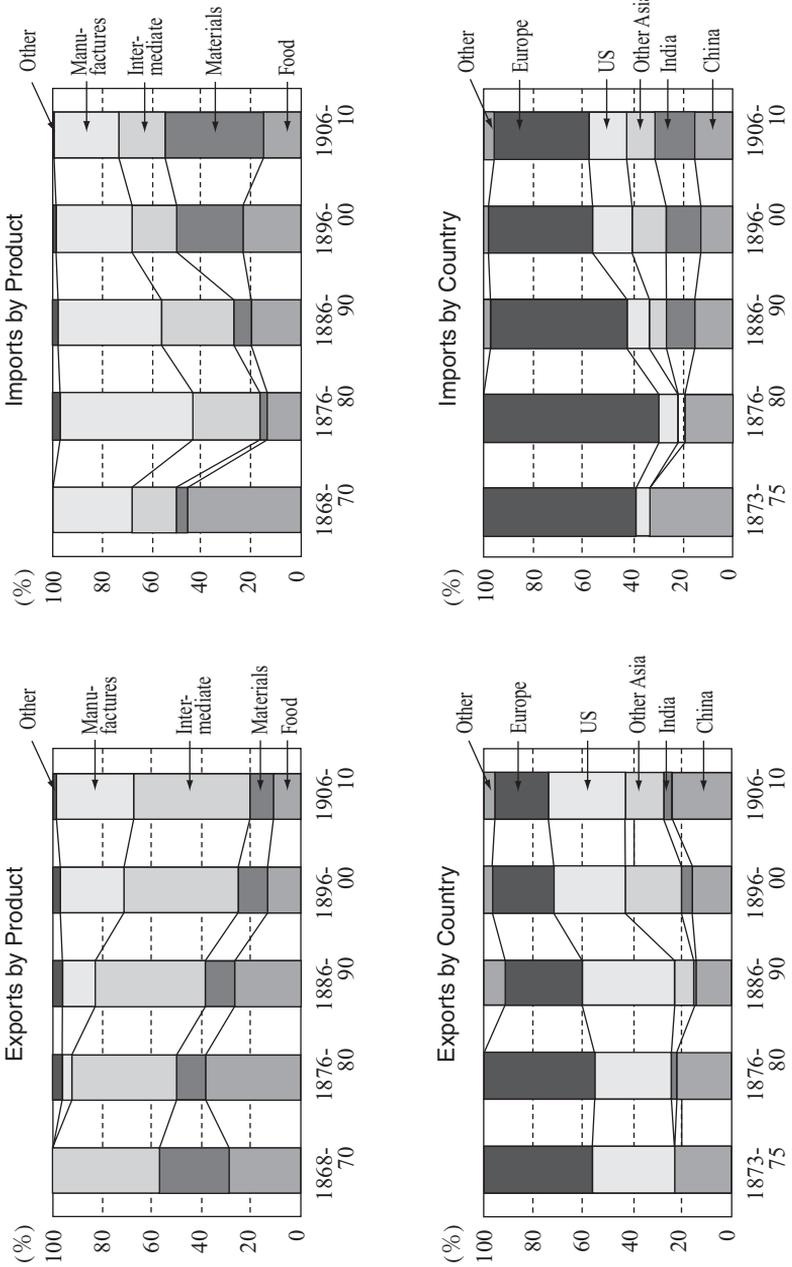


United States. Stockings made from Japanese silk were very popular among American ladies.

It should be noted that the US protected its silk weaving industry with tariff rates of 45 to 50 percent, but the industry needed silk yarn as an input. The American attempt to increase domestic silk yarn production failed, so the US was compelled to continue to import Japanese yarn. Generally speaking, as a young developing country the US maintained high import protection throughout the 19th century (see the box at the end of this chapter).

