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Shigeki Miyajima and Warren E. Weber

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Shigeki Miyajima* and Warren E. Weber**

Abstract

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 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 the different banking experiences in the two countries. 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 national bank notes as a replacement for government-issued paper currency in Japan.

Key words: national banking, banking history, bank regulation

JEL classification: N20, G21

*Professor, Fuji Tokoha University (E-mail: miyajima@fuji-tokoha-u.ac.jp)

**Senior Research Officer, Federal Reserve Bank of Minneapolis (E-mail: wew@res.mpls.frb.fed.us)

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1. 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 Kohbe. This changed in 1872, due in large part to the efforts of Mr. Hirobumi Ito, the Vice-Minister of Finance at the time. Mr. Ito had read the laws establishing the National Banking System in the United States, and in late 1870 he traveled there to study the system in operation first hand. When he returned to Japan, he advocated the adoption 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 experience of the two countries with national banking was very different, however. Specifically, in this paper we identify seven differences. We find that 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

than did their U.S. counterparts.

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 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 national bank notes as a replacement for government-issued paper currency in Japan.

The outline of the paper is as follows. In the next section we present a comparison of the Japanese and U.S. national banking laws pointing out the similarities and differences. In section 3, we compare of 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 section 4, 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 section, we conclude.

2. 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 section, 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 set 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.

The remainder of this section 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 banks, national bank notes, national bank deposits, and restrictions on funding national bank balance sheets.

2.1. Provisions concerning the establishment of national banks

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.

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 stocks 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 bank located in places with populations of 50,000 or more.

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 a capital of less than $150,000 were only required to hold bonds equal to one-fourth of their capital.

2.2. Provisions concerning national bank notes

Redemption of banknotes. The national bank laws of both countries required that banknotes be redeemed by the issuing bank on demand. In Japan, national bank initially were required to redeem notes in gold coin, but in 1876 this was amended to redemption in legal tender.[1] In the U.S. 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 so-called “greenbacks.” Since greenbacks were convertible into gold after Resumption, the redemption provision essentially meant that national bank notes were redeemable for specie.

Legal tender status of banknotes. Under the national banking laws of both countries, national bank notes 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.

Government guarantee of banknotes. Under the national banking laws of both countries, ultimate redemption of national bank notes 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.

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, bank notes could be issued up to 100 percent of the value of bonds deposits. In the U.S., banknotes could be

[1]More specifically, the Japanese National Bank Act required the redemption of banknotes on demand in shohkin. The amended Act required that tsuhka 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.

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 U.S. 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.

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 bank notes were the same as those for deposits (see below) until the act of June 20, 1874. After this time, banks were required to keep five percent of bank notes 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.

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.

Maximum note issue. The original Japanese national banking law stated that the circulation of bank notes 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 Dajohkan (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 persons; in the United States in 1870, it was 42.0 million persons. Taking 1 yen = 1 dollar, which was roughly correct at the time, Japanese national banks would have been permitted to issue only about one-tenth as many bank notes per capita as U.S. national banks.

2.3. 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

[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 seventeen 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.

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 (12-1/2 percent of deposits). Banks in central reserves cities had to hold 25 percent 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.

2.4. Restrictions on balance sheets

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 other shares of stock in other corporations; and from lending against their own shares.

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.

Extended liability provisions. The national banking law of the United States had a so-called "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.

3. Comparison of the size of the banking industries

In the previous section, 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 section 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 difference 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 bank notes (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 twelve 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 section are 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 is shown in Table 2. We perform the comparison in two ways: using data for the same time period and using data for the first twelve 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 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 4.5. Even considering the first twelve years of existence of the two systems, always there were still more than ten times as many banks per capita in the United States than 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

[3]The number of banks in parenthesis 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).

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 system. 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 bank instead of total capital.

Lastly, we consider the note circulation of the two banking system. Looking at the last two columns of Table 2, we find that over the 1874–85 period U.S. national banks issued about ¥7 of bank notes 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 twelve 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 declining. The second is that both banking systems seemed start slowly in terms of the magnitude of the circulation of national bank notes.

We think that size difference in the national bank sector in the two countries can be attributed to differences in the their national bank laws. The amended Japanese national banking law set a maximum capital for national banks (¥40 million or slightly more than ¥1 per capita).

