# The Bank of Japan Network and Financial Market Integration: From the Establishment of the Bank of Japan to the Early 20th Century

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*One of the purposes cited for establishing the Bank of Japan (BOJ) was to "facilitate finance" by promoting the nationwide integration of the regional financial markets, which until that point had been divided and functioned independently.*

*Nonetheless, much remains unknown about Japanese financial transactions and the operations of the BOJ during the Meiji Period, and the role the BOJ played in the process of domestic financial market integration is still not sufficiently clear.*

*The purpose of this paper is to examine, using interest rate data and documentary evidence of financial transactions, the role played by the BOJ in the process of financial market integration in Meiji Period Japan.*

*The analysis finds that, from the perspective of reducing inter-regional interest rate differences, there was indeed significant progress toward financial market integration in the latter half of the 1890s. It also finds that the BOJ may have played a role in promoting financial market integration because the expansion of its networks (a correspondent network with private-sector banks and a branch office network) served to facilitate the movement of funds between regions through the funds transfer services it provided.*

Keywords: Financial market integration; Payments network; Bank of Japan; Correspondent network funds transfers; Movement of funds
JEL Classification: L14, N25

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## I. Introduction

It has been argued that one of the purposes for establishing the Bank of Japan (BOJ) was to promote the nationwide integration of the financial markets,[1] which until that point had been divided and functioned independently. Regarding this point, Yamamura (1970) provides a quantitative analysis of interest rates by prefecture between 1889 and 1925 and finds that there was significant progress in the integration of domestic Japanese financial markets up until about the end of the 19th century. In this regard, Tsurumi (1991) has performed a detailed documentary investigation mainly from the perspectives of payments and markets, and found that beginning around 1870 private financial institutions formed "spontaneous financial markets," but with the establishment of the BOJ in 1882, financial markets began to integrate and the BOJ began to replace private financial networks. Nonetheless, much remains unknown about Japanese financial transactions and the operations of the BOJ during the Meiji Period, and the role the BOJ played in the process of domestic financial market integration is not sufficiently clear.

The purpose of this paper is to work from both the quantitative approach of Yamamura (1970) and the documentary analysis of Tsurumi (1991) to analyze from new perspectives the role of the BOJ in the Meiji Period during the process of financial market integration.[2] More specifically, this paper analyzes the interest rate information that is commented upon in the descriptive sections of the Ministry of Finance's (MOF's) *Annual Report of the Banking Bureau of the Ministry of Finance* to expand the data analysis to the 1881–88 period, which was not covered in Yamamura (1970), and to examine from the perspectives of both the interest rate data and documentary evidence on financial transactions the role that the expanding BOJ network played in facilitating inter-regional payments and alleviating the regional disadvantage in funding. In doing this, I consider the BOJ network to consist of (1) the correspondent transactions between the BOJ and private-sector financial institutions, and (2) the branches and local offices of the the BOJ. The analysis organizes and exploits data on prefectural interest rates and BOJ correspondent transactions found in the *Annual Report of the Banking Bureau of the Ministry of Finance*, the *Imperial Statistics Yearbook* and the *Manuals and Rules of the Bank of Japan's Operations*. In addition, I examine recently released documents from the Bank of Japan Institute for Monetary and Economic Studies Archives and from the Mitsui Bunko archives.

The paper is structured as follows: Section II refers to prior research to discuss the integration of financial markets and the BOJ's involvement. Section III focuses on BOJ correspondent transactions and the establishment of local branches and representative offices in rural areas to examine the process by which the finance and payments network expanded in the 1870s and beyond. Section IV turns to local interest rate trends to examine the process by which domestic financial markets integrated under

1. Matsukata (1958).
2. It would presumably be useful for an analysis of the financial market integration process to investigate the commodities markets as well, because commodities distribution will provide important perspectives. However, this paper focuses only on the financial markets.

this financial and payments network. It also considers the role played by the BOJ network in domestic financial market integration from a variety of vantage points. Section V summarizes the findings and identifies issues for future research.

## II. Review of Prior Research on the Relationship between Financial Markets and the BOJ

Ishii (2001)[3] discusses the research into BOJ history done after World War II, when empirical studies of Japanese financial history and its relevance to Japanese financial history studies as a whole were attracting attention from scholars. According to Ishii, the analytical perspectives were, in order of appearance: (1) the shift from the institutional to the functional approach;[4] (2) the "history of industrial finance" approach;[5] (3) the financial markets and payment system approach;[6] and (4) the monetary policy history approach.[7] He notes the need for research using the comparative and correlative history approach in future research.

Focusing on the "financial markets and payment system approach" that is deeply related to the fundamental objective of this paper, I analyze the impact on financial markets of the expansion in the BOJ's networks in the form of its local representatives and correspondent transactions network. Many studies find the integration of financial markets[8] to have taken place between the 1890s and early 1900s. Some of the studies also point out the importance of focusing on the development of the BOJ's correspondent transaction network and branch and local office network when investigating financial market integration.

To identify the period of nationwide integration of financial markets, Yamamura (1970) focuses on the period between 1889 and 1925 and performs a quantitative analysis that uses deposit and lending interest rates by prefecture. He finds that the interest rate divergence among prefectures declined substantially by the end of the 19th century and concludes that during this time significant progress was made toward nationwide market integration.[9] Okada (1966) analyzes the relationship during the latter half of the Meiji Period about from 1890 to 1912 between lending and deposit rates in Tokyo, Osaka, and nationwide (in 20 major cities) and the BOJ official discount rate. He concludes that the "integrated financial markets' initial stage"

3. See Ishii (2001, p. 4).
4. The shift that appeared in the 1950s from analysis of the institutional aspects of the BOJ to its functional aspects of, for example, industrial finance (see Ishii [2001, pp. 4–5]).
5. Research from the 1960s to the mid-1970s that focused on the role of the BOJ in supplying funding to industries (see Ishii [2001, pp. 5–8]).
6. Research that began around the mid-1970s and focused on the importance of financial market functions (see Ishii [2001, pp. 8–10]).
7. Research into BOJ monetary policy that began to become more common in the 1980s (see Ishii [2001, pp. 10–12]).
8. The scope of the analysis differs across studies in terms of the financial markets. For example, Tsurumi (1991) discusses the "integration period" in terms of the lending market, deposit market, and call market, whereas Yamamura (1970) discusses it in terms of the lending market and deposit market only. In this paper, we analyze lending interest rates because data are available from a comparatively early period.
9. "The 1890s were the most important period in the process by which integrated capital markets emerged in Japan. Japan had extremely integrated, modern capital markets even prior to the end of the Russo-Japanese war" (Yamamura [1970, p. 67]).

was in the first decade of the 20th century, when there was nationwide integration of the official discount rate.[10] Okada (2001) focuses on the importance of the correspondent transaction network for private banks and concludes that "although in the initial stages, integrated, nationwide financial markets were formed . . . at the beginning of the 1900s."[11] Tsurumi (1991) indicates that "spontaneous private financial markets" existed prior to the establishment of the BOJ, but domestic Japanese financial markets were not linked to each other. Therefore when the BOJ was established these "spontaneous private financial markets" were transformed into a single market with the BOJ at its core.[12] Turning to the integration of financial markets, he finds that the divisions between the Tokyo and Osaka financial markets had more or less disappeared by the early 1890s, but "geographical separation" remained in other regions.[13] In addition, Tsurumi (1981) refers to the rapid decline in interest rates that took place between 1907 and 1912 as an "interest rate revolution," and notes that the previously wide differences in interest rate levels between different regions of the country were reduced and flattened at this time. He points out that a wide-area funding network began to form between the cities and the rural areas, and this network could be termed a "nationwide financial market."[14]

Several scholars, however, also express reservations about Meiji Period financial market integration. One example is Asakura (1988), who provides an overview of financial history since the Meiji Period. His study finds large differences in interest rates between the cities and the rural areas in the period between 1897 and 1906. The tendency was still for rates to be lower in the major cities and higher in rural cities,[15] although interest rate levels generally declined between 1907 and 1912. Teranishi (2003) finds a rapid decline in the coefficient of variation between prefectural minimum deposit interest rates between 1894 and 1898. However, while minimum rates converged around 1900, the differences in maximum deposit interest rates began to expand once again after a temporary convergence at around the same time and did not re-converge until the end of the 1930s. In light of the fact that minimum deposit interest rates were those charged by the major banks while maximum deposit interest rates were charged by the small and medium-sized banks without a nationwide network, Teranishi concludes, "While a nationwide market had formed among the major banks with nationwide funding networks by around 1900, in the rural areas financial markets retained their local character."[16] Okazaki (1993) uses data on the banking transactions of individual enterprises and people in

10. Okada (1966, p. 149).
11. Okada (2001, p. 68).
12. Tsurumi (1991, p. 152) says, "The Bank of Japan . . . served as the nationwide monetary regulator and therefore established a broad domestic correspondent transaction network. The BOJ's domestic funds transfer transactions were unique because of its position as a central bank. The domestic funds transfer market expanded and changed rapidly after the opening of ports, and the Bank came to serve literally as its backbone. The funds transfer clearinghouses in the three major cities had emerged as spontaneous organizations to provide adjustments on the back of the rapid expansion of domestic funds transfer transactions, but they were replaced by Bank of Japan correspondent transactions."
13. Tsurumi (1991, p. 239). See (Tsurumi [1991, p. 152]) for a description of "geographical separation." He does not provide a clear description of when the integration of financial markets was completed.
14. Tsurumi (1981, pp. 6–8).
15. Asakura (1988, p. 339).
16. Teranishi (2003, p. 106).

seven Kanto-area prefectures to find that there were separations of transactions in terms of both geographical location and the size of banks in 1917, indicating that little progress had been made in the integration of local financial markets.[17]

To sum up prior research from the viewpoint of the factors that promoted the integration of financial markets, there is no consensus opinion so far on the factors which promote integration of financial markets. While factors stressed as the causes of market integration differ across studies, most underscore the importance of the contributions made by both the expanding public and private sectors' financial and payments network to the integration of financial markets.[18]

Okada (2001) focuses on networks in the private sector and finds a clear correlation between the process by which the internal funds transfer arrangements developed into interbank transactions and the development of the branch bank system in the early Meiji Period. The development of the branch bank system,[19] the expansion of funds transfer services and the increase in correspondent transaction contracts, he argues, contributed significantly to the improvement and enhancement of banking services in the middle and late Meiji Period. He insists, "The development of funds transfer services, in other words, 'the expansion of the correspondent transaction network,' was expected to alleviate the unconnected and unintegrated financial structure of the early Meiji Period, link what had so far been isolated national banks and spur the development of financial markets. In other words, it was to 'facilitate finance.'"[20] On the other hand, the early Meiji[21] credit system was still "immature," and "functions providing funds transfer services developed them as internal services between the head and branch offices."[22] Because of this, private bank funds transfer services primarily utilized internal network (branches) rather than transactions with other banks. Tsurumi (1991) emphasizes the role played by the private correspondent transaction networks: "Between 1877 and 1880, major urban banks built nationwide branch and correspondent networks due to the impetus provided by two factors, the handling of government funds and the distribution of commodities. This movement, combined with efforts to create correspondent networks among major local banks in the trading centers for the distribution of old and new local specialty products, led to building the foundation for a nationwide correspondent network."[23] Teranishi (1982) highlights the major contributions that better transportation and communications networks made to the development of the private correspondent transaction networks.[24]

