

founded in 1603, brought an end to war but segregated Japan from the scientific, technological, and cultural changes that were to sweep through Europe and America during the subsequent two and a half centuries.

#### Precursors of the Tokugawa hegemony

The anarchy into which Japan had sunk with the emergence of mounted warriors in the twelfth century was interrupted by two lengthy periods of relative peace, the first referred to as the Kamakura Period (1185–1333) and the later as the Muromachi or Ashikaga Period (1336–1573). Each was a period of ascendancy of one coalition of warriors over others. But the hegemony proved impermanent in both instances. The Kamakura government was mortally weakened by the drain on the country's resources by successfully repelling the Mongol invasions (1274 and 1281). The contest for power was resumed and, for a time, won by Ashikaga Takauji<sup>2</sup> and his familial successors and their regents (1336–1468). Though nominally still the seat of government in Japan until 1573, the Ashikaga shogunate ceased to hold anything more than local power in the vicinity of the capital at the time of the Onin war of 1469–77. The ensuing period of the warring states (*sengoku jidai*), culminating in ascendancy of the overlord Oda Nobunaga<sup>3</sup> in 1568, most clearly resembles the period of feudalism in Europe: political authority resides almost completely in locally powerful warriors, bound to one another by no more than loose confederations.<sup>4</sup> Before the Onin war there had continued to be at least the semblance of a central authority, not unlike the Carolingian empire of medieval Europe.

In the civil wars that engulfed Japan in the late fifteenth and early sixteenth centuries, there gradually emerged locally powerful rulers known as *daimyō* (lit. "great names"). Eventually the *daimyō* came to exert control over ever more extensive territories. The coming of the Europeans in 1543, and their introduction of firearms, enabled technological advances in warfare that accelerated this tendency. Massed formations bearing lances were no match for those bearing muskets. The new ways of making war elicited new defenses. Castle cities surrounded by deep moats and high stone walls became the fortress headquarters for the contending factions.

These changes had fortunate consequences for economic development. As a *daimyō*'s authority became more secure and encompassed a wider region, he became more inclined toward policies that had long-lasting benefits and enabled him to draw resources away from neighboring rivals.<sup>5</sup> Guild irrigation systems were built, and new lands were reclaimed. Standardized systems of weights and measures were introduced—by each *daimyō* separately. These activities were all either socially beneficial additions to the stock of public goods or eliminations of deadweight losses.

By the middle of the sixteenth century, the *daimyō* had come to assume all functions of government within their respective domains called *han*. The ruthless tyrant Nobunaga forged a grand coalition including the most powerful of the *daimyō*, and sealed his ascendancy by occupying Kyoto in 1568. Nobunaga was assassinated in 1582 and succeeded by his lieutenant Toyotomi Hideyoshi.<sup>6</sup> Hideyoshi himself died in 1598 while pursuing an unsuccessful campaign of conquest in Korea. The descent into another civil war was averted in 1600 by the victory at Sekigahara of forces led by Tokugawa Ieyasu,<sup>7</sup> who emerged as the unrivaled overlord, founder of the dynasty that was to rule Japan in peace for the next two and a half centuries.

#### The *baku-han* system

Under Tokugawa Ieyasu and his heirs, Japan at last achieved whatever economic gains reside in a regime of stable and powerful government. In 1603 Ieyasu took for himself the title *shōgun*, a revival of an ancient title assigned to Yoritomo,<sup>8</sup> founder of the first warrior government in 1185, and claimed

<sup>2</sup> Ashikaga Takauji (1305–1358).

<sup>3</sup> Oda Nobunaga (1534–1582).

<sup>4</sup> On parallels between feudalism in Europe and in Japan refer to the excellent little book by Peter Duus, *Feudalism in Japan*, Alfred A. Knopf, New York, 1969. Regarding the onset of "full feudalism" in Japan which was precipitated by the devolution of the Kamakura government, see his ch. 4 (pp. 61–84).

<sup>5</sup> This is the basic argument of Kozo Yamamura, "The Agricultural and Commercial Revolution in Japan, 1550–1650", *Research in Economic History*, vol. 5 (1980), pp. 85–107.

<sup>6</sup> Toyotomi Hideyoshi (1536–1598).

<sup>7</sup> Tokugawa Ieyasu (1542–1615).

<sup>8</sup> Minamoto no Yoritomo (1147–1199).

also by the Ashikaga in the fourteenth century. The political authority vested in Ieyasu and his heirs is referred to in English as the shogunate or the *bakufu* (lit. "tent government"), terms also used to refer to the earlier warrior governments of Japan. In principle, Ieyasu was merely the most powerful of the *daimyō*, each of whom was the sovereign of his respective *han*. In fact, Ieyasu reserved to himself alone certain rights, including the right to establish foreign policies, the right to issue national currency, the right to establish national standards of measurement, and the right to remove other *daimyō* who threatened the hegemony of the *bakufu* or otherwise gave offense to the *shōgun*. All *daimyō* including the *shōgun* were dynastic in character; as a general rule, each *daimyō* was succeeded by his eldest son.

