Economic Development and Financial Structure in Japan, 1868-1927

Old wine in new Bottles

By

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Abstract

We attempt in this paper to explain the evolution of the financial structure of the Japanese economy during the period 1868-1927. The explanation we provide is in terms of the interactions between market forces, changes in government financial and economic policies and changes in the economic structure of the Japanese economy.

The Japanese government played a major role in the transformation through a painful learning process fraught with failures and crowned with successes. During the first phase of the transformation that extended from 1868 to 1885, private markets provided direct finance to economic development without private intermediation and without using the stock market. The government was the only major financial intermediary and provided direct finance. During the second phase that extended between 1880 and 1927, markets provided a major portion of financing economic development through direct and indirect financing. During this period, free banking reached its zenith and played a major intermediating role but the stock market didn't.

The economic and financial policies of the government favored domestic banks intermediation over stock market intermediation in the finance of Japan's economic development. The policies produced greater volatility of portfolios containing stocks. In contrast the banks offered a reasonable rate of return with little risk thanks to the monetary policy followed by the Bank of Japan and the open competition among banks. The stock market was organized as a derivative market that helped banks and large investors reduce their portfolios risk.

The loose regulatory environment of the financial sector helped Japan achieve a respectable growth rate of real GDP per capita and set the stage for the rise of of a new economic power.

For more than four centuries, between 1500 and 1850, the Japanese economy developed relatively slowly compared to the economies of Western Europe. This was due in part to a slow rate of absorption of scientific and technological knowledge and to other political, social, and economic impediments. During this period, military and political challenge grew intensively and relentlessly. In the middle of the nineteenth century both the external military and economic challenges and the internal pressures for removing the internal obstacles to economic growth and development reached a climax. A change in government and government economic and social policy was necessary. The change took place in 1868 after the successful conclusion of the Meiji revolution. The country had to catch up or risk foreign invasion and loss of sovereignty, Smith (1965).

To speed up the rate of economic development and meet the foreign military challenge, it was not enough to destroy the shackles of the old feudal regime and create a new government. The country had to build an appropriate infrastructure and an appropriate financial superstructure. The economy had to achieve an appropriate capital/labor ratio. Furthermore, the economy had to absorb relatively fast new scientific and technological knowledge. This required the importation of capital equipment and knowledge from Europe and the United States. Thus a redeployment of financial resources and existing capital equipment was necessary. In this huge transformation speed was a critical ingredient for success. To rely on self-interest and private markets alone was not enough. An appropriate combination of government economic and financial policies with market forces was most suitable.

There are many factors that determine the success of such a fast economic development. Flexible financial structures play a major role in determining the speed of economic development since they determine to a major extent the speed of accumulation of the stock of human capital, physical capital and the stock of knowledge. Since the financial requirements of economic development change over time, the financial structure must change in order to keep pace and maintain the economy operating as close to an efficient allocation of resources as possible. The financial structure changes over time in response to changes in government economic and financial policies and in response to changes in the structure of an economy under the guidance of market forces to the extent that government allows them to function.

In the dynamic economy of Japan during the chosen period, government and markets groped to build and maintain a suitable and flexible financial structure as close to efficiency as possible. As a result the financial structure underwent deep transformations during the period under study. To explain and characterize this transformation we introduce the following definition of direct finance and indirect finance. When owners of investment funds invest themselves in own business there is direct finance. There is direct finance when joint stock companies use retained earning or depreciation allowances to make investments. There is indirect finance when an intermediary such as banks or governments intervenes between the original creators of investment funds and the users of funds. Thus there is indirect finance when a government collects revenues in the form of taxes, seignorage, and inflation or borrows and uses part of the revenues or part of the proceeds from borrowing for investing directly or indirectly. When banks or other institutions collect demand or time deposits or borrow through the use of bonds or debentures and use them to provide loans or purchase securities including stocks and bonds there is indirect finance.

We attempt in this paper to explain the evolution of the financial structure of the Japanese economy during the period 1868-1927. The explanation we provide is in terms of the interactions between market forces, changes in government financial and economic policies and changes in the economic structure of the Japanese economy. We chose to study the period 1868-1927 because during this period market forces worked relatively unhindered by government intervention or monopoly power. The year 1927 marks the culmination of a financial crisis that resulted in a gradual abandonment of free markets.

The Japanese government played a major role in the transformation through a painful learning process fraught with failures and crowned with successes. During the first phase of the transformation that extended from 1868 to 1885, private markets provided direct finance to economic development without private intermediation and without using the stock market. The government was the only major financial intermediary and provided direct finance. During the second phase that extended between 1880 and 1927, markets provided a major portion of financing economic development through direct and indirect financing. During this period free banking reached its zenith and played a major intermediating role but the stock market didn't.

This paper is organized as follows. In the first section we explain the evolution of the financial structure during the early Meiji period that lasted from 1868 to 1885. We provide a rationale for the failure of the banking system and the stock market to play a major role. We draw the lessons that the government has learned from this first experiment. In the second section we show how the government applied the lessons learned from the first experiment to control the evolution of the financial structure during the period 1885-1927. The third section explains the reasons for the failure of the stock market to develop and the implications of the government failure to recognize the importance of a healthy and well functioning stock market.

Economic development and financial structure 1868-1885

Immediately after assuming power in 1868, the new government started the process of building a financial structure appropriate for a successful development program. The country had already a rather inadequate financial structure. The government realized that the collaboration of the private sector was crucial for building a more viable financial structure. It also realized that the country needed to learn from the experience of the developed countries as well as from its own experience. After nearly a decade and a half of experimentation, a modern financial structure emerged supported by a new legal framework.

The government experienced with various financial arrangements in different sectors with varying degrees of success including a failed free banking experiment. There were three major experiments during the period 1868-1885 corresponding to the three major sectors of the Japanese economy during this period: the agricultural sector experiment, the light industry sector experiment and the heavy industries and mining sector experiment. The three experiments conditioned and influenced heavily the evolution of the financial structure with regards to the mobilization and allocation of financial resources.

Mobilization of financial resources

Immediately after it won the revolution the young Meiji government removed all domestic restrictions on the movement of people and goods. The treaties with the western nations removed all restrictions on the movements of goods and capital between Japan and the rest of the world. During the first three decades after the Meiji revolution, agricultural and textile sectors accounted for the lion's share of the Japanese GDP. In 1872, agriculture, forestry, and fishing employed 85% of the total labor force. In 1895 these sectors employed 74% of the total labor force. The manufacturing sector dominated by textiles employed 10% of the labor force, Allen (1981). Despite the great improvements in the productive power of the Japanese economy after 1868, "the basic occupation and mode of life of the common people remained substantially unchanged through the first twenty five years of the Meiji era."[1] Although the mode of life remained unchanged deep changes occurred in the production modes and the financial structure of the country.

The young Meiji government was well aware of the importance of financial structures in economic development. It dispatched many fact-finding missions to Western Europe and the United States to learn not only about new production technologies and science but also about new financial technologies to mobilize financial resources. After a lot of experimentation and learning, a new financial structure emerged. The new financial structure was a cross between the old financial structure and the new financial technologies.

Old financial structure

Under the Tokugawa regime, which lasted from about 1600 to 1868, the country was a loose federation of daimyo (warlord) fiefdoms with a poor road and communication infrastructure and different monetary systems. The southwestern region with Osaka as a financial center used silver as money. The northeastern region centered on Edo or Tokyo used gold as money.[2] To pay for some of their extravagant expenses, some of the powerful landlords printed inconvertible paper money that circulated only in their respective fiefdoms. Each daimyo imposed restrictions on agriculture, trade, and industry inside his fiefdom. The restrictions were similar across the fiefdoms. The central government of Edo (Tokyo) imposed further restrictions on trade and movements of goods and capital between the whole country and the rest of the world. The central government restrictions completely isolated the country from the rest of the world except for trade in essential commodities. Foreign merchants were allowed only in Nagasaki, a port city in the Southwest of Japan.

An intricate financial structure emerged to help capital, goods, and people move across the maze of barriers within and without the country. Foreign merchants handled the international trade of Japan with the rest of the world. With the help of Western banks in Hong Kong, Shanghai and their branches in Yokohama and Nagasaki they provided financing to artisans and local merchants in Japan. Inside Japan, there were multitudes of merchants and merchant houses. The most successful of them were based in Osaka and Edo (Tokyo), awash in liquidity. Some of them formed financial houses called Ryogae in addition to their other trading activities. The Ryogaes acted as foreign exchange banks

[1] Lockwood, (1968) p, 17

[2] Rice was also used all over Japan as a unit of account and a temporary abode of value. Thus it performed two of the three main functions of money.

between the silver based currencies of the southwestern and the northeastern regions. They financed the movement of rice and silk across the two regions. Merchants and Ryogae provided loans to each other, to local moneylenders, to local and central governments, to farmers, and to artisans at high rates of interest.

In villages, interest rates ran to 20% or more. Some of the loans to governments were used to finance wars. Some were used to finance economic development. From time to time some governments repudiated part or all of the debts they owed to merchants and Ryogae. This explains in part the high interest rates. Other factors that contributed to high interest rates are internal conflicts between some daimyos and the central government, political instability, and the lack of a legal framework. The loans were crucial for the development of the economy because of the underdeveloped state of the transportation infrastructure of the country and because of the central government restrictions on movements of people and goods within and without the country. Obviously, people who could save part of their income must invest their savings in own business or hoard them in the form of gold, other species, or labor (large families). As we will show below, the old financial structure continued to thrive during the entire Meiji era and beyond.

Government as a financial intermediary: Land tax, seignorage and inflation

The early Meiji government had no other domestic source of revenue but taxes on land or inflation. In 1870, the government reformed the tax on land. It replaced the old tax that was paid in kind by a new tax paid in money. The new tax was set at 3% of the assessed value of land. For more than twenty years after, the land tax provided the government with 90% of its revenues. The land tax siphoned off all improvement in farmers income. As Lockwood (1968) points out the whole fiscal policy of the government in the early Meiji era was designed to extract as much revenue as possible from agriculture in order to finance its industrial development programs.[3] Furthermore, as Horie (1936) points out the merchant houses and landlords have also accumulated capital at the expense of farmers.[4] They formed the foundation of the old financial structure.

The National Banks experiment

In 1872, the government promulgated the National Bank Act to encourage the private sector to create

[3] Lockwood, (1968), p. 293.

[4] Horie, p. 106

national banks. A national bank must deposit with the Ministry of Finance 3/5 of its capital in the form of government notes and 2/5 in the form of gold bullion. The Ministry of Finance converted the notes into government bonds bearing a 6% interest rate. The bank was empowered to issue their own notes up to a maximum of 60% of their capital. The bank notes were called gold notes and they were convertible in gold at par on demand. Only a few banks (four) were created due to the fact that the market interest rate was around 14% and the convertibility requirement applied to bank notes but not to government notes.

Initially, government officials believed that the supply of currency and the supply of capital are identical. The more of its notes it crated the more financial resources the country can use. Thus the government's main goal for encouraging private interests to create national banks was to make the public feel that its own notes were convertible into gold. Clearly, the National Bank Act was meant to induce owners of national banks to help it replace the various governments' inconvertible notes by their own gold convertible notes. Indeed, the government declared that its notes were equivalent to the convertible gold-notes of the national banks. To protect themselves against the risk of inflation, money holders exchanged government notes for national bank gold-notes and converted the latter into gold. The 1972 National Bank Act failed to create a viable banking system or to shore up the exchange rate between the paper yen and the silver yen. The rate of discount of the former with respect to the latter continued to increase.

After experiencing heavy gold hemorrhage, the four existing national banks pressured the government to replace convertibility of their notes into gold by convertibility into government notes. At about the same time the pension benefits the government agreed to pay to the old military class and nobility became a heavy burden on government budget. In 1876, the government converted ¥174 millions worth of pension rights granted to the old military class into newly issued government bonds. To placate the owners of existing national banks and the nobility, the government modified the National Banks Act. It removed the gold convertibility requirement and allowed the nobility to profit from their converted pension rights. Accordingly, the owners of a national bank must henceforth hold 80% of the bank’s capital in government bonds to be deposited with the Ministry of Finance and 20% of the capital in government notes. National bank notes are convertible in government notes. A national bank can issue own notes up to a maximum of 80% of capital. This change made it possible for a certain number of the members of the nobility and the old military class to create joint stock national banks using the bonds issued to them in lieu of their pension rights. Those who did not have cash joined with merchants to create joint stock national banks. Consequently, the number of national banks surged from 4 in 1875 to 96 in 1878 and 153 in 1880. The rapid increase in the number of national banks contributed to a rapid increase in the money supply. For fear of igniting a hyperinflation, the government imposed in 1877 a ceiling of ¥34 million yen on the total amount of national bank notes. This limit was reached when the one hundred and fifty third bank was created in 1880. The nobility owned 44% of the total capital of national banks, members of the old military class owned 32%, and the Mitsui family owned about 4%.[5] Other merchants and landowners owned 12% and common people owned the rest.

Table 1
Total liabilities of National Banks
(1000 Yens)

Year	Deposits				Total Deposits	Paid in Capital	Reserves	Total Liability-ties	Total Lending	Government Bonds	
	Demand	Time	Public	Other[a]						Amount	%[b]
1873	74	386	0	2407	2867	2440	0	5307	3352		
1874	875	782	1834		3491	3432	29	6952	3572	2793	78.2
1875	289	653	528		1470	3450	62	4982	2134	3060	143.
1876	837	1120	545		2502	2350	81	4933	6017	2899	48.2
1877	2145	1516	845		4506	22986	137	27629	18155	20114	111
1878	2747	2213	3107		8067	33596	378	42041	34537	23751	68.8
1879	4109	2609	4431	5077	16226	40616	971	57813	51355	42555	82.9
1880	4016	2004	3664	5231	14915	43041	1665	59621	58158	44091	75.8

a- Unlike in the original source, we merged the data for public deposits and other deposits during the period 1874-1878. In the original source the data for public deposits and other deposits are not available separately. Other deposits include saving deposits of individuals, often small.

b- Percentage of total lending

Source: Bank of Japan, 1966, "Hundred Year Statistics of the Japanese Economy".

The national banks competed with other financial institutions for Treasury deposits, other government ministries' deposits and local government deposits. For example, in 1882, local government deposits represented 1/3 of total deposits in national banks. The total amount of private deposits at national banks was relatively small compared to their own paid-in capital. As Table 1 shows, total private and public deposits were about equal to total paid in capital before 1876. After 1876, total private and public deposits were no more than 40% of paid in capital. Since common people did not use checks, we may treat most of the private deposits as savings collected by national banks. During the period 1877-1880, the average annual increase in private deposits was about ¥1.5 million while the average government investment per year was about ¥12 million. This shows that national banks did not make

5 Tamaki, (19995), p.39 and Patrick, (1999)

much effort to collect deposits. Table 1 shows also that national banks did little to promote industrial or agricultural development directly. Their investment in government bonds represented more than 75% of their total lending.

Table 2
Flow of Funds
Millions of Yen

Period	Sources of Funds						Total Funds	Uses of Funds		
	Banks				Stocks	Other [a]		Agriculture	Non Agriculture	Bank Loans to local and central governments
	Total	Capital	Private Deposits	Government Deposits						
1878-82	126	52	32	42	245		371	308	37	26
1883-87	63	10	53	0	279		342	275	62	5
1888-92	67	11	47	9	75	466	608	337	273	-2
1893-97	318	92	167	59	186	595	1099	466	583	50
1898-02	437	155	339	-57	164	684	1285	621	662	2
1903-07	769	70	600	99	109	841	1719	730	904	85
1908-12	777	116	635	26	380	1164	2321	854	1328	139

Distribution in percentages

Period	Sources of funds						Uses of Funds		
	Banks				Stocks	Other [a]	Agriculture	Non Agriculture	Bank Loans to Local and central governments
	Total	Capital	Private Deposits	Government deposits					
1878-82	34.0	41.3	25.4	33.3	66.0		83.0	10.0	7.0
1883-87	18.4	15.9	84.1	0.0	81.6		80.4	18.1	1.5
1888-92	11.0	16.4	70.1	13.4	12.3	76.6	55.4	44.9	-0.3
1893-97	28.9	28.9	52.5	18.6	16.9	54.1	42.4	53.0	4.5
1898-02	34.0	35.5	77.6	-13.0	12.8	53.2	48.3	51.5	0.2
1903-07	44.7	9.1	78.0	12.9	6.3	48.9	42.5	52.6	4.9
1908-12	33.5	14.9	81.7	3.3	16.4	50.2	36.8	57.2	6.0

[a] Other: includes own capital retained earnings and bonds, debentures and post office deposits, insurance premiums, pawn brokers and moneylenders

Source: Teranishi, (1982), p. 167-68

According to the flow of funds data given in Table 2, private capital formation during the period 1878-1882 amounted to ¥345 million. The increase in banks' financial resources during the same period amounted to ¥126 million and represented 34% of total capital formation. The increase in capital due to the increase in the number of national banks and the increase in government deposits accounted for 74% of the increase in banks' resources. Merchants provided almost 20% of the increase in banks capital and 80% of the increase is essentially inflation or seignorage as national banks deposited 80% of their capital in the form of government bonds with the Ministry of Finance against which the National Banks Act allowed them to issue bank notes. Private deposits accounted only for 25% of the increase in banks' financial resources. Goldsmith also notes that the increase in total deposits between 1876 and 1885 represented only 1% of the estimated gross national product of the period.

We conclude that during this period national banks did not contribute much to the country's effort to mobilize financial resources for economic development. Much of the economic development they financed was achieved with inflation they helped to create or seignorage accruing from the shift from a precious species based to a paper-based money supply. The government hoped that the national banks would help lower interest rates. Unfortunately that did not happen.[6] Furthermore they did not help either to move the funds from the high interest rate areas to the low interest areas. In March 1890, the average interest rate in Tokyo was 14.25% per annum while the average interest rate in Osaka was 18.25%.[7]

Foreign capital

The founders of the Meiji government harbored a deep mistrust of foreign capital and until 1880 they had to deal with a constant threat of an outbreak of civil war. Except for silk or tea, there were no major industrial crops that could interest foreign capital. The main crop rice was labor intensive and required a lot of care. Furthermore, during the first decade after the restoration there were many currencies circulating in the country. The new government created its own currency the yen. Until 1880, the exchange rate of the yen was volatile. Foreign investors had to face a great exchange rate risk and the threat of a civil war. Accordingly neither the Japanese government was eager to borrow or allow direct foreign investment nor foreign investors were eager to lend or invest in Japanese agriculture, as was the case in Argentina and Australia.

Nor were foreign investors interested in investing in light or heavy manufacturing. The treaties imposed by foreign powers in 1854, insured their manufactures free access to Japanese domestic markets. The free access obviated the need for foreign manufactures to invest in Japan. Other factors contributed to discourage foreign investors. The government changed often its foreign exchange policy and monetary policy. At first it declared it was on a gold standard without sufficient gold reserves. Yet its notes were inconvertible. At the same time it allowed the Mexico dollar based on the silver standard

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[6] Allen, (1981), p.45

[7] Fuji, 1967, p. 30. Admittedly, this was a special year. In that year imports of rice increased because of a drought and the US government purchased a substantial quantity of silver causing its price to rise. This caused exports of silk to fall by a half because Japan was still on the silver standard. Many companies went bankrupt, the balance of trade went into a deficit and interest rates increased.

to be legal tender in the treaty ports of Yokohama, Osaka, Niigata, and Nagasaki. Later it encouraged some national banks to issue a silver Yen in the treaty ports and it made the silver Yen legal tender in all Japan. Then it encouraged the national banks to issue notes convertible into gold with a 40% reserve ratio. By this time Japan was on a bimetallic gold and silver standard. Then it made national banks notes inconvertible. Often it resorted to inflation to finance its civilian and military expenditures.