Turning to correspondent transactions between the BOJ and private financial institutions, Okada (2001) states, "It is impossible to be clear and specific about the role played by correspondent contracts with the Bank of Japan in achieving the initial

17. Okazaki (1993, pp. 306–307).
18. Bank of Japan (1982) looks at the expansion of the BOJ correspondent transaction network and the opening of BOJ branches since its establishment primarily in terms of the supply of funds through funds transfer services and bill discounting services.
19. For research into the significance of the development of the branch bank system, see Asai (1978).
20. Okada (2001, p. 68).
21. Okada (2001) does not provide a specific year.
22. Okada (2001, p. 4).
23. Tsurumi (1991, p. 107). With regard to "old and new local specialty products," Tsurumi defines silk thread, tea, and rice, and others; however, he does not provide a clear definition of which belongs to which.
24. See Teranishi (1982, pp. 214–219).

goal of facilitating finance at this stage (the early Meiji Period)."[25] In contrast, Tsurumi (1991) insists, "The Bank of Japan concentrated on building a correspondent transaction network that would tie together the national banks, which were spread out among the regions, and it did so in a way that did not compete with the national banks."[26] He recognizes that the BOJ did indeed enhance the correspondent network with private banks and at the same time points to the limits inherent in the correspondent network itself,[27] noting, "No matter how many domestic funds transfer systems operated by the BOJ were commonly used, they were not able to supplant the activities of local representatives."[28]

Tsurumi (1991) considers the role that the BOJ local representatives played in the integration of financial markets, taking the Osaka Branch as an example. Both the Head Office and the Osaka Branch discounted and purchased bills between Tokyo and Osaka, which Tsurumi says "virtually alleviated the remaining separations between the Tokyo and Osaka financial markets."[29] Imuta (1980) and Ishii (1980) discuss slightly later analytical periods and also emphasize the merits to local banks when there was a BOJ local representative in the same prefecture. For example, Imuta (1980) finds that the opening of a BOJ local representative in the same prefecture enabled the local banks to deal directly with the BOJ if they were allowed to make a contract with a BOJ local representative. This, he argues, facilitated the inflow and outflow of funds among regions reflecting the relative levels of local financing demand and also increased the convenience to local banks of accepting BOJ credits.[30] Ishii (1980) points out that whether there was a BOJ local representative in the same prefecture was a "decisive factor in having transactions with the Bank of Japan"[31] for comparatively small-scale local banks.

## III. The Financial and Payments Network and the Role of the BOJ

This section builds on the prior research overviewed in the previous section to examine the expansion of the financial and payments network around the time of the establishment of the BOJ, the core focus of this paper, and to observe the role that it played in the integration of financial markets.

25. Okada (2001, p. 25). The author goes on to say, "The impact [of the expansion of the BOJ correspondent network] on the formation and expansion of financial markets, together with 'joint transfers' [explained later], about which we still do not know much, remain issues that will require further verification" (Okada [2001, p. 68]).
26. Tsurumi (1991, p. 103).
27. Regarding the limits to the ineffectiveness of correspondent transactions in terms of enhancing financial market integration, Tsurumi (1991) says, "While the Bank of Japan correspondent network was effective in facilitating transfers between remote areas, banks located outside of Tokyo and Osaka were basically unable to avail themselves of the Bank of Japan's immediate bill re-discounting and current account overdraft services, creating the need to open Bank of Japan local representatives" (Tsurumi [1991, p. 152]).
28. Tsurumi (1991, p. 152).
29. Tsurumi (1991, pp. 238–239).
30. Imuta (1980, p. 52) says that "the switch from correspondent transactions to current account overdrafts that resulted from the opening of Bank of Japan local representatives in the same prefecture presumably increased the convenience with which Bank of Japan credits could be accepted." He also emphasizes the importance to private banks of transactions with the BOJ not only for funds transfers but also to take advantage of the convenience of current account overdrafts, and so on (see Imuta [1980, pp. 50–52]).
31. Ishii (1980, p. 136).

The years immediately before and after the establishment of the BOJ can be broken down into three periods from the perspective of the enhancement of the financial and payments network:

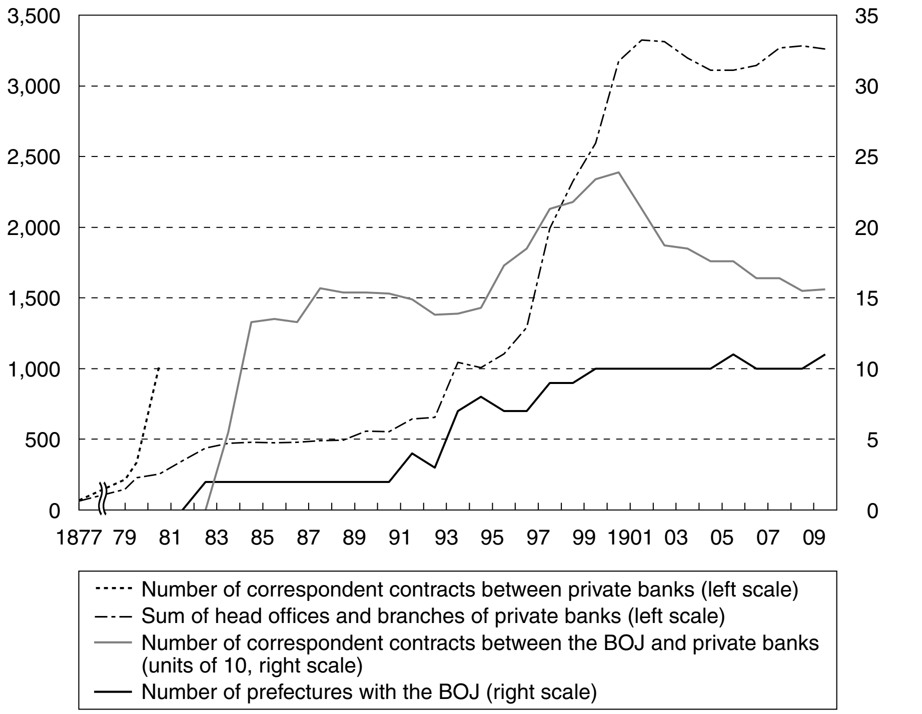
(1) 1870s: expansion of private financial institution networks

(2) 1880s: expansion of correspondent transactions between the BOJ and private financial institutions

(3) 1890s: expansion of the BOJ local representatives (branches, local offices, etc.)

Figure 1 illustrates trends for measurements of private financial institution and BOJ networks. According to the figure, there was a rapid increase in the number of bank head and branch offices in the late 1870s, the impetus for which came from the

**Figure 1 Number of Correspondent Contracts of the BOJ and Private Banks**




Note: The numbers of correspondent contracts between private banks are available only for 1877, 1879, and 1880. Numbers of banks represent total national banks and private banks.

Sources: The numbers of correspondent contracts between private banks come from the *Annual Report of the Banking Bureau of the Ministry of Finance*; the numbers of correspondent contracts between the BOJ and private banks come from the *Manuals and Rules of the Bank of Japan's Operations* Collection 1, Volume 2; the numbers of BOJ branches and offices come from *The Bank of Japan: The First Hundred Years: Materials*; and the numbers of banks come from the *Annual Report of the Banking Bureau of the Ministry of Finance* and *Japanese Monetary Statistics* (Goto [1970]).

1876 amendments to the National Banks Ordinance that led to the establishment of a series of national banks.[32] In addition to the head and branch office networks of national banks, and so on, there was a sharp rise in the number of correspondent transactions as represented by the funds transfer contract signed between these financial institutions. By 1880, the number of such contracts exceeded 1,000. When it was established in 1882, the BOJ had two offices: the Head Office in Tokyo and the Osaka Branch. It focused on correspondent transactions with private financial institutions in the building of its network, and by around 1890 had signed 150 correspondent transaction contracts with private financial institutions. During the next decade, the BOJ expanded its local branch and representative offices, and other offices, so that by 1900 it had 10 branches and local offices in seven prefectures.

I examine this history in more detail to confirm my hypothesis that the expansion of the BOJ network and consequent facilitation of remote payments alleviated the regional disadvantage in funding.

### A. 1870s: Expansion of Private Financial Institution Networks

The dozen or so years between the Meiji Restoration in 1868 and the establishment of the BOJ in 1882 are a time during which Japan conducted many experiments with the financial and payment systems, often referring to foreign and other systems as models. It was at this time that many of the core financial institutions were established, including the exchange firms,[33] the national banks, and the Yokohama Specie Bank,[34] as well as a number of private banks[35] and quasi-banks.[36] These new financial

32. National banks are based on national law and private banks on fact. The government issued the National Banks Ordinance in 1872 for the purpose of establishing a system to collect and convert the large volumes of currency that had been issued. The ordinance also aimed to reinforce financial functions, particularly the supply of funding for industrial and commercial development. Banks established under this ordinance are referred to as "national banks." Initially four national banks were established, and they issued currency that was convertible for gold. Amendments to the Ordinance in 1876, however, lifted the requirement of gold conversion, making it easier to establish national banks. The result was a sharp increase in the number of national banks and a corresponding increase in outstanding national bank notes (see Bank of Japan [1982, pp. 25–29]).
33. The exchange firms were established in 1869 at the request of the government. Their primary business was exchange services and their funding came from investments by wealthy merchants and loans from the government. Exchange firms were established in Tokyo, Osaka, Kyoto, Yokohama, Kobe, Niigata, Otsu, and Tsuruga. In addition to exchange services, they issued convertible notes and made loans. The lack of requirements to maintain reserves against specie issues resulted in rampant over-issuing, and when the government began to impose reserve ratio requirements, results deteriorated and the exchange firms were disbanded (see Tamaki [1994, pp. 18–20] and Bank of Japan [1982, pp. 12–16]). Ishii (2003) examines the commonly held view that domestic funds transfers dwindled after the disbanding of the exchange firms and finds that in fact the exchange merchants who participated in the establishment of exchange firms were at the same time providing domestic funds transfer services which were separate from those of the exchange firms.
34. The Yokohama Specie Bank was a foreign exchange bank that opened in 1880. The plan was for gold to be accumulated and specie banknotes issued by this bank, but this was not achieved (see Bank of Japan [1982, pp. 71–75]).
35. The first private bank to be established was the Mitsui Bank Private Company in 1876. According to Asakura (1988), many applications were filed during the early Meiji Period for the establishment of banks, but the government did not permit private banks to be established because of its intention to establish national banks. Private bank establishment did not, therefore, begin in earnest until 1880, after the number of national banks had reached a ceiling in 1879. During the 10 or so years beginning with 1877, private banks were established by the money changers of the Edo Period Shogunate and by relatively wealthy merchants and landlords. Most of the private banks were initially established in major cities (Tokyo, Osaka), Yokohama, and Kobe, where external trade was active or in areas such as Niigata, Miyagi, Shizuoka, Fukushima, and Nagano that produced commodities such as rice, tea, and silk thread. The highest capitalized private bank was Mitsui Bank at ¥2 million; and at the other end of the scale were numerous banks capitalized at around ¥10,000 (see Asakura [1988, pp. 51–52]).
36. "Quasi-banks" refers to institutions that were established spontaneously beginning in the early Meiji Period and provided funds transfer, exchange, lending, and deposit-taking services. Their average capital was extremely

institutions began to form networks to adjust their mutual funding surpluses and shortfalls. The networks connecting private-sector financial institutions to each other developed rapidly after the National Banks Ordinance was amended in 1876 and substantially relaxed the conditions for establishing national banks. In 1880, there were 150 private-sector banks (including national banks and private banks, excluding quasi-banks) with 254 head and branch offices and 1,027 correspondent contracts between private-sector banks.[37]