The *daimyō* were divided by Ieyasu into distinct groups. *Tozama daimyō*, or "outside" *daimyō*, were those who had accepted Tokugawa hegemony only after the battle of Sekigahara; some of them had fought on the losing side, others had remained neutral. The *fudai daimyō*, or "house" *daimyō*, had been allied with Ieyasu at Sekigahara. And the *shinpan daimyō* were blood relatives of Ieyasu and represented a collateral line of ascent should the main line fail to produce an heir. Ieyasu exercised his prerogative as the victor of Sekigahara by reassigning some of the *tozama daimyō* to less prosperous *han* than the ones they had earlier controlled, conferring their original *han* upon *fudai daimyō*. Ieyasu himself controlled the most prosperous *han* of all, called the *tenryō* (lit. "emperor's realm"), which in theory he administered on behalf of the emperor, the symbol of political authority but in effect only a figurehead. The *tenryō* encompassed about a fifth of the entire land area of Japan. It included the major cities of Edo (now Tokyo), Osaka, and Kyō (now Kyoto), the ancient capital and site of the imperial court. Eventually about a third of the population of Japan came to reside in the *tenryō*.<sup>9</sup>

Ieyasu made his headquarters at Edo (renamed Tokyo in the nineteenth century). Prior to this time Edo had been a minor fishing village of little significance, but by 1700 it had perhaps a million residents and was the most populous city in the world at that time. Its importance as a center of culture and government is indicated by reference to the two and a half centuries of Japanese history during the Tokugawa dynasty as the "Edo Period".

The sources of revenue both for the *bakufu* and the *daimyō* were mainly rice taxes collected from the cultivators. Official *han* monopolies of the production of goods like sake, rapeseed oil, crafts, and the like were additional minor sources of revenue for many *daimyō*. Also, city dwellers were obliged to pay a head tax. There did not exist free commercial intercourse among the *han*. Rather, *daimyō* introduced protectionist policies, charging tolls to travelers passing through, taxing imports from other *han*, or even banning such imports altogether where these competed with official local monopolies. The *daimyō* were not required to remit taxes to the *bakufu* but were occasionally called upon to assist in the building of public works (*tetsudai*) and were also expected to supply guard contingents to imperial and *bakufu* facilities. Neither obligation was an important permanent drain upon the *daimyō* finances.

This *baku-han* (i.e. *bakufu* and *han*) political system initiated by Ieyasu was perpetuated with few changes by his dynastic heirs. The stability of the system was due in large part to various control measures which came to have an important bearing on the economic development of Japan. These included the caste system, alternate attendance, the system for collecting rice taxes, and the seclusion policy.

#### The caste system (*shi-nō-kō-shō*)

During the Tokugawa era, the Japanese population was stratified into social castes by shogunal decree. Shinto and Buddhist priests, and doctors, were outside the caste system, but nearly everyone else fell into one of four groups: samurai, farmer, artisan, and merchant (*shi-nō-kō-shō*). There were other categories as well, the emperor and his family and the court nobles at one extreme and the outcasts at the other, but these groups did not include a significant fraction of the general population. Assignment to a particular caste was according to birth: only the children of samurai were samurai, and any child of a merchant would also be a merchant. As a popular saying of the day had it, "The offspring of a toad is

<sup>9</sup> On the details of the Tokugawa governmental system and the ancillary political controls that perpetuated it, see T. G. Tsukahira, *Feudal Control in Tokugawa Japan: The Sankin Kotai System*, Harvard University Press, 1966, pp. 5–27.

a toad." The natural unit of social organization was not the individual but rather the *ie* (lit. "house"). The *ie* typically consisted of an extended family, a group of persons related to one another by ties of blood or marriage and with a single patriarchal head. The head of an *ie* without natural heirs could adopt an heir from outside the *ie*, often someone who was already an adult, but this practice afforded only a modest prospect that individuals of merit and ambition could attain a caste above that of their own parents.

The social classes were distinguished not only by occupation but also by privilege and status. Of the four major classes, the samurai were at the top. Samurai included the *daimyō* themselves as well as their retainers of vassals, advisers, and military retainers. Only samurai were permitted to wear swords or to take on surnames. Sumptuary manifestos reserved favored consumption items and articles of fashionable clothing for members of the samurai class. Ostensibly, the samurai's role in society was that of soldier, but with no wars to fight the samurai assumed the tasks of civil bureaucracy and collection of taxes. Each samurai *ie* was assigned by the *daimyō* a set annual income to be paid in rice out of the taxes collected. The percentage of the population that comprised the samurai class was probably only about 7 percent throughout the Edo Period. The great majority of people, 80 percent, were farmers, followed by 13 percent artisans and merchants.

Merchants were held in the lowest esteem of the four major classes according to the Confucian ideology embraced by the Tokugawa. It is clear that these social rankings of the four classes were not based on their relative wealth—by the nineteenth century some famous merchants had become quite prosperous and more than a few of the samurai class had become practically destitute.<sup>10</sup> Still, according to the official ideology, it was more desirable to be even a poor farmer than a prosperous merchant.

