A Comparison of National Banks in Japan and the United States between 1872 and 1885

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In 1872, Japan established a national banking system modeled closely on that in existence in the United States at the time. The experience of the two countries with national banking was very different, however. The paper documents that the Japanese national banking system was smaller, less highly leveraged, and did less financial intermediation than the U.S. system. The paper describes the national banking legislation in the two countries and presents evidence on their different banking experiences. It then argues that, for the most part, the differences were not due to subtle differences in the banking legislation in the two countries. Rather, it argues that the differences were due to Japan's lesser degree of experience with banks and less developed banking institutions when the system was adopted. There also was more concern with establishing banknotes of national banks as a replacement for government-issued paper currency in Japan.

Key words: National banking; Banking history; Bank regulation

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I. Introduction

At the time of the Meiji Restoration in 1868, Japan had no modern banking system except for a few foreign banks doing business for foreign trade at authorized ports such as Yokohama and Kobe. This changed in 1872, due in large part to the efforts of Hirobumi Ito, the Vice-Minister of Finance at the time. He had read the laws establishing the National Banking System in the United States, and in late 1870 traveled there to study the system in operation firsthand. When he returned to Japan, he advocated the adoption of a banking system patterned after that in the United States. His recommendation was adopted, and a national banking system was established in Japan by the National Bank Act proclaimed on November 15, 1872.

In general terms, the legislation establishing the two banking systems was very similar. Both established a system of governmentally chartered banks that could issue banknotes (bank liabilities redeemable on demand by the bearer), but required that these banknotes be at least 100 percent backed by a deposit of government bonds with some government agency. There were some differences in specifics between the two sets of laws, however. One major one was that the Japanese national banking law limited the total capital of national banks, whereas the U.S. law contained no such restriction. Other differences were mostly in terms of the reserve requirements for notes and deposits and whether banks were required to accept the notes of other banks.

The experiences of the two countries with national banking were very different, however. Specifically, in this paper we identify seven differences. We find that, compared with its U.S. counterpart, the Japanese national banking industry

(1) was much smaller in terms of capital, total assets, and circulation,
(2) grew more slowly during the early part of its existence,
(3) was less highly leveraged,
(4) funded a large fraction of its balance sheet with notes as compared with deposits,
(5) did less financial intermediation,
(6) had a much closer relationship to the government, and
(7) had less extensive relationships with other banks.

These different experiences raise the question of whether they were due to subtle differences in legislation or whether they were caused by other factors. We argue that the first two differences could be to a certain extent due to differences in legislation, namely, the restrictions in Japan on the total capital of national banks and the form in which it had to be paid in. However, we also argue that the last five differences in the nature of the banking business in the two countries was not due to differences in the legislation. Rather, the different nature of national banking in the two countries seems to be due to the fact that there was far less experience with banks in Japan and that banking institutions were far less well developed in that country. We also argue that there was more concern with establishing banknotes of national banks as a replacement for government-issued paper currency in Japan.

The outline of the paper is as follows. In the next chapter, we present a comparison of the Japanese and U.S. national banking laws, pointing out the similarities and differences. In Chapter III, we compare the national banking experience in the two countries in terms of the size and growth of the national banking industry to obtain the first two differences mentioned above and argue that they were due, at least in part, to the restriction on the total capital of national banks in Japan. In Chapter IV, we compare the nature of the banking business done by national banks to obtain the last five differences mentioned above and argue that these differences were not due to differences in legislation. In the final chapter, we conclude.

II. Comparison of Japanese and U.S. National Banking Laws

Japan's National Bank Act was modeled very closely on the National Bank Act passed by the Congress of the United States in 1863. In this chapter, we highlight the important similarities between the national bank acts in the two countries. We also point out some of the important differences in the legislation in the two countries that might have led to differences in the performances of the two countries' banking systems. Table 1 contains a brief listing of the similarities and differences. In broad terms, both sets of laws established a system of governmentally chartered banks that could issue banknotes (bank liabilities redeemable on demand by the bearer), but required that these banknotes be at least 100 percent backed by a deposit of government bonds with some government agency. The laws also permitted these banks to take deposits from individuals and the government, and they restricted the types of assets that banks could own. The major differences between the laws in the two countries were mostly in terms of the reserve requirements for notes and deposits and whether banks were required to accept the notes of other banks.

Table 1 Major Provisions of Japanese and U.S. National Banking Laws

	Japanese national banks	U.S. national banks
General		
Charter	Yes	Yes
Minimum capital	Depending on population of location	
Minimum bond deposit	60 percent of capital, then 80 percent	1/3 of capital
Notes		
Redeemable on demand in	Gold coins/currency	Currency/specie
Legal tender	Yes	Yes, but . . .
Backing for notes	Government bonds	U.S. government bonds
Government insurance	Yes	Yes
Collateral requirement	100 percent of min {mkt, par}	90 percent of min {mkt, par}
Reserve requirement	2/3, then 1/4	5 percent, but . . .
Required to accept notes of other banks	Yes	Yes
Maximum note issue	¥100 million, then ¥34.4 million	$340 million, then none
Tax rate on circulation	0.7 percent	1 percent, 0.5 percent
Deposits		
Reserve requirement	25 percent	15 or 25 percent
Balance sheet		
Assets	No real estate or stocks	
Liabilities	Limited	Limited, double

The remainder of this chapter presents a far more complete discussion of the similarities and differences in the two sets of laws. In the discussion of the Japanese laws we take account of the changes to the original law made by the Amended National Bank Act proclaimed on August 1, 1876. We divide the discussion into four parts: provisions in the laws dealing with the establishment of national banks, banknotes of national banks, national bank deposits, and restrictions on funding national bank balance sheets.

