**2.Edo Period: Pre-conditions for Industrialization[[1]](#footnote-1)**

(See Handout no.2)

**The Edo period: 1603-1867**

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| http://www.grips.ac.jp/teacher/oono/hp/image_j1/lec02_2tosho.jpg |
| **Nikko Toshogu Shrine (Yomei Gate)** |

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| http://www.grips.ac.jp/teacher/oono/hp/image_j1/lec02_1ieyasu.jpg |
| **Tokugawa Ieyasu, the first Edo Shogun** |

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

Finally, Ieyasu Tokugawa unified the country after the decisive Battle of Sekigahara (located between Nagoya and Kyoto, visible from 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 including land reclamation, new canals and clean water supply systems. The Tokugawa family ruled the country in the next 264 years (15 shoguns in all). Ieyasu Tokugawa was deified and worshiped in Nikko Toshogu Shrine (even today).

We start the story of Japan's economic development from the Edo period because pre-conditions for later industrialization and modernization were created internally during this period (moreover, quantitative data for earlier periods are very limited). The following are the pre-conditions that were generated:

(1) Political unity and stability  
(2) Agricultural development in terms of both area and productivity  
(3) Development of transportation and the existence of nationally unified markets  
(4) The rise of commerce, finance and the wealthy merchant class  
(5) The rise of manufacturing (food processing, handicraft, etc)  
(6) Industrial promotion by central and 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 lecture discusses them in detail. Note that some of these conditions are not achieved even today in some countries. In fact, developing countries that are equipped with all these conditions are relatively rare.

Here are some basic terminology for the Edo period:

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| 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 dispatched army. But it usually means the head of a central military government. |
| Bakufu | Residence of a military ruler. Later it meant the central military government itself. |
| Han | A local government (like province or prefecture) in the Edo period. |

**Features of the Bakufu-Han System**

The basic characteristics of the Edo society and politics were as follows.

(1) It was a class society: The ruling class was *samurai* (military men who were permitted to carry a sword). Then farmers (ranked no.2), craftsmen (no.3), merchants (no.4). 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*).

(These four classes were called Shi-Nou-Kou-Shou (from top to bottom). Historically, Vietnam also had the distinction of Si-Nong-Cong-Thuong (Chinese characters are the same, only the pronunciation is different). It is clear that the idea originally came from China. In Vietnam, however, the top class "Si" meant scholars or literary bureaucrats, not fighting men. Moreover, it merely showed what types of people were important and respectable in society without political implication. The Edo government changed this idea into an ideology that legitimized a class society with samurais on top.)

(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. It was a feudal society in the sense that the shogun gave daimyos the land to rule. In return, daimyos pledged loyalty to shogun. Any sign of disobedience was met with sternest punishment (often*seppuku* (ritual suicide) and/or the termination of the family).

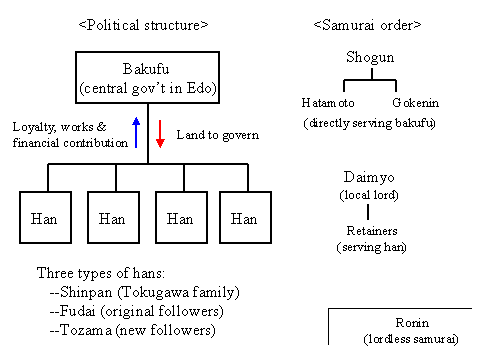
(3) Economically, it was more decentralized. The Bakufu was not very capable of (or interested in) imposing consistent economic policies. Its policies were often unstable and short-sighted. Each han could decide its tax rates and other economic regulations, or encourage certain industries (so long as it was not explicitly prohibited by the Bakufu).

(4) The Bakufu imposed the following expenses on hans. (i) *sankin kotai*, bi-annual commuting between home and Edo (one year the daimyo must live in Edo, next year in his han, then Edo, then home, *ad infinitum*) -- a large number of retainers also moved with him. This cost a large sum of money and usually constituted the largest part of han's expenditure; (ii) public works ordered by the Bakufu, such as building castles, moats, roads, irrigation ponds and canals, waterworks, etc; (iii) other ad hoc and arbitrary taxes and charges.