According to Tsurumi (1991), the postal funds transfer system that began in 1875 provided the first means of transferring funds between remote areas, but from around 1877 bank transfers became the primary means of doing so. Looking at the domestic funds transfer market in more detail, I find that between 1877 and 1880 branch office networks and correspondent networks were built between the major urban banks and the large regional banks, and these networks were used to provide funds transfer services.[38] In Tokyo, Osaka, and other centers, transfer clearinghouses began to be spontaneously organized by around 1879 and 1880, and served as a venue for trading transfers between banks.[39] However, Tokyo-Osaka transfers were the focus of the correspondent network, and only a few of the largest regional banks were able to participate in the network at all, so some regions remained at a disadvantage. To reduce this bias, there was a "systematic attempt to link national and private banks in different areas of the country."[40] The result was the "joint transfer" project[41] that tried to build a multilayer correspondent network led by the large regional banks. Under the project, the Kyushu Banking Federation did in fact create a "joint transfer" system in 1880. Taking advantage of the centralized payment functions required expanding the scope of participants from the regional to the national level, so in 1883 the Kyushu Banking Federation requested the BOJ, Tokyo Banking Association, and

small compared to the national and private banks. These firms "were established in areas where national and private banks did not adequately supply funds; only three were established in Tokyo and Osaka combined" (Tamaki [1994, pp. 41–42]). The Banking Ordinance that took effect in July 1893 forced bank-like companies to choose between going out of business, converting to banks, or merging, and effectively put an end to these firms. One can observe a corresponding doubling of the number of banks in 1893 (see Asakura [1988, pp. 18–20, p. 56]).

37. See Banking Division Report No. 1 (*First Annual Report of the Banking Bureau of the Ministry of Finance*), pp. 131–136; Banking Bureau Report No. 2 (*Second Annual Report of the Banking Bureau of the Ministry of Finance*), pp. 100–150.
38. See Tsurumi (1991, pp. 117–118).
39. Little is known about transfer clearinghouses because of the paucity of documents remaining, but it is assumed that the Osaka transfer clearinghouse provided "trading in Tokyo transfers" and "inter-bank funds lending/borrowing" (see Tsurumi [1991, pp. 130–143]). Tsurumi (1991) focuses on the fact that domestic transfers were "traded" rather than "exchanged" to hypothesize that while the offsetting of transfers was the primary function of transfer clearinghouses, they also served as a means of short-term investment (see Tsurumi [1991, p. 135]).
40. Tsurumi (1991, p. 107).
41. The Osaka Bank Report contains a description of this point that says, "Federation banks will have lead offices in Tokyo and Osaka and handling offices in Hakodate, Sendai, Niigata, Nagoya, Hiroshima, Nagasaki, and other locations, and other banks will connect with these handling offices according to their region" (Osaka Banking Association [1957, pp. 1192–1203]). The "joint transfer scheme" was proposed by Juhachi Bank (18th Bank), which was located in Nagasaki Prefecture, as a "policy for expanding transfers" at the time the Kyushu Banking Federation was established in 1880. What the "policy" envisioned was a nationwide, centralized transfer payments mechanism in which, for example, the credit/debit relationship existing between a bank in Hirado (in Nagasaki Prefecture) and a bank in Hachinohe (in Aomori Prefecture) as the result of a funds transfer would be settled by credit/debit transfers at lead offices in Osaka and Tokyo via upper-level branches of money center banks in Nagasaki and Sendai (see Tsurumi [1991, pp. 107–108]).

Osaka Banking Association to join it. The negotiations were unsuccessful,[42] but joint transfer schemes expanded to different parts of the country. In 1900, a mechanism was set up whereby the joint exchange groups scattered around Japan were joined together by private correspondent networks in Tokyo and Osaka.[43,44] As can be seen from this discussion, these networks were spontaneous, self-directed private-sector-level networks, and there were limits to the number of participants they could attract and the functions they could deliver.

### B. 1880s: Expansion of Correspondent Transactions between the BOJ and Private Financial Institutions

The momentum built for the establishment of the BOJ between 1880 and 1881. One of the chief purposes of its establishment was to provide Japan with a conversion system,[45] but proponents also emphasized its duties to smooth out the supply of funds, reduce interest rates, and create uniform, nationwide financial markets. The "Proposal to Establish the Bank of Japan" was submitted in 1882 in the name of Masayoshi Matsukata, the Minister of Finance. According to the proposal and supporting documentation entitled "Explanation of the Establishment of the Bank of Japan,"[46] there were five objectives related to the BOJ's establishment: (1) facilitation of finance; (2) enhancement of the funding of the financial institutions such as national banks; (3) reduction of interest rates; (4) treasury receipt and disbursement services; and (5) discounting of foreign bills. Of these purposes, the first three were related to the enhancement of domestic financial intermediation functions and funds payment functions, and the first is particularly relevant to my discussion of the BOJ network. According to the "Explanation of the Establishment of the Bank of Japan," the first purpose, "facilitation of finance," was based on a judgment that networks of

42. According to the Osaka Bank Report, the banking association replied, "This proposal needs to be considered as an exceedingly expedient means of linking finance throughout the country and expanding the collection and dispersion of prices. However, given the exceeding importance of this matter, the question of whether it should be expanded nationwide requires further deliberation." The BOJ responded, "This appears to be an exceedingly expedient proposal and should be given a response after full deliberation once we have finished the press of business for the amendment of the Banking Ordinance" (Osaka Banking Association [1957, pp. 1192–1203]). On this point, Tsurumi (1991) says that the opposition of the Tokyo and Osaka banking associations was because "the lead branches in eastern and western Japan would provide the payments axis and would profit from the accumulation of large volumes of transfer funds, but would also see a concentration of complex and time-consuming clerical work. What is more, the burdens for performing this work were considered to be natural 'obligations' that the branches undertook in return for this accumulation of funds, and the fees were kept low as a result." The BOJ's opposition stemmed from the fact that "it had a policy of building a nationwide correspondent network between the BOJ and major banks in the urban and rural areas and controlling these through its nationwide correspondent network created from the above private-sector transfer and payment schemes, i.e., the regional 'joint transfer' networks, which separately spread in the east and west and the private correspondent networks formed by major urban banks in Tokyo and Osaka" (Tsurumi [1991, pp. 113–114]).

43. See Tsurumi (1991, p. 113).

44. Okada (2001, p. 34) says that the joint transfer scheme "extended only to Tohoku, Hokkaido, Chugoku, Shikoku, and Kyushu regions and lacked the centers of Tokyo and Osaka."

45. The BOJ was not initially authorized to issue banknotes. The "Proposal to Establish the Bank of Japan" allowed it to consolidate convertible banknotes, but there was a wide spread between the value of silver coins and inconvertible banknotes and it was feared that if the BOJ were to issue notes convertible for specie, they would be immediately converted and not circulate. It was therefore decided that the policy would be for the BOJ to accumulate reserves of specie and that specific rules regarding the issuing of convertible banknotes would be formulated when issuing became possible (see Bank of Japan [1982, p. 280]).

46. Submitted to Prime Minister Sanetomi Sanjo, requesting "a speedy decision on the proposal to establish the BOJ and promulgation of the ordinance." (See Bank of Japan [1958a, p. 990, and 1982, p. 120].)

private-sector financial institutions alone were insufficient to adjust funding surpluses and shortfalls between regions.[47] It was therefore necessary for the central bank to sign correspondent contracts with national banks throughout the country to serve as the core for financial intermediation and to unify local financial markets into a single, nationwide market.[48] As can be seen from this point, the use of correspondent transactions to build a network between the BOJ and private-sector financial institutions was considered to be a powerful tool for the achievement of the initial objectives behind the BOJ's establishment.

The details of the correspondent system are observed in the boilerplate for a correspondent transaction[49] found in Collection 1, Volume 2 of the *Manuals and Rules of the Bank of Japan's Operations*. This contract was to be signed between the BOJ and private-sector financial institutions (excerpts below):

- The Bank of Japan engages in transfer transactions, commercial bill transactions, collection services and temporary lending services with banks with which it has signed correspondent contracts (Article 1).
- The Bank of Japan establishes ceiling amounts for loans to individual banks in order to engage in transfer transactions, commercial bill transactions, collection services and temporary lending services (Article 2).
- Individual banks shall deposit security with the Bank of Japan (Article 3).
- The value of the bills issued by individual banks through the Bank of Japan shall be no more than the individual bank's credit balance (Article 4).
- Funds transfers shall be payable on sight (Article 8).
- In the event that a bank requests a temporary loan, the Bank of Japan may, at its discretion, loan an amount up to one-third the lending ceiling (Article 10).
- Credit and debit accounts shall be settled on the last days of May and November (Article 12).

The BOJ required permission from the Minister of Finance prior to signing correspondent transactions with a private-sector financial institution.[50]

47. The "Explanation of the Establishment of the Bank of Japan" says, "Regarding the present status of national banks, they stand in geographical confrontation to one another and have little desire to communicate or coordinate. Indeed, they move in opposition to one another and check one another. Should one bank have a surplus, it is not able to use that surplus to cover shortfalls in another bank." (See Bank of Japan [1958a, p. 993].)
48. The "Explanation of the Establishment of the Bank of Japan" says, "The establishment of a central bank at this time would enable the sound national banks in various regions to be treated as the BOJ's local representatives, with 'correspondence' contracts signed so as to open the first nationwide channels for the circulation of money… A central bank would play a key role in providing financial channels, observing the degree of activity of nationwide commerce and money transfers so that money surplus in one region could be transferred to the financial needs of another region, and the money surplus of that region could be lent for the financial needs of the first region. This movement and circulation would be akin to the heart pumping blood through the arteries to the limbs to enable them to move. Doing this would, for the first time, enable the volume of money to be smoothed out so that the national finances would no longer suffer from clogging and blockage." (See Bank of Japan [1958a, p. 994].)
49. The material titled "The Bank of Japan and xxx Bank sign this contract in witness of a good-faith decision of both parties to enter into 'correspondence' transactions pursuant to Article 2 of the Bank of Japan Charter and with the permission of the Minister of Finance" (*Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 2, pp. 675–679).
50. *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 2, p. 615.

From the contract boilerplate described above, it can be seen that private-sector banks that signed correspondent transactions were able to use the BOJ to transfer funds and collect bills to and from remote locations and were also able to enjoy temporary loans from the BOJ provided that collateral had been put up.[51]

The BOJ began to sign correspondent transactions with private-sector banks in June 1883, opening up a means of transferring funds through the BOJ in addition to private payment systems. Kasuya (2000) comments that "going through the Bank of Japan helped to smooth out the movement of funds between remote locations."[52] On the other hand, the initiation of BOJ correspondent transactions also had the effect of reducing handling volumes of the transfer clearinghouses that served as the fund payment vehicles for the private sector.[53]

Collection 1, Volume 2 of the *Manuals and Rules of the Bank of Japan's Operations* contains a list[54] of private-sector banks' offices that had signed contracts with the BOJ for "correspondence" transactions together with the years in which correspondent contracts began and ended for each individual office. I calculate the number of correspondent contracts during the years 1883–1909 from this list (Figure 1). One can see that there was a sharp rise immediately after the BOJ began to sign correspondent contracts in June 1883,[55] with the number of contracts going from 55 in 1883 to 133 in 1884. Later, from the latter half of the 1880s to the early 1890s, the number hovered at around 150. Then when the Banking Ordinance[56] took effect in 1893, there was a rise in the number of private-sector banks that in turn fueled an increase in the number of correspondent contracts in the late 1890s. Contracts peaked at 239 in 1900.