A. Provisions concerning the Establishment of National Banks

1. Bank charters

Both the Japanese and U.S. national banking laws required banks to get authorization from a government agency in order to do business. In Japan, this authorization had to come from the *Shiheino-kami* (Chief Officer of the Paper Currency Bureau). In the United States, a charter had to be obtained from the Comptroller of the Currency.

2. Minimum capital requirement

Both the Japanese and U.S. laws required banks to have a minimum capital size depending upon the population of the place where the bank was located. In Japan, the original bank act required a minimum capital of more than ¥500,000 for banks located in cities with a population of 100,000 or more and ¥200,000 for banks located in places with a population of between 10,000 and 100,000. With the approval of the Minister of Finance, a bank with a capital of ¥50,000 or less could be set up in a city with between 3,000 and 10,000 inhabitants. The amended law relaxed these requirements significantly. The minimum capital requirement was reduced to ¥100,000, except for banks located in cities with populations of 100,000 or more, which had a minimum capital of ¥200,000. Further, the Minister of Finance could authorize the establishment of national banks with capital of between ¥50,000 and ¥100,000. In the United States, the minimum capital requirement was $50,000 for banks located in places with populations under 6,000; $100,000 for banks located in places with populations between 6,000 and 49,999; and $200,000 for banks located in places with populations of 50,000 or more.

3. Minimum bond deposit

Both the Japanese and U.S. national banking laws required banks to make a minimum deposit of government bonds upon starting business. In Japan, the minimum amount was 60 percent of capital, which was raised to 80 percent of capital under the amendment of 1876. The U.S. national banking law required a bond deposit of not less than $30,000, not less than one-third of capital. That was amended in 1882 so that banks with capital of less than $150,000 were only required to hold bonds equal to one-fourth of their capital.

B. Provisions concerning Banknotes of National Banks

1. Redemption of banknotes

The national bank laws of both countries required that banknotes be redeemed by the issuing bank on demand. In Japan, national banks initially were required to redeem notes in gold coins, but in 1876 this was amended to redemption in legal tender.[1] In the United States, national banks were required to redeem notes in legal tender. Before resumption on January 1, 1879, this meant that national banks could redeem their notes with "greenbacks." Since greenbacks were convertible into gold after resumption, the redemption provision essentially meant that banknotes of national banks were redeemable for specie.

2. Legal tender status of banknotes

Under the national banking laws of both countries, banknotes of national banks were given legal tender status for all public and private transactions, including the payment of taxes and government salaries, except for payment of interest on the public debt and payment of customs duties.

3. Government guarantee of banknotes

Under the national banking laws of both countries, ultimate redemption of banknotes of national banks was guaranteed by the government. That is, if the national bank issuing the notes were to fail and its assets were insufficient to redeem all of its outstanding notes, holders of unredeemed notes could present them to the Ministry of Finance (Japan) or the Comptroller of the Currency (United States) for redemption.

4. Bond collateral requirement for banknotes

The national bank laws of both countries required government bonds to be deposited as collateral for banknote issues. In Japan, banknotes could be issued up to 100 percent of the value of bond deposits. In the United States, banknotes could be issued only up to 90 percent of the value of the bonds deposited. There was, of course, the issue of how the bonds should be valued. In the United States, it was the minimum of the market or par value of the bonds. U.S. bonds were virtually always selling above par, at least before 1900. The original Japanese law was ambiguous about the valuation scheme, but the amendment explicitly adopted the U.S. requirement that the value of bonds was their market value. The laws of both countries provided for the banking authorities to require more bonds to be deposited if market prices should decline. Such a provision is usually referred to as a call provision.

5. Legal tender reserve requirement for banknotes

The national bank laws of both countries also required legal tender to be held as backing for note issue. However, the requirements were far more strict in Japan. The original Japanese national banking law required a bank to hold 40 percent of its capital in the form of gold coins. Since banks could only issue notes up to 60 percent of their capital, this meant that Japanese national banks faced a 67 percent specie reserve requirement. After the amendment of 1876, the requirement was dropped to 20 percent of capital, which meant that the specie reserve requirement was dropped to 25 percent. Further, after the amendment, the requirement was only in terms of government paper currency rather than gold coins. For U.S. national banks, the reserve requirements for banknotes were the same as those for

1. More specifically, the Japanese National Bank Act required the redemption of banknotes on demand in *shokin* (specie). The amended act required that *tsuka* (currency) in the amount of two-tenths of capital had to be reserved for the redemption of banknotes, which we and others infer to mean that banknotes had to be redeemed on demand in government paper currency.

deposits (see below) until the act of June 20, 1874. After this time, banks were required to keep 5 percent of banknotes in specie in a redemption fund at the U.S. Treasury. This fund counted as a part of a bank's reserves against deposits, however.

6. Acceptance requirement

National banks in the United States were required to accept the notes of other national banks "at par for any debt or liability." There was no such explicit requirement in the Japanese national banking law.

7. Maximum note issue

The original Japanese national banking law stated that the circulation of banknotes would be roughly ¥100 million. The amended law of 1876 contained no provisions in this regard, but an amendment of March 2, 1878, finally stipulated the possible restriction of the maximum amount of the total note issue of the national banks. Before this amendment, the *Dajokan* (the highest legislative and administrative organization of the Meiji government) had approved the maximum amount of total capital (¥40 million) together with its allocation among prefectures and the corresponding maximum amount of note issue (¥34,420,880). The U.S. law originally restricted the issue of notes to $340 million; it also specified maxima by national banks in different regions of the country. The restrictions were removed by an amendment dated January 14, 1875. To put the maxima in perspective, the populations of the two countries were approximately the same at this time—the population of Japan in 1872 was 34.8 million; in the United States in 1870, it was 42.0 million. Taking ¥1 per $1, which was roughly correct at the time, Japanese national banks would have been permitted to issue only about one-tenth as many banknotes per capita as U.S. national banks.