All of these changes occurred in the space of a twelve-year period. The unstable foreign exchange and monetary policies of the government produced a lot of volatility in the exchange rate of the Yen. As figure 6 below shows these policies subjected the Yen to a continuous depreciation. Given that foreign manufactures have unobstructed access to the Japanese market, no wonder foreign investors were interested only in natural resources or government bonds labeled in pound sterling

Nevertheless, despite those vicissitudes capital of foreign merchants covered a chronic foreign trade during this period. The Meiji government was able to borrow on the London market £1 million (¥3.75 million) in 1871 and £3.4 million (¥10.72 million) in 1873. The government used the first loan to build the Tokyo Yokohama railway line. The second was used to cover government obligations that resulted from the abolition of the feudal system.[8]

Allocation of Financial Resources

The new government adopted the objective of a rich nation and a strong army. The military superiority of western nations convinced the new leaders that the achievement of this objective requires the acquisition of advanced equipments and knowledge to manufacture and use those equipments. The achievement of this objective required that the government set the Japanese economy on a self-sustaining development path. It also required learning about western sciences and technology and the fast diffusion of this knowledge among producers of goods and services in all sectors and all levels including farmers, peasants, artisans, workers and management. This strategy required the mobilization and appropriate allocation of a relatively huge amount of financial resources. The most promising avenue was to develop the agricultural sector and harness the resulting surplus to finance the development of the manufacturing industry. In 1872, agriculture and forests accounted for 82% of total employment.[9]

[8] Allen, (1981), p.43

[9] Allen, (1981), Table III p. 250.

Finance of infrastructure and research and development

The agriculture sector was the only major sector where Japan had the least absolute disadvantage. Accordingly, the major tasks of the governments were to build an appropriate infrastructure of roads and irrigation systems, educate farmers and peasants in new techniques of production and induce them to invest in modernizing their production technology and increasing the capital labor ratio. Mobilizing the required financial resources to develop agriculture was a major and perennial problem of the government.

Central and local governments encouraged farmers and tenants to adopt new crops and better methods of production. They opened agricultural experimental stations and hired advisors to assist farmers in the adoption of new crops or new production methods and the use of chemical fertilizers. They also built new irrigation systems that helped increase the cultivated area by 18% between 1880 and 1913. The yield of rice, for a long time the main staple of the Japanese population, increased by 40% between 1880 and 1913. Government investments in the agricultural sector and also in infrastructure were very productive. The production of rice increased 15 folds between 1873 and 1885. This increase enabled the government to raise the revenues necessary to pay for its expenditures and investments in all sectors of the Japanese economy and particularly in agriculture.

The textile and clothing industry accounted for a large proportion of the output and employment of the manufacturing sector. In 1913, the industry accounted for 62% of total employment in factories and 45% of the total value of output of factories.[10] The textile sector is closely related to the agricultural sector for several reasons. Traditionally, Japanese agriculture supplied the raw materials for the textile industry such as silk, hemp, and cotton. The farmers supplied also most of the labor force. Furthermore, farmers and tenants were also active in the transformation of agricultural raw material into finished textile products. Farming did not provide them with employment the year round and they needed to supplement their net incomes from agriculture in order to survive high taxes, high interest rates, high rents, and risk. The effect of the introduction and absorption of new technology is most pronounced in the production of raw silk. Technological improvements in the production of raw silk were important because in the first three decades following the Meiji revolution most of the raw silk was exported. The

[10] Allen, (1981), p.79

proceeds paid for a significant portion of the cost of importing other raw material, the machinery needed for economic development, and other manufactured products.

The government imported samples of machines and gave them to local governments to help acquaint local producers with modern technology. The government set up pilot companies equipped with new western machinery in order to encourage producers to improve quality and output. It hired foreign technicians to train workers and managers. After they completed training the government offered to reallocate the trained workers and managers among private firms in order to train other workers and managers. Government financed research and development and investment in infrastructure. It made elementary education compulsory. To understand how did producers in this industry finance their fixed and working capital, we need to describe its structure.

Table 3
Government investment in construction and total expenditures
Millions of Yen

Year	Investment in Construction	Total Expenditures	Investment in Construction as a % of total expenditures
1874	7.5	66.1	11.3
1875	9.8	69.2	14.2
1876	8.3	59.3	14.0
1877	7.3	48.4	15.1
1878	7	60.9	11.5
1879	10.1	60.3	16.7
1880	10.9	63.1	17.3

Assuming that investment in construction represents mainly investment in infrastructure, the evidence presented in Table 3 shows the relative importance that government has attributed to the development of infrastructure. Between 1874 and 1880, investment in infrastructure absorbed more than 10% of government expenditures. In 1880 it represented 18% of total government expenditures. The government helped also with marketing in export markets and created also agencies to inspect quality and impose a standard quality for exported products.

The government encouraged the creation of private shipping and shipbuilding companies to drive western countries shipping companies out of domestic waters. Later, the government created another publicly owned shipping company and many public shipyards. The aim was to allow Japanese companies to monopolize Japan's trade with the rest of the world. The government created also a special bank, the Yokohama Specie Bank. One of the objectives of the bank was to collect species to help stabilize the Japanese Yen. Another objective was to provide discounting facilities of bills of exchanges for exporters of textiles and silk. A third objective was to create a source of foreign exchange funds to pay for imports. All these services contributed to provide exporters and Japanese producers in agriculture and textiles easy and unfettered access to raw material and international markets. In the 1890's the government abolished import duties on cotton to encourage the development of the Japanese cotton industry at the expense of the local producers of raw cotton.

We conclude that government investment in infrastructure, research and development and marketing reduced substantially the private sector need for fixed capital investments in all industries. This helped farmers, tenants and textile producers to improve productivity.

Finance of agriculture and textile industry

Certainly government investments in infrastructure and research and development played a major role in developing agriculture and the textile industry. However, much more capital was needed to bring those investments to fruition. The government relied on the national banks and competitive markets in agriculture and industry and the informal financial sector to mobilize the maximum possible of financial resources.

Economic structures

The Japanese textile and agriculture industries did not benefit from any protective tariffs. Producers in both industries competed openly in domestic and international markets. Fortunately, technology in the textile and agriculture industries required small investments in fixed capital. Furthermore they had free access to research and development and training thanks to heavy government investments in the dissemination of western technology and know-how. The government also provided the necessary infrastructure to allow them unfettered access to domestic and international markets of raw material and finished products. A well-developed network of merchants provided the necessary marketing know-how. The two industries approximated fairly well the conditions of perfect competition or monopolistic competition.

Free entry and exit required producers to minimize average costs and increase productivity. Given the abundance of labor, producers can achieve lower unit costs thanks to lower time and money fixed costs by locating their enterprises nearer to the young workers homes than in large concentration of industrial zones. Besides, large concentration of industrial zones needed also additional investments in infrastructure. In those conditions, everything else equal, economic theory suggests that small-scale enterprises are the most suitable form of industrial organization. The following analysis of the industrial structure of the agriculture and textile industries in Japan bears out this hypothesis.

Structure of the agricultural industry

Efficiency depended on effort, infrastructure, and adoption of new technology and new methods of production. Effort and willingness to adopt new methods of production are not observable and required ownership or output sharing. However, Japanese farmers could not save much except in the form of own labor invested in improvements of land or irrigation. Taxes on income from land and business took 28% of income and rents paid by tenants were about 55% of income. Furthermore, consolidation of small farms into big plantations through equity financing was not a viable alternative.

Fortunately, central and local governments investments in infrastructure and the nature of land and agriculture reduced fixed capital requirements substantially. Also, governments encouraged farmers and landlords to adopt new technology and new methods of production. Thus, small size farms survived competitive pressures. The average farm size was 2.6 acres. Some 39% of farmers owned no land and were tenants. Tenants furnished their own implements, seed, and fertilizer. Since they are relieved from investment in infrastructure and investment in research and development, the investment in fixed capital that farmers and tenants needed was relatively small.

Structure of the silk industry

The silk industry was the first to respond to government incentives. Soon after the government established pilot companies, private producers of reeled silk followed the example as the new reeling machinery was divisible and the corresponding per unit capital cost was relatively small. Before 1868, a single farmer family performed all the tasks required in the production of silk. The members of the family grew mulberry trees, they raised silkworms and silkworm eggs, they recovered silk from the cocoons, and they reeled the silk. After the opening of the country to foreign trade, more farmers with little experience were attracted into the industry in response to a substantial increase of foreign demand. In 1895, there were 45000 producers of silkworm eggs. Consequently, the average quality of the silkworm eggs and cocoons deteriorated. To insure a uniform quality, the government created a guild of exporters of silkworms and cocoons whose main task was to set and enforce quality standards. To insure a high quality of reeled silk, the government helped set up small firms specializing in silk reeling and staffed by farmers daughters. There were more than 3203 reeling factories employing more than 10 workers. However, most of the firms were small. Allen (1981) argues that small production units were a natural characteristic of the cocoons producing industry. In 1913, thee were more than 284000 hand-reeling establishments in addition to 4700 machine reeling filatures, 546 of the latter were relatively large, Lockwood, (1968). Mechanized silk weaving concerns developed into an industry with larger size firms but the firms were mostly small by English standards.[11]

Silk weaving firms had to locate near cocoon producing firms in order to insure a uniform quality of silk. Given the state of the Japanese and communication infrastructure, it is not surprising that size of the weaving concerns were relatively small. Thanks to government assistance, competition among the small firms encouraged them to adopt new technology and to invent new production methods. These innovations reduced the capital and labor costs per unit and they improved the quality product. As a result the Japanese silk industry was able to compete more effectively in international markets at the expense of Indian and Chinese competitors. The spinning and weaving industries employed mostly young female workers sometimes against their will at low wages. Labor costs represented the main component of total costs (Lockwood, 1968). In 1890, small establishments with a capital of about ¥1500 dominated the silk filature industry, Lockwood, (1968).[12]

Structure of the cotton industry

The cotton industry was also an important industry in the economic development of Japan. Before 1868, the exclusion policy protected the Japanese cotton industry. The hand weaving industry used hand-spun yarn, product of peasant and farmers households. In an effort to modernize the industry the government created a cotton-spinning factory equipped with western machinery. It imported also spinning machines and sold them to private persons at favorable prices and gave them loans. After the opening of the country to foreign trade, imports of cotton yarn and cotton based clothing zoomed. The industry was dislocated by imports and it took a significantly longer time to recover and develop than the silk industry. There were 83 spinning mills in 1899 but both spinning and weaving industries were small. The total number of spindles of all Japanese spinning mills amounted to the equipment of a contemporary fair size Lancashire concern, Allen (1982). After the war with China, the industry began

[11] Allen, p. 69.

[12] Lockwood, (1968), p. 197.

to develop earnestly. Cotton weaving concerns introduced power looms. In response to the elimination of the tariff on imports of raw cotton and reduced transportation costs, Japanese spinning concerns started using mainly cheap imported cotton from India and the US and they started making profits. Many small concerns merged or were acquired by others. The number of spinning firms decreased and their average size increased. Merchant houses owned and provided the capital of the larger concerns. However, the larger concerns remained small by British standards. Some of them added weaving factories but half million households continued to do specialized weaving in their homes. In 1913 there were 2013 weaving factories.

This analysis suggests that entry and exit were easy and small-scale enterprises were predominant. They were the most efficient method of industrial organization given the scarcity of capital and abundance of labor. To fit to this industrial structure, an appropriate mechanism of allocation of resources evolved.

Allocation of Financial Resources

A rapid development of the agriculture and textile industry required sustained effort to improve quality and lower unit costs. It also required rapid absorption and adaptation of new technology. The fact that efforts are not observable combined with the small-scale characteristic of the industry favored individual ownership. Government policy facilitated the development of small-scale concerns. The policy helped reduce overhead costs of research and development. Since producers in the agriculture and textile industries were small, they needed relatively small amounts of fixed capital but working capital was important. Farmers and tenants needed relatively large amounts of working capital to buy fertilizer, seeds, and cocoons to produce silk. Similarly, textile producers needed relatively large amounts of working capital to pay for raw material and wages. Furthermore producers in both industries needed the merchants' marketing expertise in domestic and international markets. Drawing the difference between the relative sizes of fixed and working capital helps to understand better the financial structure during the given period.

Equity financing was not possible

Given the widespread lack of accounting information, investors in securities could not monitor the business conditions in these two sectors populated by a large number of small producers. Accordingly, equity or bond finance was not a viable method of financing. The Meiji government did not create formal equity markets until 1878. However, it did make a major effort to encourage the creation of national banks and joint stock companies.

National banks did not provide much lending to agriculture and industry

After 1876, the number of national banks grew rapidly thanks to a fundamental change in the National Bank Act. The total capital and the total value of their loans increased many folds in the space of a few years. Table 1 shows the fast expansion of the total lending of national banks. In 1880, total lending represented 3.8 times total deposits. Their advances to merchants represented 240% of their deposits in 1876 and 428% in 1881. In 1880, they invested more than 75% of their total lending in government bonds.[13] In 1885, their holdings of government bonds represented 40% of their assets. Goldsmith (1983) reckons that most of the remainder of their assets was loans to traders as their loans to agriculture represented only 10% of their total assets. About 17% of their loans went to the nobility.[14] The national banks were concentrated in two belts. One was around Tokyo and extended to the northwest. The other belt was around Osaka and extended to the southwest. During this period, national banks had no branches to enable them to cover a significant area of the country. Since most of farmers and industrial enterprises were small and scattered across the county, national banks did not contribute directly to the financing of agriculture and industry.

The need for collateral

During the first decade after the Meiji restoration, producers in the agriculture and textile industries could not have much access to direct financing from national banks. National banks and other so-called quasi-banks made loans with collateral. At other times they relied on the reputation of the borrower. In most cases the collateral was land or other tangible or financial assets. Small producers in agriculture and textile industries had little collateral and limited reputation.

A substantial proportion of the national banks loans were not made to producers in agriculture and industry. The Fifteenth National Bank, a relatively large bank compared to the other national banks, loaned 15 millions to the central government in 1877. That was 25.8% of the total loans of all national banks combined. The First National Bank made large loans to the great Ono family businesses in the

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[13] In 1889, they held ¥10 million of government bonds in excess of the proportion of their capital they are required to hold in government bonds.

[14] Goldsmith, (1983), p. 26

silk trade and mining in the early seventies. The Ono family invested some of the credits they obtained from national banks in silk reeling.[15]

The other smaller national banks made loans and advances to merchants of rice and silk, many of which owned stocks of national banks or they were bank directors. The Sixty-Third Bank and Nineteenth Bank were located in Nagano prefecture, a major silk producing and reeling area. Their loans consisted in advances to silk merchants (Tonya) who in turn provided short-term seasonal credits to silk producers and silk reeling companies. Starting at about 1877, major Yokohama merchants started to provide credits to silk producers and silk reeling mostly small silk reeling companies. They recover their loans after they sell the output of the silk producers. They charged a 10% monthly rate of interest. Only after 1881, did banks become active in direct loans to producers in the silk industry. Merchants continued to grant credits to producers until the early nineteen twenties. National banks and other local banks did not establish close relations with silk producers until after 1895.[16] Large banks in the three major financial centers of Tokyo, Yokohama, and Osaka provided direct financing to producers in the textile and agricultural industry only after 1910. In addition to merchants, national banks also made loans to individual moneylenders and landlords who then made loans to impoverished members of the old military class and to farmers to pay their land taxes. Printing of bank notes financed much of the lending of national banks.

Merchants acted as an interface

In contrast, national banks were more willing to lend to merchants, landowners, and individual moneylenders since they had collateral or they were directors of national banks. Furthermore, merchants of rice and other agricultural products, silk and textiles or wealthy landlords knew better the business of farming and textiles respectively. They also knew better the financial condition of the producers and they had accumulated financial capital. In addition, the returns from lending to finance working capital were immediate since the government built the necessary infrastructure and the three main crops rice, tea and silk have a one-year gestation period. Merchants, landlords, and individual moneylenders were the natural supplier of investment funds and working capital to producers in the

[15] First Bank, 1957, p. 175, 187-195, 224,

[16] Eighty Second Bank, 1968, p. 44-52.

agriculture and textile sectors. Often they borrowed from national banks and quasi-banks to supplement their funds.

Sometimes the banks required collateral and sometimes they didn't. Merchants, landlords, and individual moneylenders borrowed more than necessary to conduct their own business. They lent the surplus to producers in the agricultural and textile industries to finance working capital. European merchant houses provided a substantial proportion of the needed working capital.[17] They also provided transportation to distant markets and marketing expertise. In return, merchant houses wielded a monopsony power that kept wages and profits of small entrepreneurs low thanks to a sustained population growth that Japan experienced between 1868 and 1945, Lockwood (1968).[18]

Essentially, one of the roles of merchants and landlords was to act as an interface between national banks and producers in the agriculture and textile industries. As Yamamura (1972) noted, in 1894, bank loans of one year or less dominated their longer terms loans by a factor of 3 to 2 and most loans were not renewed. Given that agriculture received 12.5% and industry received only 1.2% of all bank loans, it follows that that national banks provided mostly indirect finance of working capital for the two industries.

National bank direct loans were small and not for fixed capital

There is evidence that shows that National banks did lend to agriculture and textile producers. In 1894, banks, including national banks, made a total of ¥50 million to commercial borrowers, ¥15.4 million loans to agricultural borrowers, and only ¥1.7 million to industry. The loans for which they had a land collateral amounted to ¥16.9 million. The average loan to agriculture was small ¥154 and the average land collateral was also small ¥222. All loans with a land collateral were not necessarily loans to producers of agricultural products. However, the average loan to borrowers from the agricultural industry was of the same magnitude as the average loan with a land collateral. It stands to reason that producers in the agricultural industry needed to offer land as collateral in order to obtain loans.

Source of funds for fixed investment

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[17] Allen, (1981), p. 71

[18] In the 1930 census, 29% of the total labor force of around 15 millions working in manufacturing declared themselves as entrepreneurs. 3.6 millions or 85% of these entrepreneurs were small. The majority of these entrepreneurs earned about ¥400 a year, little more than a day worker, Lockwood (1968, p 208-210)

Many of the small national banks were located in rural areas. They did make loans to farmers who often needed to pay in cash the heavy land taxes. In 1894, the average loan of banks to farmers was ¥14. The average loan of banks to industry was ¥236 and their number was 7207. On the other hand, as we have mentioned earlier, national banks were concentrated in two major areas around Tokyo and Osaka. Given the large number of producers in the textile industry and agriculture we concur with Yamamura, (1972), that banks did not play a significant role in directly financing fixed capital in these industries.

Own savings, savings of relatives and borrowing from merchants, landowners and moneylenders must have provided the majority of funds used to finance fixed investments in the agricultural and textile industries. Yamamura, (1972), gives evidence of case studies that shows that many entrepreneurs financed the startup capital for companies in the cotton industry, sugar industry, shipbuilding, electricity through own savings, savings of relatives and borrowing. Similarly, using their pension bonds and with the help of merchants who provided 20% of capital in cash, many samurai created small national banks. Yamamura, (1992), asserts that banks played a minor role in financing startup fixed capital for many companies. Although the evidence he provides is drawn from the histories of large companies, it is clear that his conclusions apply a fortiori to small producers in the agricultural and textile industries. This is further evidence that the informal financial sector was responsible for much of fixed capital formation in the agriculture and textile industries.

Competition among a large number of small-scale enterprises and improvement in infrastructure and knowledge facilitated investment and accumulation of fixed capital in the agriculture and textile industries. National banks indirectly, merchants, landlords, and pawnbrokers directly and through a web of relations contributed as well to fixed capital formation. It is difficult to disentangle the web and assign exactly to each one of these sources the extent to which it contributed.

Finance of Mining and heavy industry

Starting in 1868, the Japanese government considered mining, infrastructure, including railroads and communications, heavy industry and armament industry as vital for the country's political program and ambitions. Besides their strategic values, the government deemed that their development is also important for the development of the other sectors of the economy. Prince Matsukata, one of the architects of Japan's economic policy of the time, believed that there exists a high correlation between the railway development and general economic progress.

The government built dirt roads, irrigation canals, railroad trunks, and harbors and improved the main road between Tokyo and Osaka. Following in the footsteps of the government, private companies built some of the feeder railroads. In 1906, the government acquired all existing private railroads for military reasons and formed a national railroad company. In 1868, the government acquired all coal, iron, copper and gold mining companies and created new ones. It created shipbuilding and marine shipping companies. It encouraged the great merchant houses to create marine shipping companies at first to control coastal shipping then to develop a navy and a mercantile marine. The government invested heavily to modernize a few existing companies (mainly in the mining and shipbuilding sectors) and to equip the new ones with modern technology. It imported western machinery and hired foreign experts and created trade schools to help train workers and managers. From 1868 to 1880, all government owned companies in these industries made losses. Yet the government continued to nurture them. Faced with a serious inflation and serious budget deficits, the government sold in the following decade a large number of these companies to merchant houses on very favorable terms but retained some form of control.