However, as will be discussed below, the records of the times indicate that even in the late 1880s, when significant progress had been made in the erection of a correspondent network between the BOJ and private-sector financial institutions, there had still been little headway made on the nationwide integration of financial markets.

### C. 1890s: Expansion of the BOJ Local Representatives[57]

#### 1. Policies of the MOF and BOJ on the establishment of the BOJ local representatives

As discussed above, in the 1880s the emphasis was on the correspondent network aspect of the BOJ network, but in the 1890s the focus shifted to the expansion of

51. Correspondent contracts were signed on a branch office basis, not on a financial institution basis. For example, in 1883 Mitsui Bank had seven branch offices in Hachioji, Odawara, Nagoya, Aomori, and other locations that signed contracts with the BOJ's Head Office, while its Otsu office signed a contract with the BOJ's Osaka Branch. In other words, at this point in time, Mitsui Bank had eight correspondent contracts with the BOJ (see Bank of Japan [1982, p. 329]).
52. Kasuya (2000, p. 136).
53. "Bank of Japan correspondent transactions certainly had a negative impact on the activities of the transfer clearinghouses . . . The functions of the transfer clearinghouses were gradually swallowed up and replaced by the expansion of BOJ correspondent transfers" (Tsurumi [1991, p. 151]).
54. *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 2, pp. 695–709.
55. Banks (national banks, private banks) at the time did not have a large number of branch offices, and indeed some had no branch offices at all. Throughout the Meiji Period, the average was approximately one branch office per bank.
56. Article 1 of the Banking Ordinance provides this definition: "Any entity that engages in the discounting of securities, funds transfer services, or has both deposit-taking services and lending services as a business in publicly opened offices shall be deemed a bank regardless of the name under which said services are provided" (Meiji Period Fiscal History Editing Committee [1905, pp. 594–597]).
57. The BOJ's offices consist of the Head Office, branches, local offices, representative offices, and agencies. The Head Office, branches, and local offices were established and run by the BOJ. The representative offices and agencies are private-sector banks, which were commissioned to serve as the BOJ. I call offices located in local areas altogether "local representatives."

local services in the form of either a branch or local office. One of the factors behind this was presumably a change in the MOF policy regarding the BOJ network during this period of time.

The BOJ's network was seen as a means of "facilitating finance," but at the time of the BOJ's establishment the MOF was concerned that "the establishment of BOJ's local representatives might 'impair the operations of local ordinary banks,' and the BOJ should therefore 'initially' sign correspondent contracts rather than establishing branch offices."[58] This was presumably why the BOJ began by developing a nation-wide correspondent network as a channel for circulating funds.[59] However, the MOF's policy appears to have changed in the latter half of the 1880s. According to documents in the Bank of Japan Institute for Monetary and Economic Studies Archives, BOJ Governor Shigetoshi Yoshihara applied to Minister of Finance Masayoshi Matsukata to establish new branches on June 16, 1886.[60] The application begins by noting the need to closely monitor conditions in local areas: "There has been a significant increase in the Bank's operations with respect to its duties of handling treasury receipts and disbursements, issuing convertible banknotes and providing 'correspondence' services, and these services now extend throughout the country. I therefore believe it is necessary and urgent to more closely monitor local conditions and circumstances." Having done this, the application notes, "However, the Bank only has one branch office in Osaka and engages in 'correspondence' financial transactions with national and private banks in other parts of the country and must rely on their communications through correspondent transactions to confirm the ebbs and flows of local commerce and finance to report to the Bank of Japan's Head Office." In other words, correspondent transactions with private-sector financial institutions are, according to the application, insufficient for responding to changes in local financial and economic circumstances. It then argues that the establishment of "branch offices in local centers" would "facilitate finance and balance[61] interest rates."[62] Minister of Finance Matsukata approved the application on June 23,[63] which led to a series of branch and local offices being opened by the BOJ in the 1890s.[64]

58. Tsurumi (1991, p. 96). "Bank of Japan Ordinance" (Bill No. 330) first reading; see *Minutes of the Upper House*, Volume 12, p. 526.
59. "The Bank of Japan did not have a local representatives' network where there was fear of encroaching upon the base of operations for national banks. Instead, it signed correspondent contracts with powerful local banks, enabling it to overcome the isolation of the national banks and achieve nationwide control" (Tsurumi [1991, p. 114]).
60. "Application to the Minister of Finance to Increase Branches" (Bank of Japan Institute for Monetary and Economic Studies Archives, Document A3681).
61. When the BOJ was established, Matsukata commented in "Explanation of the Establishment of the Bank of Japan" on both the alleviation of regional disparities in interest rates and the alleviation of seasonal fluctuations, as the purpose of opening the BOJ's local representatives. However, "balance interest rates" is not clearly defined.
62. Other important purposes for local representatives were funds payments and settlement, treasury receipts, and disbursements and banknote issuing.
63. Matsukata wrote his response at the bottom of the BOJ's application form.
64. The first application was made on April 19, 1886, but due to inadequate content (lack of branch bylaws) the BOJ reapplied on June 16. The draft application of April 19 (the actual application is not in the BOJ archives, only the draft remains) lists eight centers for the establishment of branches or local offices: Nagasaki, Hakodate, Niigata, Kobe, Yokohama, Akamagaseki (now Shimonoseki), Nagoya, and Sendai. The application notes that they "will not be established all at the same time" but does not comment specifically on the order of establishment. The application of June 16 (which remains in the BOJ archives) contains Matsukata's signature and a note that says, "Quickly investigate the locations of branch offices and their operational bylaws and submit additionally."

On July 30, 1889, seven years after the drafting of "Explanation of the Establishment of the Bank of Japan" by Matsukata, a memorandum that was preserved by Shigeyoshi Matsuo,[65] then the head of the Receipts and Disbursements Bureau of the MOF, noted that the MOF acknowledged the need to expand the BOJ's local representatives network to facilitate finance. In other words, the primary duty of the BOJ was, according to the "central bank" heading in this memorandum, "to provide a means of funds transfers throughout the country and to facilitate market finance." This emphasis on promoting funds transfers[66] was more or less the same as Matsukata had argued for in the "Proposal to Establish the Bank of Japan," and the MOF also comments on the need to establish branches and agencies to achieve these objectives.[67]

Table 1 contains an overview of the establishment of branches and local offices between 1882 and 1909. The Osaka Branch was established in December 1882, virtually simultaneous with the opening of the Head Office, because of Osaka's position as a "center of commerce,"[68] but no other branches were established immediately thereafter. The first two local offices were in Gifu and Wakayama in 1891[69] and then three were established in Hokkaido in 1893. The second branch to be established was the Saibu (Kyushu) Branch,[70] which came in 1893, 10 years after the opening of the Osaka Branch. Branches and local offices were established at a steady pace thereafter. In 1909, there were branches and local offices in most of the major financial centers and Hokkaido: Osaka (1882), Saibu, Sapporo, Hakodate, and Nemuro (1893), Kyoto (1894), Nagoya and Otaru (1897), Fukushima (1899), Hiroshima (1905), and Kanazawa (1909).[71]

65. Shigeyoshi Matsuo papers; writer unknown; uses MOF stationery. The document explains the functions of the Yokohama Specie Bank and the BOJ and is entitled "Proposal for the Bank of Japan to Use the Specie Bank as a Liable Agency to Perform Foreign Exchange Services" (Bank of Japan [1958a, pp. 1441–1453]).
66. The other duties it lists are "rediscounting and purchasing of commercial bills and promissory bills so as to enhance the funding of banks, etc.," "regulating the ebbs and flows of finance and maintaining converged interest rates," "discounting foreign funds transfer bills so as to enhance the convenience of domestic and foreign trade," and "planning the recovery of specie."
67. At the bottom of the page on "providing a means of funds transfers throughout the country and facilitating market finance," the MOF notes, "The Bank of Japan is the central bank of Japan and at the center of monetary circulation in the Japanese financial economy. It should open a series of branches, local offices, representative offices, and agencies around the country so as to communicate and coordinate with financial companies around the country. It should provide a significant means of funds transfers so as to alleviate the congestion and clogging in finance by averaging the relative demand for money, for example, allowing a money surplus in one region to be transferred to serve the financial needs of another region, and a money surplus in the second region to be lent for the financial needs of the first region."
68. On October 20, 1882, Vice Governor Tetsunosuke Tomita, acting on behalf of the governor of the BOJ, submitted an "Application to Establish an Osaka Branch" to Minister of Finance Matsukata (Bank of Japan Institute for Monetary and Economic Studies Archives, Document A3681). His reasons for needing a branch in Osaka were as follows: "Osaka is the center of commerce and a major channel for finance in western Japan as Tokyo is in eastern Japan. Maintaining close contact with Osaka is a key point in the operations of the Bank, and it is considered urgent that the Bank of Japan establish a branch there." This application was approved on October 23.
69. These local offices were established as an emergency measure because Mitsui Bank, which had served as the local treasury agent, resigned that position. The local offices were closed after a short period of time.
70. The speech given by an executive director of the BOJ, Morito Yokura, at the opening of the Saibu Branch remains in the Bank of Japan Institute for Monetary and Economic Studies Archives ("Speech at the Opening of the Saibu Branch" Document A3681). He says, "[T]he Bank . . . has a responsibility to facilitate finance around Japan and enhance the convenience of private enterprise," but in spite of this, "the circumstances were not right and the times were not ripe" for the establishment of branch offices after the opening of the Osaka Branch, but "we have begun to reform the Bank's organization and reorganize its operations so that branches can gradually be established around the country."
71. When local private-sector banks requested the establishment of a BOJ branch or local office, it was common for them to emphasize the facilitation of funds transfers with other regions as a main motivation behind the request.