By imposing the caste system, the rulers of the country attempted to freeze the social order with themselves and their descendants forever occupying the top place. Yet there were economic costs arising from the caste system. It blocked the complete exploitation of comparative advantages in choices of occupation. For instance, individuals with an aptitude for commerce and trade would not become

merchants unless they had been born to that class, a loss to society as well as to the individuals themselves. On the other hand, by choking off any avenue of social advance other than the accumulation of *ie* assets, the caste system contributed to the incentive of families of all classes to delay marriage, and in the event of pregnancy to resort to either abortion or infanticide, at least in the period after 1700,<sup>11</sup> thereby restricting population growth.

Each of the respective castes was charged with duties. For the samurai these included observance of correct behavior, administration of the government, and, for the highest samurai, the *daimyō*, the observance of a peculiarly Japanese institution known as "alternate attendance".

#### Alternate attendance (*sankin kōtai*)

The political measure adopted by the Tokugawa that had the most immediate impact on economic development was the requirement that the *daimyō* spend half their time in Edo and that their families reside there year round. *Daimyō* whose *han* were close to Edo were required to rotate back and forth at six-month intervals, while those whose *han* were remote rotated at longer intervals of up to two years in length. This institution was formally proclaimed in 1635 and was continued until 1862, the very brink of the Meiji Restoration. It is referred to as *sankin kōtai* (lit. "alternate attendance"). The *sankin kōtai* requirement assured that the families of the *daimyō* were perpetual hostages against any *daimyō* activities offensive to the *shōgun*. It also ensured that the Tokugawa could at a minimum cost to themselves preserve their hegemony by carefully monitoring *daimyō* activities and associations, wherever necessary playing one faction off against others, or seeking a quick compromise in the event that opposition threatened.

The economic effects of alternate attendance were many. The first consequence was a massive migration

<sup>10</sup> On the evolving fortunes of merchants during the Edo Period, see Charles D. Sheldon, "Pre-Modern Merchants and Modernization in Japan", *Modern Asian Studies*, vol. 5, no. 3 (1971), pp. 193-206.

<sup>11</sup> This is the basic argument of James I. Nakamura and M. Miyamoto, "Social Structure and Population Change: A Comparative Study of Tokugawa Japan and Ch'ing China", *Economic Development and Cultural Change*, vol. 30 (1982), pp. 229-69.

of persons from every part of Japan to Edo. Because *daimyō* families were the wealthiest in the country, Edo became a major consumption center. Extensive commercial activity developed in Edo to supply the *daimyō*, their families, and retainers with the daily necessities in exchange for the rice taxes collected in the various *han*. The most prosperous *han* were located in the western part of the country. Consequently a pattern of trade emerged in which rice collected as taxes in the western *han* was shipped to Osaka where it was stored in warehouses and sold, and bills of trade issued in payment for the rice were exchanged for consumption items in Edo.<sup>12</sup> Osaka thus became a great entrepot for the entire country. There developed in Osaka sophisticated commercial institutions such as a kind of fractional reserve banking based on the issuance of warehouse receipts for rice, wholesaling networks, and even futures markets.<sup>13</sup> If as a result of *sankin kōtai* Edo had become the city of samurai, then Osaka had become the city of merchants. The two cities exhibit some of these same ambiances even today.

Besides contributing to the development of Edo and Osaka, *sankin kōtai* had significant economic effects in many of the *han*. Some *han*, particularly those to the west of Osaka, were favorably situated to benefit from the expenditures by *daimyō* processions from more distant *han*. These processions were strictly governed by shogunal decrees to be commensurate in all details to the social rank of the *daimyō* that led them. The processions of the highest ranking *daimyō* were quite elaborate, and typically included hundreds of servants, retainers, advisers, and so on. If spending by these processions stimulated the economies of some *han*, it is equally true that they acted as a drain on other less favorably situated *han*. Those *han* located in the far reaches of Tohoku (the north-east of the main island) had to pay taxes to finance spending in other *han* and in Edo without themselves gaining any such commerce.

An additional consequence of the *sankin kōtai* institution is that it added impetus to the development of roads and coastal waterways connecting Edo and Osaka to the farther reaches of the country. The famous Tokaido, depicted in the masterful woodblock prints of Hiroshige, was among the well traveled roads that originally had been developed to accommodate the *daimyō* processions.

Just as the high and mighty had duties to fulfill, so too did the low and common. And for the farmers, or peasants, the most important duty was the payment of taxes.