Economies of scale, public good aspects, advanced technology, relatively highly skilled workers, and new methods of organization are major characteristics of these industries. To achieve its political goals the government needed to develop these sectors and retain control over them. The private sector dominated by merchant houses was unwilling or unable to do the job unless the government guaranteed rates of return and markets. Obviously no equity markets would do the job either.

In other developing countries of the time, such as the US and Canada, governments considered also the development of these industries as vital. Emigration of capital and skilled labor from Europe made their tasks easier. The private sector was willing to develop those industries with government support in the form of subsidies, land grants, easy credit, and loan guarantees. To provide the required financial support governments in those countries imposed high tariffs on imports from selected countries. They borrowed from European investors to build the necessary infrastructure and to make loans available to the private sector. They also encouraged the emigration of European skilled labor and capital. The Canadian government agreed to subordinate certain articles of their business laws to British law in order to protect British investors. For political reasons and lack of unsettled agricultural land, emigration of people to Japan who bring with them capital and skills was not feasible. High population density precluded any other kind of emigration. The European powers forced Japan to sign a treaty in 1866 limiting the maximum tariff on imports that the Japanese government can impose to 5%, Lockwood (1968).[19] Furthermore, the government was at first unable to tax incomes or impose indirect taxes. Later the government imposed heavy indirect taxes but was unwilling to impose but light income taxes on high incomes and business profits. This made it impossible for the young Japanese government to use strategies similar to those used in the United States of America to attract foreign capital.

The land tax financed a substantial proportion of the required government expenditures and investments. In 1873, the government replaced the old land tax paid in kind (rice) by a tax of 3% on the value of land paid in money. The tax rate was reduced to 2.5% in 1876. The value of land was fixed on the basis of the productive powers of land in 1873 prices. This value was never changed thereafter. Since the revenues from the tax were in nominal terms they did not fluctuate with the rice yield of the land or the price of rice. The land tax accounted for 73% of government revenues in 1870, 89% in 1876, 73% in 1880, and 52% in 1890. In 1880, the government imposed excise taxes on the consumption of soy oil, sugar and textiles. It also imposed excise taxes on the consumption of alcohol. The government imposed a flat 3% income tax in 1887, Ranis (1959). However, the total tax revenues were not enough to pay for the government's operating expenditures, other commitments arising from the pacification of the country and its development programs.

Given its meager resources in the early years of its formation, the new Meiji government borrowed from foreign and domestic sources (i.e. merchant houses). In 1867, it borrowed the equivalent of ¥3.75 millions abroad from the London financial market to build the Tokyo-Yokohama railway line. It also borrowed from foreign merchant houses operating in Japanese main ports. In 1872, it borrowed abroad the equivalent of ¥10.72 millions to cover obligations resulting from the abolition of feudalism. The government borrowed also from domestic sources. At first, it pressured certain merchants (Mitsui house and others) to provide it with goyokin loans, a sort of a benevolent gift. In return the government granted them later special privileges and favors in building the country's heavy industry, which rewarded them handsomely. The government used some of the borrowed funds to defray operating

[19] It took a war with China in 1895 and a quick victory in its favor for Japan to regain sovereignty over tariffs.

expenses and some to build roads, irrigation systems, telegraph lines and the first Japanese shipping line between Osaka and Tokyo.

In 1876, total government debt amounted to ¥55 millions, of which foreigners held 25%. From 1868 to 1871, government tax revenues and borrowings covered only one half of its ¥21 millions of expenditures. The situation improved temporarily in 1871 and deteriorated again in 1872. To pay for the difference between expenditures and revenues, the government resorted to money printing. It considered money printing as a source of revenue. The so-called Exchange Companies, among which the house of Mitsui was the most prominent, obtained the right to print the additional inconvertible notes needed to cover the deficits. After the imposition of the land tax, the complete pacification of the country and the reform of coinage, government revenues improved and expenditures decreased. By 1876, the government was able to reduce the total number of notes issued by 6%. Part of the reduction was achieved through replacing the corresponding notes by bonds. Inflation stopped temporarily. In 1876, the yen started to trade at the par fixed by government in 1871. As Allen (1981) notes, the success of the government in arresting inflation was largely due to the replacement of an economy based on barter by a monetary economy. The fast and substantial development of trade and industry helped to create a sufficient increase in the demand for money to siphon off a significant proportion of the excess money created.

Pressed by the need to pay for fighting the final Satsuma rebellion in 1877 and to continue the development of infrastructure and heavy industries, the government was forced to increase its borrowing or issue more notes. It did both. In 1877, it converted ¥174 millions worth of pension rights granted to the old military class into newly issued government bonds. While the new bonds did not increase its total liabilities the government used them to create the amount of inflation necessary to pay for its higher budget deficits without increasing unduly the volume of its own notes. The 1876 modification of the National Bank Act encouraged the creation of more national banks and allowed the government to monetize part of the pension bonds. In 1877, the government borrowed from the Fifteenth National Bank, the largest of them and upon its creation, ¥15 millions to pay for its expenses to suppress the Satsuma rebellion.[20] This loan allowed the government to pay for part of its budget deficit without the fear of being blamed for creating more inflation. To finance the remainder of its

[20] This is the Fifteenth National Bank.

budget deficit, the government issued in 1877 ¥27 millions worth of its notes. The volume of notes has increased by 60% in one year and a half. In addition, the government borrowed in 1878 ¥12.5 millions to pay for extending the railway system and for the construction and improvement of bridges, roads and harbors. The government raised another ¥22 million from a subsequent bond issue. It used the proceeds to build the main trunk line between Tokyo and Osaka.

The stage was set for another bout of inflation. The price of rice doubled between 1877 and 1880. The yen depreciated by 45% with respect to its official parity in silver. The price of government bonds fell and interest rates increased. Farmers, tenants, and landlords benefited from inflation. Farmers and peasants have benefited because their debts and the interest payments were fixed in terms of the depreciating currency but the price of their product in terms of the same depreciating currency was rising. Farmers and landlords benefited since their rents are fixed in kind but their taxes are fixed in terms of the depreciating currency.

Again the government had recourse to inflation to finance part of its economic development program and pay part of its operating expenditures. True to its philosophy, the government continued to finance the development of heavy industry and infrastructure. "We find that every company or manufactory deserving of notice in any way has been furnished with capital by the government or has been endowed with special privileges by the same power."[21] On the other hand, landlords used the windfall to increase their consumption, to purchase more land and to invest in manufacturing and trade. The parties who benefited from inflation, government and landlords, used the proceeds of the savings they extracted from people on fixed incomes mainly to finance development.

However, the government did suffer a windfall loss since the land tax was fixed in terms of the depreciating currency. The longer the inflation episode continued the higher the interest rate it will have to pay on its debt and the greater the decrease in the real value of its main source of income, the land tax. Thus the higher the inflation rate the government has to create to keep the higher real revenues flowing. Furthermore, wage earners and creditors[22] who lost from inflation represented a latent danger. The probability of their rebellion increases with an increase in the inflation rate. The government understood quickly that inflation is not a non-exhaustible source of investment funds. As

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[21] Japan Gazette, The currency of Japan, p. 260, cited in Allen, 1982

[22] Especially the Samurai who held pension bonds.

early as 1879 the government started to reduce its government deficit and rely more on borrowing. Government debt also ballooned. Government debt increased from ¥55 millions in June 1876 to ¥254 in June 1878. Upon subtracting the ¥174 millions corresponding to the capitalization of its future pension obligation to the military class, we find that the government debt has increased by about 50% in two years. To increase the pool of loanable funds available to it, the government created the postal savings system in 1875. Up until the First World War the government invested the postal savings in its own obligations.

During the period 1868-1885, land taxes, borrowing and inflation represented the fundamental sources of capital accumulation used to develop infrastructure, heavy industries and trade. In other words, indirect finance siphoned off all possible (voluntary and involuntary) savings available. Accordingly it is not surprising that the multitudes of small savers couldn't participate actively in a vibrant equity market. Landlords and merchant houses did create joint stock companies but the corresponding trading of their equity interests was limited to finance their interlocking interests. For example, the Yasuda family created the Yasuda Bank (now the Fuji Bank) as a joint stock company but the family held all the shares.[23] It is not surprising that the newly created equity markets remained essentially ineffectual.

Policy Conclusions

The economic policy of the government in combination with the new financial structure and competition among small producers helped the agriculture and textile sectors of the Japanese economy achieve a reasonable degree of success. According to Ranis (1959), productivity in the agriculture sector increased 13% between 1880 and 1885. Agricultural output increased from ¥715 million in 1878 to ¥1058 million in 1880.[24] The production of rice increased from 0.360 million tons in 1873 to 4.7 million tons in 1880 to 5.10 million tons in 1885. Allen, (1981) reports that the production of silk cocoons increased from 278000 Kwan = (1043 tons) in 1868 to 457000 Kwan (1714 tons) in 1883.[25] The exports of cocoons increased from 175000 (656 tons) in 1868 to 365000 (1369 tons) in 1883. The production of cocoons increased from 35000 tons in 1878 to 59000 tons in 1891. The production of

23 Fuji Bank, 1967, p. 21

24 In constant 1928-32 prices

25 Allen, (1981), p.68 one ton = 3.75 kg.

textiles increased by 45% between 1880 and 1885 despite the fact that between 1881 and 1885 the economy was in the grips of a depression caused by the Matsukata deflation of 1881-1885.[26]

However, the success was limited. The saving and investment ratios remained low. From 1868 to 1885, the growth rate of real GDP was most likely around 2%, small but larger than the population growth rate of 0.9%, Goldsmith, (1983). The benefits of growth were not equitably distributed. The net investment GDP ratio was about 6%. The gross investment GDP ratio was about 10%. The net fixed capital formation was about 4% of GDP. The net savings GDP ratio was about 4%. The net savings were about sufficient to cover the net fixed capital formation. Foreign capital investment (short tem commercial credit) was about 2% of real GDP. The investment program relied partly on forced savings through inflation, land taxes high interest rates and exorbitant rents partly on voluntary savings of landlords, merchants, moneylenders, pawnbrokers and small business.[27] Land taxes, exorbitant rents and high interest rates cleaned farmers and peasants almost dry of any cash savings. There was little room left for private market intermediation. The development of infrastructure, the introduction of new technology, the establishment of competitive markets and quality control crated the basis for sustained growth that will require the development of a more appropriate financial structure.

Towards the end of this period, competitive pressures for a fundamental change in the hybrid financial structure reached a climax. The ¥34 million cap that the government imposed on the total issue of bank notes strangled the competitive pressures since the limit was quickly reached and the number of banks was frozen at 153. Given the optimality of small-scale enterprises in the textile industry, the industry where Japan had the least absolute disadvantage, it was clear that the National Bank Act had to be repealed. The act was a bottleneck because the government decreed that no other enterprise could call itself a bank in the sense that in case of litigation the law does not protect its loan contracts. Nevertheless competitive pressures resulted in the creation of financial institutions that are essentially banks. They had capital of different sizes. They were the harbingers of the new financial structure that at first the government tolerated and later it promoted.

In recognition of their services, the government allowed certain great financial houses, the most prominent of which was Mitsui, to create their own banks and call them banks. The first of them was

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[26] Bank of Japan, Hundred Years Statistics, p.108 rice, p. 94 textiles, p. 110 for cocoons

[27] Lockwood, (1968), p.17, 15 from bottom

the Mitsui Bank, created in 1876. Other small moneylenders or landlords created similar but smaller banks and had to settle for the title of quasi-banks. As the Fuji Bank, (1967), noted the government could not prevent the creation and operation of quasi-banks. Along with the competitive pressures, there were at the end of the seventies pressures inside the government to separate note issuing and regular banking, to control inflation, to end the forced-draft of financial resources, to cleanup government finances, to abdicate public ownership of industrial concerns and to stabilize the Japanese Yen. Long before Prince Matsukata obtained absolute power to implement his financial reform in 1881, competitive pressures have shown the way to a reform of the financial structure for a government eager to learn from the experience of others and its own. There were a few lessons. Forced-draft of financial resources, seignorage from money creation and merchant capital were limited in scope. It is better to separate note issue from mobilization and allocation of resources. The government should strive to create legislation that would help the country mobilize the maximum of financial resources internal and external with appropriate incentives. Competition with quality control is better in mobilizing and allocating financial resources. Competition in product markets performed much better than government control of productive resources. It is competition that produced much of the foreign exchange necessary for the development of public enterprises in heavy industry. The government can impose guidelines to achieve its political aims without stifling competition. Learning by doing, importation of technology, and improvements of physical infrastructure and human capital are essential.

We do not disagree with the proposition that private capital played a significant role in the development of the Japanese economy during the early years of the Meiji era. However, this does not mean that equity markets or banks made an equally significant contribution. Government indirect financing - through the informal financial structure and through own resources- reigned supreme. They crowded out both indirect financing through ordinary banks and direct financing through the stock market.

Golden era of small banking 1885-1927

From the time of its inception, the Meiji government was well aware of the fundamental importance for economic development of the continuous mobilization and expansion of existing and the creation of new financial resources. Figure 1(a), based on Table 2, shows a fast growth of private deposits heralding the fast growth of ordinary banks and the transformation of many of them from simple lending institutions into modern financial intermediaries.[28]

Figure 1
Growth of sources of funds 1878-1912

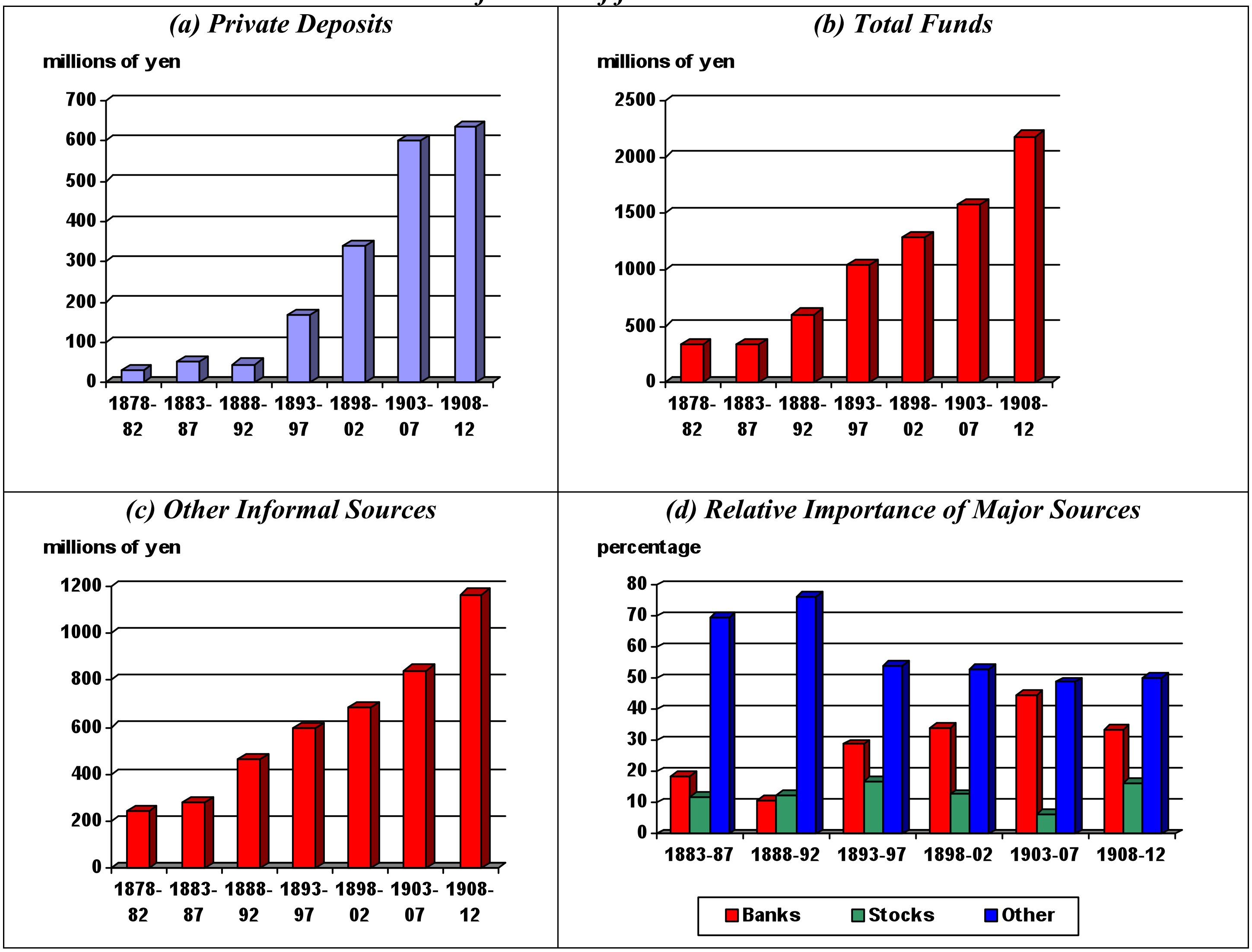


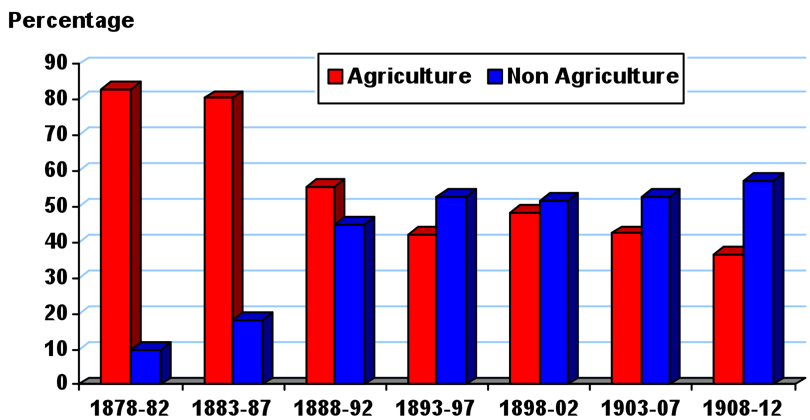
Figure 1(b), based on Table 2, shows the fast growth of the total value of funds. The total value of funds increased more than six folds between 1878 and 1912. This reflected the significant development that the economy has achieved and the deep transformation of the financial structure during this period. Although their growth rate was slightly lower than that of private deposits as figure 1 (c) shows, other sources accounted for more than 49% of available investment funds. This underscored the importance of the informal financial structure and the pressure of competition among small entrepreneurs,

[28] The data in Table 2 involve a great deal of estimation. The reliability of the data is not guaranteed.

pawnbrokers, and small moneylenders. During the period 1888-1892, the informal financial sector provided seventy percent of total funds. As the modernization and development of the financial sector progressed, the importance of other sectors declined. Some of the moneylenders and pawnbrokers become private banks. However, in 1912, the informal sector still provided 50% of total funds. This constitutes evidence of the importance of competition inside the financial sector that contributed to maintain lively competition among small and large producers in the light industry sector.

Financing through stocks grew in importance, as figure 1(d) shows, almost as fast as bank resources (capital and deposits) but provided no more than 17% of total funds invested during the period 1878-1912. It provided less than 10% during the period 1903-1907. There are many factors that explain the low profile of direct financing through stocks. Allen (1981) and others argue that a major factor is that Japanese do not like stocks due to their high volatility. We argue that the economic and financial policies of the government were not neutral with respect to the promotion of the various sources of financing economic development.

Figure 2
Use of Funds



As figure 2 shows, at the beginning of the period, agriculture accounted for the lion's share, 83%, of the use of total funds available. At the end of the period, agriculture accounted only for 36% of the use of total funds. This change in the allocation of funds reflected the transformation of the Japanese economy through industrialization, technological change, and financial deepening. The rapid growth of loanable funds and the shift in the allocation of funds were in part a consequence of significant changes in government financial and economic policies and in part the work of competitive forces at the levels of mobilization and allocation of resources.