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[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 dollar to grains of gold per yen during this period. Since the U.S. did not return to the gold standard until 1879, it might be more appropriate to have discounted the numerator to account of the depreciation of greenbacks against gold. However, yen-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 is that for 1885 estimated by Ohkawa (1974). Therefore, we compared total capital, assets, loans, and circulation as a percentage of GNP for 1885. The results are shown in parenthesis under 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.

Further, the way in which allowable national bank capital was allocated among the prefectures, meant that there could never have 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 coin. Further, Japanese national banks had to redeem their notes in gold coin, 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 state bank notes.

4. Comparison of the nature of the banking business

In this section, 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

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

money, amounts due from other banks, other (non-governmental) 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 of U.S. national banks. Figures 3 and 4 present the information for the liability and net worth side of the balance sheets.

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 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 five and fifteen percent of liabilities plus net worth. Note-deposit ratios for this period were between one and a half and six. 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 ten 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 one percent of Japanese national banks' liabilities plus net worth. Deposits were fifteen to thirty percent of the total, and note-deposit ratios were one half or less.

If anything, the differences in the laws should have caused Japanese national banks to fund relatively less of their balance sheet with notes than with deposits. Prior to the passage of the amendment, note issuance was probably not very profitable. Because

Japanese national bank notes 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 thirty percent of the asset portfolio of Japanese national banks, and in 1877 and 1878, the percentages were as low as twelve percent.

Note that under the national banking legislation, loans and discounts can only be funded by capital and deposits. They cannot be funded by bank notes, 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 we 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 37 percent in 1864 to only about 15 percent in 1885. In addition, after 1866, government deposits were never more than three percent of liabilities plus net worth, and for most years, they were less than one percent. There was one exception, 1879. In this year, government deposits were about one-eighth of liabilities plus net worth. We suspect that this build up 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 seventeen and a half percent of liabilities plus net worth. After that time the percentage fell to about one percent. Amounts owed by the Japanese government to banks, other than government bonds, was 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.

[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 five 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.

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 three 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 were between eight and fifteen percent of total liabilities plus net worth; due from other banks were 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 the difference. U.S. national banks could include deposits at specific other national banks as part of its required reserves against public deposits is part of the reason that interbank relationships were stronger for U.S. national banks. But the relationships between banks in the U.S. are 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 U.S. were not legally required to accept the notes of other banks. Yet, even before 1863, U.S. banks had very strong interbank relationships.

5. Conclusion

In 1863, the United States passed the National Banking Act that 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 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 experience 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 far 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 Dajohkansatsu and the Minbushohsatsu with convertible national bank notes.

However, differences in the laws do not explain the significant differences in the composition of bank 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 over 80 years of experience with banking. It had a well-established banking system with over 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 non-national 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 Yedo era preceding Meiji, there had been *ryogae* banks mainly in Osaka and Yedo, 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 more 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. Maybe further research will come up with a way of determining whether or not our conjecture is correct.

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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	US government bonds
Government insurance	Yes	Yes
Collateral requirement	100% of min{mkt,par}	90% of min{mkt,par}
Reserve requirement	2/3, then 1/4	5%, but …
Required to accept notes of other banks	Yes	Yes
Maximum note issue	yen 100 million, then yen 34.4 million	$340 million, then none
Tax rate on circulation	0.7%	1%,1/2%
Deposits		
Reserve requirement	25 percent	15 or 25 percent
Balance sheet		
Assets	No real estate or stocks	
Liability	Limited	Limited, double