**Table 1 Opening of the BOJ's Branches and Local Offices**

| End of year | Total | Head office | Branches | Local offices | Places of the BOJ other than the Tokyo Head Office |
|---|---|---|---|---|---|
| 1882 | 2 | 1 | 1 | | Osaka Branch |
| 83 | 2 | 1 | 1 | | |
| 84 | 2 | 1 | 1 | | |
| 85 | 2 | 1 | 1 | | |
| 86 | 2 | 1 | 1 | | |
| 87 | 2 | 1 | 1 | | |
| 88 | 2 | 1 | 1 | | |
| 89 | 2 | 1 | 1 | | |
| 90 | 2 | 1 | 1 | | |
| 91 | 4 | 1 | 1 | 2 | Osaka Branch, Gifu Office, Wakayama Office |
| 92 | 3 | 1 | 1 | 1 | Osaka Branch, Wakayama Office |
| 93 | 7 | 1 | 2 | 4 | Osaka Branch, Saibu Branch, Sapporo Office, Hakodate Office, Nemuro Office, Wakayama Office |
| 94 | 8 | 1 | 2 | 5 | Osaka Branch, Saibu Branch, Sapporo Office, Hakodate Office, Nemuro Office, Kyoto Office, Wakayama Office |
| 95 | 6 | 1 | 3 | 2 | Osaka Branch, Saibu Branch, Hokkaido Branch, Sapporo Office, Kyoto Office |
| 96 | 6 | 1 | 3 | 2 | |
| 97 | 8 | 1 | 4 | 3 | Osaka Branch, Saibu Branch, Hokkaido Branch, Nagoya Branch, Sapporo Office, Kyoto Office, Otaru Office |
| 98 | 8 | 1 | 4 | 3 | |
| 99 | 9 | 1 | 4 | 4 | Osaka Branch, Saibu Branch, Hokkaido Branch, Nagoya Branch, Sapporo Office, Kyoto Office, Otaru Office, Fukushima Office |
| 1900 | 9 | 1 | 4 | 4 | |
| 01 | 9 | 1 | 4 | 4 | |
| 02 | 9 | 1 | 4 | 4 | |
| 03 | 9 | 1 | 4 | 4 | |
| 04 | 9 | 1 | 4 | 4 | |
| 05 | 10 | 1 | 4 | 5 | Osaka Branch, Saibu Branch, Hokkaido Branch, Nagoya Branch, Sapporo Office, Kyoto Office, Otaru Office, Fukushima Office, Hiroshima Office |
| 06 | 9 | 1 | 4 | 4 | Osaka Branch, Saibu Branch, Nagoya Branch, Otaru Branch, Kyoto Office, Hakodate Office, Fukushima Office, Hiroshima Office |
| 07 | 9 | 1 | 4 | 4 | |
| 08 | 9 | 1 | 4 | 4 | |
| 09 | 10 | 1 | 4 | 5 | Osaka Branch, Saibu Branch, Nagoya Branch, Otaru Branch, Kyoto Office, Hakodate Office, Fukushima Office, Hiroshima Office, Kanazawa Office |

Source: Bank of Japan (1986).

A slightly later example comes from the application for the establishment of a branch in Asahikawa, Hokkaido, which was filed on November 22, 1921 and submitted to Governor Junnosuke Inoue as a resolution of the 21st Hokkaido Bankers Conference. The application says that the establishment of a BOJ branch or local office in Asahikawa would "contribute to the steady growth of Hokkaido, the development and progress of industry and in particular the development of modern funds transfers . . . it is most urgent for funds transfers to be facilitated so as to promote the development of industry" (Bank of Japan Institute for Monetary and Economic Studies Archives, Document A3682).

Thus for the first decade after its establishment, the BOJ had only two branches, in Tokyo and Osaka, but by the early 1900s it had 10 offices in seven prefectures.

**2. Differences between the head office, branches, local offices, and representative offices in transactions with private-sector banks**

Three forms of local BOJ offices existed at the time: branches, local offices, and representative offices. Documentary evidence allows us to observe the role that they played in the integration of financial markets. From my perspective of considering how the facilitation of remote funds transfers and payments enabled the integration of financial markets, the most important point is whether these offices provided funds transfer services. My information comes from Collection 1, Volume 1 of *Manuals and Rules of the Bank of Japan's Operations*, which describes the operations of the Osaka Branch, Gifu Local Office, and Wakayama Local Office. According to the records, from the time the branch and local offices were established, they provided funds transfer services in addition to receipt and disbursement of banknotes, treasury receipt and disbursement services,[72] and government bond services.[73] In contrast, representative offices were head offices and branch offices of private-sector banks that were commissioned with a part of BOJ services. While much is unknown regarding the details of their duties and services, the Branch Representative Office Bylaws[74] of 1897 authorized them to perform "treasury services" (receipts, disbursement, and custody services for treasury funds under the supervision of the BOJ) and "government bond services."[75,76] One can also see that the work of representative offices focused on government bonds and treasury services[77] from the following documents: notifications of transfer and transfer

72. The BOJ began to handle treasury services on July 1, 1883. Prior to this time, services were provided by private-sector banks under commissions from the funds transfer authorities at the MOF. Treasury funds held by the banks were treated as government deposits that were used for the ordinary operations of the bank (i.e., invested), but after the BOJ was ordered to handle treasury receipts and deposits in April 1883, private-sector banks, as agencies of the BOJ, treated treasury funds taken in from the government and public as deposits from the BOJ and were prohibited from using these funds for their own operations. Article 3 of the Minister of Finance Order concerning the Handling of Treasury Monies says, "While the Bank of Japan commissions local national banks and private banks to act as agents in the receipt and payment of treasury monies, they must segregate these monies from other monies and are prohibited from pooling them for their own business." (See *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 4, p. 3.)

73. The Osaka Branch had a Documents Division, Treasury Division, Discounting Division, and Calculations Division. The Gifu local office and Wakayama local office had a Treasury Section, Government Treasury Section, Operations Section, and Documents Section.

74. *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 1, pp. 615–616.

75. There are also provisions covering representative offices in the Bank of Japan Internal Bylaws that took effect in 1899 (*Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 1, pp. 361–362), which state "The head office, branches or local offices may send staff to handle treasury services and public bond services" (Chapter 8, Part 3, "Representative Offices," Article 214), and "The expenses of representative offices shall be paid by the office with jurisdiction" (Chapter 8, Part 3, "Representative Offices," Article 217). There were also "agencies" that served as representatives of the BOJ. Like representative offices, agencies were private-sector banks commissioned to handle a part of the BOJ's services. According to the Internal Bylaws, "Agencies may handle all or a part of treasury services, public bond services, treasury deposit interest payment services, and bill and damaged convertible banknote exchange services" (Chapter 9, "Agencies" Article 218) and "Agencies shall be paid a set commission for their services and shall bear all costs associated therewith . . ." (Chapter 9, "Agencies" Article 220). Note that funds transfer services are not included. The list of agencies found on pp. 569–607 of Collection 1, Volume 4 of *Manuals and Rules of the Bank of Japan's Operations* contains Mitsui Bank, Kawasaki Bank, and Daiichi Kokuritsu Bank.

76. Some representative offices in Hokkaido were allowed to handle funds transfer services as an exception to the rule (*Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 1, p. 603, pp. 608–609, 615–617, p. 619).

77. When transferring services from one consignee to another or from the consignee to the BOJ, the consignee handed over government bond principal and interest deposits, government bond certificates and interest coupons,

items list issued in conjunction with a change of consignees for the clerical processing at the Fukuchiyama and Ayabe Representative Offices in 1905[78] and also from the "Representative Office Succession Procedures" that served as general rules and bylaws (1908).[79] This point is consistent with the fact that representative office transactions are not included in the "account for transfer bills handled by the Head Office, branch offices, and local offices" listed in the Bank of Japan Business Report[80] during the Meiji Period. I can therefore conclude that while the Head Office, branch offices, and local offices played a significant role in the integration of financial markets by providing funds transfer services, the role of the representative offices was limited.[81]

### 3. Example of private-sector bank handling: Mitsui Bank

Now I turn to documents from the private-sector banks to examine how funds transfers were accomplished using the BOJ's network. The Meiji Period books and ledgers[82] of Mitsui Bank contain evidence of funds transfers made between the bank's head and branch offices over the BOJ's network.[83] The ledgers for 1898 and 1899 (Tokyo Head Office Ledger of Accounts [1988, material number 143]; Osaka Branch Office Ledger of Accounts [1899, material number 144]; Kyoto Branch Office Ledger of Accounts [1899, material number 145]) contain many entries indicating that funds were circulating through BOJ telegraphic transfers.[84] In 1898, the Tokyo Head Office received funds[85] from Bakan (Shimonoseki), Osaka, Hakodate, and Otaru and made transfers to Osaka. In 1899, there are entries for transfers[86] to the Osaka Branch from Tokyo, Kyoto, and Bakan. The Kyoto Branch shows transfers from the Osaka Branch. In all cases, the transfers were accomplished by using the Head Office, branches, and local offices (network) of the BOJ. Mitsui Bank provides one example of a bank making use of the BOJ network at the end of the 1890s.[87]

ledgers, statement of total amount of income tax and official seals, and so on. Details are not known about how representative offices were selected or the time period for the contract, but documents in the Bank of Japan Institute for Monetary and Economic Studies Archives do contain a few examples of consignees being changed (Bank of Japan Institute for Monetary and Economic Studies Archives, Documents 7687, 7700).

78. "Notification of Procedures for the Transfer of Clerical Agency Services for the Fukuchiyama and Ayabe Representative Offices from Tanba Bank to Hyakusanju Bank (130th Bank)" (Bank of Japan Institute for Monetary and Economic Studies Archives, Document 7752).
79. *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 9, pp. 64–66.
80. Bank of Japan (1957, 1958b).
81. In light of the fact that the final treatment (final payment) for one-sided funds transfers was accomplished either by sending cash or by offsetting treasury funds, we should point out the need for analysis to focus on the important role played by treasury funds in rectifying the geographical bias in funding and bringing about converged national interest rates.
82. In the archives of Mitsui Bunko.
83. According to Mitsui Bunko (1980), the "Reform Order" (1886) was issued when Mitsui Bank resigned its handling of government funds. The order calls for the bank to "expand current account deposit-taking services. When deposits are in excess compared to the demand of funds in that office, allocate one-third to payment reserves and send the remaining two-thirds to the head or other branch offices" and "facilitate the circulation of private industrial funding with close coordination among head and branch offices." The presence of these items indicates that information on financial conditions in different regions was being exchanged and funds may have been moving between the branch and head offices based on that information (Mitsui Bunko [1980, pp. 344–345]).
84. Telegraphic transfers involve telegraphing the recipient office regarding the transfer of funds. Katano (1956, p. 457) explains that this method of transfer was "fast, simple and easy."
85. There are also entries for "cash transfers," which were relatively short (within a city) distance transfers, according to the documents, from Fukagawa to the Head Office in Tokyo.
86. There are also several "cash transfer" entries over a short distance that the documents indicate were from Kobe and Wakayama.
87. The Mitsui Bank books and ledgers are only available for a limited period. It was not possible to use ledgers from other periods of time to compare transfers.

## IV. The Role of the BOJ Network in the Integration of Financial Markets

This section examines how the financial and payments networks, discussed in the previous section, served to integrate domestic financial markets in the Meiji Period.