On the import side, dramatic shifts occurred as the cotton industry succeeded in import substitution as discussed above. Initially, finished products (clothes) were imported. Later, imports shifted to intermediate inputs (cotton yarn) and then to raw materials (raw cotton). In Figure 4-1, we can see a clear *product cycle* of this industry moving from import to domestic production and finally to export. Domestic production shifted from spinning to weaving as well as from low to high quality products. At first, Britain was the main exporter of finished textile products and machinery to Japan. But over time, Japan effectively increased competitiveness against British textile products and drove them

Figure 4-3 Structure of Export and Import



out of the Asian market.

In early Meiji, Japan's trade pattern was a “vertical” one typical of a developing country. It exported silk and other primary commodities to Europe and America and imported finished textile goods and machinery from them. By late Meiji, Japan developed a more complex trade pattern. Against Europe and the US, trade remained basically vertical. But with the rest of Asia, which included China, Korea and India, Japan began to export light industry goods such as cotton yarn, cotton clothes, matches, umbrellas, clocks, lamps, glass products, knitwear, and so on, and import materials needed to produce them, especially Indian raw cotton which was short-fiber cotton. Japan also imported US cotton which was long-fiber cotton. Due to the emergence of Japan's cotton industry, India was driven out of the position of an exporter of cotton products into an exporter of raw cotton.

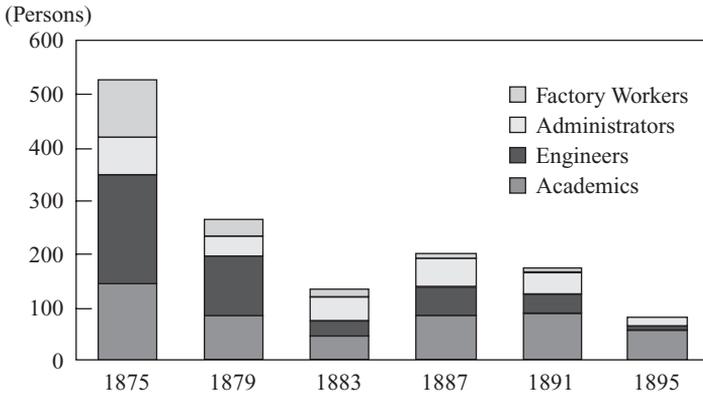
As the export of cotton yarn and the import of raw cotton both rose, the government abolished the cotton yarn export tax in 1894 and the cotton import tariff in 1896. This benefited modern cotton factories which used Indian cotton as inputs, but hurt traditional producers who spun domestically produced cotton. In order to establish a monopolistic position in importing Indian cotton, Japanese textile companies formed a cartel and used only Nippon Yusen (a Mitsubishi-group shipping company) and Menka (cotton) Shosha as the sole carrier and distributor of Indian cotton to Japan. This secured a stable supply of Indian cotton at low prices for Japanese textile companies.

4. How Western technology was transferred

Western technology was imported and internalized in three distinct ways.

- (1) *Hiring of foreign advisors*: In early Meiji, new factories and infrastructure were constructed and operated with a significant assistance from foreign engineers and managers. In the late 19th century, there were many unemployed British railroad engineers since the British railroad system had been more or less completed. They often traveled abroad in search of jobs. The salaries of foreign advisors were very high and sometimes even higher than that of the Prime Minister. This became a

Figure 4-4 Foreigners Employed by the Meiji Government



Source: Kajima Institute Publishing, *Hired Foreign Workers*, 1968.

Note: Numbers exclude private-sector employment.