Mobilization of Resources

The financial structure that emerged at the end of the 1890's incorporated some of the lessons that the government learned from the experience during the previous period. The government created a central bank that has the exclusive privilege of money creation. It cleaned up its finances and created a comfortable gold reserve. It recognized the role of small savings and small financial institutions. It also recognized the role of competition, the need to protect small debtors and small savers and the need to correct for a domestic market failure in the long-term credit sector by creating its own financial institutions.

Competition policy

In its effort to promote investment and transfer of technology from abroad as quickly as possible the government encouraged the creation of joint stock companies. Before 1899, the government did not promulgate laws or decrees to regulate the formation and operation of joint stock companies. Similarly it did not promulgate laws governing the formation of ordinary banks until 1893. The managers of companies listed on the Tokyo stock exchange had no restrictions or limitations on their prerogatives.[29] Some of the listed companies had 73% of their capital paid in. Companies set up between 1888 and 1890, whether listed or not on the stock exchange, had only 29% of their capital paid in. In addition many companies had borrowed huge sums of money from banks.[30] It took the government some time to elaborate and implement a coherent financial policy.

Initially, the lack of regulations may have helped competition to mobilize more financial resources than otherwise. It allowed the informal financial sector to make a significant contribution. As Table 5 shows, moneylenders were numerous and their number increased over time indicating easy entry. Compared to the paid in capital of ordinary banks, their working capital was relatively large. In some areas, the total amount of lending by individual moneylenders including pawnbrokers was greater than the total amount of lending by ordinary banks, Asakura (1967).[31] The growth of banks and the increase in the number of moneylenders shows the power of competition to mobilize and to allocate financial resources. A lesson, the Japanese government did not fail to learn.

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[29] Tamaki, 1995, p. 66.

[30] Tamaki (1995) p. 66, Takezawa 1968 p. 123-124

[31] P. 292

Table 5
Relative importance of Money Lenders

	Moneylenders		Ordinary Banks
	Number	Working Capital (Millions of Yen)	Paid in capital (Millions of Yen)
1903	36524	107	233
1905	53920	185	252
1910	68058	275	315
1915	45646	302	357
1920	49792	376	963
1925	81647	730	1488

Source: Asakura, (1967)

Banking policy

Besides the 1872 National Bank Act, the Meiji government did not promulgate before 1893 any laws or statutes to regulate the formation and operation of ordinary banks. However, there were private financial institutions that received deposits, provided loans and discounted bills of exchange to facilitate trade. For a while the government tolerated this multitude of unregulated financial institutions. It allowed only a few large ones to call themselves banks. Learning from its experience during the 868-1885, the government decided that it must reorganize the banking system. The reorganization appeared necessary in order to take advantage of the powers of competition to mobilize the existing financial resources and newly created ones that will appear eventually as a consequence of economic growth. Before the reorganization was completed, there were four kinds of financial institutions: the national banks, the private banks, the quasi-banks, and individual moneylenders and pawnbrokers.

Between 1876 and 1880, the number of national banks multiplied fast. Most of the national banks, except for the Fifteenth Bank, were small with a capital less than ¥200 000. Their resources consisted mainly of own capital, government deposits and note issuing since personal deposits were comparatively small.

At the end of the eighteen seventies, inflation threatened to get out of control. It reduced the real tax revenue from the land tax. It also hurt the holders of government and bank notes and the holders of bonds. The price of yen in silver sunk and Japanese merchants repudiated their contracts with foreign merchants whenever the yen exchange rate moved against them. As Tamaki (1995) argues, the government took a long time to act on an advice by Shand, an advisor to the Ministry of Finance at that time. Shand advised the government to separate the function of note issuing from that of collection and supply of financial resources. Seignorage is substantial at the time of the transformation of a barter economy to a money economy. After the transformation is completed, the amount of seignorage is small compared to GDP. It is related to the growth rate of real GDP and cannot substitute for an appropriate financial policy and appropriate financial structure unless the government is willing to risk hyperinflation and an unstable exchange rate.

One faction of the governing oligarchy understood the lesson. It blamed the rising inflation and the instability of the exchange rate on the "evil" of free issue of bank notes and multiple currencies by the government and national banks. This faction advocated the consolidation of the privilege of note issue into the hands of a single central bank. Eventually the faction won the argument. In 1881, the government underwent a political surgery that ousted the beleaguered minister[32] of finance to pave the way for the implementation of a new monetary policy. The new minister of finance[33] created a central bank, the Bank of Japan (BOJ), and initiated many other financial reforms of the banking sector. He speeded up the process of cleaning up government finances. The reforms were far reaching.

After renouncing inflation and budget deficits as a means to finance economic development, the government had to mobilize quickly and effectively reliable self-renewing sources of finance. It also had to rebuild its credit worthiness both domestically and internationally. To achieve these goals the government adopted a series of policy changes. It adopted a policy of fiscal discipline. It created the Bank of Japan. It implemented a reform of the currency and started to build a credible bimetallic specie reserve and later a gold reserve with a view to make the paper yen convertible. The building of a growing specie reserve and the need to pay for the imports of foreign technology required the development of exports. The government created a special bank called the Yokohama Specie Bank for this purpose. Furthermore, the adoption of the gold standard required no controls on capital outflows. Thus the country had to develop its industrial and agricultural productive powers quickly. Rapid capital accumulation and technological improvement of the right mix were necessary in order to produce more capital accumulation. Japan's comparative advantage in the short run was in silk, rice and light industries. To provide for these industries growing appetite for capital the government left no stone

[32] This is the infamous S. Okuma.

[33] This is the famous Prince Matsukata

unturned. It encouraged the creation of local credit associations, the Mujin. It implemented a plan to dispose of national banks and organize the private banking sector by promulgating an Ordinary Banks Act and a Savings Banks Act. Lastly, it created special banks. The reforms underscored the need to mobilize growing domestic financial resources and a certain amount of foreign financial resources in order to speed up the economic development of the country.

Bank of Japan

The government created the Bank of Japan in 1882. It provided half of the capital of BOJ and the private sector provided the other half. Yet the government would receive less than half of the dividends. This insured that private interests had a stake in the monetary policy of the Bank of Japan. From the outset, the Bank of Japan acquired the exclusive privilege of issuing notes and the status of lender of last resort. The most urgent task of BOJ was to redeem all non-convertible notes issued previously by government, national banks or feudal lords and to replace them with its notes. After 1883 the right of a national bank to issue notes was limited to 20 years starting from the date of its creation. Since the last bank was created in 1879, the national banks right to issue bank notes lapsed in 1899. After its right to issue notes lapses a national bank must reorganize as a private bank or close down. Starting in 1883, the government forced each national bank to build a sinking fund to redeem its notes. By 1899, all government and national bank notes were redeemed and replaced by Bank of Japan notes. By the end of the year 1900, all national banks transformed themselves into private banks or disappeared.

In addition to the privilege of issuing notes and lender of last resort, the government assigned BOJ other functions. According to the "Proposal to establish the Bank of Japan" The main reasons for creating BOJ were: "…to facilitate finance, to increase the resources of national banks and other companies, to lower interest rates, to entrust it with some of the functions of the Ministry of Finance, and to discount foreign bills of exchange".[34] According to the Bank of Japan, (1975), the Meiji government intended to make the discounting of bills of exchange the principal business of BOJ. The Bank of Japan act prohibited BOJ from lending on the security of real estate or shares of corporations or to have interest in industries or to own real estate. Since most national and ordinary national banks

[34] As quoted in Bank of Japan, (1975), p. 8

were directly involved in industry or real estate, BOJ became also involved indirectly in financing industry.

In practice BOJ discounted bills of exchange and other bills. It advanced loans secured by gold or silver coin or bullion and granted term loans with collateral. The collateral can be government bonds or securities, including shares, bonds and debentures of private and public companies. The Ministry of Finance was vested with the power to decide, alter and publish before hand the list of admissible securities.[35] This provision had important consequences for the operation of the stock market and the finance of economic development in Japan.

The reorganization of the private banking sector

During the first two decades of the Meiji era, organized banking was concentrated in the hands of large financial interests. During its formative years, the Meiji government solicited their help. In exchange, it granted them privileges. The largest of the private financial institutions, Ryogae, were entitled to call themselves private banks.[36] Merchants and wealthy families owned them. The Mitsui Bank was the biggest of the private banks and the oldest. It started as a limited partnership company with a capital of ¥2 million. Members of the Mitsui family owned 75 % of the bank and the employee's of the bank owned collectively the rest. In 1880 a quasi-bank owned by the Yasuda family transformed itself into a joint stock company wholly owned by the Yasuda family and become the Yasuda (later the Fuji) Bank. The Yasuda Bank had a capital of ¥200000 (Fuji, 1967). By 1881, eighty more banks joined the Mitsui and Yasuda Banks and eight other private banks. Their average capital stock was about ¥90000. The average capital of these new private banks was less than 5% of that of the Mitsui Bank. Most of them were extremely small. Many of them were under the direction, i.e. owned, by members of nobility.[37] Their number continued to increase but their average capital continued to decrease. In 1889, their number reached 218 but most of them had a capital less than ¥50000.[38]

Until 1893, the government did not allow the other small financial institutions to call themselves banks. Accordingly they called themselves quasi-banks. The quasi-banks were small in size and widely

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[35] Fuji, (1967), p. 25

[36] According to Tamaki (1995), Ryogae were the origin of modern private banks in Japan.

[37] Fuji Bank, 1967, p. 19.

[38] Bank of Japan, 1975, p.11

dispersed across Japan. There were more than 120 of them in 1880, 369 in 1881, and 750 in 1885.[39] Their average capital was ¥20000. The owners of quasi-banks were mostly landowners and small merchants.[40] They catered to local small businesses in the agricultural and light industries sectors.

The bank reforms were meant to make out of private banks one of the main channels of financing the economic development of Japan. "The government has assigned to them [banks] the role of supplying capital to Japan's industry".[41] The government promulgated the first Bank Regulations Act in 1890. It started to enforce the act in 1893.[42] The act placed few restrictions on banks. There was no minimum capital restriction or an information disclosure requirement. An important article in the Banks Regulations act specified that loans or discounts by an individual bank to one particular firm or business cannot exceed 10% of the banks paid up capital. This restriction was irksome to bank owners. In their view, the restriction was not consistent with the role the government assigned to them. Many enterprises set up banks to finance their investment programs.[43] Furthermore, an intimate relationship has already developed between small and large banks on one hand and industrial enterprises on the other.

This relationship was a direct corollary of the Bank of Japan's function to provide loans with securities of certain private companies as collateral. The shares of the following companies qualified as collateral: Yokohama Specie Bank, Nihon Yusen, Tokyo Marine Insurance, another shipping company and eleven railways companies.[44] Article 22 of the Bank of Japan bylaws prohibits it from making loans with shares as collateral. To get around it, the bank of Japan with the approval of the Ministry of Finance, called such loans discounting. This special type of discounting amounted to 50% of total discounts by the bank of Japan between 1890 and 1899. According to Tamaki (1995), this special discounting helped mainly big banks holding first grade shares.[45] The discounting function encouraged the strongest and largest private banks in particular to acquire the maximum number of shares and

39 Tamaki, 1995, p. 42.

40 Bank of Japan, 1975, p.11

41 Fuji, 1967, p. 34

42 Fuji, 1967, p. 33

43 ibid..

44 Tamaki, 1995, p. 67.

45 ibid..

bonds of the most successful joint stock companies. Thus it is not difficult to understand the strong and successful opposition of the owners of private banks to the restriction on loans to business enterprises. In 1895, the government relented and abolished the restriction.

The special banks

Following the French and German examples, the government of Japan created the Hypothec Bank of Japan, the Industrial Bank of Japan and the postal savings system,

The Hypothec Bank

The goal of the Hypothec Bank was to collect capital from domestic lending sources and to make it available to farmers and light industries at government's own rate of interest. The loans must be used for the improvement and development of agriculture and industry.

The government created the Hypothec Bank in 1897 with a ¥10 million capital. Its head office was in Tokyo. To assist the Hypothec Bank in its function, the government required that every prefecture government create a bank of agriculture and industry whose capital the central government provided. The Hypothec Bank and the agricultural banks made loans on the security of immovable property such as real estate or paddy rice fields. The central government subscribed to the capital of the Hypothec Bank as well. The statute of the bank allowed it to issue debentures for a total not exceeding a maximum of ten times its capital. To entice small investors and to collect the maximum possible, the Hypothec Bank issued debenture of small denominations. The government guaranteed to the bank's stockholders a 5% dividend for the first ten years of the bank's life.[46]

Industrial Bank of Japan

The government created the Industrial Bank of Japan in 1900 to provide long-term loans to the steel industry, the chemical industry, the shipbuilding industry and to public and private utilities on the security of movable property such as bonds and shares. The bank started with a capital of ¥10 millions. In 1906 the bank capital was increased by ¥7.5 million through the sale of a corresponding number of shares in the London market. It could issue debentures both in the domestic and international markets up to a maximum of ten times its capital. The government guaranteed to the stockholders a minimum 5% dividend for the first ten years of the bank's life.[47] For a long time after its creation the bank was in

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[46] Fuji Bank, (1967), p.46

[47] Fuji Bank, (1967), p.48

direct competition with the Bank of Japan; the latter also made loans directly to individuals, financial and non-financial enterprises on the security of movable property. Most likely this competition hindered the development of the Industrial Bank until 1914. World War I offered the Japanese government a golden opportunity to develop Japan's heavy industry. This meshed well with the mandate of the Industrial Bank of Japan. The Industrial Bank of Japan was the most suitable source of long-term credit to finance the development of a heavy industry. Consequently, starting in 1914, the Industrial Bank of Japan experienced rapid growth.

Postal savings system

Following the example of the western European countries, the government of Japan created the postal savings system in 1875. To manage the funds deposited in the postal savings system, the government created a special department in the Ministry of Finance called the Deposit Bureau. Before 1914, the Deposit Bureau invested the collected savings in government bonds. The postal savings system competed with banks and the stock market for the savings of rural and urban areas. It had a comparative advantage in rural areas and covered all Japan since there is a post office in every village.

The postal savings system appealed to small and large risk averse investors. Deposits at the postal savings system were risk free since the postal savings system is backed up by the security of the Japanese government. The system served as a mutual fund for small investors who do not have access to appropriate information about the risks associated with various financial instruments or enterprises. Also it served as an intermediary between individual savers and large-scale investment projects. The government used the proceeds of the sale of bonds to finance various projects of infrastructure and heavy industry. As Tables 5 show, the post office savings developed fast.

Table 5
Postal savings system
(a)

Year	Number of Depositors Millions	Total Deposits ¥ Million	Average Deposit in ¥
1885	0.3	9	30
1896	1.25	28	22.4
1914	12	189	15.75

Source: Allen, (1981), p. 58

Table 5
Postal savings system
(b)

March 31 of following year	Deposits ¥ Millions	Accounts Millions	Deposit per account ¥	Deposits per inhabitant in ¥		% of population with a post office savings account
				Current	1934-36 prices	
1885	12	0.42	29	0.3	1.0	1.1
1900	25	2.4	10.4	0.6	1.2	5.5
1913	200	12.89	15.5	3.9	6.3	25.1
1921	901	25.43	35.4	16.1	12.4	45.3
1926	1254	32.41	38.7	20.8	16.8	53.8
1931	2816	39.03	72.1	43.4	46.3	60.2
1936	3483	39.24	70.7	50.1	45.4	70.8
1941	9975	110.16	90.6	139.3	81.2	153.9
1944	30375	193.79	156.7	411.1	196.2	262.6

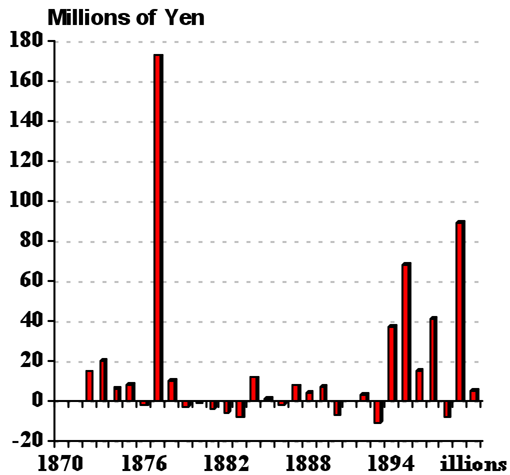
Source: Goldsmith (1983), Table 4.9 p.86

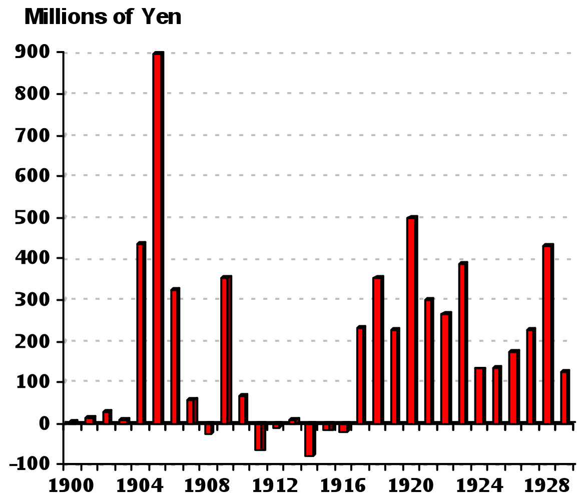
Worthy of notice is the fast increase in the number of depositors and accounts. As income per capita increased, low-income earners started saving some of their incomes. Their savings were comparatively small. As the fourth columns of Tables 5 (a) and (b) show, the average deposit per person decreased between 1885 and 1914. Four factors contributed to the fall: the very fast growth of the number of accounts as the third column of Table 5 (b) shows, the very fast increase in the percentage of population with a post office account as the seventh column of Table 5 (b) shows, the development of the post office system, and the fast increase in the number of low-income people who could save. However, as average income increased the average person's savings, and hence deposits, increased. Consequence the average deposit per person started to increase after 1914.

The government bond market

Due to the nature of its political ambitions, the challenges it faced and its continuous involvement in the promotion of economic development and technology transfer, the government has participated actively in domestic and international financial markets. Figure 3 shows that during the mid 1870's and during the period 1893-1910 the government borrowed heavily.

Figure 3
Government Total Borrowing





Source: Bank of Japan, 1966

Before 1900 the government borrowed heavily in domestic markets. During the 1870's, government bonds traded in informal markets at deep discounts. Intermittent civil disobedience, inflation, and continued government budget and balance of trade deficits increased the likelihood of default. The issue of massive amounts of government bonds in 1876 to capitalize the pension benefits of the old samurai and nobility added to the downward pressures on bond prices. The famous money lender and money exchanger Yasuda made large profits from purchasing government bonds in the early and middle seventies at deep discounts that he resold later at prices near par. The samurai who were forced to accept government bonds in lieu of pension lost heavily.

The commutation of pension benefits into bonds, the pacification of the country, the retrenchment policy started in the late 1870's to cut government expenditures and the increase in income per capita combined to reduce government budget deficits and to build confidence in the government's ability to bring order into its finances. The creation of the Tokyo and the Osaka stock exchanges in 1878 helped make government bonds much more liquid. Trading in government bonds boomed and, for a long time to come, it was the main trading activity of the two exchanges. The yield on government bonds fell from 10% in 1877 to 6% in 1882 and 5% in 1887. The fall was probably due to the pacification of the country, the development of the economy, the healthy competition, the elimination of government budget deficits, the relatively free trade, and the substantial reduction of the inflation rate. The inflation rate of the price of rice was 31% in 1879 and dropped to –20% in 1884.

Between 1900 and 1913 the government borrowed heavily in international markets for three major reasons. First because it won two consecutive wars[48] it felt more confident that foreign lenders would not bring the country to its knees if ever it defaulted. Second it adopted the gold standard and proved that it has the required gold reserves to sustain it. This opened the doors of foreign financial markets as the gold standard required free movements of capital. Third, at the close of the nineteenth century, the domestic financial markets were stretched thin. The government felt it was better to free up room in the domestic financial markets in order to enable small and large firms to satisfy their growing appetite for investment funds.