Table 2

Years after passage of national banking law	total number of banks			banks per million people		Capital		Assets		Loans		Circulation	
						----------------------------(gold yen percapita)---------------------------------------							
	Japan	U.S.		Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.
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	1294	(420)	0.11	30.81	0.10	8.53	0.36	26.90	0.07	8.66	0.01	0.55
3	4	1634	(760)	0.11	38.90	0.07	11.09	0.26	35.26	0.07	13.14	0.00	0.70
4	11	1636	(762)	0.32	38.95	0.59	11.51	0.96	35.68	0.11	14.05	0.25	0.73
5	30	1640	(766)	0.86	39.05	0.71	11.84	1.50	37.55	0.19	15.66	0.48	0.80
6	139	1619	(745)	3.99	38.55	1.14	12.06	2.56	37.36	0.48	16.39	0.93	1.05
7	152	1612	(738)	4.37	38.38	1.35	12.39	2.92	37.39	0.73	17.18	0.99	1.02
8	150	1723	(849)	4.31	41.02	1.43	13.10	3.09	40.68	0.85	18.85	0.99	1.09
9	147	1853	(979)	4.22	44.12	1.48	13.75	3.19	42.29	0.91	20.81	0.98	1.20
10	141	1968	(1094)	4.05	46.86	1.53	14.50	3.19	44.21	0.90	22.10	0.98	1.32
11	139	1983	(1109)	3.99	47.21	1.54	14.74	3.27	44.22	0.98	22.12	0.90	1.39
12	138	2076	(1202)	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		Assets		Loans		Circulation	
						----------------------------(gold yen percapita)---------------------------------------							
	Japan	U.S.		Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.
1874	3	1983	(1109)	0.09	47.21	0.09	14.74	0.43	44.22	0.08	22.12	0.04	1.39
1875	4	2076	(1202)	0.11	49.43	0.10	15.63	0.36	45.22	0.07	23.24	0.01	1.25
1876	4	2091	(1217)	0.11	49.79	0.07	15.51	0.26	43.20	0.07	22.30	0.00	1.11
1877	11	2078	(1204)	0.32	49.48	0.59	14.90	0.96	41.95	0.11	21.54	0.25	1.21
1878	30	2056	(1182)	0.86	48.95	0.71	14.46	1.50	41.40	0.19	19.94	0.48	0.97
1879	139	2048	(1174)	3.99	48.76	1.14	14.00	2.56	47.84	0.48	19.96	0.93	1.09

1880	152	2095	(1221)	4.37	49.88	1.35	14.27	2.92	53.13	0.73	25.59	0.99	1.15
1881	150	2115	(1241)	4.31	50.36	1.43	14.43	3.09	55.13	0.85	27.35	0.99	1.31
1882	147	2239	(1365)	4.22	53.31	1.48	14.93	3.19	55.59	0.91	28.87	0.98	1.24
1883	141	2417	(1543)	4.05	57.55	1.53	15.67	3.19	56.06	0.90	30.70	0.98	1.63
1884	139	2625	(1751)	3.99	62.50	1.54	16.37	3.27	54.11	0.98	30.33	0.90	1.69
1885	138	2689	(1815)	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