Table 4-1 A Salary Comparison: Foreign Advisors and Prime Minister

Person	Position	Monthly salary
Mr. Cargill (British)	Advisor to the Railroad Department, Ministry of Industry	2,000 yen
Mr. Kindle (British)	Advisor to the National Mint, Ministry of Finance	1,045 yen
Mr. Morrell (British)	Advisor to the Railroad Department, Ministry of Industry	850 yen
Mr. Kiplon (American)	Advisor on the development of Hokkaido	833 yen
Tomomi Iwakura	<i>Udaijin</i> (equivalent to Prime Minister); chief of Iwakura Mission to US and Europe	600 yen

Source: S. Sakamoto and T. Fukuda, eds, *Shinsen Nihonshi Zuhyo* (New Selection of Diagrams in Japanese History), Daiichi Gakushusha, 1998.

great financial burden on the government. For example, the salaries of foreign engineers accounted for 34 percent of the current budget of the Ministry of Industry in 1874. Figure 4-4 indicates the number of foreigners employed by the central and local governments. Their number—especially the number of engineers—declined significantly toward the end of Meiji. From the mid Meiji onward, foreign teachers,

including language teachers, hired by private organizations (not shown here) became the dominant form of foreign employment.

Different technological transfer schemes were adopted depending on the project type, including turn-key contracts, management contracts, and technical advice. However, unlike today's developing countries, there was virtually no foreign direct investment (FDI) in the Meiji period regardless of whether they were 100 percent foreign-invested or jointly managed by foreign and local partners. Since contracts that the government signed were project-specific and had fixed terms, foreigners returned home when the contract expired. The government took utmost care to avoid important national projects, such as mines, railroads and shipyards, falling into foreign hands. Japan was even afraid of borrowing from foreigners, especially in early Meiji.

- (2) *Training Japanese engineers*: Since foreign advisors were too expensive, the government vigorously promoted “import substitution” by Japanese engineers. Excellent students were nominated by the government to go abroad to absorb latest ideas and technology at the first-rate universities in Europe and America with financial support from the Japanese government (however, the amount of scholarship was not very large). Domestically, *Kobu Daigakko* (Institute of Technology) was established as the highest academic institute for absorbing technology in 1877, where foreign professors taught in English and German. This institute was originally located where the Ministry of Finance now stands in Kasumigaseki, Tokyo, but it was later merged into the Faculty of Engineering of Tokyo University. In addition, technical high schools were created all over the country to produce a large number of mid-level engineers. This no doubt greatly increased the technical absorptive capacity of the country. However, according to Konosuke Odaka (2000—see below), traditional craftsmen were more influential on the factory floor than newly trained engineers during much of Meiji.
- (3) *Copying, licensing, technical cooperation*: Graduates from *Kobu Daigakko* played an instrumental role in selecting and importing new technology. In economic ministries and private firms, they took initiative in collecting information, purchasing machines, and adjusting

them to Japanese requirements. Many US and European machines were copy-produced by reverse engineering (however, this is illegal today under WTO and TRIPS rules). Trading companies, such as Mitsui Corporation and Takada Shokai, provided customers with product information and technical assistance. Later, in the early 20th century, a number of automobile and electrical machinery companies signed licensing agreements and technical cooperation contracts with Western firms. However, in such cooperation the Japanese partners quickly absorbed new technology and often dissolved the relationship with the Western partner shortly after.

Japan is said to be a country of *monozukuri* (manufacturing things). In many European countries including Britain, engineers who worked in oily factories did not have high status compared with managers, lawyers and accountants who worked in clean offices. But in Japan, university graduates loved to build, adjust and repair machines and manage factories. They had no problem with working side by side with machine operators. This was true in Meiji as well as until recent past. Best students chose engineering, rather than law or economics, as their field of specialization. However, this *monozukuri* tradition may be eroding in today's Japan.

5. Hybrid technology

Professor Konosuke Odaka (1990) of Hosei University argues that Meiji industrialization was achieved by combining existing traditional technology and imported Western technology in an appropriate manner. He calls this “hybrid technology.” Although Western technology was far superior to Edo technology, the former did not completely replace the latter. This can be considered as one example of the “translative adaptation” introduced in chapter 1.

According to Professor Odaka, different types of industrial evolution can be identified. In the Figure 4-5 below, intermediate points such as I* and M* can be called hybrid technology² (M stands for “modern,” I stands for

² Takafusa Nakamura (1997), Professor Emeritus at Tokyo University, proposes the concept of *new indigenous industry*, which is an indigenous industry modified by Western technology. This corresponds to I + I* in Professor Odaka's terminology.