#### The *honbyakushō* system

Though the *daimyō* were ostensibly the sovereign rulers of their respective *han* with independent powers to set taxes on their subjects, there did exist a system of collecting land taxes that was quite uniform throughout Japan, referred to as the *honbyakushō* (lit. original farmers) system. In 1582-98 Hideyoshi had undertaken a cadastral survey of all the arable land and recorded the name of the head of each *ie* responsible for paying taxes on each specific parcel. These *honbyakushō* and later their familial successors were divided into groups of five members. Within each such group, all members were held responsible for shortcomings in tax payments by any one of them. Each village had a designated headman, in some instances elected and in others hereditary, who was the official tax collector and intermediary between the samurai and all the groups in the village. In fulfilling the various duties associated with the payment of taxes, villagers evolved a remarkable facility for enforcing advantageous rules of social behavior, and as a result grew more productive and more governable.<sup>14</sup>

The base for the land tax was output, so that the amount of rice collected varied from year to year with the state of the harvest. There was a natural incentive to understate the true size of the harvest, but by test plots and unannounced inspections the state of the harvest was independently measured by samurai assigned to this task. The tax rate was in principle 40 percent but in fact varied from place to place and over time. The *kokudaka*, the aggregate

<sup>12</sup> On the details of these remarkably advanced institutions, see E. S. Crawford, "The Development of a Credit System in Seventeenth Century Japan", *Journal of Economic History*, vol. 20, no. 3 (September 1961), pp. 342-60.

<sup>13</sup> The indigenous development and evolution of cotton futures markets in Osaka during the Tokugawa period is described in some detail by William B. Hausert, *Economic Institutional Change in Tokugawa Japan, Osaka and the Kinai Cotton Trade*, Cambridge University Press, 1974.

<sup>14</sup> On this point see James I. Nakamura, "Human Capital Accumulation in Premodern Rural Japan", *Journal of Economic History*, vol. 41, no. 2 (June 1981), pp. 263-81.

officially assessed annual average rice yield of the land one was authorized to tax, became a status token for the *daimyō* and some lesser samurai, for by shogunal design the size of each's *kokudaka* comported with his place in the social hierarchy. The units of measurement were *koku*; 1 *koku* = 180 liters (5.1 bushels), nominally, the amount of rice thought necessary to sustain an adult for one year.

The highly controlled, even repressive, social and economic system embodied in the various institutions so far reviewed exhibited little change over the two and a half centuries of the Edo Period. Nor was it intended by Japan's rulers that the system should change. To assure stasis, a further measure was required, one that, more than any other, conveys the essence of the Tokugawa era, the closure of the country.

#### The seclusion policy (*sakoku*)

The third *shōgun*, Iemitsu,<sup>15</sup> grandson of Ieyasu, issued in 1642 an order for the closing of the country (*sakoku*). The Dutch and Chinese were allowed continued contact through the southern port at Nagasaki but were not allowed free transit within Japan. The Dutch were restricted to a minor settlement on the small island of Dejima in Nagasaki harbor, while the Chinese were restricted to a part of Nagasaki proper, and trade with both of them was reserved to the *bakufu* alone. All foreigners of any nationality other than Dutch or Chinese were denied entry into Japan under threat of death, and Japanese abroad were, initially, allowed two years to return to Japan safely or else were ordered to remain as permanent exiles under threat of death upon repatriation. These draconian decrees were strictly enforced for two centuries, with the minor exceptions of some authorized trade with Korea by the *Sō* clan of Tsushima and some illicit traffic between the southernmost *han* and Chinese traders, by way of the *Ryūkyū*s (later to become *Okinawa*).

The principal reason for the seclusion policy was to prevent military alliances with the European countries and the *daimyō*. In the wars leading to rivalrous alliances between *daimyō* and rivalrous European powers had already set what was, for the Tokugawa, an alarming precedent. Suppression of Christianity was an additional motivation of the *bakufu*, not necessarily distinct from the desire

to prevent military alliances with Europeans. The seclusion order and the official outlawing of Christianity represented an attempt to embargo weapons and subversive ideas both at the same stroke. A final motivation for the seclusion order was to reserve for the Tokugawa a quasi-monopoly of imports into Japan, including imports of precious metals.

#### Economic development during the Tokugawa era

Japan achieved significant industrialization and rising per capita income only after the precipitous demise of the Tokugawa regime and the dismantlement of the *baku-han* system in the mid-nineteenth century. Scholars of Japan's economic history remain divided on whether the draconian economic and political controls of the Tokugawa era retarded Japan's economic development or, in some curious and roundabout way, hastened it. Proponents of either view must reconcile themselves to the mass of evidence that the steady accumulation of human capital in Tokugawa Japan was an antecedent to the nation's rapid economic expansion following its later opening to the West.

From the founding of the Tokugawa dynasty by Ieyasu in 1603 until the Genroku era<sup>16</sup> a century later, the economy of Japan grew significantly. The population increased from about 20 million in 1600 to about 30 million in 1700. The arable lands were expanded commensurate with this. The great cities, particularly Edo, grew and prospered. However, from 1700 until the Meiji Restoration in 1868, the population grew hardly at all. There was some migration from the cities back to the countryside. The remarkable changes in the political and economic order that had taken place in the early Tokugawa period had no counterparts in the later period.