At first glance, it seems that the government borrowing was used to pay for the wars. As it happened the heavy industry and the chemical industry developed during the wars. The two industries needed heavy investment in utilities and the wars needed the development of heavy industry, infrastructure and an armament industry. The heavy industry, light industry and utilities needed the importation of machinery and other equipment from abroad. Since the gold standard precluded financing with open inflation, the government had to supplement borrowing in domestic markets with borrowing from international markets. Heavy borrowing kept yields on government bonds attractive and offered a low risk investment instrument to small and large savers. However, small investors needed the intermediation of banks or the postal savings system because they couldn't afford to buy single lots of government bonds. Accordingly deposits in banks and the postal savings system grew fast and banks absorbed a large proportion of government bonds. The volume of post office deposits grew a hundred folds between 1885 and 1926.

Foreign investment in Japan

There are many ways in which foreign capital contributes to the economic growth of a country. It can contribute through direct investment. In this case, foreigners own a controlling interest in a company. They contribute financial and human capital and know how. Foreign capital can contribute also through portfolio investment in the form of securities, shares and bonds, or long-term loans. In this case owners of foreign capital do not contribute know how or management. Finally, foreign capital can contribute through short-term loans or credit to finance part of the imports of consumer or producer products. In all cases foreign capital inflows allow the country access to more resources that are not available

[48] It won the Sino-Japanese war in 1895 and the Russo-Japanese war in 1906.

without the collaboration of foreign capital. It is misleading to focus attention only on foreign direct investment or portfolio investment in private securities.

As it happened, the Japanese government preferred to place stringent limits on foreign direct investment and portfolio investment in Japan. In the beginning of the Meiji era, portfolio and direct foreign investments were restricted for political reasons and because of an unhappy experience with an underwriter. Later the unstable monetary policy and the failure of the government to create a stable currency discouraged foreign investors. In the eighteen nineties the shortage of domestic financial resources relative to the investment opportunities convinced the government to change its attitude and started to seek the collaboration of foreign capital.

The success of BOJ in reforming the monetary system and crating a single stable currency was one of the major ingredients required to obtain the collaboration of foreign capital. Another major ingredient is the elimination of the volatility of the exchange rate of the country's new single currency with respect to currencies of the major western powers.

Following Japan's victory in the Sino-Japanese war of 1895-96, the Japanese government succeeded in extracting a huge war indemnity from China equivalent to 14% of Japan's national income of 1903 paid in pound sterling. Acting upon the advice of Japan's finance minister Prince Matsukata, the Japanese government required the indemnity to be paid in pound sterling. It did not convert the indemnity into gold for fear it would disturb world financial markets. The government used fifty four percent of the indemnity to pay for already made government purchases of war material and equipment for heavy industry. It kept 3% of the indemnity or eleven million pounds invested in the London money market to cover temporary shortfalls of Japanese foreign trade receipts relative to disbursements. The government repatriated the remainder and used it to modernize the Japanese army and build a steel factory later organized as the Yawata Steel Company.[49] To reinforce the credibility of its commitments to the gold standard, BOJ often borrowed short-term on the London money market at high interest rates in order to prevent the stock of its pound sterling holdings in the London money market from falling below the eleven million mark.

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[49] Ministry of Finance (1955), 151-162

These arrangements allowed the Japanese government to hitch the Japanese economy to the gold standard locomotive in 1898 on an equal footing with western powers.[50] The Japanese yen is now a strong currency. Soon afterwards, the Japanese government was able to float successfully various sizable bond issues in London and New York. However, the Japanese government was not interested in foreign direct investment except that which involved transfer of new technologies. Such investments were joint ventures between foreign companies and the great financial houses bypassing domestic stock markets. Foreign trust funds were not allowed to operate freely either. Japanese special banks and the five largest banks owned by the five great financial houses borrowed from abroad and\or offered to operate trust funds on behalf of foreigners.[51] Essentially, the government chose to borrow itself from abroad and to contribute a large share of national gross capital formation. Figure 4 shows that, excluding military gross fixed capital formation, the government accounted for more than 25% and often more than 40% of national gross fixed capital formation.

Minami (1986) suggests that the Chinese indemnity could be counted as a foreign capital inflow. Clearly the government used a substantial proportion of the large loans that it contracted in 1905 and 1906 to defray basic costs of the Russo-Japanese war of 1905-1906. However, during these years the government invested heavily directly and through subsidies or guarantees in the expansion of steel production, railroads, shipbuilding and shipping. The expansion of those industries was necessary to win the Russo-Japanese war but it helped also to develop those industries. Later, the development of those industries provided Japan with a new comparative advantage after the loss of its comparative advantage in silk and textiles.

Wars before 1930 often spurred the economic development of Japan. Government fixed capital formation including military fixed capital formation accounted for more than 40% of national gross fixed capital formation. Besides its investment in the military sector, the government financed both infrastructure and investment in durable equipment. Often, government investment in durable equipment represented 50% of its gross fixed capital formation. Government financed investment in railways, transportation and steel. Therefore it is legitimate to consider part of the government

[50] These arrangements seem to imply that Japan was on a gold exchange standard rather than on the gold standard. However, the Japanese government committed itself to a fixed parity with respect to gold not to the pound sterling.

[51] This technique was also used in the US during the nineteenth and early twentieth centuries to attract foreign capital, Wilks ( ).

borrowings abroad as borrowing for the purpose of economic development and include it in total foreign borrowing.

During the period 1895-1927 there were capital flows out of Japan and into its colonies. They represented investments of Japanese government or Japanese corporations in Korea, Formosa (Taiwan) and North China. The investments were used to develop railroads and sources of raw material, iron, coal, and agricultural products destined for use in Japan. Those investments contributed directly to the development of Japan. Accordingly those investments were not really capital outflows. On the other hand, Japan's exports boomed during World War I creating huge trade balance surpluses. Japan exported ammunition and other war equipment to its European allies. As the European powers were busy in the war, Japan replaced them as the major supplier of manufactured products to other Asian countries. With the accumulated specie from the trade surpluses, Japan made loans to its European allies and became a creditor nation.

The situation was reversed abruptly in 1920 after the recovery of the economies of the European allies. The trade balance turned negative again, in part because the BOJ prevented the fall of domestic prices to the same extent as did the US and UK prices in order to soften the effects of deflation. The European powers repaid their loans. However, the Japanese government used the proceeds to pay for Japan's trade deficits during the period 1918-1927 rather than allow the marvelous adjustment mechanism of the gold standard to work its wonders.

Figure 4 shows total foreign investment including all kinds of foreign capital inflows as a percentage of national gross fixed capital formation. Because of the heavy government borrowing during the Russo-Japanese war in 1905 and 1906, we replaced government foreign borrowing during those two years with its level in 1904. Figure 4 shows also total foreign investment excluding government borrowing.

Kuznets (1966) argues that in Japan "capital inflow did not loom large" but he adds, "it may have been significant in some temporary conjunctures". [52] Minami (1986) argues that the role of foreign capital in the development of Japan was negligible except in the last two decades of the nineteenth century. We disagree with Minami. First, that contribution was not negligible. Second, the fact that capital inflows were not large compared to national gross fixed capital formation does not mean that the role of foreign capital is negligible. The fact that capital inflows were significant at some conjunctures attests to a

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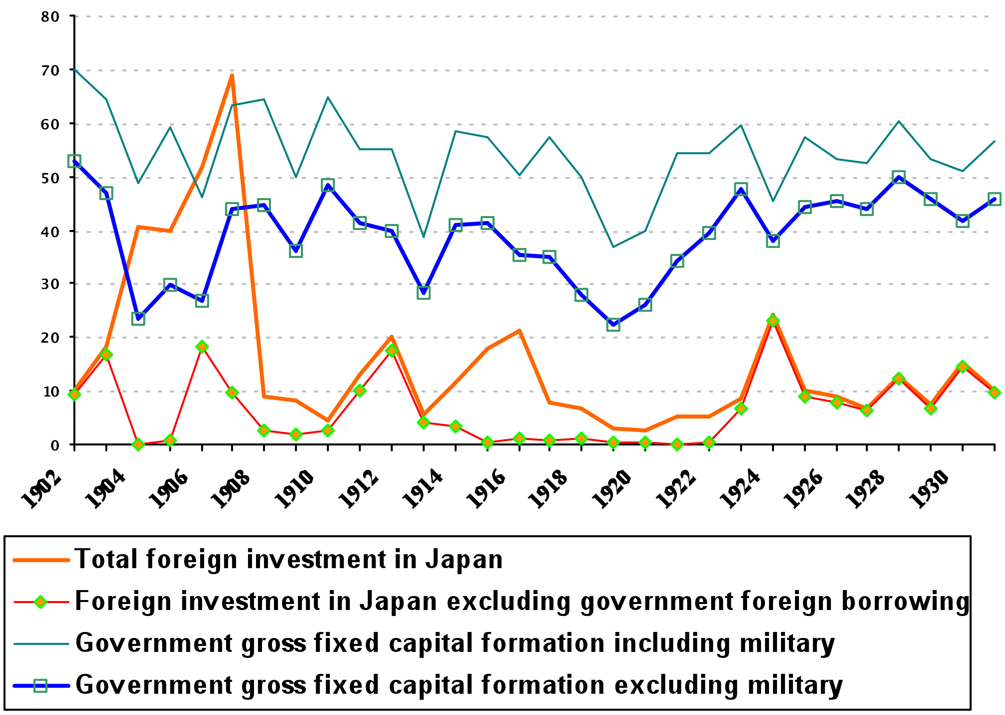
[52] Kuznets, (1966), p. 332

significant role for foreign capital in the economic development of Japan. Figure 4 shows that foreign capital did make a substantial contribution to gross capital formation in Japan and hence to the development of Japan. However, the contribution was not even or steady. Except during the period 1918-1923, total foreign investment including government borrowing represented more than 10% of national gross fixed capital formation.

Figure 4
Foreign investment in Japan
In % of national gross fixed capital formation



Source: Bank of Japan, (1966) "*Hundred Year Statistics of the Japanese Economy*".

The inflow was not steady as in other late developers as data from Kuznets (1966) show. During the period 1870-1929 net capital inflows in Canada and Australia represented more than 22% of national gross fixed capital formation. During the period 1870-1890, net foreign capital inflows in Canada represented 40%. In Sweden, however, net capital flows represented 4.6% of national gross fixed capital formation during the period 1861-1880, 14% during the period 1890-1909 and 3.8% during 1901-1920. In Canada as in Australia, there was little government involvement in production except in the building of infrastructure and there were free capital movements. The two countries courted and relied heavily and consistently on foreign capital to develop their agriculture and natural resources.

Canada remained for a long time an exporter of natural resources including agricultural and forestry products. However, Japan's development policy was centered on the development of light and heavy industry. It did develop and export part of its natural resources but only to finance the development of industry. Japan is not unlike Sweden. Kuznets (1966) characterization of the contribution of foreign capital applies to Sweden as well as to Japan. If we include the Chinese indemnity associated with the 1895-1896 Sino-Japanese War, like Minami (11986) suggests, we find that foreign capital contributed 9.9% of national gross fixed capital formation in Japan during the period 1885 1900. It contributed 19.2 during the period 1901-1910. Thus in terms of financial resources, foreign capital contributed to the development of Japan as much as it did to Denmark or Sweden.

Allocation of Resources

The brief survey of the Japanese financial system during the period 1885-1927 shows that the economy and government built an awesome arsenal of financial institutions to mobilize existing and future financial resources in Japan and some financial resources abroad. Until 1930 these financial institutions competed with each other in the domestic market. The great variety of financial institutions and the lively competition among them is one of the important innovations of the Meiji government.

Financial superstructure and trade finance

In 1878, the government started to cut expenditures and raised taxes on liquor in an effort to balance its budget. Matsukata's deflation, which lasted from 1881 until 1885, helped the government produce budget surpluses. Prince Matsukata used the surpluses and a bond issue to retire government notes of all kinds.[53] The paper yen price in terms of the silver yen started to rise and in July 1884 the paper yen exchanged at par with the silver yen. In 1885 BOJ started to issue notes convertible in silver and Japan was effectively on the silver standard. Soon, the government stopped using its budget surplus to retire notes and started to use them to acquire specie and build up its Reserve Fund. The government instructed the Reserve Fund to make a ¥3 million loan in paper yen to the Yokohama Specie Bank. It instructed the latter to discount in paper yen foreign trade bills of exporters drawn in foreign currency at an attractive 6% interest rate. This arrangement was successful. Soon it was made permanent as BOJ started to discount the bills acquired by the Yokohama Specie Bank. The extended arrangement

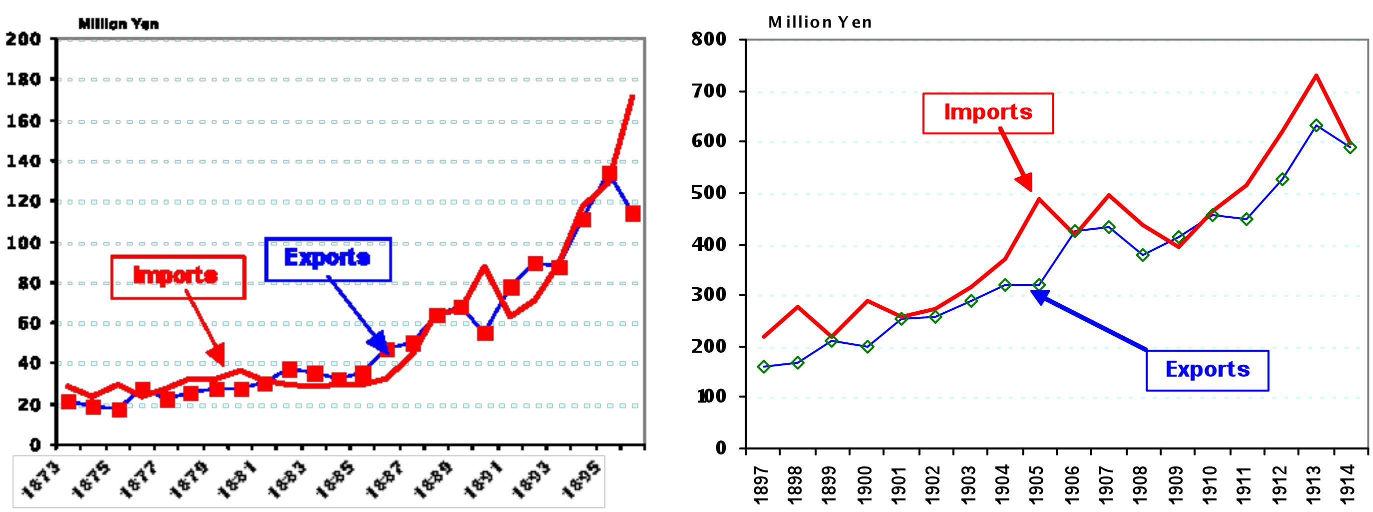
[53] Matsukata, (1900), p. 107. Between 1878 and 1884 the government reduced the amount of paper money from ¥165.7 million to ¥124 million or by 25 %.

provided a permanent source of growth for the government's stock of specie. It also helped the fledgling Japanese trading companies acquire a foothold in the foreign trade of Japan.

Prince Matsukata argued that all business involved risk. While government should not be involved in business, government active involvement in discounting foreign trade bills was advantageous for building up the specie reserve of the country. In addition, large Japanese trade companies requested such facility. Prince Matsukata (1900) asserted that as a result of the adjustment of the stock of paper yen and the augmentation of the Reserve Fund, economical progress of the country accelerated and the trade balance turned positive. As figure 5 shows, the balance of trade was positive between 1882 and 1895, except in 1890 and 1894. From 1881 to 1885, the appearance of the trade surplus was probably due as well to the Matsukata deflation following the reduction of government expenditures and the stock of paper yen. At the same time the price of silver in terms of gold was falling and the main export markets were in countries that adopted the gold standard. As soon as Japan adopted the gold standard in 1898, the tide changed and the trade balance turned negative. The policy helped to increase exports and imports but the devaluation of the silver was also a major factor in the development of export markets.

While the Japanese government was busy making the paper yen convertible into silver, economic powers of the time adopted the gold standard. Germany and the US in 1873 and later India adopted the gold standard and demonetized silver. By 1898, many other countries have either adopted the gold standard or prohibited further coinage of silver. During the same period the output of silver increased substantially thanks to technological improvements and the discovery of new deposits.

Figure 5
Balance of Trade

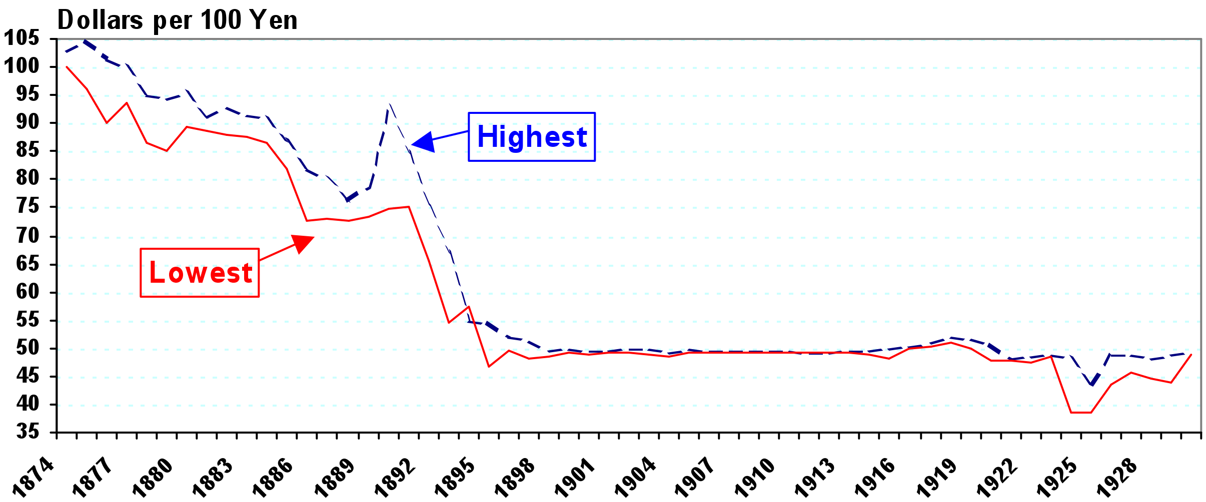


Source: Bank of Japan, (1966), Hundred-Year Statistics

The price of one unit of gold in silver increased from 15.55 in January 1868 to 37.63 in August 1897. The Japanese Minister of Finance established a committee to study the desirability of the shift from the de facto silver standard to the gold standard. The committee members agreed that the decline of the price of silver has greatly benefited the country in terms of exports and employment. However, the decline raised the prices of most imports. Most of the imported good originated mainly from the then developed countries, which are on the gold standard. The increase in prices hurt those on fixed incomes and creditors. The committee members were of the opinion that the decline and the volatility of the price of silver would reduce foreign investment in Japan. The majority of the committee members recommended the adoption of the gold standard as soon as the government has accumulated the required gold reserves.

Japan adopted the gold standard in 1898 after it has proved that it has the required cushion of foreign exchange and gold reserves. By the end of the nineteenth century, BOJ has achieved one of its main goals. The exchange rate of the yen has been stabilized. As figure 6 shows, before 1896, the exchange rate of the Yen fluctuated relatively more than during the period 1897-1918. Furthermore, between 1874 and 1896, the Yen depreciated by about 50%. A substantial proportion of the depreciation was due to the fact that Japan was essentially on the silver standard between 1880 and 1898. While Japan continued to be on the gold standard, the yen's exchange rate in terms of US dollars remained within a much narrower band around the exchange rate implied by its official gold parity.

Figure 6
The exchange rate of 100 yen in terms of US dollars



Source: Bank of Japan, (1966), Hundred-Year Statistics

The war indemnity was a one-time windfall. To maintain the credibility of its commitment to the gold standard the government had to maintain the inflow of specie growing in order to finance the country's fast growing imports of equipment and technology. This was especially important since the government restricted foreign portfolio and direct investment. The new financial structure with BOJ at its apex helped the government to maintain a competitive financial sector. Before World War I, BOJ accounted for one third of the value of discounted bills. It discounted bills directly to business and individuals and through banks at interest rates lower than the lowest interest rate charged by banks. Private banks discounted only bills that they expect they can discount at BOJ. Some businesses, individuals and banks made money simply by acting as intermediary between borrowers and BOJ. The number of banks and companies multiplied fast between 1885 and 1900. This helped to maintain a competitive light industry sector, the lifeline of Japanese economic development because of its strong foreign reserve earning power. This strong earning power helped to bolster the credibility of the commitment of the Japanese government to the gold standard. Japan can now have unfettered access to international financial markets and foreign direct investment became interested in Japan. The Japanese government can now borrow in the London financial market with no security pledge at interest rates that are less than two percentage points above the yield on British government consols.[54] In the absence of an active

[54] Goldsmith, (1983), p.57

derivative market, the reduction in the volatility of the yen must have reduced considerably the risks of investment and trade.