Figure 1

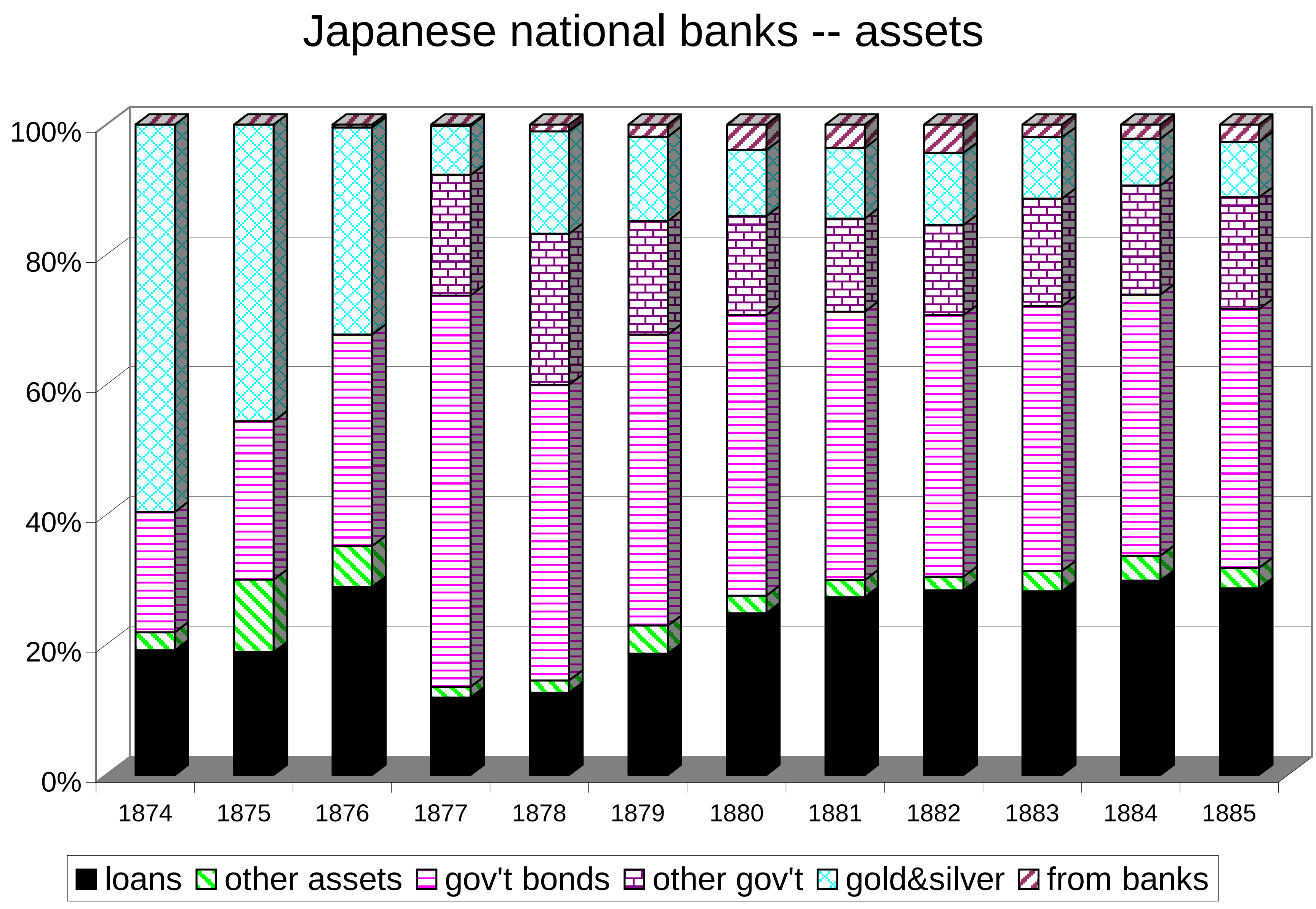

Japanese national banks -- assets
100%
80%
60%
40%
20%
0%
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
loans
other assets
gov't bonds
other gov't
gold&silver
from banks