Imposition of these financial expenses on hans had the effect of weakening the financial capability of hans so they were unable to build military forces to rebel against the Bakufu.

**Figure 2-1**

**Bakufu-Han System**



**Agriculture**

The Edo society was agrarian (particularly at the beginning) with about 90% of the population being peasants. Later, the ratio declined somewhat. The basic unit of production was the small family. Previously, one farming household often contained many families plus servants. But official land surveys (*kenchi*) conducted before and after the beginning of the Edo period dismantled the big family system and created small farming units, with each family guaranteed of the land to cultivate.

According to the law, peasants had no right to move and were tied to the land as labor force (they were the tax base !) But in reality, some farmers moved to new land, sometimes to avoid a high tax burden, unreasonable policy or famine, but sometimes to look for new land to 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 spots (officially for worship, but actually for fun).

Villages were well organized and permitted autonomy, as long as they paid rice taxes as stipulated. The rice tax was levied on villages (not individual farmers), and village representatives, who were often themselves farmers, allocated rice tax burden among all villagers. In a sense, they played the role of lowest-level tax administration. Thanks to them, the Bakufu and hans could raise tax revenues with little administrative cost. Prof. Keiichi Tanaka (Edo historian) argues that farmers were very dynamic and independent, and they often rejected Bakufu officials and policies which were inconsistent and unreasonable. (Prof. Tanaka thinks that the Bakufu had no long-term vision and their laws and regulations were ad hoc responses to unfolding events.)

There were two ways to determine the rice tax obligation. One was the *kemi* (inspection) system where an official inspector came to check the actual yield every year. Naturally, village representatives treated the official with lots of food and gifts. Some officials only had drinking parties and did not actually check the fields. The bribed official happily understated the crop output (often very substantially) so villages paid much less taxes. According to Prof. Shinzaburo Oishi (historian), such corruption was an important reason for chronic revenue shortage of the government. On the other hand, if the visiting official was arbitrary and uncooperative, he might raise the tax obligation to the chagrin of the farmers.

Another method was the *jomen* (fixed amount) system where the rice tax was unchanged for three or five years based on the average output of the preceding years. Under this system, the government could expect a more stable tax revenue and also minimize the inspection cost. Farmers borne a greater risk for crop failure, but incentive to produce was also greater (if they worked hard, additional output was all theirs). According to Prof. Tanaka, farmers often preferred the jomen system because they did not want to cope with corrupt officials every year.

During the Edo period, agricultural development underwent two phases: from quantitative expansion to qualitative intensification.

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| **Table 2-1 Estimated Land under Cultivation**  (unit: thousand hectare) | |
| 930 AD | 862 |
| 1450 AD | 946 |
| 1600 AD | 1,635 |
| 1720 AD | 2,970 |
| 1874 AD | 3,050 |
| Source: S. Oishi (1977). | |

From the mid 15th century to the late 17th century (this includes the previous *Sengoku Jidai* (warring period) as well as 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--this was the only place where constant water supply was available. But during this period, large-scale water projects were carried out all over Japan by daimyos and private farmers to control floods and use rivers for irrigation. As a result, land under cultivation expanded dramatically. The plains, which had hitherto been uninhabitable marshlands, were turned into productive paddy fields. The population increased rapidly (such population growth was very unusual for a pre-modern society). Prof. Shinzaburo Oishi calls this "The Great Age of Opening Fields."

After 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 (i) shortage of labor force; and (ii) deforestation and frequent occurrence of floods. From this period onward (even today), Japanese agriculture emphasized intensive cultivation with large inputs of labor and technology, instead of quantitative expansion.

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| **Agricultural technology in the Edo period** |

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 popular), and invention of new farming tools. Many guidebooks were published to teach farmers how to produce crops more effectively and efficiently.

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, as productivity rose, agricultural surplus was created and peasants began to sell their rice and other crops to the market (which was nationally integrated). Cash crops increased and commercial agriculture began.