Although it is a controversial achievement, BOJ has essentially supported ordinary banks in time of serious financial crisis. This helped provide depositors with unwritten deposit insurance for free. During the 1890 depression, BOJ pumped in money to save weak banks from bankruptcy. Despite the fact that Japan was on the gold standard between 1898 and 1914, BOJ followed a slightly inflationary monetary policy through most of the 1884-1927 period. However, the gold standard helped dampen the inflationary bias. Indeed, BOJ maintained its discount rate at least 2 percentage points higher than that of the Bank of England. The discount rate of BOJ was significantly and consistently lower than the domestic market interest rate. The easy monetary policy followed by BOJ within the limits of the gold standard allowed it to be actively involved in financing industrial development through the provision of loans with collateral. The policy helped the Ministry of Finance, to which BOJ is directly accountable, to exercise a strong influence on the allocation of resources and the development of the Japanese economy.

The stabilization of the exchange rate of the yen and the active monetary policy of BOJ coincided with a boom in the investments in heavy and light industries. Gross fixed capital formation increased from 12% of GDP in 1885 to 20.5% of GDP in 1897 and 17% in 1913[55]. In absolute terms, gross private capital formation increased from ¥30 million in 1887 to ¥175 million in 1913.[56] The output of the manufacturing sector increased at an average rate of 5% between 1884-1886 and 1912-1914. As figure 5 shows imports and exports increased sharply between 1886 and 1914. This was no mean accomplishment for a developing country.

Specialization

Between 1890 and 1930, there were five large banks and a multitude of small banks.[57] Each one of the large banks is associated with one of the great financial groups that became known as Zaibatsu. Until 1885, the large Zaibatsu banks competed for government deposits and the management of government funds. They made loans to central and local governments and financed movements of goods across the

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55 Goldsmith, (1983), p.39

56 Bank of Japan, Hundred years Statistics, p.34

57 The five large banks were: Mitsui Bank, Mitsubishi Bank, Yasuda Bank, Sumitomo Bank.

domestic market and between the domestic and foreign markets. After 1890, and under government exhortation, they become interested in financing heavy industry, chemicals, transportation and utilities. As the income per capita increased savings of small investors become available and the big banks shifted their attention to the collection of small savings. After experiencing some serious liquidity problems in the late 1890's, large banks decided to diversify by underwriting large companies bonds. They emphasized short-term commercial loans. In 1902, the rates of return on the latter were around 9.3%, compared to 6.3% on investment in securities and 5.2% in real estate.[58]

In contrast, starting in the late 1870's, small banks sprung everywhere where they can collect small savings and where small producers needed capital. Their niche was the collection of small savings and the finance of small business. As government and heavy industry borrowing increased, small and large banks found another financial service to offer to small savers. They financed government and corporate borrowing with small and large savers deposits.

Heavy industry finance

Before 1885, the government owned most companies in the heavy industries. The shares of those companies could not be traded on the stock exchange. After 1885 the government sold all of its enterprises to private interests except those directly or indirectly related to the defense sector such as munitions, railways, telegram and telegraph systems, salt and matches. The government did not sell its enterprises through initial public offerings on the stock market. Rather it sold them through private arrangements. Most of the enterprises were making losses and they were a burden on the public purse. The government sold enterprises in gold, copper and coal mining, shipbuilding yards, cement factories, a glass factory, cotton spinning mills, and filature enterprises. The enterprises had state of the art technologies and skilled workers and management. They were sold at deep discounts and on very favorable terms to nobility, merchants, bank owners, and financially powerful family interests.[59] The new owners may have set up the heavy industry enterprises they acquired as joint stock companies. However, they did not intend to relinquish control through stock market trading or otherwise since full payment for the purchase will not be completed until decades later.[60] Instead, in many cases, these

[58] Mitsui Bank, (1959), pp. 155-156

[59] See Fuji (1967), p. 29 and Smith (1965).

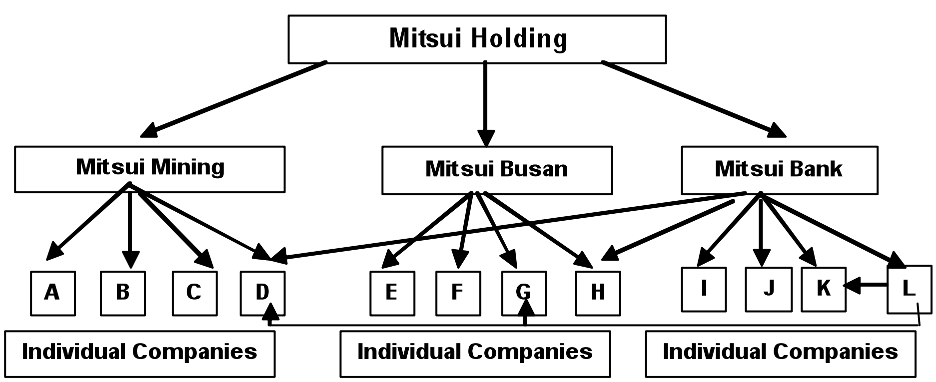
[60] The cost of a copper mining company was ¥500000 but it was sold at a price of ¥200000 payable in 25 years installments, Fuji (1967, p 29). See also Smith (1965).

acquisitions formed the basis of future Zaibatsu. The sale of those public enterprises to special interests but not through initial public offerings reduced the chances of developing an active stock market.

During the first few decades of the Meiji era, the great financial houses used their own funds and government easy payment-terms to acquire the public heavy industry enterprises that the government privatized in the 1880's. To diversify risk and to circumvent the problems of lack of transparency, the great financial houses (Zaibatsu) preferred to create new enterprises rather than to lend to enterprises not under their control.

To maintain control and gather the required financial resources, each Zaibatsu created a large bank and competed for deposits. The Zaibatsu is managed by a Zaibatsu holding company. Except in the case of the Yasuda Zaibatsu, the Zaibatsu holding company retained complete ownership of the group's mining company, merchant company and bank. In addition, the Mitsubishi Company retained complete ownership of the Mitsubishi shipbuilding company. The Zaibatsu mining company, merchant company and bank owned a controlling interest in each of the companies under the control of the group. In turn, each one of the companies under the control of the Zaibatsu owned a certain percentage of the shares of other companies in the group. As a result the companies in the group had interlocking directorates. This allowed the Zaibatsu group to diversify its holdings and reduce risk without losing control. Figure 7 describes the interlocking relations among the companies of the Mitsui Zaibatsu.

Figure 7
Structure of the Mitsui Zaibatsu



Theoretically, each company in the group can use the shares it owns as a collateral to borrow money from financial institutions outside of the group including the bank of Japan. A Zaibatsu company deposits its excess cash exclusively with the corresponding Zaibatsu bank. The Zaibatsu bank provided a significant portion of the short and long-term borrowing of the corresponding Zaibatsu companies.

The Zaibatsu companies obtained also a significant portion of their long-term loans from the government owned special banks or through sales of bonds or debentures. The government encouraged this strategy since enterprises in the heavy industry, transportation industry and insurance industry required huge financial resources and were essential for the success of its economic development strategy. The government gave subsidies, gave easy term loans and guaranteed markets and rates of returns. It tolerated the monopoly power in product markets of the companies under control of the Zaibatsu. Until the early nineteen twenties, a Zaibatsu main holding company retained complete ownership of the major industrial companies in the group including the Zaibatsu's bank.

According to Takahashi (1930), the Mitsui Zaibatsu controlled 97 firms for a total capital of ¥1.6 billion.[61] The Mitsui Zaibatsu owned the largest trading company, Mitsui Bussan. Mitsui Bussan supplied raw material to and sold the output of all the firms under control of the Mitsui financial house. It has its own shipbuilding and shipping companies. The Mitsui Zaibatsu owned the largest coal mining company[62] and first class firms in the following industries: paper, cotton, spinning, silk reeling, rayon, sugar refining, electrical machinery, railroads, electric power, warehousing, real estate, department stores, trust banking, and life insurance.[63]

Like the other Zaibatsus, the Mitsui family acquired its mining company from the government in the eighteen eighties at a basement bargain price below the replacement cost and got with it a monopoly on coal mining. The monopoly, the bargain price and other subsidies made the initial investment a sure bet. To maintain monopoly and diversify its portfolio, the Mitsui mining company acquired other rivals and an iron ore mining company with the help of the financial muscle of the Mitsui holding group. The Mitsui mining company acquired the Miike mine from the government with the help of a one million loan from the Mitsui Bank. In preparation of takeover of other companies, the Mitsui Bank acquires controlling interest in mining companies outside of the group or forms a consortium with the Mitsui holding company and the Mitsui trading company Bussan to provide loans to companies outside of the Mitsui group. An example of the first strategy is the acquisition by the Mitsui Bank of the Hokkaido mining and shipping Company in 1899. Later the Mitsui Bank ceded its acquisition to the Mitsui mining company who made the Hokkaido mining and shipping Company one of its subsidiaries. An

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[61] See Fuji (1967), p. 91

[62] The Mitsui mining company dominated the coal mining industry.

[63] Fuji (1967), p.100.

example of the second strategy is the Kamaishi iron ore mining company. Kamaishi obtained a five or six millions yen loan in 1923 before it was absorbed into the Mitsui group.[64]

Mitsui Bussan is the merchant arm of the Mitsui Zaibatsu. The interests of Mitsui Bussan extended over a wide range of commodities and marketing in domestic and foreign markets including exports and imports. The range of commodities included silk fiber, rice, metals, textiles, and most manufactured products. Mitsui Bussan advanced funds to medium size commercial houses and to manufacturing concerns in exchange for future contracts over the marketing of their products giving Bussan a monopoly over their products. This strategy allowed Mitsui Bussan to control and eventually help the Mitsui Zaibatsu acquire a controlling interest in many companies and diversify its holdings. To meet its huge financial needs, Mitsui Bussan borrowed heavily from the Mitsui Bank and other banks. In 1902, Mitsui Bussan and other companies under the control of the Mitsui family received ¥5 Million of loans from the Mitsui Bank. These loans represented more than one half of the total loans of the Mitsui Bank and 20% of its total assets.[65]

Before 1920, the companies owned by the Mitsui Zaibatsu accounted for 15% of the Mitsui Bank deposits and 10% of its loans. The Mitsui Bank was essential for the investments of the Mitsui Zaibatsu. It collected deposits and used them in part to purchase controlling interests in industrial firms.[66] As these industrial firms developed, they generated cash, which was then deposited in the Mitsui Bank. Indeed, according to BOJ, the large banks became customers of enterprises and competed for their deposits. In order to avoid the risks of *organ* banking after its reorganization in 1895, the Mitsui Bank diversified its loan portfolio. It became a major underwriter of corporate and government bonds. Often it did not resell its share of the newly underwritten bonds in the secondary market. As a consequence it was heavily involved in financing electric utilities and electric railroads through the purchase of their bonds. It was the precursor of what it has become known the Main Bank.

The Mitsubishi Zaibatsu controlled 65 companies for a total capital of ¥0.7 billion.[67] The Mitsubishi Bank owned the Tokyo Marine and life insurance company and many other small banks. The

[64] Mitsui Kouzan (19..), p. 124

[65] Mitsui Bank (1957), p. 156

[66] Patrick, (1999), p.49

[67] See Fuji (1967), p. 91

Mitsubishi bank lent heavily to the enterprises under control of the Mitsubishi Zaibatsu.[68] The Yasuda Zaibatsu controlled 66 companies for a total capital of ¥308 million. It controlled 11 banks, three insurance companies, three railroads, a construction company, and an electric power company. The Sumitomo Zaibatsu controlled 30 companies for a total capital of ¥250 million. The Sumitomo family controlled 30 companies for a total capital of ¥244 million. Their main company is the Besshi copper mine.

The following evidence for the year 1936 illustrates the dominance of heavy industry and mining by the Zaibatsus. The Mitsui mining company produced 25%, the Mitsubishi mining company produced 15% and Sumitomo mining company produce 4% of the total output of coal in Japan. The three largest Zaibatsu produced 44% of the total output of coal in Japan. Together with other mid size Zaibatsu the three largest produced 75% of the total output of coal in Japan.

In copper mining, the Nissan Zaibatsu mining company produced 31%, the Mitsubishi mining company produced 18.4%, the Furukawa Zaibatsu mining company produced 17.2%, the Sumitomo mining company produced 15.4% of the total output of coal in Japan and the Fujita Zaibatsu mining company produce 11% of the total output of copper in Japan. Together these Zaibatsu produced 93% of the total output of copper in Japan.

In shipbuilding, the Mitsubishi, Kawasaki and Mitsui Zaibatsus shipbuilding companies produced 86% of the total output. In chemicals, the Nihon Chisso Zaibatsu produced almost 15%, the Nihon Soda Zaibatsu produced 12.7%, the Mori Zaibatsu produced 13.4, the Mitsui Zaibatsu produced 12% and the Nissan Zaibatsu produced 6% of the total output of Soda in Japan. The Nihon Chisso Zaibatsu produced 32%, the Mori Zaibatsu produced 15%, the Mitsui Zaibatsu produced 15.4%, the Sumitomo Zaibatsu produced 9.3% and the Nissan Zaibatsu produced 4.2% of the total output of aluminum sulphate in Japan.

The Mitsui Zaibatsu produced 81%, the Mitsubishi Zaibatsu produced 4.6% and the Yasuda Zaibatsu produce 2.5% of the total output of paper in Japan. In 1927, the Yasuda-Assano Zaibatsus produced 34.4% the Mitsui Zaibatsu produced 19.7%, and the Mitsubishi Zaibatsu produced 15.8% of the total output of cement in Japan. Obviously, it is the Zaibatsus that dominated the heavy and chemical industries. This is consistent with the industrial policy of the Japanese government, which emphasized

[68] See Fuji (1967), p. 100.

that the government must retain indirect control of those industries.

Light industry finance

Until 1920, the founders of new enterprises could create new banks of any size greater than a certain minimum to help them finance their investments or create new enterprises.[69]. There was no minimum required size before 1900. In 1901, the government encouraged banks to maintain a minimum capital size of ¥250000. In 1923, the government raised the minimum capital to ¥1 million. In 1927, the government raised the minimum capital size to ¥5 million. After the creation of the enterprise and the associated bank, the latter continued to provide credit to the former. Most of these banks tended to be small since small enterprises dominated the economic landscape of light industries. As the number of small businesses increased the number of banks increased. As the number of small businesses contracted the number of banks decreased. The number of joint stock companies increased from 3336 in 1882 to 8612 in 1902. Correspondingly the number of banks increased from 156 in 1880 to 2358 in 1901. The small banks competed with each other and with large banks by offering higher interest rates on deposits.

Although the first special bank that the government created, the Hypothec Bank, was meant to help finance the development of agriculture, agriculture was always starved for credit. Asakura argued that agriculture received a relatively small share of the available financial resources. Agricultural and non-agricultural land was used as a collateral for credit. However, most credit that was meant for agricultural was diverted to industry. Banks lent to individuals with land as collateral who then used the loans to buy company shares. Individuals use those shares as collateral for further loans.

Small investors, the government and the role of banks

Small banks financed small enterprises. The great financial houses financed large enterprises in heavy industry, textiles and trade. The government encouraged the great financial houses and small banks. It guaranteed the great financial houses a minimum rate of return on investments in heavy industry and transportation. To small savers who deposited their savings in small and large banks it implicitly guaranteed deposits. Routinely new banks go bankrupt as some of their creditors fall onto hard times. However, unmistakably the government and the bank of Japan came to the rescue of their depositors,

[69] Fuji Bank, 1967, p.73.

and sometimes to the banks themselves. Every time there is a serious episode of bank failures, the government encouraged the well-managed banks to absorb or merge with one or more of the failed ones. At the same time that some banks disappeared new ones are created.

The government viewed small and large banks as a way to mobilize small savings in rural and urban areas. The banks were necessary to provide credit and investment funds to the multitude of small enterprises in the textile industry and agriculture. The small banks had also access to better information about small enterprises than the great financial houses or the small savers. Without the small enterprises there were no exports of textiles and raw silk. Without exports the country does not have species to pay for imports of foreign made machinery and technology. Nor could the Japanese economy remain on the gold standard. Thus the government put little in the way of bank creation in terms of information disclosure or monitoring of their loans or investment. Even the great financial houses extended credit to small enterprises through small banks. Due to the lack of transparency and effective communications, the banks of the great financial houses preferred to subcontract to the small local banks the business of collecting deposits from local areas and making loans to local small businesses rather than absorb them or merge with them.

The relationship between banks and non-financial companies is complicated. Banks held shares of non-financial companies directly or indirectly. The degree of control through share holding varied from bank to bank and from company to company. Many of the banks, small and large, each in its own sphere of influence, invested some or all of their resources in shares of various enterprises. For example deposits accounted for the lion's share of the Yasuda Bank resources. In 1893, the Yasuda Bank invested most of its resources in shares of companies under its control. In collaboration with the Asano family it invested in cement and followed Asano in many other industrial fields.[70] The bank of Taiwan was heavily involved with the Suzuki great financial house in rayon, sugar plantations and sugar refining and many other industries.

Many of the entrepreneurs were owners or directors of banks, Patrick, (1999). Some small banks lent most of their resources to a single company. These banks earned the special name of *organ* banks. When the company experiences difficulty, the *organ* bank lends it more for fear of losing its previous

[70] Fuji Bank, (1969), p. 53

loans if the company goes bankrupt. Finally when the company goes bankrupt, the *organ* bank goes bankrupt.

As quoted by Patrick, (1999), some entrepreneurs borrowed from banks to buy shares of industrial corporations. They used the shares as a collateral to obtain more loans that they used with some of the dividends to purchase more shares and so on. Table 6 shows that dividends rates were high and the interest rates were high. This implied low retained earnings during this period. Corporations relied heavily on external funds in the form of stocks, bonds and borrowing. In 1895, bank lending to corporations represented only 5.2% of total lending of commercial banks. Loans to rich landlords, merchants, entrepreneurs, and moneylenders accounted for most of the remainder of total bank lending, Teranishi (1994). That is, individual borrowers played a major role of intermediation between banks and small and medium businesses. Since 1895, the structures of bank lending and the liabilities of corporations have changed. However, large shareholders continued to own most of the large corporations shares until 1930. The large shareholders continued to manage or to control the managers of large and medium corporations.

Implications for financial markets

The small and large banks granted credit with or without collateral. In 1914, 26% of the bank loans were without collateral, 23% of the loans had a security (bonds and stocks) collateral and 38% had real estate collateral. In 1918, 32% of the bank loans were without collateral, 38% of the loans had a security (bonds and stocks) collateral and 10% had real estate collateral. Some of the collateral securities were issued by well-managed companies and some by less well-managed companies. The abolition from the 1893 bank act of the restriction on bank lending and investment encouraged the use of stocks and bonds as collateral for borrowing from banks and allowed banks to lend without collateral. At the end of 1895, stocks accounted for 38.5% of bank loans collateral.[71] This helps explain the concentration of stock ownership despite the proliferation and the high growth rate of joint stock companies.

Since the start of the Meiji period the government promoted the formation of joint stock companies. There were 3336 joint stock companies in 1882. Only nine of them were listed on the Tokyo stock exchange during that year. Half of the listed companies were (national) banks. In 1902 there were 8612

[71] Teranishi, (1994)

joint stock companies but 136 (1.5%) of them were listed on the Tokyo stock exchange. Among the listed companies there were 29 banks and 45 railroad companies, 15 textile companies, 10 food-processing companies and 6 chemical companies. In 1907 there were 10087 joint stock companies but 172 (1.7%) of them were listed on the Tokyo stock exchange. Among the listed companies there were 29 banks, 57 railroad and other transportation companies, 17 textile companies, 16 food-processing companies and 10 chemical companies. The shares of banks and railroads figured prominently on the list of stocks traded on the Tokyo stock exchange market. The number of companies listed and the number of sectors represented increased over time. This suggests that over time existing and prospective investors in the stock market must have had a better opportunity of risk diversification. Other things being the same, over time stock ownership should have become more widespread. However, other things have not been the same.