The extensive growth in the seventeenth century derived from the more secure and durable rights of the samurai class to the taxable output of the economy. Prior to the establishment of the Tokugawa

<sup>15</sup> Tokugawa Iemitsu (1604-1651).  
<sup>16</sup> Genroku era (1688-1704). Japanese dates are identified by the reign year of the successive emperors; for instance, 1697 is Heisei 9, the ninth year of the reign of the Heisei emperor. The Genroku era marks the apogee of Edo culture.

hegemony, *daimyō* and their forerunners perceived a smaller expected return from land reclamation and irrigation projects because of the possibility of its forfeiture in the vicissitudes of civil war. Under the *baku-han* system *daimyō* were secure in their exclusive rights to levy taxes on the lands within their own *han*. To induce the cooperative efforts of farmers in land reclamation, *daimyō* proffered temporary exemptions from taxes for newly reclaimed rice fields (*shinden*). By the end of the seventeenth century this process had approached the fundamental limits imposed by the mountainous geography of the nation. Further economic expansion would require either the discovery and diffusion of superior methods of production, or the accumulation of physical and human capital. The historical record of the late Tokugawa era affords evidence of both technical change and capital accumulation.

From 1700 to 1850 Japan's population seems to have grown hardly at all, remaining at about 30 million persons. The view, once dominant among historians, that these statistics bespeak famine, pestilence, and human misery has fallen under the weight of evidence that Japanese families in the late Tokugawa era voluntarily limited their size, to accumulate per capita wealth. Restriction of marriage to the first-born son, who was the only one to inherit family property, and delayed age at marriage were characteristic of samurai and peasant families alike in the late Tokugawa era. Infanticide afforded further controls on family size, particularly for peasants. Thomas C. Smith examined Japanese village registers and determined that the recorded sex ratio (ratio of male to female registered births) frequently diverged from one, indicating sex-selective population control, i.e. infanticide.<sup>17</sup> Smith focuses on infanticide, roundly condemned even in Tokugawa Japan, because its incidence can be measured indirectly through the recorded sex ratio, not because that was necessarily the most important or prevalent method of family planning in early modern Japan. But if infanticide reflects economic calculation, so too must have other methods of restraining family sizes. Smith found that the variation in the recorded sex ratio over time and across geographic locales reflected the presence or absence of female by-employment opportunity and the relative difficulty of partitioning holdings among male heirs,

both of which would be logically associated with economic incentives of families to exercise sex-selective population control.

The rational attempts of late Tokugawa Japanese families to accumulate wealth and raise living standards, and not only through population control, seem to have achieved a modicum of success. Increasing commercial activity, including farm family by-employments (spinning, weaving, pottery making, etc.), increasing trade within Japan, increasing improvements in irrigation and fertilization, and the selection and diffusion of improved strains of rice are all characteristic of eighteenth-century Japan. These developments progressed more rapidly and more completely in regions of Japan that contained the most fertile lands, and which afforded relatively greater opportunity to evade onerous government restrictions on productive activity.<sup>18</sup> The geographic regions around the shogunal capital of Edo (now Tokyo), the major cities of Osaka and Kyō (now Kyoto), and in much of the western parts of Japan fared rather better economically in the Tokugawa era than did the regions of the north-east (Tohoku).

By the early nineteenth century, rice taxes, head taxes on city dwellers, and franchised monopolies were becoming less and less effective at maintaining the samurai's share of Japan's rising national income.<sup>19</sup> *Daimyō* and *bakufu* alike resorted to debasement of the currency to enhance fiscal resources, with the inevitable result that prices rose and barter displaced monetary trade. Price controls only worsened the state of affairs. Repeated unsuccessful attempts to ban or discourage farmers from engaging in by-employments also failed to enlarge the collection of rice taxes. Attempts to raise the rice tax rates met with stiff resistance and occasional armed insurrection.

<sup>17</sup> Thomas C. Smith, *Nakamura: Family Farming and Population in Japanese Village, 1717-1830*, Stanford University Press, 1977.

<sup>18</sup> For details, see Kozo Yamamura, "Towards a Reexamination of the Economic History of Tokugawa Japan, 1600-1867", *Journal of Economic History*, vol. 33, no. 3 (September 1973), pp. 509-46.

<sup>19</sup> In a careful study, Kozo Yamamura demonstrates that the bannermen (*hatamoto*), among the highest ranking samurai other than *daimyō*, maintained relatively constant real income throughout the Edo Period, but grew increasingly discontented as the incomes of peasants and others rose relative to their own. See Kozo Yamamura, "The Increasing Poverty of the Samurai in Tokugawa Japan, 1600-1868", *Journal of Economic History*, vol. 31, no. 2 (June 1971), pp. 378-406.



reversed the previous inflation. It would have been possible to establish convertibility of the currency at a new par, avoiding deflation, but this would have required a smaller cache of reserves and precisely for this reason would have been a less effective signal of military might.

The Matsukata deflation induced a business recession in the 1880s<sup>38</sup> but raised the real value of the land tax receipts, unbundled the government of the annual losses which the government factories had invariably sustained, and restored fiscal balance. The deflation, of course, also raised the real value of outstanding samurai commutation bonds, but the bonds constituted a much smaller claim on government resources than the stipends they had replaced.

Some of the former samurai had used their voluntary commutation bonds as collateral for chartering national banks under an 1873 law patterned after the contemporary US national banking regulations. But because the right of note issue was severely restricted in Japan (in contrast to US national banks), only four national banks had been chartered, and these had all floundered. In 1876 new national banks were authorized under more liberal charters, and by 1879 153 national banks had been founded, most of which prospered.<sup>39</sup> These national banks were the first joint-stock, limited-liability companies in Japan. This soon became the predominant form of organization for newly founded manufacturing firms in cotton spinning and other industries.