Officially, all farmers were supposed to belong to (or be tied to) pre-assigned land. But in the 19th century as landless farmers increased, the landlord-tenant relationship began to emerge.

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

**Budget and money**

The Bakufu's revenue sources included the following:

--Rice tax from land directly held by Bakufu (land 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 & cartel permission  
--Charges on and borrowings from rich merchants (sometimes not repaid)  
--In addition, the Bakufu assigned hans to various public works, as noted above

Hans' revenue included the following:

--Rice tax from its territory  
--Revenues from local industries (if industrial promotion was successful)

The entire fiscal system was based on the rice tax. The unit of fiscal account was "koku" (about 180 liters of rice). The han's economic size was measured in koku and samurai's salaries were paid in rice (but of course they had to convert it to cash to buy things). Rice was physically collected from each village and transported to the major rice markets (Osaka was the most important national rice market), then redistributed to the rest of the country. The "koku" size of each han was based on cultivated areas at the beginning, but as new fields were opened and productivity rose, the official "koku" size and the actual "koku" size of each han deviated.

This rice-based system had the following consequences:

(1) Since rice had to be actually shipped across regions, this tax system required a nationally unified transportation and distribution mechanism. Private merchants provided such services but the Bakufu and han governments often guided and supported them. Land transportation (on horseback) was very costly and inefficient, so sea and river transportation was mainly used.

(2) 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 some taxes on commerce but this did not become the reliable tax base. As a result, the Bakufu and han governments faced fiscal crisis while farmers and merchants were allowed to increase their income and wealth.

(3) Faced with chronic fiscal crisis, the Bakufu responded in the following ways: monetary debasement (similar to printing money, which leads to inflation), spending cuts, tax increases, price controls, administrative reforms. Some commercial policies were tried, including providing certain merchants with the exclusive right to market a product (i.e. monopoly) in exchange for financial contribution to the government.

Money consisted of both gold and silver. Gold was popular in Edo and silver was mainly used in Osaka. Copper money was also used for small transactions. Hans could also issue local paper money. Inflation rose at the time of famine and accelerated toward the end of the Edo period (especially after international trade was resumed).

**Transportation and commerce**

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| **Tokaido "Highway"** |

The Bakufu designated five official highways and opened major sea lanes. But private inns, restaurants, shippers, baggage carriers, etc. provided the necessary service. Farming villages near the highway were required to provide horses when necessary (part of their nontax obligation). *Sankin kotai* (bi-annual commuting by daimyos) also stimulated the development of the road system. At the same time, due to military reasons, Bakufu did not encourage free movement of people and merchandise. At major check points, *sekisho* (passport controls) were created. Some rivers were left without bridges, intentionally and for military reasons. Hans were not allowed to build ships or maintain navy.

As noted above, from the beginning, the Edo tax system presupposed a nationally unified rice market. Development of cash crops and handicrafts also stimulated nationwide commerce. Osaka was the commercial center with many rich merchants and money lenders, while Edo was a political center and consumption city. Naturally, the sea lane between the two cities was well developed. In Osaka, the futures market in rice emerged (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. Other times free economy was permitted. Cartels were sometimes imposed and other times prohibited. Among historians, opinions differ as to whether the Edo economy was more dynamic under free market policy or pro-cartel policy. Prof. Tetsuji Okazaki (Tokyo University) 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, his data and regressions may be too crude to be decisive.

Toward the end of the Edo period, many hans and local cities developed economically. As a result, direct trading among them (without the intervention of Osaka merchants) began. The center of economic activity gradually moved eastward, from Kansai (Osaka, Kyoto) to Edo and Eastern Japan. Many markets (not just rice, but almost everything) were nationally integrated.

**Industry**

As agriculture and commerce grew, pre-modern manufacturing (handicrafts, food processing) also began to develop. For example, the following products were produced:

tea, tobacco, wax, indigo, salt, knives, sword, pottery, lacquer ware, silk, cotton, soy sauce, sake, paper, stone cutting, medicine, chemicals

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| **Cotton weaving factory in Owari (Nagoya). No steam engines or electricity yet, but division of labor was underway.** |

In order to enrich local population and increase tax revenue, many hans promoted local industries, and some even succeeded (S. Nishikawa and M. Amano, 1989). For example,

**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 interest 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. But the Bakufu objected to this move, prohibiting such official support (the Bakufu wanted to protect Osaka merchants who contributed financially to the central government). So the han privatized the indigo exchange and other services.