Figure 4-5 Technology and Factory Size

		Factory size	
		Small	Large
Technology	Indigenous	I	I*
	Modern	M*	M

Source: Odaka, 1990, p.336.

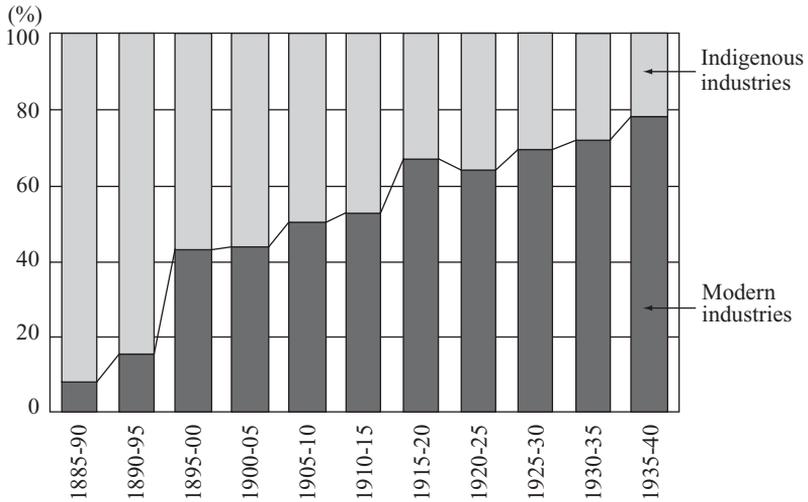
Note: * indicates hybrid status.

“indigenous” and the asterisk means modified).

- M → M — For a completely new technology, the Western model must be imported as a whole; there was no corresponding traditional technology (e.g. railroads, telephone system, electrification)
- I → I* → M — Indigenous technology was first adjusted and expanded. Later, there was a switch to a new Western method (e.g. shipbuilding, sake making)
- I → M* → M — Indigenous technology was first replaced by Western technology but at a small scale that fitted Japanese reality. Later, the size was expanded (e.g. printing, machinery)

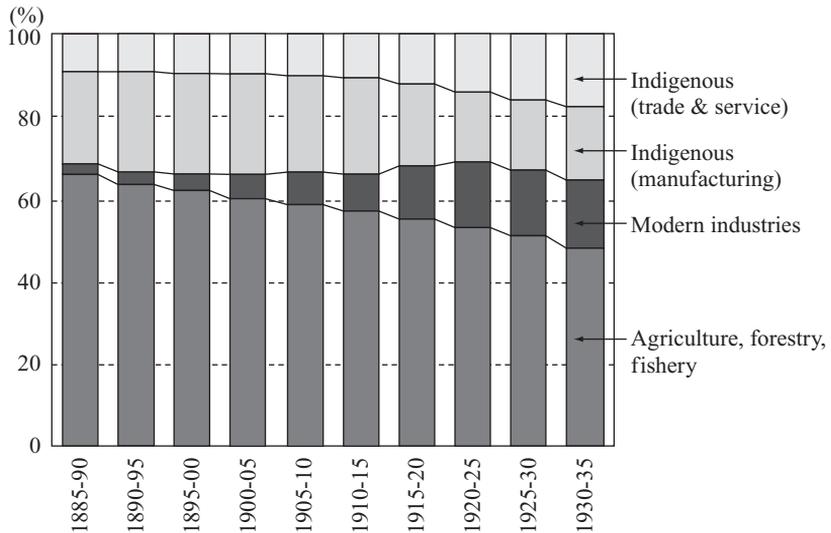
In addition, indigenous and modern technology often co-existed because they played complementary roles in vertical industrial linkage, namely, one industry producing the input to the other, or because their markets were differentiated, for instance, modern plants producing for export while traditional ones serving the domestic market. As Figures 4-6 and 4-7 illustrate, despite the steady growth of modern industries from Meiji to early Showa measured by output, it was not the largest part of the Japanese economy as far as employment was concerned. The largest absorber of labor force still was the primary industry whose share, however, was gradually declining. The share of employment of indigenous manufacturing and service remained relatively stable at slightly over 30 percent.