Figure 2

United States National Banks -- assets

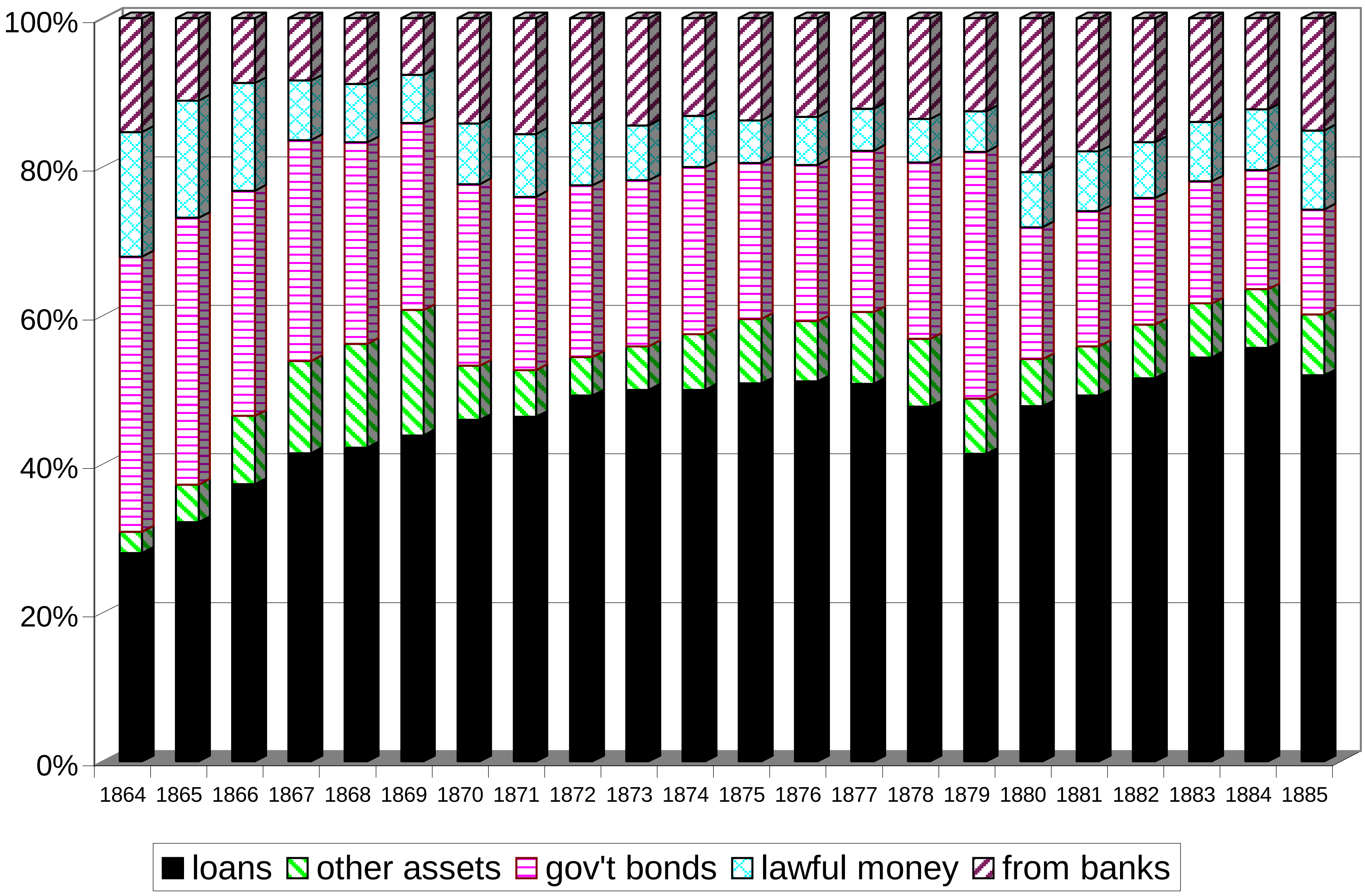