### A. The Integration of Domestic Financial Markets as Shown by Regional Interest Rates

#### 1. The integration of domestic financial markets as seen from the "financial status" section of the *Annual Report of the Banking Bureau of the Ministry of Finance*

The "financial status" section of the *Annual Report of the Banking Bureau of the Ministry of Finance* contains many entries indicating a lack of financial market integration up until the late 1880s. For example, the *10th Annual Report of the Banking Bureau of the Ministry of Finance* (1887) demonstrates that there were still large regional gaps in interest rates: "Tokyo and Osaka are the national centers of commerce and their interest rates contain sufficient information to infer general trends in nationwide finance. However, market conditions are independent for each region as are relative levels of financial demand, and there are therefore differences in interest rate levels."[88]

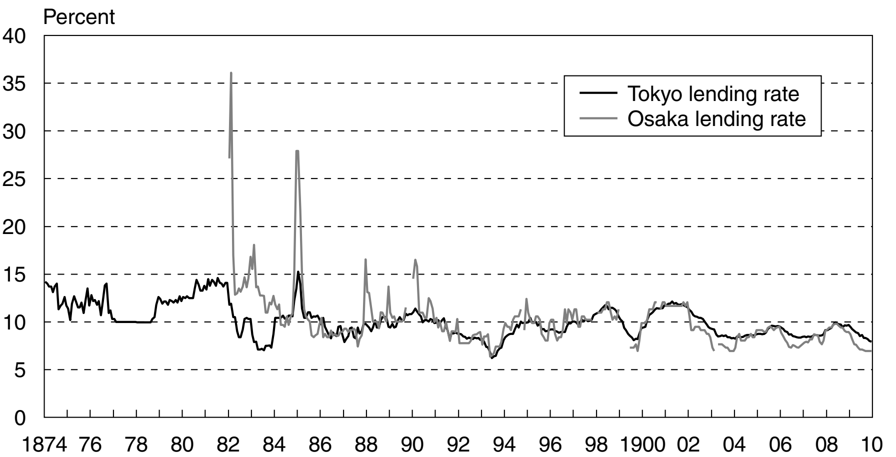
There were also many indications that interest rates were higher in rural regions than in the urban centers:[89] "The reason that regional interest rates tend to be extremely high is because regional commerce is generally small in scale and the relative accumulation or dispersion of money necessarily has an impact on finance" (1887);[90] "Traditionally, interest rates in Japan have been lower in the cities and higher in the rural areas" (1888);[91] and "Interest rates are always lower in the urban areas where there are highly developed financial institutions and higher in rural areas that lack these institutions; this is a generally accepted economic principle" (1889).[92]

However, even in Tokyo and Osaka, which had relatively low interest rates, interest rate levels differed until the end of the 1880s; Osaka's interest rates were higher than Tokyo's. For example: "Interest rates at Osaka branches are normally high in comparison with Tokyo" (1888)[93] and "Many years of observation indicate that interest rates at Osaka branches are always slightly higher than at Tokyo branches" (1889); see

88. *10th Annual Report of the Banking Bureau of the Ministry of Finance* (1887, pp. 45–46).
89. Okada (1966, pp. 115–149) says that the reason why interest rates were relatively high in outlying areas was that smaller banks had to compete with larger urban banks for deposits in local markets and therefore were required to pay high interest rates. These high deposit rates led to higher lending rates. In addition, borrowers were often ultra-small enterprises or small-scale merchants and the amounts borrowed were tiny in comparison to the loans made by major urban banks. Interest rates are higher on small-value loans because of the management costs and risks involved. One of the distinguishing features of regional finance was that conditions were vulnerable to trends in a single major industry, resulting in large seasonal sways in the demand for funds and financing.
90. *10th Annual Report of the Banking Bureau of the Ministry of Finance* (1887, pp. 46–47).
91. *11th Annual Report of the Banking Bureau of the Ministry of Finance* (1888, p. 59).
92. *12th Annual Report of the Banking Bureau of the Ministry of Finance* (1889, p. 61). As examples, interest rates in commercial areas such as Tokyo, Osaka, Kyoto, and Kanagawa were the lowest in the country.
93. *11th Annual Report of the Banking Bureau of the Ministry of Finance* (1888, p. 54).

Figures 2 and 3.[94,95] I should also note that around the middle of the 1890s, when the BOJ began to expand its regional network, the *Annual Report of the Banking Bureau of the Ministry of Finance* ceased to include comments on the regional gaps in interest rates and indeed contained entries that pointed to the gradual formation of integrated financial markets. The *18th Annual Report of the Banking Bureau of the Ministry of Finance* (1894) says, "While there were many events for the financial markets this year, the markets were fortunately able to overcome them without upheaval," and then goes on to note, "This is because financial institutions have come to be situated as intermediaries as credit transactions have developed. They are able to take measures as the situation demands so as to successfully coordinate their efforts."[96]

**Figure 2 Averages of Lending Rates (Tokyo/Osaka/Monthly)**

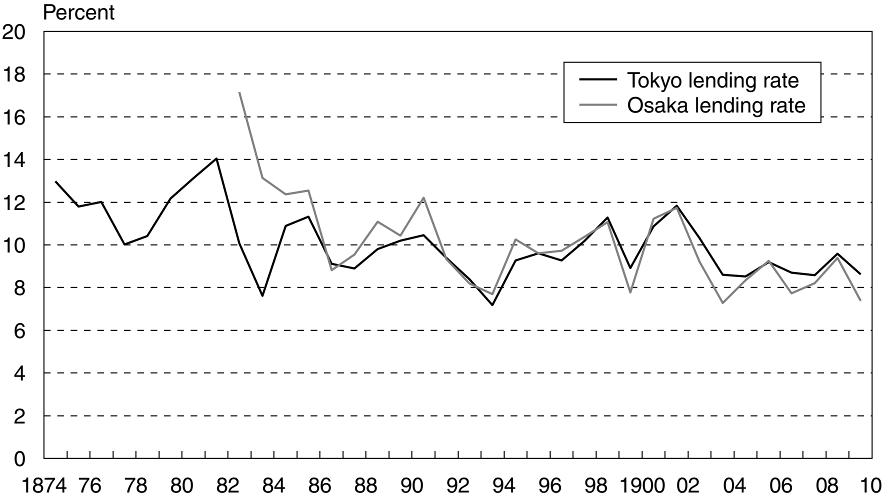



Note: Monthly averages in the tables were used. In cases where monthly averages were not available, averages were calculated by using the high and low of each month. Original rates are daily rates that have been converted into annual rates.

Source: Asahi Shimbun (1930), pp. 383–402.

94. *12th Annual Report of the Banking Bureau of the Ministry of Finance* (1889, p. 59).
95. Monthly lending rate data are available for Tokyo and Osaka in the "Collected Japanese Economic Statistics" (the source is "Financial Reference"). In the first half of the 1880s, there appears to have been little linkage between the interest rates in the two cities. In coefficients of correlation for Tokyo and Osaka lending rates during the period from the 1880s through 1909, a general rising trend can be observed, moving from 0.1 in the first half of the 1880s (1882–85) to 0.86 in the latter half of the 1880s (1886–90), 0.89 in the first half of the 1890s (1891–95), 0.90 in the latter half of the 1890s (1896–1900) and remaining high after the turn of the century (0.94 for the 1900–09 period). The spread between Tokyo and Osaka lending rates also contracted from 2.15 percentage points on average in 1880 to 0.23 percentage point in 1890. The increased linkage of interest rates and the contraction of the spread coincide with the startup of operations at the BOJ Head Office and Osaka Branch, and it is conceivable that the establishment of the BOJ's offices in the two centers of Tokyo and Osaka helped to alleviate the separation of the two markets. It is also conceivable that the startup of banknote issuing by the BOJ in 1885 played a role, as this allowed banknotes to be supplied more flexibly. For further information on the functions of the BOJ Osaka Branch at the time of its establishment, see Bank of Japan (1982, pp. 250–258) and Tsurumi (1991, pp. 222–287).
96. *18th Annual Report of the Banking Bureau of the Ministry of Finance* (1894, p. 43).

**Figure 3 Averages of Lending Rates (Tokyo/Osaka/Annual)**




Note: Monthly averages in the tables were used. In cases where monthly averages were not available, averages were calculated by using the high and low of each month. Original rates are daily rates that have been converted into annual rates.

Source: Asahi Shimbun (1930), pp.383–402.

The indication was that financial markets were functioning effectively at this time. Likewise, in the *21st Annual Report of the Banking Bureau of the Ministry of Finance* (1896) it says, "Interest rate trends in different regions are virtually the same,"[97] an indication that interest rates across regions had indeed become co-moved.

What can be observed from these comments is that little progress occurred regarding the nationwide integration of financial markets during the 1870s, when private-sector financial institution networks developed, and during the 1880s, when the BOJ was putting in place its correspondent networks with private-sector financial institutions. In contrast, there were indeed advances in integration in the 1890s, when the BOJ expanded its local representatives' network.[98]

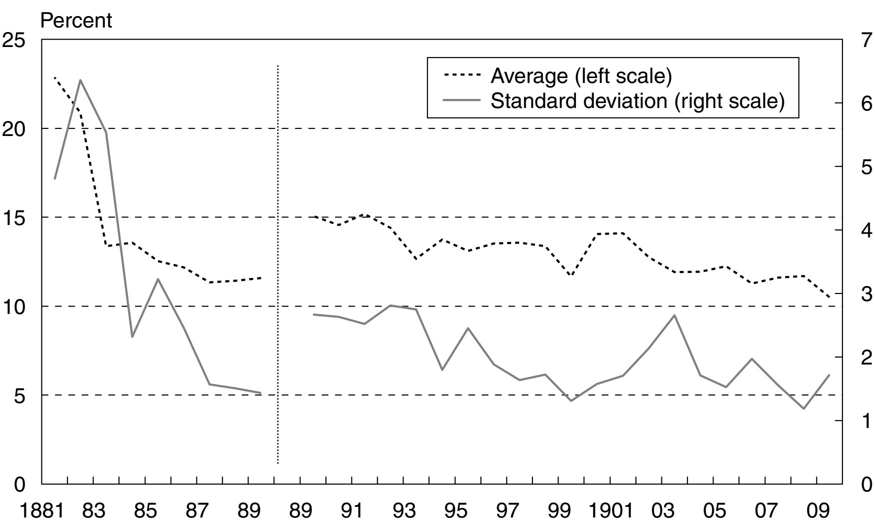
### 2. The integration of domestic financial markets as shown by prefectural interest rates

Section III examined the documentary evidence to see that the expansion of the BOJ's network facilitated funds transfers with remote areas. I will now consider the extent to which this function helped to achieve the "facilitation of finance" that was advocated as one of the objectives of establishing the BOJ in "Explanation of the Establishment of the Bank of Japan" with a quantitative analysis. More specifically, since it is natural to assume that the smoothing out of funds surpluses and shortfalls between regions

97. *21st Annual Report of the Banking Bureau of the Ministry of Finance* (1896, p. 29).
98. As will be discussed below, the standard deviation and coefficient of variation for prefectural interest rates was declining as early as 1884 (see Figures 4 and 5). Further study will be required to evaluate the degree of integration in the financial markets during this period.

could alleviate regional differences in interest rates, I can use standard deviation and coefficient of variation[99] to measure the differences in lending interest rates on a prefecture-by-prefecture basis during the period between the 1880s and the 1900s (Figures 4 and 5). For data, I will use the lending interest rates found in *Annual Report of the Banking Bureau of the Ministry of Finance* and *Collected Japanese Economic Statistics* (Asahi Shimbun [1930]).[100] Yamamura (1970) analyzes the convergence of interest rates between 1889 and 1925 using lending and deposit rates recorded in the *Annual Report of the Banking Bureau of the Ministry of Finance* as found in Bank of Japan (1957). Yamamura (1970) does not analyze the period prior to 1889 because the data in Bank of Japan (1957) begin with that year. This paper works from the foundation laid by Yamamura (1970), but also prepares new data based on the lending interest rate commentary in the *Annual Report of the Banking Bureau of the*

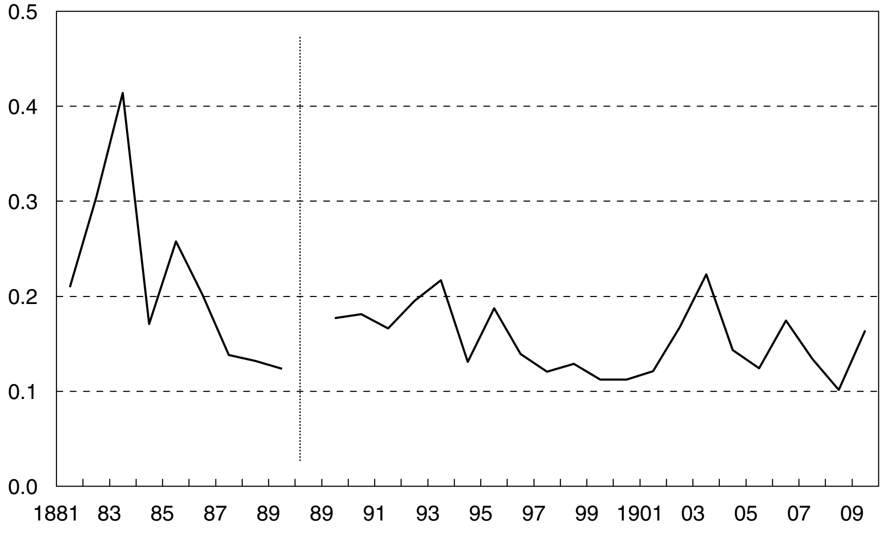
**Figure 4 Averages of Prefectural Interest Rates and Standard Deviation**




Sources: Data for 1881–89 (left side of the dotted line) are from *Annual Report of the Banking Bureau of the Ministry of Finance*, data for 1889–1909 (right side of the dotted line) are from *Collected Japanese Economic Statistics*.