Just before his appointment as Minister of Finance, Matsukata had advocated the complete revamping of Japan's banking system, so that a government-controlled central bank with the sole right of issuing bank notes would supplant national banks, completing the set of measures assuring government control of the money supply and maintenance of convertibility. At Matsukata's initiative a central bank, the Bank of Japan, was founded in October 1882. At that time the charters of the national banks were shortened from thirty years to twenty and made non-renewable. New private commercial banks were now chartered in great numbers.<sup>40</sup>

In 1886, full silver convertibility of government paper money was established, a policy maintained until 1897 and the switch to gold. As Figure 2.2 illustrates, in the last decade of the nineteenth century silver appreciated in value relative to gold as a

consequence of new gold discoveries (in Transvaal, South Africa), an unexpected windfall for Japan and other silver standard nations. This windfall, and the sizable indemnity Japan received in the Sino-Japanese War (which is discussed in the next section), ultimately provided the needed reserves for Japan's adoption of the gold standard.

### Industry, trade, and imperialism in the late Meiji era

As the end of the nineteenth century approached, the Japanese economy underwent a permanent transformation. It began to industrialize. From the last decades of the nineteenth century, Japan has numbered among the fortunate nations experiencing what Nobel laureate Simon Kuznets dubbed "modern economic growth",<sup>41</sup> a sustained rise in per capita output, made possible by the continual application of scientific advances to the technology of manufacturing. The hallmark of modern economic growth is the expansion of industry.

In Japan, the industries that mechanized and grew first were cotton spinning and silk reeling. The scale of these industries in Japan of the 1890s should not be exaggerated. In 1893 Japan had forty cotton spinning factories and all together these employed 25,448 persons, only about one-tenth of a percent of the nation's labor force. But cotton and silk goods in 1893 accounted for about a third of the net product in Japan's factories. (Food and beverages, mostly produced in the traditional ways, accounted

<sup>38</sup> The Matsukata deflation happened to coincide with a worldwide slump, and it is difficult to disentangle the effects of the one from those of the other. So argues Terayama (1970), "Matsukata deflation no makuro keizai gaikokai burseki" (Microeconomic analysis of the Matsukata deflation), *Kokoro shindai keizai* (Spring 1982), pp. 78-92.

<sup>39</sup> Kozo Yamamura has developed evidence that samurai commutation bonds comprised between one-third and one-half of the paid-in capital of Japanese banks in the 1880s, but in specific cases much less. See Kozo Yamamura, "The Role of the Samurai in the Development of Modern Banking in Japan", *Journal of Economic History*, vol. 27 (1967), pp. 198-220.

<sup>40</sup> On the early development of private commercial banking in Japan, see Hugh T. Patrick, "Japan 1868-1914", in Ronald Cameron (ed.), *Banking in the Early Stages of Industrialization*, New York: Oxford University Press, 1967, pp. 239-80.

<sup>41</sup> Simon Kuznets, *Economic Growth of Nations*, 1971, and *Production Structure*, Harvard University Press, 1971.

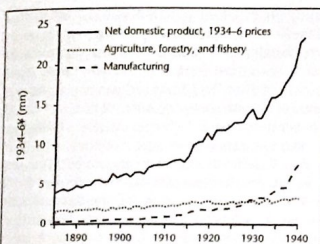


Figure 2.3. Net value added in manufacturing and mining versus that in agriculture, forestry, and fisheries, all in 1934-6 prices, 1885-1940. Besides manufacturing and agriculture, Japan's net national product comprised outputs of construction, services, transport, and telecommunications. Source: ITEX, vol. 1 (1974), table 24, p. 226.

for another third.) Factory output in the 1890s represented only about 15 percent of Japan's value-added in manufacturing and perhaps 3 percent of net national product. More significantly, cotton spinning firms were among the first large joint-stock enterprises to succeed in Japan (banks were the first), and in the subsequent decades there would be many more. As Figure 2.3 illustrates, manufacturing output was now growing at a faster rate than agriculture and would eclipse it by around 1930.

Textiles carried a much greater weight in Japan's foreign trade than in its output. Cotton yarn and raw silk, together, accounted for about half of Japan's exports in the last decade of the nineteenth century. Raw cotton accounted for a third of Japan's imports. Clearly, a substantial portion of Japan's gains from specialization arose from the manufacture of cotton yarn and raw silk. The profitability of these industries derived partly from the fact that their mechanization required only an incremental change in long existing cottage industries. In the Edo Period, cotton spinning and silk reeling had both become significant by-employments of farmers using hand tools and primitive methods. Furthermore, even after mechanization in the 1880s and 1890s, both cotton spinning and silk reeling were relatively labor-intensive (often therefore described as "light"

industries). In short, both employed readily available, indigenous resources.