Figure 3

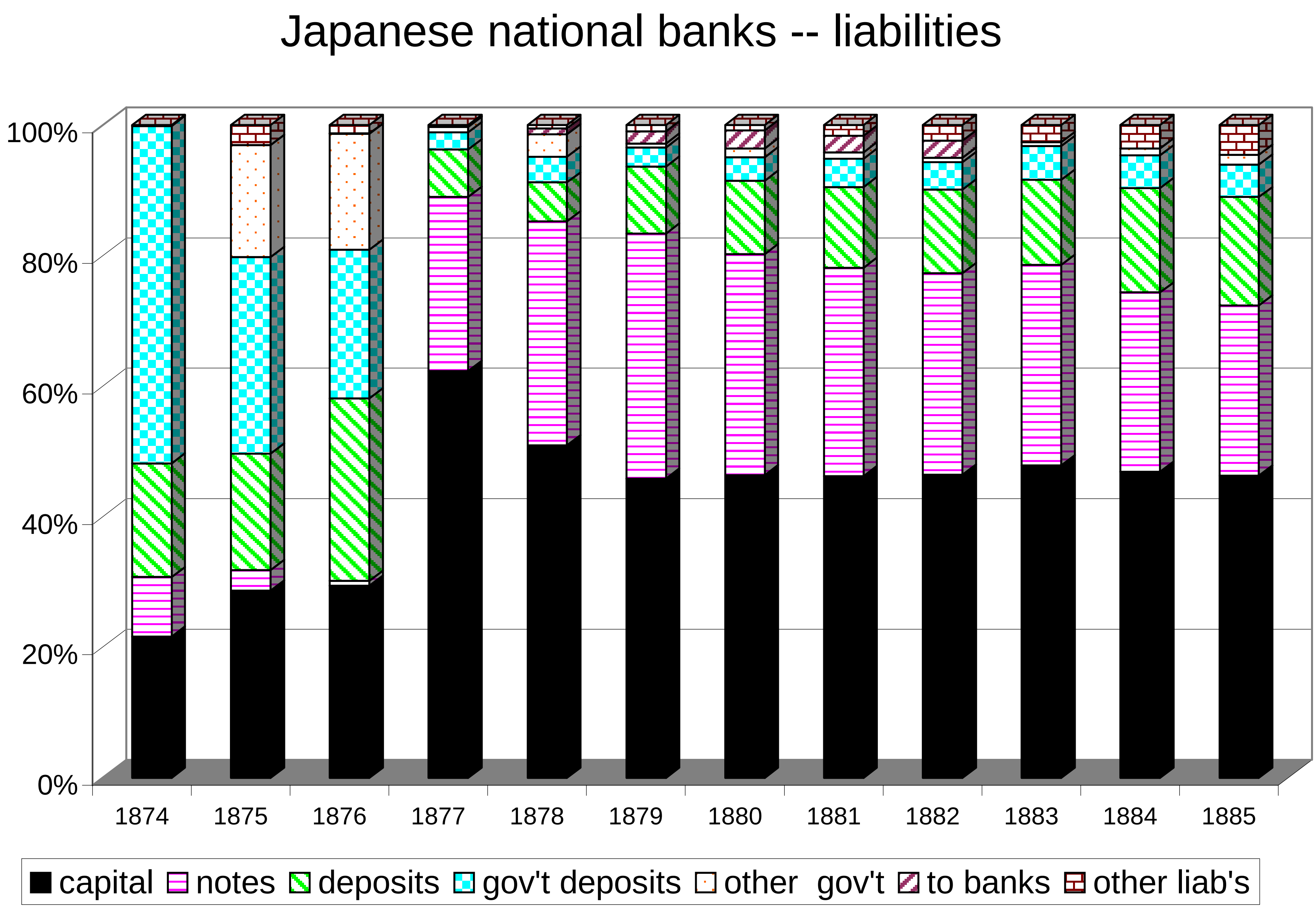
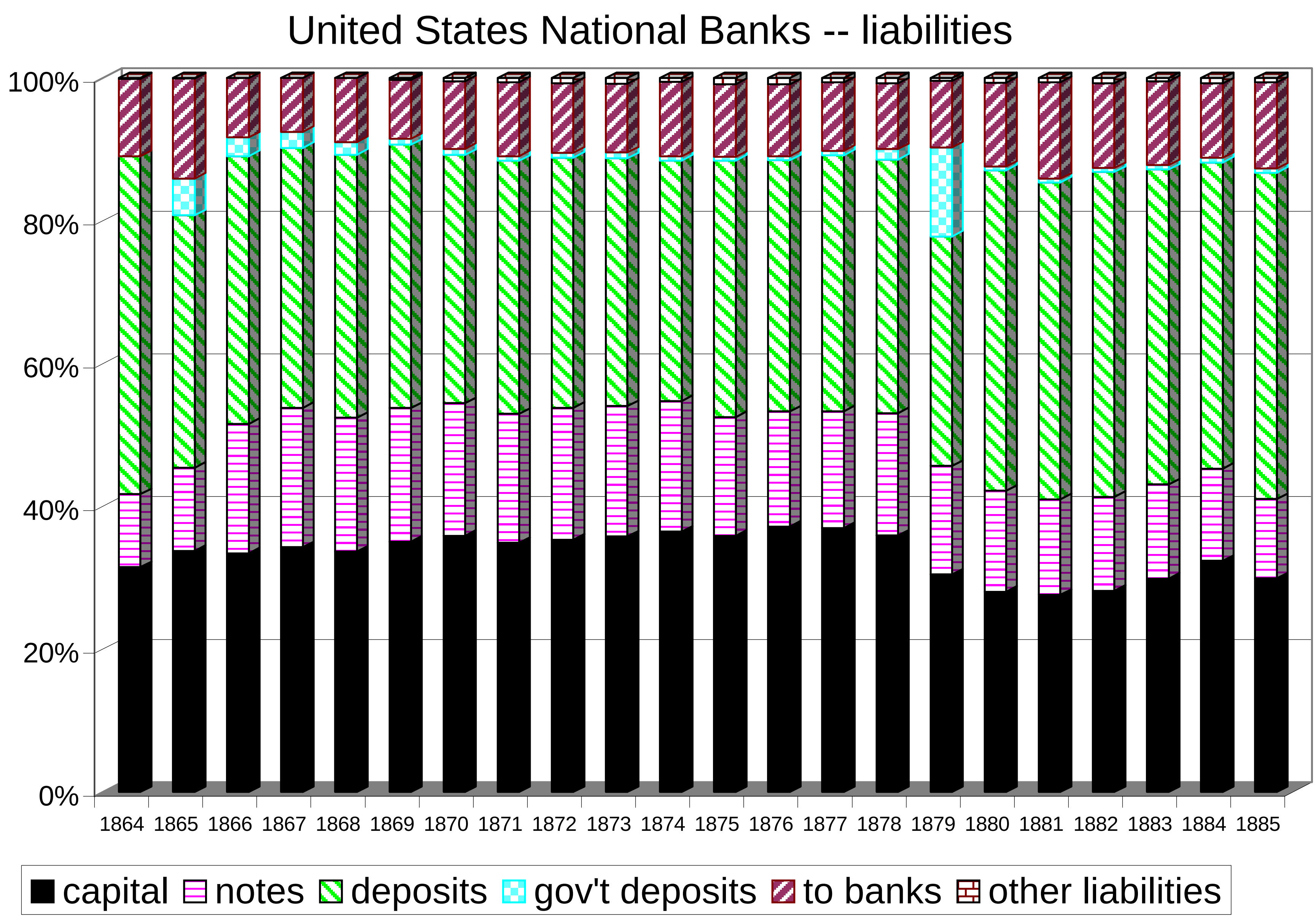