99. Coefficient of variation is the standard deviation divided by the average.
100. The left-side interest rates (1881–89) shown with the dotted line in the figures come from *Annual Report of the Banking Bureau of the Ministry of Finance*; the right-side interest rates (1889–1909) from *Collected Japanese Economic Statistics*. I am unable to obtain information on interest rates from 1881 to 1883 from statistical documents, but the *Annual Report of the Banking Bureau of the Ministry of Finance* in its general commentary includes comments on economic and financial market trends as well as lending interest rates in several regions. I have therefore tabulated regional interest rates for the 1881–83 period from the general commentary in the 4th, 5th, and 6th *Annual Reports of the Banking Bureau of the Ministry of Finance*. More specifically, I used the regional lending interest rates mentioned in the general commentary to arrive at an arithmetical average of prefectural interest rates. This leads to a small sample for the 1881–83 period (26 in 1881, 19 in 1882, and 14 in 1883). For the 1884–89 period, I use the "Table of Regional Interest-Rate Highs and Lows," "Table of Regional Market Interest-Rate Highs and Lows," "Regional Interest-Rate Market," "Regional Table of Lending Interest-Rate Highs and Lows" and "Table of Lending Interest-Rate Highs and Lows" found in the general

**Figure 5 Coefficient of Variation of Prefectural Interest Rates**




Sources: Data for 1881–89 (left side of the dotted line) are from *Annual Report of the Banking Bureau of the Ministry of Finance*, data for 1889–1909 (right side of the dotted line) are from *Collected Japanese Economic Statistics*.

*Ministry of Finance* for the 1881–88 period, enabling us to analyze the financial market integration process from an earlier point in time.

The prefectural interest rate differences are greatest for the first half of the 1880s, right around the time that the BOJ was established. In 1882, the standard deviation was 6.36 and the coefficient of variation in 1883 was 0.41, the two peak figures for the 1881–1909 period that I analyzed. After those points in time, both the standard deviation and the coefficient of variation fell rapidly, reaching 2.31 and 0.17, respectively, in 1884. This downtrend continued until 1889.[101] What I do find is that both the standard deviation and the coefficient of variation were flat between 1889 and 1893, declined in 1894, rose in 1895, declined in 1896 and then gradually declined for the rest of the 1890s, although there were some variations within this. This decline in prefectural interest rate differences backs up what I have seen from the

commentary and elsewhere in the *Annual Report of the Banking Bureau of the Ministry of Finance*. For 1884 and 1885, only the high and low rates are available for the first and second halves, so we use the average of the high and low rates for the second half. For 1886, there are high and low interest rates for the July–December period; for 1887–89, there are monthly high and low rates, so I use an annual average adjusted for average monthly highs and arbitrage rates. The right side of the dotted line was created from the "Table of Prefectural Interest Rates" in *Collected Japanese Economic Statistics* for 1889 and beyond. The prefectural interest rates in this statistical document record only the December, or in some cases the June and the December, values; I use the December value. Samples differ from year to year, but are generally 42. We should note, however, that a prefecture's data may not be tabulated on a continual basis. The source for the "Table of Prefectural Interest Rates" in the *Collected Japanese Economic Statistics* is the *Imperial Statistics Yearbook* (Cabinet Statistics Bureau [various years]).

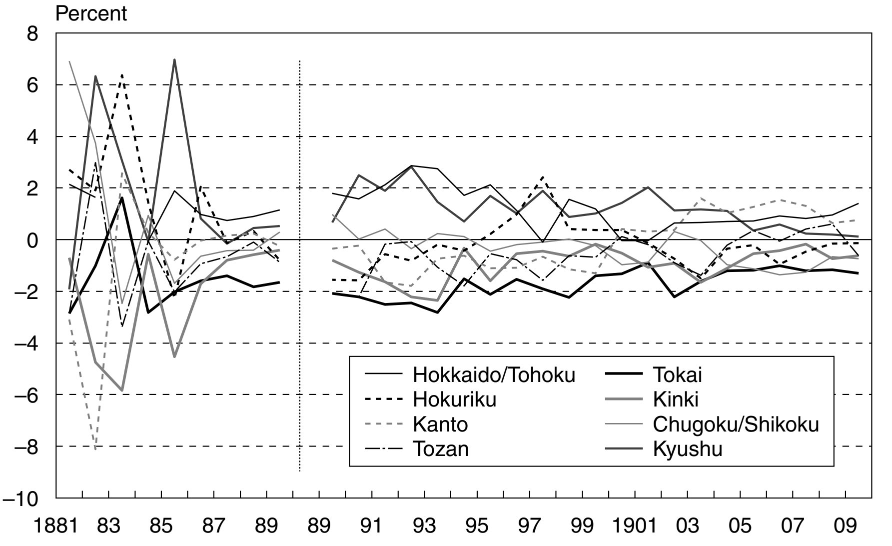
101. The year 1889 marks the borderline for my data, and as there are two data sources I can see the trend but will withhold interpretation for the level shift.

documentary evidence, that there was progress on the integration of financial markets in the latter half of the 1890s.

Figure 6 provides more detail on regional interest rate trends, and it can be seen that there were differences from region to region in the deviation from the national average. For example, at the end of the 1880s and in the first half of the 1890s, the Hokkaido, Tohoku, and Kyushu regions had interest rates higher than the national average, while the Tokai, Kinki, and Tozan (Yamanashi, Nagano, and Gifu) regions had lower ones. In the latter half of the 1890s, the deviation from the national average tended to contract for all regions and interest rate gaps moved in the direction of convergence. A certain degree of regional difference remained even after the 1890s.[102]

One can also observe the convergence of regional interest rates from the BOJ official discount rate.[103] For a while after its establishment, the BOJ did not have a uniform official discount rate for its offices. Different rates were applied in Tokyo and

**Figure 6 Regional Averages of Differences between Each Prefecture's Interest Rate and the National Average**



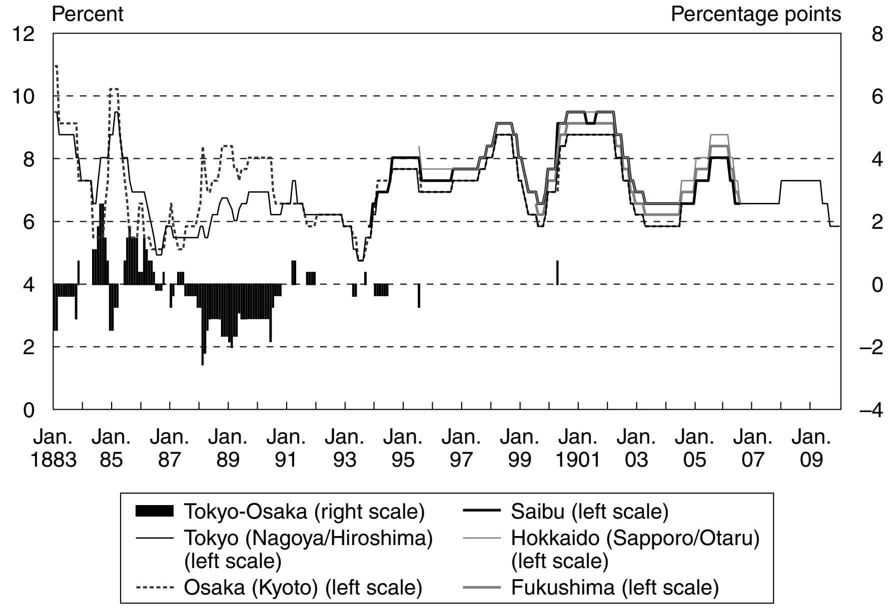

Note: Tozan consists of Yamanashi, Nagano, and Gifu Prefectures.

Sources: Data for 1881–89 (left side of the dotted line) are from *Annual Report of the Banking Bureau of the Ministry of Finance*, data for 1889–1909 (right side of the dotted line) are from the *Imperial Statistics Yearbook*.

102. This finding is consistent with Asakura (1988) and Okazaki (1993).
103. At the time it began operations in October 1882, the BOJ had two official discount rates: the local commercial bill discount rate and the public bond-secured lending rate. For the purposes of this paper, "official discount rate" refers to the "local commercial bill discount rate." In this context, "local" refers to a bill that was issued and paid in the same location. This was therefore the discount rate used by a BOJ office to discount a bill that had been issued within its territory. We should also note that the term "official discount rate" did not officially begin to be used by the BOJ until 1919 (see Bank of Japan [1982, p. 242]).

Osaka,[104] and also at other offices,[105] until 1906.[106] However, the divergence between the official discount rates at the Head Office and Osaka Branch (Figure 7) that were seen in the 1880s had virtually disappeared by the early 1890s.

**Figure 7 The BOJ's Official Discount Rates**




Source: Bank of Japan (1986).

104. Comments on the process of determining the BOJ official discount rate indicate that in the 1880s the Osaka Branch frequently used different "local commercial bill discount rates" and "public bond-secured lending rates" than the Head Office. The "Osaka Branch Temporary Bylaws" approved by the Minister of Finance in 1882 restricted the branch from setting its own rates without the permission of the Head Office, but that did not mean that Osaka merely followed the interest rates charged by the Head Office. Rather, it was able to set bill discount rates and lending rates that it determined to be appropriate and to request the Head Office to make changes. There is correspondence beginning about July 1884 between Osaka Branch Manager Yuzo Toyama and BOJ Governor Shigetoshi Yoshihara and Vice Governor Tetsunosuke Tomita from which can be gauged the process of changing the official discount rate to adjust for financial demand. Among the correspondence is a disagreement between the Head Office, which wanted Osaka to raise its official discount rate, and the Osaka Branch, which was reluctant to do so because it wanted to encourage use of its bill discounting services. While the Osaka Branch eventually acquiesced, it appears that it did not easily give in to instructions from the Head Office to change its official discount rate (see Bank of Japan [1982, pp. 250–258]).