C. Provisions concerning Deposits: Reserve Requirements

National banks in both countries were required to hold lawful money as reserves against deposits. For U.S. national banks, the reserve requirement against deposits depended on whether a bank was located in a central reserve city, a reserve city, or elsewhere.[2] Prior to June 20, 1874, banks not in reserve cities were required to hold 15 percent of deposits as reserves. They could hold three-fifths of these reserves (10 percent of deposits) as balances at banks in central reserve cities or reserve cities. Banks in reserve cities were required to hold 25 percent of deposits as reserves. They could hold half of these (12.5 percent of deposits). Banks in central reserve cities had to hold 25 percent of reserves against deposits. For Japanese national banks, the reserve requirement was 25 percent of deposits, regardless of a bank's location. Forty percent of this reserve requirement (10 percent of deposits) could be in the form of government bonds.

2. The locations of U.S. national banks were divided into three categories: central reserve cities, reserve cities, and other. The designation of central reserve cities and reserve cities was specified in the national banking legislation. Originally, the only central reserve city was New York City. There were 17 reserve cities, among them Chicago, St. Louis, and New Orleans. Later, in the act of March 3, 1887, the law was changed so that cities with populations of more than 200,000 could become central reserve cities, and cities with populations greater than 50,000 could become reserve cities.

D. Restrictions on Balance Sheets

1. Types of assets

Under both laws, national banks were prohibited from owning real estate, except that necessary to conduct business or received through mortgage defaults; from owning other shares of stock in other corporations; and from lending against their own shares.

2. Types of liabilities

The laws of both countries restricted national banks' liabilities to consist of notes, deposits, and bills of exchange. The Japanese law also permitted some forms of promissory notes; U.S. law, drafts against deposits.

3. Extended liability provisions

The national banking law of the United States had a "double liability" provision; that is, shareholders were liable for an amount equal to their shareholdings. This meant that if a national bank failed and, say, its assets were zero, the shareholders could not only lose their investment of capital, but could be called on to pay the bank's creditors an amount equal to their shareholdings. The Japanese national banking law contained no such provision.

III. Comparison of the Size of the Banking Industries

In the previous chapter, we described the national banking laws in the two countries. This discussion showed that, considered in a broad sense, the laws were very similar. Both provided for a privately issued convertible currency fully collateralized by a deposit of government bonds, and both provided for national banks to conduct what is commonly considered banking business, the making of loans funded by capital and deposits. There were some differences in the two sets of laws, however. The Japanese law restricted the total capital of national banks. In addition, the laws differed in terms of the reserve requirements for notes and deposits and whether banks were required to accept the notes of other banks, but these differences seem relatively minor.

In this chapter and the next, we consider the questions of whether the banking outcomes in the two countries were similar or not and the extent to which any differences can be attributed to differences in the national banking legislation. To do this, we compare the Japanese and U.S. national bank experiences according to some characteristics of their balance sheets. In making these comparisons, we cover the years 1874 to 1885 for Japan. We end with 1885, because that was the year the Bank of Japan first issued convertible banknotes (the 10 yen note). We could have ended the analysis in 1883, when the law was passed ending national banks' note issuance privileges when their charters expired, but we decided to use the longer period to provide more of a comparison with the United States. For the United States, we cover the years 1864 to 1885. We use this longer time period for the United States so that we can make comparisons of the two systems by either their first 12 years or at the same point in time. All data for Japan are as of June of the year. All data for the United States are taken from the call report of the date closest to the end of June.

Our finding in this chapter is that the Japanese national banking industry was smaller in terms of capital, total assets, and circulation than the national banking system in the United States, even if differences in population are taken into account. We also find that it grew more slowly during the early part of its existence. We also argue that the differences can be accounted for by differences in the national banking laws.

Comparisons of the size of the national bank sector in the two countries are shown in Table 2. We perform the comparison in two ways: using data for the same time period and using data for the first 12 years of existence. Both comparisons lead to the same conclusion: the scale of national banking in the United States was far larger than that in Japan.

Columns 2 and 3 of the table show the number of national banks and the number of banks per capita in the two countries. The differences are very large. Japan never had more than 153 national banks. Once the national banking law had been on the books for one year, the United States never had fewer

Table 2 Selected Statistics of Japanese and U.S. National Banks

Years after passage of national banking law	Total number of banks			Banks per million people		Capital (Gold yen per capita)		Assets (Gold yen per capita)		Loans (Gold yen per capita)		Circulation (Gold yen per capita)	
	Japan	United States		Japan	United States	Japan	United States	Japan	United States	Japan	United States	Japan	United States
1	3	467	(224)	0.09	11.12	0.09	1.82	0.43	6.02	0.08	1.69	0.04	0.07
2	4	1,294	(420)	0.11	30.81	0.10	8.53	0.36	26.90	0.07	8.66	0.01	0.55
3	4	1,634	(760)	0.11	38.90	0.07	11.09	0.26	35.26	0.07	13.14	0.00	0.70
4	11	1,636	(762)	0.32	38.95	0.59	11.51	0.96	35.68	0.11	14.05	0.25	0.73
5	30	1,640	(766)	0.86	39.05	0.71	11.84	1.50	37.55	0.19	15.66	0.48	0.80
6	139	1,619	(745)	3.99	38.55	1.14	12.06	2.56	37.36	0.48	16.39	0.93	1.05
7	152	1,612	(738)	4.37	38.38	1.35	12.39	2.92	37.39	0.73	17.18	0.99	1.02
8	150	1,723	(849)	4.31	41.02	1.43	13.10	3.09	40.68	0.85	18.85	0.99	1.09
9	147	1,853	(979)	4.22	44.12	1.48	13.75	3.19	42.29	0.91	20.81	0.98	1.20
10	141	1,968	(1,094)	4.05	46.86	1.53	14.50	3.19	44.21	0.90	22.10	0.98	1.32
11	139	1,983	(1,109)	3.99	47.21	1.54	14.74	3.27	44.22	0.98	22.12	0.90	1.39
12	138	2,076	(1,202)	3.97	49.43	1.56	15.63	3.37	45.22	0.97	23.24	0.88	1.25