Concentration of ownership within a company

In 1887 the average number of stockholders per company was 61. In 1897 the average number of stockholders per company was 82.[72] Among the joint stock companies a few of them are large but most are small. The average capital stock was about ¥15000 in 1882 and ¥110000 in 1907. There were large joint stock companies in the railroad and cotton spinning sectors. In 1906 there were 51 railroad companies and 45 cotton spinning companies. The average capital stock of a railroad company was approximately ¥1.6 million in 1896 and ¥5.1 million in 1906. The average capital stock of a cotton spinning company was ¥378000 in 1896 and ¥1 million in 1906. In contrast, there were 263 silk reeling companies and 1126 banks in 1906. The average capital stock of a silk reeling company was ¥15000 in 1896 and 1906. The average capital stock of a bank was ¥118000 in 1896 and ¥154000 in 1906.[73]

The data suggest that there was a weak concentration of ownership and market power in product markets. This was probably true in many light industries. However, concentration of ownership within each joint stock company was probably high. In the heavy industry and railroad and trade sectors concentration of ownership within joint stock companies and within industry and concentration of market power in product markets were quite high.

[72] Shimura, Table 1-2, p. 32

[73] Shimura, Table 1-2, p. 37

The 1893 banking act did not forbid banks from undertaking other kinds of business other than banking. Because the act prevented private banks from collecting savings less than ¥5000 but savings banks could, many private banks small and especially large ones created savings banks to collect funds from small savers. The brisk competition in product markets of the light industry was the result of the lack of economies of scale in those sectors, the competition from abroad, and the lack of any significant restriction on bank creation or operation. This prevented the concentration of ownership within the sector of light industries. However, the same lack of significant restrictions and regulations on banks resulted in concentration of ownership within any given joint stock company. Teranishi, (1994) reports that business borrowing accounted for only 5.7% of total banks lending. Rich landlords and merchants who are often bank managers accounted for the remainder of total banks lending. They often used their shares as collateral to borrow more and buy more shares of the same company.

Asakura (1961) shows evidence that the credit from the Hypothec Bank accounted only for 10.3% of the total indebtedness of farmers in 1902 and 7.39% in 1929.[74] Asakura (1961) provides the following quotes of the famous finance Minister of the Meiji era, Prince Matsukata. "*Private banks are undertaking attempts to trade in goods, engaging in the sale and purchase of stocks and shares or real estate property, or any type of business considered profitable, no matter what it may be.*" Asakura (1961) also quotes a newspaper article written in 1909, that the business of banks was to make high interest loans on the security of uncertain stocks or real estate. [75]

This contributed to a high concentration of ownership within small joint stock companies in the light industries and trade. This is corroborated by the following facts. The decision-making in banks was not based on majority rules. Rather it was based on consensus. The major owners were also managers. Joint stock companies paid high dividend rates as Table 6 shows in part to enable the owners to pay interest on the loans they contracted to purchase their shares. The fact that they can use shares as collateral to borrow both from private banks and from the Bank of Japan itself made joint stock companies shares liquid obviating the need for an active stock market.

Table 6
Interest rates and Dividend Rates

Year	Interest Rate	Dividend rate

[74] Asakura (1961), p. 294-295

[75] Asakura (1961), p.289

	Highest	Lowest	First half	Last half
1892	14.09	8.4		
1897	13.91	8.4		
1902	13.91	8.2		
1907	11.5	10		
1912	11.21	8.2		
1914			10.9	9.8
1915			11.2	9.8
1916	10.91	7.12	13.7	14.2
1917			20.9	21.7
1918			26.2	24.4
1919			26.1	25.5
1920			35.3	23.0
1921	13.69	9.49	16.6	16.0
1922			15.1	14.7
1923			14.4	12.2
1924			12.4	12.5
1925			12.6	12.7
1926	11.75	9.6	12.5	11.8
1927			11.8	10.9
1928			10.8	10.7

Note: Sample of 75 companies: Cotton spinning 10, fertilizer 4, cement, 10, flour 2, sugar 6, paper 3, Beer 3, Coal 5, Electric light 10. Electric power 10, electric trains 12.

Source: Bank of Japan, Hundred Years Statistics, p. 260-261 and p. 335.

The sectors of heavy industry, infrastructure and trade came to be dominated by Zaibatsu groups largely because of the government decision to develop these sectors. The government considered these sectors critical for national security. In the early Meiji era, the government tried to develop them itself. It created and owned many of the companies in these sectors. Burdened with mounting operating losses, the government privatized them in the early 1880's. It turned to the great financial families and worked up exclusive deals with each one of them to purchase the ailing companies in order to make sure that the companies remain under Japanese ownership. The great financial families bought the companies at great discounts and the government guaranteed to the new owners markets and to some of them dividend rates. In addition, the government encouraged concentration and the formation of oligopolies in shipbuilding, marine shipping, international trade, electric power, steel and armament industries, electric and chemical industries and sugar industries. Many of the great financial families had already a stronghold in domestic wholesale trade and mining. The great financial families expanded by creating more of their own companies and/or acquiring existing ones in various industries in order to diversify their risks and increase the liquidity of their investment. Each great financial family created a holding company, which later came to be called a Zaibatsu. Each Zaibatsu group had its own bank and most of the Zaibatsu banks were large.

After the victory of Japan in the Sino-Japanese war, investments in the heavy industry became profitable through government procurement to develop its military machine and the country's infrastructure. In 1896, the Japanese parliament passed the shipbuilding encouragement act. The act empowered the government to provide subsidies for building large steel ships and to subsidize marine transport companies that bought Japanese made ships.[76] The government helped create the first two marine transport companies. It gave ships and subsidies and markets: exclusive shipping rights in the Sino-Japanese war and the Russo-Japanese war and preferential treatment for shipping in local Japanese waters and Japan's international trade. The Mitsubishi Zaibatsu owned the first marine shipping company. The government created the second company to compete with the Mitsubishi shipping company. When competition between the two companies became fierce, the government forced them to merge to make the Nihon Yusen Company. The government provided technical assistance through the creation of schools and the hiring of foreign instructors. It guaranteed 8% rates of dividends for fifteen years. In the beginning of the twentieth century large Japanese marine shipping companies accounted for 52% of the export shipping and 47% of import shipping business.

The government provided subsidies to companies that refined imported sugar and exported it abroad.[77] This helped create the new great Suzuki Zaibatsu based on sugar refining. Also the government closed the door on foreign investment except in case of technology transfer (such as the partnership between NEC and General Electric) or portfolio investments in the form of bonds, debentures or loans. Thanks to the policy of high dividend rates, borrowing to increase capital using shares as collateral and lucrative oligopolies, the Zaibatsus retained control of the companies in their group.

Table 7
Financial structure of large firms
Percentage of the value of total assets

Year	Borrowing	Bonds	Paid in Capital	Reserves
1914	20.6	11.2	53.2	15.1
1915	16.7	14.2	53.4	15.8

[76] Allen (1981)

[77] Allen (1981), p. 88

1916	14.9	13.9	50.5	20.7
1917	16.0	11.3	47.9	24.8
1918	17.4	10.3	46.2	26.2
1919	19.3	9.2	43.2	28.3
1920	20.1	6.7	51.3	22.0
1921	18.8	8.0	53.6	19.6
1922	17.6	9.0	53.0	20.5
1923	19.8	10.8	50.6	18.8
1924	18.1	14.4	49.8	17.7
1925	17.4	18.7	46.9	16.9
1926	18.2	19.2	47.5	15.0
1927	19.7	20.0	45.8	14.5
1928	16.4	25.9	44.3	13.5
1929	17.0	26.2	44.1	12.7
1930	18.5	26.0	42.3	13.1

Source: Teranishi (1994). Table 2.2, p. 56

Table 7 shows that large companies borrowed relatively little from banks to finance capital expansion. Before 1930, large companies financed more than 60% of their assets through securities including bonds and shares. In most years before 1924, shares financed more than 50% of total assets. This is due to the fact that holders of securities can use them as collateral to borrow from banks and from the Bank of Japan and use the proceeds to acquire more shares. Bonds and stocks accounted for more than 60% of the assets of large firms. On average borrowing from all sources excluding bonds accounted for less than 20% of total assets. This evidence supports the hypothesis that individuals not companies borrowed and that individuals used shares as collateral. On average reserves financed 18.5% of total assets. This suggests that large stockholders encouraged their companies to distribute most of their earnings. During this period, there were no taxes on dividends to discourage distribution of dividends. Some companies in the heavy industry and transportation industry must also distribute dividends in order to help validate government guarantees for minimum dividend rates to the owners of some of the companies in the heavy industries and the transportation sector. This is also consistent with the fact that a lot of credit that was supposed to be used to develop agriculture found its way to industry.

Large landholders borrowed from the Hypothec Bank using land as collateral. They used the proceeds to invest in heavy industry, as returns in the heavy industry were higher than in agriculture. In 1898, the

Hypothec Bank rescued the cotton industry even though Japan stopped producing cotton and the industry imported the bulk of its raw material from India.

The Industrial Bank of Japan was created to provide long-term credit with securities as a collateral. During the golden era of World War I, the Industrial Bank of Japan became very active in financing the development of heavy industry and the armament industry. Since its loans must have a security collateral, it is not surprising that large firms financed their capital through the issue of stocks and bonds.

Many of the Zaibatsu groups avoided *organ* banking during normal times but not during recession. During recession financial markets become tight. Often some banks fail and some others refuse to renew loans in order to build their reserves for fear of runs on banks. To enable the members of a Zaibatsu group to continue to have easy access to credit, a Zaibatsu Bank refuses to renew or call up loans to businesses outside of the corresponding Zaibatsu.

This policy helps to make all members of a Zaibatsu group strong including the Zaibatsu bank. As a consequence, during a recession depositors shift their funds from weak banks to a Zaibatsu bank. The Zaibatsu can use their own shares or securities as a collateral to borrow during a recovery. Together with the uninterrupted flow of dividends this policy allows the members of the group to continue its investment programs in preparation for the recovery precisely at the time when competitors are forced to retrench. The Zaibatsu groups retained ownership of their companies. For example, until 1920, the Iwasaki family owned 99% of the mining company Mitsubishi Kogyo. In 1920, following pressure form the public on the Zaibatsus to make their companies public, the Mitsubishi group made an initial public offering that allowed other private interests to own 34.9% of the company stock. They also adopted the principle of cross shareholding among the companies that belong to the group. This allowed the main holding company of the group to own majority control without showing excessive concentration of ownership. It also allowed the group to tap the financial resources of their insurance companies and trust banks.

Many well managed and/ large companies were not traded on the stock market

The fact that a company is large and/well managed did not imply that its shares are widely traded or traded at all. In 1925, the Watanabe bank was a large bank with a ¥5 million paid in capital.[78] The

[78] Tamaki (1995), p.153

Watanabe family owned entirely the Watanabe bank. The Fifteenth Bank was a large joint stock company. The Matsukata[79] family held 50% of its capital stock. It was the bank of the aristocrats.

Since its inception in 1880 and until 1912, the Yasuda Bank was a joint stock company with unlimited responsibility. The Yasuda family owned all the shares. It was large and well managed company. It started with a paid in capital of ¥200000. It grew relatively fast and by 1912, it had a paid in capital of ¥5 million. In 1912 its capital was increased to ¥10 millions and it was reorganized as a joint stock company with limited responsibility. Again, the Yasuda family retained complete ownership.[80] In 1923, the Yasuda Bank grew through mergers and business expansion to become a very large and well-managed company. It had a paid in capital of ¥92.75 million. The Yasuda family and two managers owned entirely its capital stock.[81]

The Mitsui Bank was the first and largest bank created by the Mitsui family in 1876 with a capital of ¥2 million. It has always been a well-managed company. The Mitsui family owned also a large trading company the Mitsui Bussan and a mining company. In 1909, the Mitsui family reorganized all its companies into joint stock companies. The capital of the Mitsui Bank was increased from ¥5 million to ¥20 million. During the period between 1909 and 1927, the Mitsui Bank grew though internal expansion. In 1927 it had a paid in capital of ¥60 million. In 1909, the Mitsui family created the Mitsui Gomei (partnership) Company. The Mitsui Gomei retained majority control of all the joint stock companies in the group. Similarly, the Iwasaki family created the Mitsubishi limited partnership company. This company owned enterprises in nonferrous metal mining, shipbuilding, maritime shipping, and banking.

In general, during the period 1885-1927 the great financial houses maintained tight control over the companies of their respective groups.[82] Although most of the Zaibatsu controlled companies were joint stock companies, there was little trade in their shares. Goldsmith, (1983), concurs.

Lack of transparency and Mismanagement

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[79] This is the same famous Finance minister and later Prime Minster of the Meiji era.

[80] Fuji bank, 1967, p. 62

[81] Tamaki (1995), p, 143

[82] Goldsmith, (1983), p.69

The management of many banks was not satisfactory. Directors of many small banks used bank funds to speculate in stocks or other banks. The government failed to inspect banks and audit their accounts. Most national banks extended loans to enterprises closely related to their founders. National banks made profits by borrowing from the Bank of Japan at low interest rates and lending at higher interest rates.[83] Banks made loans to their own directors on weak collateral. One of the banks loaned 30% of its total financial resources to its directors with their shares in the bank as collateral and in some cases without any collateral, (Tamaki, 1995, p. 152).

Banks also borrowed short-term from the call market and lent long-term to industrial firms. The banks may never have been repaid some of their loans. Some banks lent close to 70% of their deposits to companies of some of their family owners without a collateral. The bank of Taiwan had a capital of ¥92 millions but made advances of ¥544 million. Borrowing on the call market bridged most of the gap. The Matsukata family took 30% of the total lending of the Fifteenth Bank to finance their own business. Consequently, it is not surprising that there were many episodes of bank failures between 1880 and 1940. As Tamaki (1995) observed "bank failure was regarded as a rather routine phenomenon". Although the 1927 banking crisis in which 34 banks closed their doors was the most severe it was not a surprise. It was in the making since the 1923 earthquake in Tokyo. Since the implementation of the 1890 Banking Act the government and the Bank of Japan provided the safety net beneath failed banks. Banks ignored or sabotaged the Ministry of Finance efforts to audit their books. The 1927 crisis merely helped uncover many badly managed banks and confirmed the conclusion of a long drawn study commissioned by the Ministry of Finance. The routine bank failures provided a gauge of the quality of management. It also showed the lack of transparency in the management of banks and the willingness of the government to live with it.

We have no detailed information about management of joint stock companies in other sectors. Because of the intimate relationships between banks and joint stock companies and the character of the Zaibatsu management, we assume that this lack of transparency is also characteristic of the management of joint stock companies elsewhere in the Japanese economy. Thus investing in the stocks of such companies was riskier than usual. The observed increase in the number of stocks listed on the Tokyo or Osaka

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[83] Fuji Bank, (1967), p. 32.

stock exchanges and the increase in the number of sectors represented did not imply a reduction of risk since most companies suffer from the common problem of lack of transparency.

Trading in government bonds started to contract from a maximum value of ¥326 million achieved in 1881 and dwindled to a trickle of ¥2000 in 1887. It recovered to ¥400000 in 1890. One of the reasons for the tremendous decline in the trading of government bonds was the fast increase in private and national banks. Banks acquired government bonds to reduce their exposure to risk. Banks and other interested parties found it advantageous to buy government bonds and use them as collateral to borrow from the Bank of Japan and lend the proceeds at higher interest rates compared to the relatively low interest rate charged by the Bank of Japan on its loans. For example in 1890, the maximum discount rate charged by the bank of Japan was 7% but the minimum interest rate on loans in Tokyo was 12%.

The quasi=monopoly by banks on the holding of government bonds has limited the opportunities for risk diversification of small investors asset portfolios. Active competition among small banks to attract deposits kept interest rates on deposits quite high compared to the inflation rate. Bank deposits provided small and medium savers a better alternative to in vestment in the high-risk securities of joint stock companies.

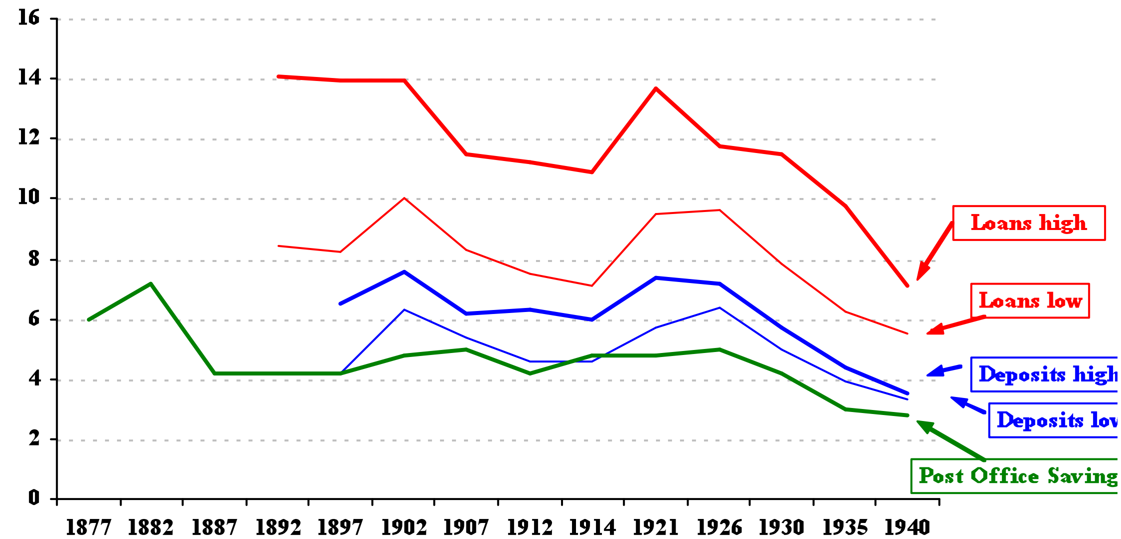
Small businesses like silk reeling provided most of the employment for the growing rural population. The government was concerned that, without small banks, larger banks would siphon off local savings and invest them in businesses of large cities or outside of Japan. Local small business would be starved for credit and financial resources to undertake investment. Without small banks around, employment would fail to grow faster than population and exports would fall. The Canadian experience at the end of the nineteenth century shows that large banks absorbed or eliminated small banks in the east of the country after the large banks discovered the savings market in rural areas have become profitable. The large banks drained the savings away to lend them in New York or Chicago. Soon after, small manufacturing firms disappeared from Eastern Canada. Fortunately, the Japanese government realized that if small enterprises in the silk industry disappeared, it would not have enough species to import capital goods and to maintain adequate specie reserves to keep Japan on the gold standard. Thus the Japanese government encouraged the proliferation of small banks and turned a blind eye on the mismanagement of some of the banks.

We have discussed the mismanagement of some banks and lack of transparency in their management to provide an example of mismanagement and lack of transparency in the management of other joint stock companies. Mismanagement and lack of transparency was not limited to banks. The only way to acquire reliable information about a company was to control it. This explains in part why the great financial houses or Zaibatsu have always sought control of companies for which they intended to provide financing. Small investors could not afford such a financial power. Their next best alternative was to use banks as an interface. While banks do not necessarily stand a better chance to be better managed or offer better transparency, the government protected implicitly their depositors.