A further, unusual, development had contributed to the growth of silk reeling in Japan. A blight known as pébrine afflicted the silkworms of Europe beginning in 1852 in the south of France and continuing in the early 1860s in Italy, wiping out sericulture in Europe precisely at the point when Japan opened to foreign trade. The resulting increase in world price of silk products contributed greatly to Japan's gains from specializing in silk production. Beginning in 1865, Louis Pasteur, already famous for his studies on beer and wine leading to the development of pasteurization, was set to the task of researching the silkworm disease. Pasteur did in fact discover a way of detecting pébrine-infected silkworm eggs and thus preventing the disease. He published these findings in 1871 and effectively ended the European blight, but by then Japan's silk industry was well established on world markets and ripe for mechanization.

Meiji Japan's direct gains from foreign trade should not be overstated. From the opening of treaty ports in 1858, Japan began to export goods having lower relative prices in Japan than in the world outside (raw silk, coal), and to import goods having higher prices in Japan (cotton cloth, wool), certainly achieving gains from pure exchange.<sup>42</sup> And, by expanding its output of the export goods, specializing, it compounded these gains. However, from 1885 to 1910 foreign trade amounted only to about 10-15 percent of Japan's national output, and the direct gains from it were probably a lot less than this, small in comparison to the gains associated with economic growth. The opening of Japan to knowledge of foreign technology did more than free trade to hasten the country's advance toward the industrial age.

The Meiji government actively encouraged the infusion of foreign technology. Under the slogan "increase production, encourage industry" (*shokusan kōgyō*), the Meiji government hired foreign advisers to set up model factories, including mechanized cotton spinning factories and silk filatures, though just how important such factories were to the

<sup>42</sup> For some details on price differences between Japan and the outside world prior to Japan's opening, see Chapter 8 below, and also J. Richard Huber, "Effect on Prices of Japan's Entry into World Commerce After 1858", *Journal of Political Economy*, vol. 79 (May/June 1971), pp. 614-28.

development of these industries has been seriously questioned. This matter is taken up again in the chapters on industrial policy (Chapter 9). Here, suffice it to say that other government steps taken to promote foreign ways had a broader impact on daily life than did the government factories. With the help of foreign advisers, the government set up agricultural experiment stations, established a modern rail system, a telegraph network, a postal system, police forces, and schools and universities.<sup>43</sup> Japan also adopted another foreign institution that eventually proved disastrous: imperialism.

Foreign expansion was a major preoccupation of the Meiji oligarchy. In 1876, two decades after Japan's own forced opening by Perry, the Japanese leaders coerced Korea into opening three of its ports to Japanese traders. From this point, Japan was a rival to the Western powers in pursuit of Asian empire, even though its very own waters encompassed trade ports established by unequal treaties. Korea had historically maintained a tribute relation with its larger neighbor China which the Japanese initiative, by design, threatened to eclipse. The ensuing diplomatic disputes between China and Japan erupted into outright warfare in August 1894. The Sino-Japanese War ended quickly with China's capitulation in February 1895, and in the end proved to be as much an economic success for Japan as a military one.

Expenditures in conducting the Sino-Japanese War totaled 200 million yen, easily more than double the annual government spending up to that time (and about one-eighth of Japan's 1895 GNP). These expenditures were partially defrayed by placing a 43 million yen loan at 5 percent and a 10 million pound sterling loan at 4 percent, both on the London market. Along with this, the Japanese government once again resorted to the inflation tax. The spoils of war outweighed the economic sacrifice, at least if one takes a rather pecuniary view of the matter. The indemnity from China provided in the Treaty of Shimonoseki of 1895 totaled 32 million pounds sterling (equivalent to 362 million yen at the current exchange rate, about one-fifth of Japan's 1896 GNP), and along with this Japan was awarded control of Taiwan and the nearby Pescadores, and promised access to treaty ports on the Chinese mainland on a par with the European powers. In the "Triple Intervention", France, Russia, and Germany

jointly pre-empted Japan from also taking control of the Kwantung peninsula of South Manchuria as agreed under the original terms of the Shimonoseki treaty. Then three years later (in 1898) Russia itself took control of the Kwantung peninsula under a twenty-five-year lease, and began to construct a rail line connecting the newly opened trans-Siberia line to the year-round ports there, Dairen and Port Arthur. (Vladivostok freezes every winter.)

In the anti-foreigner Chinese rebellion of 1900 (called the "Boxer" rebellion<sup>44</sup>), the Russian-built Manchurian rail line came under attack, and Russian troops occupied the whole of Manchuria. A combined relief expedition of foreign troops, including a large contingent of Japanese troops, marched on Peking and suppressed the rebellion. Russia agreed at that time to withdraw its troops from Manchuria but was slow to act on it and seemed to threaten Japanese designs on Korea. Tensions between Japan and Russia led to war in February 1904. Japanese land forces attacked Russian positions in South Manchuria, sustaining large casualties but prevailing. Then in May of the following year (1905) the Russian fleet was intercepted en route to Vladivostok and destroyed by a Japanese fleet comprised mostly of warships purchased from Britain. Both sides accepted American mediation and the US President Theodore Roosevelt successfully negotiated a mutually acceptable treaty at Portsmouth, New Hampshire, in 1906. Japan obtained the Russian lease on the Kwantung peninsula and control of the Russian-built Manchurian rail line, recognition of Japan's pre-eminent position in Korea and control of the southern half of the island of Sakhalin (north of Hokkaido); Japan recognized