Year	Total number of banks			Banks per million people		Capital (Gold yen per capita)		Assets (Gold yen per capita)		Loans (Gold yen per capita)		Circulation (Gold yen per capita)	
	Japan	United States		Japan	United States	Japan	United States	Japan	United States	Japan	United States	Japan	United States
1874	3	1,983	(1,109)	0.09	47.21	0.09	14.74	0.43	44.22	0.08	22.12	0.04	1.39
1875	4	2,076	(1,202)	0.11	49.43	0.10	15.63	0.36	45.22	0.07	23.24	0.01	1.25
1876	4	2,091	(1,217)	0.11	49.79	0.07	15.51	0.26	43.20	0.07	22.30	0.00	1.11
1877	11	2,078	(1,204)	0.32	49.48	0.59	14.90	0.96	41.95	0.11	21.54	0.25	1.21
1878	30	2,056	(1,182)	0.86	48.95	0.71	14.46	1.50	41.40	0.19	19.94	0.48	0.97
1879	139	2,048	(1,174)	3.99	48.76	1.14	14.00	2.56	47.84	0.48	19.96	0.93	1.09
1880	152	2,095	(1,221)	4.37	49.88	1.35	14.27	2.92	53.13	0.73	25.59	0.99	1.15
1881	150	2,115	(1,241)	4.31	50.36	1.43	14.43	3.09	55.13	0.85	27.35	0.99	1.31
1882	147	2,239	(1,365)	4.22	53.31	1.48	14.93	3.19	55.59	0.91	28.87	0.98	1.24
1883	141	2,417	(1,543)	4.05	57.55	1.53	15.67	3.19	56.06	0.90	30.70	0.98	1.63
1884	139	2,625	(1,751)	3.99	62.50	1.54	16.37	3.27	54.11	0.98	30.33	0.90	1.69
1885	138	2,689	(1,815)	3.97	64.02	1.56	16.42	3.37	57.49	0.97	30.04	0.88	1.25
						(Percentage of GNP)							
1885*						7.4	8.0	16.0	28.0	4.6	14.6	4.2	0.6

*See Footnote 4.

than 467.[3] An alternative way of looking at this is that considering the same time period, there were 50 or more national banks per million people in the United States. In Japan, the number never was larger than 4.4. Even considering the first 12 years of existence of the two systems, always there were still more than 10 times as many banks per capita in the United States as in Japan.

Of course, it could be the case that the number of banks is a misleading statistic for the size of the banking systems, because one could have a large number of small banks and the other a small number of large banks. However, we find that other measures of banking size also show that the U.S. national banking system was far larger than Japan's. One such measure is the per capita capital of the banking system. This comparison is shown in columns 6 and 7. (The scale in columns 6 through 13 is in gold yen per capita.)[4] We find that the total capital of the U.S. national banking system was around ¥16 versus less than ¥1.6 per capita for the Japanese banking system. The difference in capitalization is even greater considering the first 12 years of existence of the two systems. Columns 8 through 11 show that the same conclusions would be drawn if we use the total assets of national banks or the loans made by national banks instead of total capital.

Lastly, we consider the note circulation of the two banking systems. Looking at the last two columns of Table 2, we find that over the 1874–85 period U.S. national banks issued about ¥1.3 of banknotes per capita. The note issuance of Japanese national banks was never greater than ¥1 per capita. The table also shows that the order of magnitude difference between note issuance of the national banks in the two countries holds when we consider the first 12 years of existence. There are two other interesting points in Table 2. The first is that over the period 1874–1885 the circulation of Japanese national banks was increasing whereas that of U.S. national banks was roughly flat or declining. The second is that both banking systems seemed to start slowly in terms of the magnitude of the circulation of banknotes.

We think that size difference in the national bank sector in the two countries can be attributed to differences in their national bank laws. The amended Japanese national banking law set a maximum amount of capital for national banks (¥40 million or slightly more than ¥1 per capita). Further, the way in which allowable national bank capital was allocated among the prefectures meant that there could never have

3. The number of banks in parentheses for the United States is the number of national banks that were started *de novo*; that is, excluding existing state banks that converted their charters. These numbers still show that many more banks existed under the U.S. national banking system than under the Japanese one. The number of state banks that converted to national banks is obtained from Haxby (1988).

4. To obtain these values, the dollar values for U.S. national banks were multiplied by 23.22/23.149, which is the ratio of grains of gold per U.S. dollar to grains of gold per yen during this period. Since the United States did not return to the gold standard until 1879, it might be more appropriate to have discounted the numerator to take account of the depreciation of greenbacks against gold. However, yen-U.S. dollar exchange rates for the period suggest that this depreciation was not severe enough to affect our conclusions. Further, the paper yen began to depreciate against the gold yen after 1877. Taking this into account would make the scale differences larger in favor of the United States.

We also have to take into account the difference in the level of industrial development in the two countries. However, the only available Japanese GNP data for this period are those for 1885 estimated by Okawa (1974). Therefore, we compared total capital, assets, loans, and circulation as a percentage of GNP for 1885. The results are shown in parentheses for the 1885 figures in Table 2. The discrepancy in the size of the two banking systems in terms of assets and loans is still evident. However, banking capital as a percentage of GNP is approximately the same in the two countries and circulation is actually a larger fraction of GNP in Japan.