Japanese national banks -- liabilities
100%
80%
60%
40%
20%
0%
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
capital
notes
deposits
gov't deposits
other gov't
to banks
other liab's

Figure 4



United States National Banks -- liabilities
100%
80%
60%
40%
20%
0%
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
capital
notes
deposits
gov't deposits
to banks
other liabilities

Appendix
Allocation of call report categories for figures 2 and 4

Assets

Loans
- loans & discounts

Other assets
- bonds, securities, and etc
- real estate, etc
- current expenses
- premiums paid
- cash items
- three percent certificates
- U.S. certificates of deposit
- due from U.S. Treasury

Government bonds
- U.S. bonds & securities
- other items
- bonds for circulation
- bonds for deposits
- U.S. bonds on hand
- Other U.S. bonds & securities

Lawful money
- fractional currency
- specie and other lawful money
- specie
- legal tender notes

Due from banks
- due from national banks
- due from state banks
- due from national & other banks
- due from (redeeming) reserve banks
- due from other banks & bankers
- clearing-house loan certificates
- clearing-house exchanges
- bills of other banks

Liabilities and capital

Capital
- capital
- surplus fund
- undividend profits

Notes
- national bank circulation

Deposits
- individual deposits
- certified checks
- state bank circulation

Government deposits
- U.S. deposits
- deposits of U.S. disbursing agents

Due to banks
- due to national banks
- due to national and other banks
- due to state banks
- due to other banks and bankers
- clearinghouse loan certificates, net balance

Other liabilities
- dividends unpaid
- notes rediscounted
- bills payable
- other liabilities

Appendix
Allocation of balance sheet categories for figures 1 and 3

Assets

Loans
- Loans
- Overdue Loans
- Loans of Non-Performance
- Overdrafts
- Discounted Bills
- Bills for Collection

Other assets
- Fund for Exchange of Bank Notes to be withdrawn due to Decrease in Capital Stock ('81~)
- Damaged Bank Notes presented to Gov. for Exchange ('81~)
- Bank Notes to be exchanged
- Fund for Purchases ('83~)
- Documentary Bills
- Loan on Overseas Documentary Bills ('83~)
- Fund for Documentary Bills ('83~)
- Advance on Documentary Bills ('83~)
- Rejected Bills ('80~)
- Guaranteed Bills ('80~)
- Deposit ('80~)
- Mailed Money ('80~)
- Fund for Exchange of Copper Coins ('82~)
- Money for Bank Employee on Business Trip
- Exchange receivable
- Fund for Purchase of National Bonds ('83~)
- Fund for Purchase of special Paper & Stamps ('83~)
- Fund for Purchase of Gold & Silver Bullion ('83~)
- Branch Office Account ('81~)
- Adjustment Account
- Miscellaneous Account
- Founding Cost
- Shareholders' Account ('83~)