**Takamatsu han (sugar)**: The Takamatsu government issued han's paper money to promote various industries but failed, and its money depreciated. After many such failed attempts, the han finally succeeded in research on sugar production (from sugar beets) and commercialized the technology. As sugar production greatly increased, the han promoted inter-han trade (direct trade between hans). But again, the Bakufu tried 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, lacquer wax), 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 many hans which were less successful and deeply in debt. They borrowed money from big private merchants but never repaid.

**Education**

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| **Bakufu school at Yushima Seido (Ochanomizu, Tokyo). Confucianism was taught to the sons of bakufu samurais.** | **Professional school (enacted)** |

The popularity of education in the Edo period is often cited as the cause of fast industrialization in later periods. Education in this period ranged from the recondite study of Chinese philosophy and literature at public schools to children's primary education at private schools. More specifically, four types of learning institutions were important.

(1) Bakufu schools

The bakufu's 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 leader, and respect for elderly and superior. The Edo government vigorously promoted Confucianism as an ideology to legitimize and maintain the class society. Seika Fujiwara and Razan Hayashi 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 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 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 following Meiji period.

(3) Private professional schools

An eminent scholar often established his school and recruited students. Depending on the instructor, various subjects were taught: Confucianism, research on ancient Japanese literature (later leading to nationalism and anti-foreigner movement), Western language (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 hot-hearted 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.

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

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| School & location | Teacher & year of establishment | Main teaching | Prominent students |
| Shokason Juku (Hagi, Choshu Han) | Shoin Yoshida 1855-57 | 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 & 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 scholar) 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) |

(4) *Terakoya* (private primary schools)

These schools were run by local teachers for teaching 3Rs -- reading, writing, and arithmetic (abacus) -- to small children, usually starting from six years old. The popularity of terakoya all over Japan contributed to the very high literacy among the general public.

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| http://www.grips.ac.jp/teacher/oono/hp/image_j1/lec02_9terako.jpg | **Terakoya in caricature. The teacher simultaneously taught different things to different kids. In this picture, some kids are fighting in the corner.** |

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| **Proto-industrialization and population dynamics**  Economic historians have noticed that certain areas of Europe (say, Flanders in Belgium and Lancashire in England) were "industrialized" in the 17th-18th centuries, even before the Industrial Revolution began in the UK. This industrialization was characterized by rural, family-based production of textile and garment without modern machinery (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 advance a hypothesis to explain rural industrialization from the unique interaction among agriculture, population and commerce. Population growth is often considered given in economic modeling. But in the hypothesis of proto-industrialization, population dynamics is a crucial endogenous factor. F.F. Mendels and P. Deyon, who proposed this idea, define proto-industrialization as the phenomenon satisfying the following three conditions:  --It is a manufacturing activity for market sale, 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 (or 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 also sell products to the outside world too).  Furthermore, the hypothesis of proto-industrialization is demographically dynamic, as follows:  (1) For some reason, villages with poor soil face a population increase, leading to food shortage. (2) Poor peasants engage in the production of garments for sale to relieve population pressure. (3) This increases their income, and they start 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) Supply of cheap labor is increased in this way, and rich farming villages and urban merchants continue to accumulate wealth.  (This widening income gap may possibly generate capitalists and landless farmers which leads to industrialization under full-fledged capitalism. However, such historical linkage is not convincingly proven statistically.)  According to Prof. Osamu Saito (Hitotsubashi University), Japanese data in the Edo period does not support the hypothesis of proto-industrialization as stated above. There is no evidence of systematic population change 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 cope with the population pressure.  At any rate, 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 periods. However, the idea of population growth responding to the process of early industrialization is an interesting one. |

[**Additional Questions & Answers**](http://www.grips.ac.jp/teacher/oono/hp/lecture_J/qa02.htm)

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