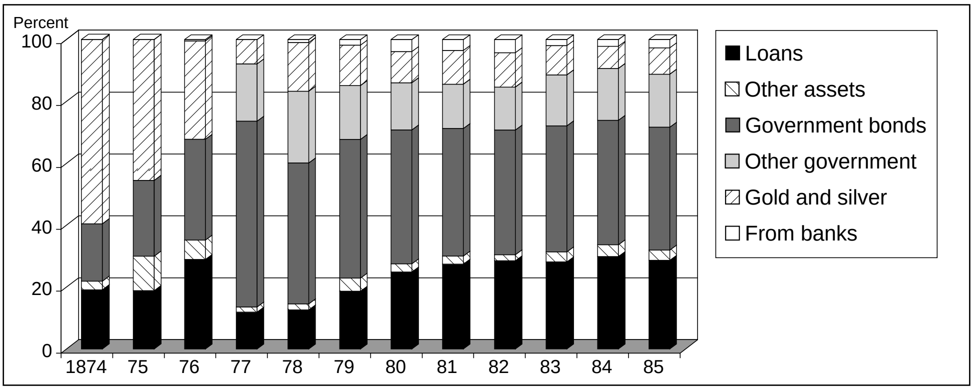
been many more national banks in Japan than were actually established.[5] Finally, as noted above, restrictions on note issue meant that Japanese national banks could not issue more than one-tenth as many notes as their U.S. counterparts.

We also think that the slower initial growth of Japanese national banks can be attributed to differences in the laws. Prior to the amendment of 1876, 40 percent of a national bank's capital stock had to be paid in gold coins. Further, Japanese national banks had to redeem their notes in gold coins, even though government paper currency was inconvertible. Once these restrictions were eased in the amended law, growth of national banks in Japan was far more rapid, but not so rapid as in the United States, where the conversion from state banks to national banks was promoted by the imposition of a 10 percent turnover tax on banknotes of state banks.

IV. Comparison of the Nature of the Banking Business

In this chapter, we examine the nature of the banking business done by the banks in the two countries, as shown by the composition of their balance sheets. We find that the nature of the banking business was quite different in the two countries. To make these comparisons, we combined the separate items on the balance sheets of the national banks into their major categories. On the liabilities and net worth side of the balance sheet, we identify six major categories: capital, notes, public deposits, government deposits, amounts due to other banks, and other (governmental) liabilities (this last category is for Japanese national banks only). On the asset side of the balance sheet, we also identify six major categories: loans and discounts, government bonds, lawful money, amounts due from other banks, other (nongovernmental) assets, and other (governmental) assets (again, this last category is for Japanese national banks only). The assignment of the finer balance-sheet categories to these broader groupings is given in the Appendix. The relative composition of the balance sheets of the national banks in the two countries in terms of these major categories is given in Figures 1 through 4. Figure 1 shows the year-by-year composition of the asset side of the balance sheets for Japanese national banks. Figure 2 shows the analogous information for U.S. national banks. Figures 3 and 4 present the information for the liability and net worth side of the balance sheets.

Figure 1 Japanese National Banks (Assets)



5. See Teranishi ([1982], p. 148) for a discussion of how national bank capital was allocated among the prefectures.

Figure 2 U.S. National Banks (Assets)

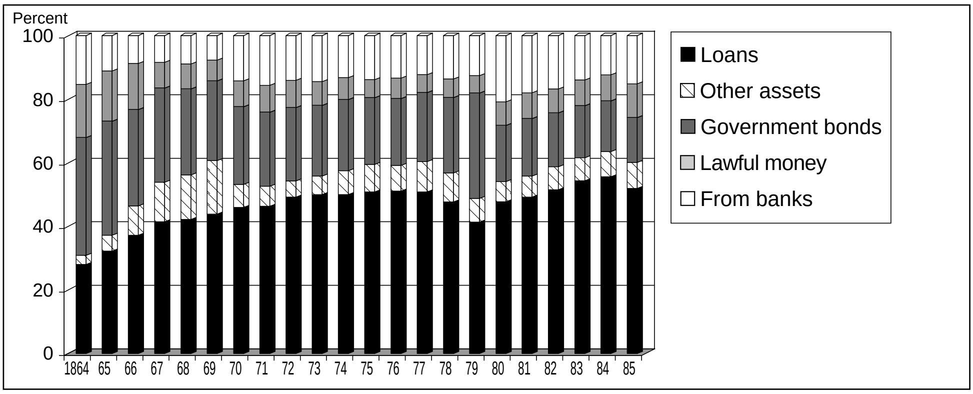


Figure 3 Japanese National Banks (Liabilities and Capital)

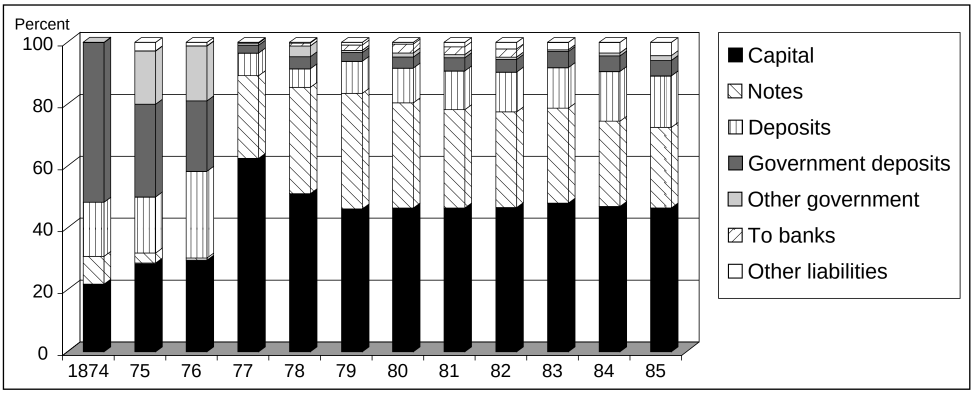
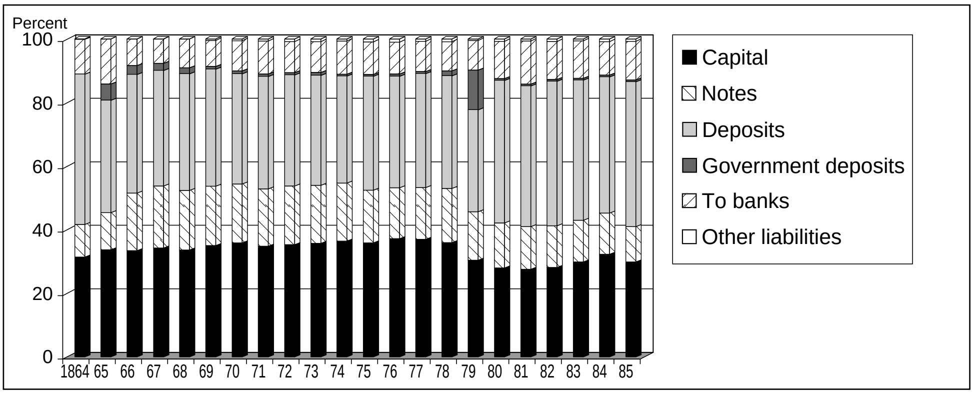