Figure 4-6 Manufacturing Output in Pre-war Japan



Source: Matsumoto and Okuda, 1997.

Figure 4-7 Employment Structure of Prewar Japan



Source: Matsumoto and Okuda, 1997.

Meiroku Zasshi

Mei is the first syllable of Meiji. *Roku* means six. *Zasshi* means journal. Meiroku Zasshi (Journal of the Sixth Year of Meiji) was a series of publications by Meirokusha (Society of the Sixth Year of Meiji) in 1874 and 1875. Meirokusha, in turn, was a free discussion forum founded in 1873 by Arinori Mori, who later became the first education minister. Meiroku Zasshi was a collection of relatively short essays covering a wide variety of issues, such as lessons from Western history, proposals for reforming the Japanese language, religious questions, social policy, and economics. At the outset of each issue, the following message was printed in archaic Japanese:

Recently, we friends gathered to discuss social issues and foreign situations in order to deepen our knowledge and enjoy high spirits. As meeting records have accumulated, we have decided to publish and share them with our colleagues at large. While it is only a small booklet, we would be happy if it helps to improve the knowledge of the Japanese people.

As an example, here is the summary translation of “The Argument Against Tariff Protection” by Mamichi Tsuda (1829-1903), a scholar in Western studies. This article was published in the fifth volume of Meiroku Zasshi on April 15, 1874.

Our trade deficits were 8 and 7 million yen in 1872 and 1873, respectively. In addition, we pay 2 million yen annually as salary for foreign advisors and teachers. This means that gold and silver flow out of Japan at the rate of roughly 100 million yen every decade. Our international reserves may be exhausted in one or two decades.

Pessimists say, “If we lose precious metals like this, how can Japan survive? We must stop this outflow. Europe used tariff protection in the past. The US is still practicing it. We must also adopt this policy.”

I disagree with this idea. European economists state clearly that protection is the worst policy which harms the nation’s welfare. The US is still resorting to tariff protection because American industries are less developed than European, with higher cost. Therefore, Americans levy high tariffs on imported goods to promote domestic industries.

But the development level of Japanese industries is far below that of American. Needless to say, comparison with Europeans is out of question. It is like a small baby trying

to compete with a giant. That is why we have to pay 2 million yen for foreign teachers. Evidently, copying American policy is not suitable for Japan. More specifically, there are several reasons why tariff protection is undesirable.

First, commercial treaties with the West prohibit raising our tariffs.

Second, there is a huge gap in technology between Japan and Europe. For example, the price of domestic steel is higher than imported steel even after paying the transportation cost. Protection is not enough to narrow this gap.

Third, Japanese people now like to consume a wide variety of imported products such as food, clothes, household goods, and so on, for which domestic supply is nonexistent. For many goods, no Japanese factories can produce them.

Fourth, under the policy of rapid Westernization, a large amount of imports is hardly avoidable.

Fifth, Japan is a student learning Western knowledge and technology. To study more and faster, we need to pay high tuition.

Some say, "If we do nothing, we will lose all international reserves soon." But don't worry. The trade balance may be in surplus or in deficit in the short run, but there will be no great imbalance on average. The movement is natural and cyclical. When we first opened our ports, we had trade surpluses for a few years. Then, imports exceeded exports for the next three to four years. It is certain that we will have surpluses again in the near future. The natural balance is always maintained, and this is the condition under which technology and civilization should progress.

Meiroku Zasshi was Japan's first modern scholarly journal which greatly stimulated policy debate among intellectuals. However, the journal was terminated by the government order under the tightened speech control in November 1875. Its publication lasted only one and half years.