Liabiliites and net worth

Capital
- Capital Stock
- Reserved Capital
- Reserved Capital of Mexican Dollar Department
- Reserved Capital for Construction of New Office
- Reserved Capital for Specified Purposes
- Installments unpaid
- Bonus unpaid to Directors ('81~)
- Subscribed Money for Increase in Capital Stock ('80~)
- Temporary Contribution of Shareholders
- Profits for this half year ('80~)
- Balance brought forward from the previous half year ('80~)
- Reserve for Loan of Non-Performance for this half year ('80~)
- All profits brought forward from the previous half year ('80~)

Notes
- Bank Notes in Circulation ('80~ Circulated Amount of Bank Notes issued)

Deposits
- Fixed Deposit
- Current Deposit
- Deposit Certificate
- Deposit for Specified Purposes
- Deposit of Notice (~'83)
- Saving Deposit

Government deposits
- Gov.Deposit
- Gov.Deposit Certificate
- Gov. Current Deposit
- Bank Bill payable to Gov. (~'83) Remittance Drafts ('84~)
- Gov. Deposit of Notice (~'83)

Appendix
Allocation of balance sheet categories for figures 1 and 3

Assets

Installment ('83) Installment paid in part ('84~)
Mexican Dollars receivable(or in surplus)
Profit/Loss Account
Bank Tax
Gold & Silver receivable
Bank's Property ('80~ Property Account)
Pledge forfeited
Land, Building and Furniture
Advance for Lease of Building ('83~ Deposit for Office Land & Building)
Gold & Silver Bullion and Foreign Currencies (~'82) Gold & Silver Bullion Account ('83~)

<u>Government bonds</u>
National Bonds to secure Bank Notes (~'80)
Gov. Paper Currency to secure Bank Notes(~'79)
Other National Bonds (~'80) National Bonds ('81~)

<u>Other government assets</u>
Loan to Gov.
Overdraft to Gov.
Temporary Payment from Gov.Current Deposit ('82~)
Money paid for Gov.
Unpaid Subsidy
Bank of Japan account
Deposit of Fund for Redemption of Bank Notes ('83~)
Deposit for Redemption of Bank Notes ('83~)

<u>Gold & silver</u>
Gold & Silver Coins in Stock ('80~+B7Gold & Silver Account)

<u>Due from banks</u>
Credit to other Banks
Other Bank's Bank Notes('80~'82) Bank Notes ('83~)

Liabiliites and net worth

Gov. Notice Money ('81~'83)
Gov. Agency's Deposit
Gov. Fixed Deposit
Gov. Deposit for Specified Purposes (~'83)
Gov. Temporary Deposit
Gov. Various Deposits ('84~)

<u>Other government</u>
Borrowing from Gov.
Fund for Exchange of Old Currency & Damaged Paper Currency
Fund for Exchange of Damaged Paper Currency ('83~)
Fund for Exchange of Gold & Silver Bullion and Copper Coins ('83~)
Subscribed Money of Industrial Bond
Unpaid Tax('80□Unpaid Bank Tax)
Bank of Japan account
Treasury Deposits ('83~)
Deposit of Treasury Agency ('83~)
Miscellaneous ('83~)

<u>Due to banks</u>
Debt to other Banks

<u>Other liabilities</u>
Promissory Notes ('83~)
Bill for Collection
Bank Bills payable (~'83) Remittance Drafts ('84~)
Exchange payable
Notice Money (~'83)
Bill for Collection of Deposit
Rediscounted Bills ('83~)
Borrowing of Fund for Documentary Bills ('83~)
Fund for Documentary Bills for Direct Export ('83~)

Appendix
Allocation of balance sheet categories for figures 1 and 3

Assets	Liabiliites and net worth
Convertible Bank Notes('83)	Borrowing
Other Banks' Checks	Adjustment Account
	Mexican Dollars payable(or in deficit)
	Reserved Money for Commission Charge
	Miscellaneous Account
	Reserved Capital for the Fund for Redemption of Bank Notes ('84~)
	Money for Redemption of Bank Notes