Figure 4 U.S. National Banks (Liabilities and Capital)



An examination of Figures 1 through 4 reveals five additional broad differences in the national banking systems in the two countries. We now discuss those differences and the extent to which they could be caused by differences in the two sets of national banking laws.

- *Japanese national banks were less highly leveraged than U.S. national banks; that is, Japanese national banks funded a larger portion of their balance sheets with capital than did U.S. national banks.*

  After the amendment of 1876, the asset-capital ratios for Japanese national banks were between 1.5 and 2.5; asset-capital ratios for U.S. national banks were never less than 2.5 (actually, they were never less than 2.7), and for most years they were around 3 or somewhat above. It is the case, however, that Japanese national banks funded a much smaller fraction of their balance sheets with capital before the amendment was passed. During this period, their asset-capital ratios were between 3.5 and 5. Such ratios were substantially above the asset-capital ratios of U.S. national banks when they began.

  Although the Japanese national banking law restricted the aggregate capital of banks, there is nothing in the laws that can explain these differences.

- *Japanese national banks funded a larger fraction of their balance sheets with notes and a smaller fraction with public deposits than did national banks in the United States.*

  After the amendment of 1876, notes were always at least a quarter and in several years they were a third or more of liabilities plus net worth of Japanese national banks. For the same period, public deposits of Japanese national banks were between 5 and 15 percent of liabilities plus net worth. Note-deposit ratios for this period were between 1.5 and 6. For U.S. national banks, notes were virtually always less than 20 percent of liabilities plus net worth, and by 1885 they were only roughly 10 percent of liabilities plus net worth. Public deposits were always a larger fraction of liabilities plus net worth—between a third and a half of the balance sheet. Note-deposit ratios for U.S. national banks were never greater than 0.54, and by 1885, notes were only about one-quarter as large as deposits.

  Prior to the amendment of 1876, the composition of Japanese balance sheets looked quite different in terms of notes and deposits, because Japanese banks issued almost no notes. In fact, by 1876, notes were only about 1 percent of Japanese national banks' liabilities plus net worth. Deposits were 15 to 30 percent of the total, and note-deposit ratios were 0.5 or less.

  If anything, the differences in the laws should have caused Japanese national banks to fund relatively less of their balance sheets with notes than with deposits. Prior to the passage of the amendment, note issuance was probably not very profitable. Because banknotes of Japanese national banks could be redeemed for gold whereas the government paper currency could not, it is likely that notes did not stay in circulation very long. Although the passage of the amendment made note issuance more profitable for Japanese national banks, the far more stringent reserve requirements against notes faced by Japanese national banks compared to those faced by U.S. national banks should still have led the Japanese banks to rely relatively more heavily on deposits.

- *Japanese national banks did less financial intermediation than did U.S. national banks; that is, Japanese national banks looked a lot less like modern-day commercial banks than did U.S. national banks.*

  The amount of financial intermediation done by national banks is measured by the amount of loans they make and the amount of paper that they discount. U.S.

national banks consistently held a larger part of their asset portfolio as loans and discounts than did Japanese national banks. Loans and discounts were between one-third and two-thirds of the asset portfolio of U.S. national banks in all years except 1864 and 1865. In contrast, loans and discounts were never more than 30 percent of the asset portfolio of Japanese national banks, and in 1877 and 1878 the percentages were as low as 12 percent.

Note that under the national banking legislation, loans and discounts can only be funded by capital and deposits. They cannot be funded by banknotes, because notes have to be fully collateralized by government bonds. However, since neither set of national banking laws restricted deposit-taking by national banks, differences in the laws again do not seem to be an explanation for the differences.

- *Japanese national banks had a much tighter relationship with the government than did U.S. national banks.*

National banks in both countries interacted with the government in two ways. First, they intermediated government debt by issuing notes backed by government bonds as collateral. Second, they acted as fiscal agents for the government by holding the government's deposits (which were also backed by government bonds as collateral).

Both activities were a more important part of the business of Japanese national banks than they were for U.S. national banks. After the amendment of 1876, Japanese national banks consistently had a larger part of their assets in the form of government bonds than did U.S. national banks. From 1878 to 1885, government bonds were between 40 and 50 percent of the asset portfolios of Japanese national banks, and government deposits were between 2.5 percent and 5 percent of the other side of the balance sheet. For U.S. national banks, government bonds were never more than 40 percent of the asset portfolio, and the fraction of their portfolio held as government bonds almost steadily declined over time from a high of 37 percent in 1864 to only about 15 percent in 1885. In addition, after 1866, government deposits were never more than 3 percent of liabilities plus net worth, and for most years they were less than 1 percent. There was one exception, 1879. In this year, government deposits were about one-eighth of liabilities plus net worth. We suspect that this buildup of government deposits was due to the resumption of gold convertibility of U.S. paper currency that occurred on January 1 of that year.