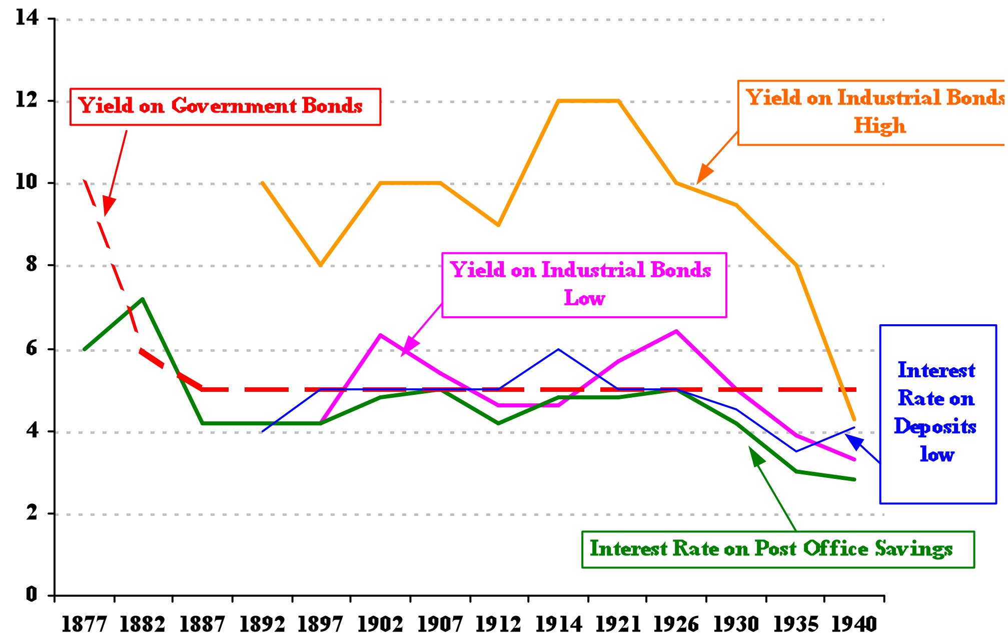
The competitors

In the early Meiji period, small merchants and landowners owned quasi-banks. Their savings were not available for investment in the stock market. As incomes increased savings appeared in the hands of workers and self-employed people. Those savings were now available for investment. Deposits in post office savings accounts and in banks offered serious competition to investment in stock markets. They offered relatively higher rates of returns with little risk. The Bank of Japan has consistently offered support to bank depositors at all times. During the period 1880-1914, Japan was essentially on the gold standard. Accordingly the government allowed free movement of capital forcing the bank of Japan to maintain its discount rate 2% higher than the Bank of England. As figure 8 shows, interest rates on loans remained relatively high during the 1890-1930. Correspondingly, the interest rates on deposits remained relatively high. Competition among the banks and between banks and other financial institutions provided a ceiling on the profit margin of banks. In addition savings banks competed effectively for funds. In the 1880's they collected small savings starting as low as ¥0.05. They paid 7% and some paid 10% on deposits. They charged as high as 15% or 20% on loans. However, many of the savings banks were not well managed.

Figure 8
Interest Rates on Loans and Deposits (%)
Average of all Banks except for Post Office deposits



Yields on government and industrial bonds, bank deposits and post office saving deposits (%)
Average of all Banks



Source: Hundred years Statistics of the Japanese Economy, Statistics Department Bank of Japan.

Generally, the interest rates on deposits followed the movements of average interest rates on loans. Similarly the Post Office Deposit Bureau had to compete with banks after the development of ordinary banks. As figure 8 shows the strong positive correlation between the interest rates on post office deposits and bank deposits is striking and attests to two facts. The banking policy produced a lively competition among banks and produced relatively high rates of returns on deposits. The banks competed effectively against the stock market.

In addition to the competitive rates of returns offered by banks, small investors possessed a better knowledge about small banks than about stocks. The Bank of Japan provided the implicit insurance against bank failure.

Accordingly, it is not surprising that small investors have refrained from active participation in the stock markets. They invested in bank deposits.

Stock market transactions and portfolio balance

On the stock markets there were spot and future transactions. Both of these transactions did not involve delivery of securities. The spot transactions were offset during the same day by a sale or purchase on the same day. Only the balance of a profit or sale is settled every day. Future transactions involved settlements in three months. They are offset by sales or purchases before the settlement date. Only the balance of a profit or sale is settled at the settlement date. Such transactions did not help asset holders to build optimal portfolios that provided optimal balance between return and risk. Bank advances largely financed the initial public offering of newly created companies. The banks placed the shares with the public. The payments were made by installments. According to Fuji Bank (1967, p. 107) the installment provision allowed a few financial interests to acquire the initial public offerings. In many cases the promoters acquired all the stocks offered. "The tendency was particularly conspicuous in the case of Zaibatsu enterprises".[84] Similarly enterprises that wanted to increase capital and expand, allocated newly issued shares to existing shareholders who paid for the newly created shares with future dividends. Since actual securities are not delivered in connection with transactions on the stock exchanges, over the counter dealers appeared to fulfill this function. The stock market was marginalized.

The number of daily transactions on the Tokyo stock exchange has increased over the years. However, it remained relatively small compared to the number of stocks traded and compared to the total number of joint stock companies. In 1882, the average daily volume was 23 shares, but the number of stocks listed on the Tokyo stock exchange was nine. In 1892 the average daily volume was 35774 but the number of stocks listed on the stock exchange was 105.

Foreign capital and the stock market

Although in terms of quantity of financial resources, foreign capital contributed to the development of Japan as much as it did to Denmark or Sweden, there was a major qualitative difference between the contributions of foreign capital in Japan and other countries.

In the US, foreign direct investment and active foreign trust funds contributed to increased transparency and the fast development of the New York stock exchange. The fact that the Japanese government was interested only in foreign loans underscores its economic development policy. The policy goal was to obtain a quick transfer of technology and to develop all industries at the same time. The policy relied on domestic private interests to develop trade, light industry and agriculture and restricted government assistance to the building of appropriate infrastructure and financial superstructure, the education and training of the labor force and the transfer of technology from abroad. At first, domestic private capital was not interested in developing heavy industries, chemical industries, military hardware, and transportation under the same terms. It required and obtained more incentives. To secure the involvement of domestic capital in this area, government used moral suasion, pressure on the great financial and trading houses and a variety of incentives including help with technology transfer, assistance in the fields of human capital and finance and guaranteed rates of returns. Although it was successful, the policy prevented foreign capital from forcing domestic private corporations to be transparent. This was costly.

Although most Japanese financial institutions were organized as corporations, they failed to be transparent. This contributed to the fragility of companies in the financial and real sectors. Economic downturns resulted in bankruptcies. The government succeeded in reducing the number of bankruptcies in a variety of ways. Sometimes it forced the weaker financial institutions to merge with the stronger ones or other bigger ones. Sometimes it instructed BOJ to discount the loans of some of the financial institutions that would have gone bankrupt otherwise. Some other times it raised the minimum capital of banks. However, it never allowed foreign capital to acquire a controlling interest in the Japanese financial or non-financial institutions. After the 1927 crisis, which followed closely on the heels of the 1924 crisis triggered by the Tokyo earthquake bills, the government decided that the problem was too much competition. Accordingly it decided to adopt the convoy policy. The policy forced mergers and

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[84] Fuji Bank, (1967), p. 107.

takeovers that reduced the number of banks from 1575 in 1926 to 895 in 1930 and 69 in 1945. After 1930 banks could not compete anymore. The strong banks were forced to assist the weaker ones and every bank must survive. The main victim of this policy was the stock market and the efficient allocation of resources.

Monopolization of financial markets and the failure to establish transparency

The period 1885-1927 was an extraordinary period in Japanese economic and financial history. Gross fixed capital formation represented consistently more than 17% of real GDP. Real GDP in 1934-35 prices increased from ¥3.85 billion in 1885 to ¥8 billion in 1913 to ¥11.42 in 1920 and ¥12.84 billion in 1927. Real GDP increased 3 times in four decades. More impressive is the increase in real personal consumption per head in 1934-1935 prices. Real personal consumption increased from ¥86 in 1885 to ¥128 in 1913 to ¥153 in 1920 to ¥176 in 1927. Real average monthly wages in 1934-35 prices increased from ¥0.63 in 1885 to ¥0.86 in 1913 to ¥1.23 in 1920 and ¥1.73 in 1927. Both real personal consumption and real average monthly wages doubled in forty years. Despite the steady relatively high rate of gross fixed capital formation, the growth of real GDP was not steady. There were great fluctuations in the growth rate of real GDP between a maximum of 10% and a minimum of –4%. [85].

The economic development of the period was supported by a corresponding development of the financial superstructure. During the period bank deposits at the end were 3.5 times their level at the beginning. Reproducible tangible wealth grew in current prices from ¥2.73 billion in 1885 to ¥8.15 billion in 1900 to ¥15.11 billion in 1913 to ¥47.72 billion in 1920. Since prices doubled between 1885 and 1920, real tangible wealth was in 1920 ten times its value in 1885. In 1934-1935 prices, the value of financial assets grew from ¥7.20 billion in 1885 to ¥13.25 billion to ¥25 billion in 1913 to ¥37 billion in 1920 to ¥78 billion in 1930. The value of real financial assets in 1930 was ten times their value in 1885.

There were special circumstances that helped Japan achieve this performance, World War I, silk and the availability of substantial natural resources in Japan and its colonies. However, it is mostly the economic development policy and the development of an appropriate financial structure that are most likely the main drivers. Without the building of appropriate physical infrastructure and financial and human capital superstructure, the Japanese economy could not have taken advantages of those special

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[85] There were recessions in 1890, 1896-1897, 1900, 1905-1906, 1913, 1920, 1922-1923, and 1925

factors. These infrastructures and superstructures would not have been of much help without the policy of free trade, free capital outflows and competition in the vital sectors of light industries and finance. In the financial sector, free entry was crucial. Bank laws imposed few restrictions. Government financial enterprises competed alongside private enterprises. The number of ordinary and national banks increased from 357 in 1885 to 1867 in 1900. An increase in the minimum required capital in 1900 and a few mergers stunted the growth of small banks and reduced their number to 1614 in 1913. Alongside the ordinary banks, developed savings banks since these were not subject to minimum capital requirements. Their number increased from 23 in 1893 to 661 in 1920. Starting in 1913 credit cooperatives, trust bank companies and insurance companies joined in the foray of competition. Government long-term banks, BOJ and the post office savings were also major competitors and provided support to private financial institutions. This modern financial superstructure operated in competition with private moneylenders, pawnbrokers, and credit departments of great merchant houses.

The failure of an agreement among the great five banks to enforce ceilings of interest rates on deposits attests to the brisk competition among this myriad of financial institutions. Competition helped introduce to Japan financial innovation in institutions and financial instruments without destroying the old financial superstructure. The financial legislation was flexible enough to allow the Japanese economy to take advantage of both the old and new financial superstructures. The two structures competed against each other and they cooperated as well. The government tried to put as little obstruction as possible in the way of competition and development of the financial sector. Competition in the financial sector together with an active government policy of importation of foreign technology helped to maintain competition among producers in the light industry sector where Japan had a comparative advantage. Thanks to competition the liability structure of banks changed significantly. At first banks relied mainly on own capital and reserves. Later deposits dominated the liability side of the banks' balance sheet. Interest rate paid on deposits remained high and they were highly correlated with interest rates on loans. Due to the competition with BOJ, the Yokohama specie Bank, moneylenders and the trading companies of the great financial houses, ordinary banks were always active in the markets of medium and long-term loans.

BOJ had operated an easy monetary policy and allowed the adjustment mechanism of the gold standard to operate unobstructed during the period 1914-1920. As a result the inflation rate in Japan was about 4% between 1885 and 1913 and 10% between 1914 and 1920. Between 1885 and 1913, this rate was significantly higher than in the US and UK who experienced a 1% deflation. During the 1913-1920 period, the US and UK experienced a relatively high inflation. This allowed the Japanese economy to escape the hardships of the gold standard adjustment mechanism despite the fact that BOJ allowed the money supply to grow with the trade surplus. The situation changed radically in the beginning of the 1920's. The economy of the UK recovered and the British government started to prepare for the return to the gold standard at the prewar parity. The resulting deflation created major problems for Japanese exports and for Japanese industry. Since its inception, the Japanese industry operated in a relatively inflationary environment. As a result of the increased competition from the UK in the product markets of Asia outside of Japan and its colonies, Japanese companies experienced heavy accumulation of inventories. To maintain the relative parities between the Japanese Yen and the British pound, BOJ tried to reduce Japanese prices in preparation for an eventual return to the gold standard. As a consequence, the Japanese banking system started to feel the pressure of the deflation. Many medium and small size banks experienced difficulties.

Starting in 1922, as usual, BOJ tried to support the ailing banks and their depositors. It discounted some of their bills and forced the weaker and some of the stronger banks to merge. After a long period of patchwork a new bank law was proclaimed in 1927. Essentially, the law raised the minimum capital for banks forcing small banks and medium banks to merge with large banks or to merge together. The number of ordinary banks dropped from 1794 in 1922 to 1028 in 1928. Although the average paid in capital per bank increased, the total paid in capital of all ordinary banks decreased steadily. Total deposits in private ordinary banks more than doubled from ¥9 billion in 1927 to ¥24.7 billion 1940. However, their net worth (paid in capital plus reserves) decreased from ¥2.1 billion in 1927 to ¥1.7 billion in 1940 while their number decreased during the same period from 1280 to 286. While the average net worth of an ordinary bank increased during the same period from ¥1.6 million to ¥5.9 million its deposit liabilities increased from ¥7 million to ¥86 million. Everything else equal, the safety of deposits deteriorated. In 1927, an average private ordinary bank's net worth covered 27% of deposit liabilities. In 1940 it covered only 8% of its deposit liabilities.

After it has encouraged competition in the financial sector since early Meiji restoration, the government adopted a new and radically different policy, the so-called the convoy policy. The convoy policy replaces competition and free entry with monopoly and controlled entry. The policy required a considerable reduction in the number of financial institutions. The market is divvied up among the remaining institutions. If one of the financial institutions fails the others are required to come to its rescue. The policy paved the way for monopoly banking. Instead of solving the basic problem of lack of transparency in the Japanese financial and real sectors, the convoy policy killed the brisk competition in the financial sector. The same competition that helped catapult Japan into the league of developed countries.

Financial institutions acquired most of the new issues of corporate and government bonds. They also held a substantial proportion of shares of small and large enterprises. The Zaibatsu were reluctant to relinquish control of their well-managed corporations in part because of the easy access to credit and discounting, which made their holdings liquid. Throughout the period 1885 to 1927 and beyond the government continued to restrict foreign direct investment and portfolio investment. All three features of the financial system conspired to encourage the lack of transparency and to cripple securities markets. There was not much left of the shares and securities of reliable and successful joint stock companies to create a viable market for them. Their market was thin. The price of those securities can easily be manipulated if they are available at all. This limited the choices of small investors to riskier securities of the less successful joint stock companies of unproven or doubtful record without much left of less risky securities such as government bonds to diversify risk. Risk averse small investors could not diversify risk. They preferred to deposit their savings in banks or postal savings. The withdrawal of small savers from the securities markets made the latter even thinner and riskier. The deep involvement of banks in the finance of industrial enterprises provided an interface between investors, small and large, and entrepreneurs. Direct intermediation contributed further to make the market for any particular security thin and risky. The fact that there is a large proportion of capital financed through joint stock companies does not mean that direct finance was important. Among small banks and great financial houses first and large banks later, there was little room left for the stock market.

Conclusion

The period 1868-1927 is not an epoch according to the definition of Kuznets (1966) but it comes close.[86] Most of the technological innovations that took place in Japan during this period were not originated in Japan. However, the innovations were so important they have absorbed most of the energies of the Japanese society and helped it to catch up with the developed western countries in a relatively short period of time. As Kuznets noted the exploitation of major technological innovations requires social inventions. Although most of the social innovations in Japan during this period were

[86] Kuznets (1966) p. 5

imported as well, many inventions were made in Japan. Although many of its components were imported, the competitive and dynamic nature of the financial structure that evolved in Japan during this period was decidedly a Japanese innovation.

After it had decided to restrict severely financial and human capital inflows from abroad, the Japanese government spent two decades to figure out an appropriate financial superstructure for its economic development program. During the first period, the government used inflation and land taxes to finance the creation and operation of modern factories in all modern industrial sectors. It imported machinery, technology and know-how including the concept of Joint Stock Company. It trained farmers, workers, managers and scientists. It assumed that the main function of banks was to issue notes to finance its economic program. Ten years after the successful end of the Meiji revolution, the Japanese economy was mired in a quagmire of multiple currencies circulating side by side in the country and serious inflation became a threat. Most public enterprises were making losses. After a false start, the privately owned National banks multiplied but they were only note issuing and lending institutions using merchant capital. They did not help to mobilize new sources of savings. They became part of the problem.

Wisely enough the government tolerated the traditional financial structure made up of moneylenders, pawnbrokers, and credit provider merchants. To develop agriculture including sericulture and the textile industries, it relied on competition, the traditional financial structure and the physical and human infrastructure that it created and continued to develop. Competition among moneylenders, pawnbrokers and trading houses helped to finance the multitude of proliferating small enterprises in agriculture and textile industries. The development under free trade of these industries and the building of the human and physical capital infrastructure were crucial for the sustained future development of the Japanese economy. They helped Japan absorb the new technologies. Together with the development of the copper, gold, and coal mining, they provided Japan with the specie necessary to import the machinery, the know-how and the technology necessary for development. The traditional financial structure secured unfettered access of small enterprises to financial resources and quality control insured them an expanding market share in international markets. This lesson did not escape the Japanese government at the end of the 1870's. A second lesson the government learned is that banks were intermediaries not creators of financial resources. A third lesson was that open inflation was detrimental to development and growth.

The implementation of these lessons starting in the beginning of the 1880's ushered Japan into its takeoff period. The government revoked the National banks privilege of note issuing. It created a central bank BOJ, and invested with the privilege of note issuing and allowed it to provide credit directly to private enterprises. It proclaimed a new banking law that placed little restrictions on free entry and on bank activities except for note issuing. It created the Yokohama specie bank to finance international trade and acquire specie. It created long-term credit banks that financed their credit with the issue of securities. It created the post office savings that absorbed a significant portion of government bonds and securities issues of long-term credit banks. It encouraged competition among banks since it allowed interest rates to be market determined. The traditional financial structure continued to operate alongside BOJ, the new financial structure and the post office savings. Reluctantly but fortunately, the government of Japan accepted the unfair treaties imposed by the European powers that limited its freedom to set tariffs above 5% and to set quotas. To make its commitment to a low inflation environment credible, the government adopted the gold standard. However, it allowed or instructed BOJ to soften the unpleasant deflationary effects of the gold standard adjustment mechanism.

Two major shortcomings plagued the financial structure of the country: the limited roles of securities markets and foreign capital. An important consequence was the lack of transparency and quality control of the whole financial and product markets. The lack of transparency resulted in the development of great financial holding companies called Zaibatsu and hindered the development of security markets. There was a concentration of holdings of government securities in the hands of banks and the great financial houses. Small and medium savers could not diversify risk and preferred to deposit their savings in banks trust companies and the post office savings. Large savers such as the owners of the great financial houses or landlords preferred to control directly their investments. In addition to investing their own funds they became intermediaries between banks and primary issuers of securities.

Although it appeared as if direct finance was dominant, indirect finance was the most prevalent. This contributed to reduce transparency. The active support of BOJ to the modern financial system made the lack transparency palatable. That is until the UK and the US opted to return to the gold standard in the twenties after suspending it during the war. The return was at the prewar parities and was preceded by the recovery of the economies of the victors of World War II. Due to the positive inflation policy of BOJ throughout the period, Japanese prices were out of line with its competitors. In the twenties competition intensified in Asia and throughout the world. To maintain its market share and reduce the excess capacity, the governor of BOJ called for a return to the gold standard at prewar parity.

The 1923 Tokyo earthquake and the necessity to deflate in order to return to the gold standard combined with the lack of transparency precipitated a financial crisis in 1923 causing successive crisis and bank failures, which culminated in the 1927 financial crisis. BOJ tried its best to stem the flow of bank failures but to no avail. Following the 1927 crisis, the government enacted a new banking law that raised significantly the minimum capital for banks. The law was predicated on the assumption that competition in the financial sector was the cause and regulated monopoly was the best solution of the problems of stagnation during the twenties and the recurrent financial crises. Perhaps in order to maximize the speed of development, the lack of transparency was perceived as a necessary cost that Japan had to pay to speed up economic development. This policy of benign neglect of transparency continued to prevail until the late nineteen nineties. When worldwide competition was mild, the policy was a phenomenal success. When worldwide competition was brisk and fierce, the policy was a phenomenal failure and Japan pays in terms of lost growth opportunities and/or loss of speed.

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