<sup>43</sup> On the agricultural experiment stations, see Yujiro Hatanaka et al., *A Century of Agricultural Growth in Japan: Its Relevance to Asian Development*, University of Minnesota Press, 1973 (esp. pp. 44-59). On the educational system, see Richard Rubinger, "Education: From One Room to One System," in M. Jansen and G. Rozman (eds.), *Japan in Transition: From Tokugawa to Meiji*, Princeton University Press, 1986, ch. 8, pp. 195-230. On the police force and post office, see D. H. Westney, *Imitation and Innovation: The Transfer of Western Organizational Patterns to Meiji Japan*, Harvard University Press, 1987. On the rail and telegraph networks, see Thomas C. Smith, *Political Change and Industrial Development in Japan: Government Enterprise, 1868-1880*, Stanford University Press, 1955 (esp. pp. 42-46).

<sup>44</sup> The rebellion drew inspiration from a special kind of martial art, resembling boxing, but infused with mysticism.

China's sovereignty over Manchuria. Japan received no financial indemnity as it had after the war with Russia. Japanese deaths in the war with Russia totaled more than 100,000. Moreover, military expenses totaling 1,639 million yen (approximately half of Japan's 1905 GNP) had necessitated massive foreign loans and special taxes.

Assassination of the Japanese resident general in Korea (Itō Hirobumi), then one of the leading survivors among the Meiji oligarchs) afforded the pretext for Japanese annexation of Korea in 1910. Japan's formal empire now included Taiwan and the Pescadores, the southern half of the island of Sakhalin (called Karafuto by the Japanese), Korea, a long-term lease on Port Arthur in South Manchuria, and concessions in selected treaty ports on the Chinese mainland.<sup>45</sup> Extraterritoriality had ended in Japan itself in 1894. In 1911 commercial treaties with the United States and other nations completely restored to Japan control of its own tariffs. Less than fifty years after the Restoration, all of the immediate aims of the Meiji oligarchs had been realized.

#### Meiji industrialization in light of the Gerschenkron thesis

Scholars and others have wondered whether the Meiji transformation of Japan's economy was *sui generis* or, in subtle respects, resembled the experiences of other developed nations. In a series of essays, the famous Harvard economic historian Alexander Gerschenkron argued that the European process of industrial development during the nineteenth century exhibited some coherent patterns that comport well with economic logic.<sup>46</sup> It seems quite natural to place Japan within the framework of that argument, and we shall close our discussion of Meiji industrialization by attempting to do so. The Gerschenkron thesis holds that, as a general tendency,

[I]f the more delayed the industrial development of a country, the more explosive was the great spurt of its industrialization, and if when it came. Moreover, the higher degree of backwardness was associated with a stronger tendency toward larger scale of plant and enterprise. . . . Finally, the more backward a country, the more likely its industrialization was to proceed under some organized direction; depending on the degree of

backwardness, the seat of such direction could be found in investment banks, in investment banks acting under the aegis of the state, or in bureaucratic controls.<sup>47</sup>

The economic sense behind these patterns, and some of the evidence, can be briefly sketched. Gerschenkron argued that in the nineteenth century, compared with England, which had the most advanced economy, France was more backward economically, followed in order by Germany, Austria, Italy, and Russia. Here, "backwardness" refers to an amalgam of factors including low per capita output, small extent of urbanization, low degree of literacy, absence of sophisticated business institutions and practices, and so on. In Gerschenkron's characterization, backward countries exhibited relative scarcity of skilled and disciplined workers so that their most economical manufacturing methods employed labor-saving machines and tools, which required capital investment. But financing such investment was problematic because backwardness was apt also to be associated with factors that inhibited the process of financial intermediation. For instance, in order to succeed, private banks themselves require trustworthy borrowers, willing depositors, and managers and clerks with business acumen. Lack of trust in lending could be overcome if banks themselves controlled the businesses to which they lent, but where backwardness was such that banks lacked sufficient expertise to do this or failed to attract depositors, then if industrial development occurred at all it was likely to draw on government direction and public funds. In France, private banks supplied most of the investable funds for industrial development but played little role in the actual management and direction of the businesses to which they lent. In Germany, which took longer to develop and at the time was more backwards than France, private banks themselves organized and managed new businesses in emergent industries. In the still more

<sup>45</sup> For details on Japan's concessions in China outside Manchuria, see Mark R. Peattie, "Japanese Treaty Port Settlements in China, 1895-1937," in Peter Duus, Ramon H. Myers, and Mark R. Peattie (eds.), *The Japanese Imperial Empire in China, 1895-1937*, Princeton University Press, 1989, pp. 166-209.

<sup>46</sup> Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays*, Belknap Press of Harvard University Press, 1962.

<sup>47</sup> *Ibid.*, p. 44.