Prior to the amendment of 1876, Japanese national banks also had strong ties to the government, but they were weighted more toward the fiscal agent role and involved less intermediation of government bonds. For this period, Japanese national banks had between a quarter and a half of their liabilities plus net worth in the form of government deposits, but their holdings of government bonds were less, being between one-sixth and one-third of the asset portfolio.

Japanese national banks also engaged in borrowing from and lending to the government in other ways than bonds and deposits; U.S. national banks did not engage in this practice. Specifically, in 1875 and 1876 non-deposit liabilities to the government were about 17.5 percent of liabilities plus net worth. After that time, the percentage fell to about 1 percent. Amounts owed by the Japanese government to banks, other than government bonds, were between 15 and 20 percent of total assets after the amendment of 1876. However, most if not all of this other lending was by the Fifteenth Bank, which lent large amounts to the government to finance the Seinan War in 1877.[6] Specifically, from the aggregate balance sheets of Japanese national banks, our category "other government" closely matches the amount of lending the Fifteenth Bank did to the government. When we subtract "other government" from the asset percentages in Figure 1 and compare the result with the allocation of assets for U.S. national banks, the result is still that Japanese national banks had a more extensive relationship with the government than did U.S. national banks.

Since there were no differences in the two sets of national banking laws with regard to government deposits or with regard to borrowing from or lending to the government, once again differences in the laws are not an explanation for differences in the composition of banking activity in the two countries.

- *Japanese national banks had a less extensive relationship with other banks than did U.S. national banks.*

During this period, banks borrowed from, and therefore by definition lent to, other banks. We identify this category because banks in both countries had transactional relationships with other banks and because U.S. national banks could hold part of their required reserves against deposits in the form of deposits at certain other national banks. Japanese national banks never owed very much to other banks. "Due to other banks" never made up more than 3 percent of liabilities plus net worth. They also never lent much to other banks. "Due from other banks" never was larger than 5 percent of total assets. Both percentages were much higher for U.S. national banks. "Due to other banks" was between 8 and 15 percent of total liabilities plus net worth; "due from other banks" was between 8 and 20 percent of assets, with the fraction around 13 percent most of the time.

Differences in the laws may partially explain this difference, but they cannot fully account for it. U.S. national banks could include deposits at specific other national banks as part of their required reserves against public deposits, which is part of the reason that interbank relationships were stronger for U.S. national banks. But the relationships between banks in the United States were stronger than those between banks in Japan even when this is taken into account. Another possible reason is that Japanese national banks were not required to accept the notes of other national banks in payment of debts, whereas U.S. national banks were. However, this also is only a partial explanation. Prior to the establishment of national banks, banks in the United States were not legally required to accept the notes of other banks. Yet even before 1863, U.S. banks had very strong interbank relationships.

V. Conclusion

In 1863, the United States passed the National Banking Act, which established a system of governmentally chartered banks that could issue banknotes at least 100 percent backed by a deposit of government bonds with some government

6. The Fifteenth Bank was special in other ways than the large amounts that it lent to the government. Its capital was ¥17.8 million or 44.5 percent of the maximum aggregate capital of national banks, so that it was far larger than any other Japanese national bank. Further, it did not have to back all of its note issue with public bonds, but instead had to hold public bonds only equal to 5 percent of its notes required for its lending to the government. All of the shareholders of this bank were aristocrats belonging to the highest class of society.

agency. These banknotes were intended to circulate as currency. Japan passed a National Banking Act in 1872 that was very similar, but not identical, to the U.S. law. The experiences of the two countries with national banking were very different. The national banking industry in Japan was smaller than that in the United States in terms of capital, total assets, and circulation. Further, Japanese national banks did relatively less commercial banking and far more government banking than did their U.S. counterparts.

In this paper, we have examined whether the differences in the national banking experiences in the two countries can be attributed to the differences in their actual national banking legislation. Our general conclusion is that they cannot. It is true that the restrictions on the total capital and total note circulation of Japanese national banks explain the relatively small size and the initial slow growth of the national banking sector in that country. These restrictions themselves were related to the Japanese government's efforts to contain the total amount of inconvertible paper currency and to replace the inconvertible *Dajokansatsu* and the *Mimbushosatsu* with convertible banknotes of national banks.

However, differences in the laws do not explain the significant differences in the composition of banks' balance sheets in the two countries. We think the primary cause of these differences was the differences in the initial conditions in the two countries when their national banking systems were established.

By 1863, the United States had more than 80 years of experience with banking and a well-established banking system with more than 1,400 banks. In fact, the establishment of the U.S. national banking system did not so much involve the establishment of *de novo* banks as it did the encouragement, mainly through a punitive tax on the paying out of notes of nonnational banks, of banks to switch from being chartered by states to being federally chartered (that is, national) banks. Further, these banks had a long history of conducting business with each other.

In contrast, in 1872 Japan had virtually no experience with modern banking. In the Edo Period (1603–1867) preceding the Meiji Restoration, there had been *ryogae* banks mainly in Osaka and Edo, but they were primarily engaged in the trade of gold, silver, and copper coins. Although *ryogae* banks in Osaka developed a highly advanced system of settlement using various kinds of bills drawn on deposits, they did not essentially use these deposits for lending, but used their own funds. Therefore, they were not engaged in financial intermediation for domestic businesses as was the case of banks in the United States.

Suppose our hypothesis about the cause of the differences in the composition of the balance sheets of the two national banks is correct. Then the balance sheets of Japanese national banks should have begun to look more like those of their counterparts in the United States as the Japanese national banking system became more mature and the country became more familiar with banking and undertook larger-scale financial intermediation. Unfortunately, we cannot test this prediction, because the establishment of the Bank of Japan in 1885 fundamentally changed the nature of banking in that country. Perhaps further research will find a way to determine whether our conjecture is correct.

APPENDIX 1: ALLOCATION OF BALANCE-SHEET CATEGORIES FOR FIGURES 1 AND 3

Assets	Liabilities and net worth
Loans	Capital
Loans	Capital stock
Overdue loans	Reserved capital
Loans of nonperformance	Reserved capital of Mexican dollar department
Overdrafts	Reserved capital for construction of new office
Discounted bills	Reserved capital for specified purposes
Bills for collection	Installments unpaid
Other assets	Bonus unpaid to directors (1881–)
Fund for exchange of banknotes to be withdrawn due to decrease in capital stock (1881–)	Subscribed money for increase in capital stock (1880–)
Damaged banknotes presented to government for exchange (1881–)	Temporary contribution of shareholders
Banknotes to be exchanged	Profits for the half year (1880–)
Fund for purchases (1883–)	Balance brought forward from the previous half year (1880–)
Documentary bills	Reserve for loan of nonperformance for the half year (1880–)
Loan on overseas documentary bills (1883–)	All profits brought forward from the previous half year (1880–)
Fund for documentary bills (1883–)	Notes
Advance on documentary bills (1883–)	Banknotes in circulation (1880–, circulated amount of banknotes issued)
Rejected bills (1880–)	Deposits
Guaranteed bills (1880–)	Fixed deposit
Deposit (1880–)	Current deposit
Mailed money (1880–)	Deposit certificate
Fund for exchange of copper coins (1882–)	Deposit for specified purposes
Money for bank employees on business trips	Deposit of notice (–1883)
Exchange receivable	Saving deposit
Fund for purchase of national bonds (1883–)	Government deposits
Fund for purchase of special paper and stamps (1883–)	Government deposit
Fund for purchase of gold and silver bullion (1883–)	Government deposit certificate
Branch office account (1881–)	Government current deposit
Adjustment account	Bank bill payable to government (–1883), remittance drafts (1884–)
Miscellaneous account	Government deposit of notice (–1883)
Founding cost	Government notice money (1881–83)
Shareholders' account (1883–)	Government agency's deposit
Installment (1883), installment paid in part (1884–)	Government fixed deposit
Mexican dollars receivable (or in surplus)	Government deposit for specified purposes (–1883)
Profit/loss account	Government temporary deposit
Bank tax	Government various deposits (1884–)
Gold and silver receivable	Other government
Banks' property (1880–, property account)	Borrowing from government
Pledge forfeited	Fund for exchange of old currency and damaged paper currency
Land, buildings, and furniture	Fund for exchange of damaged paper currency (1883–)
Advance for lease of buildings (1883–, deposit for office land and building)	Fund for exchange of gold and silver bullion and copper coins (1883–)
Gold and silver bullion and foreign currencies (–1882), gold and silver bullion account (1883–)	Subscribed money of industrial bonds
Government bonds	Unpaid tax (1880–, unpaid bank tax)
National bonds to secure banknotes (–1880)	Bank of Japan account
Government paper currency to secure banknotes (–1879)	Treasury deposits (1883–)
Other national bonds (–1880), national bonds (1881–)	Deposit of treasury agency (1883–)
Other government assets	Miscellaneous (1883–)
Loan to government	Due to banks
Overdraft to government	Debt to other banks
Temporary payment from government current deposit (1882–)	Other liabilities
Money paid for government	Promissory notes (1883–)
Unpaid subsidy	Bill for collection
Bank of Japan account	Bank bills payable (–1883), remittance drafts (1884–)
Deposit of fund for redemption of banknotes (1883–)	Exchange payable
Deposit for redemption of banknotes (1883–)	Notice money (–1883)
Gold and silver	Bill for collection of deposit
Gold and silver coins in stock (1880–, gold and silver account)	Rediscounted bills (1883–)
Due from banks	Borrowing of fund for documentary bills (1883–)
Credit to other banks	Fund for documentary bills for direct export (1883–)
Other banks' banknotes (1880–82), banknotes (1883–)	Borrowing
Convertible banknotes (1883)	Adjustment account
Other banks' checks	Mexican dollars payable (or in deficit)
	Reserved money for commission charge
	Miscellaneous account
	Reserved capital for the fund for redemption of banknotes (1884–)
	Money for redemption of banknotes

APPENDIX 2: ALLOCATION OF CALL REPORT CATEGORIES FOR FIGURES 2 AND 4

Assets	Liabilities and capital
Loans	Capital
Loans and discounts	Capital
Other assets	Surplus fund
Bonds, securities, etc.	Undivided profits
Real estate, etc.	Notes
Current expenses	National bank circulation
Premiums paid	Deposits
Cash items	Individual deposits
3 percent certificates	Certified checks
U.S. certificates of deposit	State bank circulation
Due from U.S. Treasury	Government deposits
Government bonds	U.S. deposits
U.S. bonds and securities	Deposits of U.S. disbursing agents
Other items	Due to banks
Bonds for circulation	Due to national banks
Bonds for deposits	Due to national and other banks
U.S. bonds on hand	Due to state banks
Other U.S. bonds and securities	Due to other banks and bankers
Lawful money	Clearinghouse loan certificates, net balance
Fractional currency	Other liabilities
Specie and other lawful money	Dividends unpaid
Specie	Notes rediscounted
Legal tender notes	Bills payable
Due from banks	Other liabilities
Due from national banks	
Due from state banks	
Due from national and other banks	
Due from (redeeming) reserve banks	
Due from other banks and bankers	
Clearinghouse loan certificates	
Clearinghouse exchanges	
Bills of other banks	

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