105. The Head Office, Osaka Branch, Hokkaido Branch, Saibu Branch, and Fukushima Local Office all had their own official discount rates. The Sapporo Local Office and Otaru Local Office used the same rates as the Hokkaido Branch; the Kyoto Local Office used the same rates as the Osaka Branch; and the Nagoya Branch and Hiroshima Local Office the same rates as the Head Office (see Bank of Japan [1986, pp. 350–375]).

106. In 1906, the BOJ reformed its interest rate systems, including the application of a uniform official discount rate ("Bank of Japan Interest Rates System Reforms"; "Tokyo Bank Report"; "Conversations with Seishiro Kimura, Director, Operations Department, Bank of Japan; found in Tokyo Banking Association [1957, pp. 1096–1098]). The main points of these reforms were to (1) eliminate the transfer premium (charged to customers for transfers between offices); (2) unify interest rates (apply the same interest rates at all offices); and (3) achieve more effective usage of interest rates (use the official discount rate as the standard interest rate, but also establish a maximum interest rate depending upon the type of the loan and apply interest rates between the two). An analysis of the 1906 interest rate system reforms is beyond the scope of this paper.

## B. The Role Played by the BOJ Network

### 1. Existence of local representatives and its impact on local interest rates (statistical investigation)

In this subsection, I examine from a statistical perspective the contribution made by the expansion of the BOJ network to the contraction of interest rate differences.

My first step is to identify changes in interest rates before and after the opening of the BOJ offices. I did this by looking at the nine prefectures in which the BOJ opened offices between 1882 and 1909, examining two terms before and after the opening of the office and comparing how the prefectures' interest rates diverged from the national average. In eight of the prefectures in which the BOJ opened offices, excluding Osaka, there was a contraction in interest rate deviation after the office opened compared to before (Table 2).[107,108] Of this number, Fukuoka, Kyoto, Aichi, and Fukushima Prefectures showed a significant difference in deviation from the average before and after the opening of the office. I next compared the deviation from the national average interest rate for prefectures that had BOJ offices and prefectures that did not for the period after 1900, when the number of offices was more or less unchanged (Table 3). I found that over a 10-year period, in every year except 1909, the deviation from the average was lower for prefectures that had BOJ offices than for those that did not. I also confirmed a significant difference in the average of the differences for prefectures with and without BOJ offices for the years 1900, 1901, 1903, and 1905.

**Table 2 Differences between the Prefectural Rates Where the BOJ Was Present and the National Average**

Percentage points, absolute figures

| | Average of the whole period (1881–1909) | Before opening of the BOJ | After opening of the BOJ | Year the BOJ opened | Test for the average of differences of deviation before and after the opening of the BOJ ($t$-test) |
|---|---|---|---|---|---|
| Tokyo | 2.94 | 4.61 | 2.87 | 1882 | — |
| Osaka | 1.49 | 1.08 | 1.51 | 1882 | — |
| Fukuoka | 1.46 | 3.09 | 0.85 | 1893 | *** |
| Hokkaido | 1.43 | 1.65 | 1.36 | 1893 | |
| Kyoto | 0.76 | 1.41 | 0.48 | 1894 | ** |
| Aichi | 2.08 | 2.59 | 1.60 | 1897 | *** |
| Fukushima | 0.89 | 1.13 | 0.65 | 1899 | * |
| Hiroshima | 1.07 | 1.15 | 0.77 | 1905 | |
| Ishikawa | 1.62 | 1.63 | 1.52 | 1909 | — |

Note: Regarding the test, *** stands for 1 percent significance, ** stands for 5 percent significance, * stands for 10 percent significance.
Since data of sufficient duration are not available for Tokyo, Osaka, and Ishikawa, the $t$-test was not conducted for these three prefectures.

Sources: Data for 1881–89 are from *Annual Report of the Banking Bureau of the Ministry of Finance*, data for 1889–1909 are from the *Imperial Statistics Yearbook*.

107. We should note that interest rate data is only available for one year prior to the opening of the Tokyo and Osaka Branches and only one year after the opening of the Kanazawa Local Office (Ishikawa Prefecture). I have also excluded the Gifu Local Office and Wakayama Local Office, because they did not remain open.

108. As we will see in the panel analysis that follows, we have reservations about what can be interpreted from these data, as the deviation between prefectural and national average interest rates was already in an overall contraction trend during this period.

**Table 3 Differences between Prefectural Rates and the National Average during 1900–09**

| | Average of differences between prefectural rates and the national average | Average of differences between rates of prefectures with the BOJ presence and the national average (A) | Average of differences between rates of prefectures without the BOJ presence and the national average (B) | Test for differences of averages of deviation of (A) and (B) ($t$-test) |
|---|---|---|---|---|
| 1900 | 1.218 | 0.622 | 1.323 | ** |
| 01 | 1.333 | 0.695 | 1.444 | ** |
| 02 | 1.510 | 0.806 | 1.615 | |
| 03 | 1.996 | 1.212 | 2.133 | * |
| 04 | 1.380 | 0.795 | 1.482 | |
| 05 | 1.170 | 0.784 | 1.249 | ** |
| 06 | 1.507 | 1.075 | 1.595 | |
| 07 | 1.206 | 1.163 | 1.215 | |
| 08 | 0.940 | 0.913 | 0.946 | |
| 09 | 1.442 | 1.463 | 1.437 | |

Note: For the $t$-test, ** stands for 5 percent significance, and * stands for 10 percent significance.

The next step is to perform a panel estimation for the period 1889–1909, the period for which interest rate data could be obtained from a single source. For this estimation, I use the interest rates differences from a national average for 47 prefectures as the dependent variable. Independent variables are the branch dummy that equals one, where a BOJ office exists, which is set based on office openings as shown in Table 1 and the number of correspondent contracts between private-sector banks and the BOJ. (The results are in Table 4.) A one-year lag for "whether a BOJ office exists or not" is used because new offices were not necessarily opened at the beginning of the year and the interest rate convergence effects were assumed to be more prominent in the year after the office was opened. Regarding coefficient signs, it is expected that they will be negative because interest rate deviation should be smaller the greater the number of BOJ offices and correspondent banks. The results of the estimate with a single regression indicate that both the coefficients of the branch dummy and the number of correspondent contracts between private-sector banks and the BOJ had negative signs and were significant at the 5 percent level. Even the estimation using two independent variables found negative signs for the coefficients of the branch dummy and the number of correspondent contracts between private-sector banks and the BOJ are significant at the 5 percent level. I further refined this estimation by adding a trend term (coefficient sign assumed to be negative) to take into account the convergence of interest rates over time due to enhancements in the transportation and communications networks during this period. The estimations indicate that the coefficients of the branch dummy, the number of private-sector correspondent banks, and the trend term are significant at the 5 percent level, 1 percent level, and 1 percent level, respectively.

These results indicate that the local offices of the BOJ and the BOJ correspondent network with private-sector banks can be assumed to have contributed to the convergence of local interest rates.

**Table 4 Panel Analysis of Differences between Each Prefecture's Lending Interest Rate and the National Average, Existence of a BOJ Branch, and Correspondent Relationships between the BOJ and Private Banks**

Equations (1) $S_{it} = \alpha_i + \beta X_{it-1} + u_{it}$

(2) $S_{it} = \alpha_i + \gamma Y_{it} + u_{it}$

(3) $S_{it} = \alpha_i + \beta X_{it-1} + \gamma Y_{it} + \delta T_{it} + u_{it}$

$S_{it}$ = deviation of lending interest rates of each prefecture (differences between each prefecture's rate and the national average; annual, absolute figure)

$X_{it}$ = branch dummy which equals one, where a BOJ office exists

$Y_{it}$ = the number of correspondent relationships between the BOJ and private banks

$T_{it}$ = trend

Estimates period 1889–1909

The results of the panel analysis for the 47 prefectures (fixed-effect model)

| | $\beta$ (BOJ branch dummy) | $\gamma$ (the number of correspondent relationships between the BOJ and the private banks) | $\delta$ (trend) | $\bar{R}^2$ | DW | Number of samples |
|---|---|---|---|---|---|---|
| (1) | –0.498 (–2.143)** | — | — | 0.358 | 1.264 | 912 |
| (2) | — | –0.044 (–2.289)** | — | 0.307 | 1.254 | 958 |
| (3) | –0.563 (–2.391)** | –0.062 (–3.343)*** | –0.038 (–5.954)*** | 0.283 | 1.304 | 912 |

Notes: Figures in parentheses are *t*-values. *** and ** indicate that estimations are significant at the 1 percent and the 5 percent level, respectively.

Test: *p*-values regarding null hypothesis "acceptance of random effect model" are 0.151 for equation (1), 0.010 for equation (2), and 0.013 for equation (3), respectively. Therefore, the fixed-effect model was adopted.

Sources: Interest rates of each prefecture are from the *Imperial Statistics Yearbook*; the number of the BOJ's branches is from Bank of Japan (1986); and the number of the correspondent relationships between the BOJ and private banks is based on *Manuals and Rules of the Bank of Japan's Operations*, Collection 1, Volume 2.

## 2. Functions of local representatives: The Saibu Branch

To this point, I have observed the role over time played by the private-sector bank network, correspondent network between the BOJ and private-sector banks, and BOJ branches and local offices network. Comparing these developments against trends in prefectural interest rates indicates that the creation of the BOJ network, and particularly the branch and local office network, played a significant role in the integration of financial markets through the funds transfer services provided. Here I take an individual case study to examine from the perspectives of funds transfer services and interest rates the role played by a local BOJ office in the integration of financial markets.[109] Specifically, I examine the functions of the BOJ Saibu Branch.

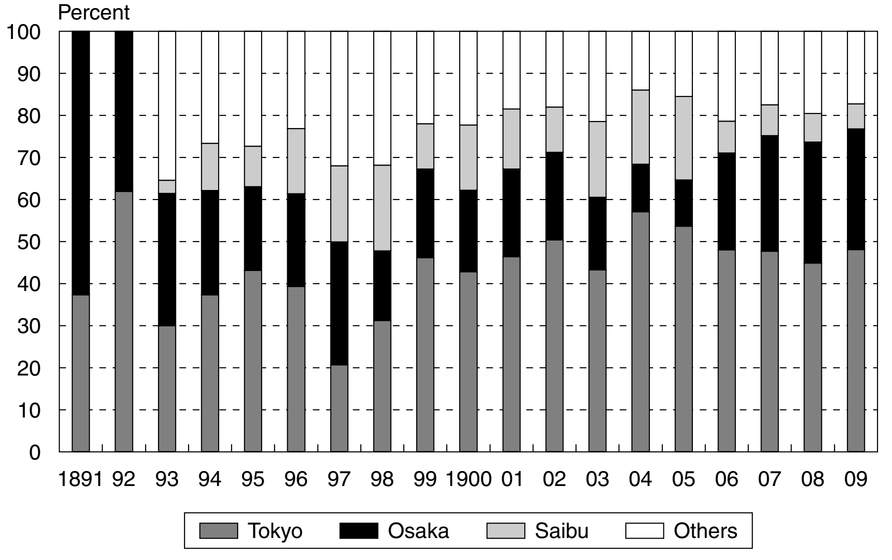
109. For BOJ funds transfers, Tsurumi (1991) uses the period from the latter half of 1883 to the first half of 1888, during which time the activities of the transfer clearinghouses declined. His analysis distinguishes between government transfers and civil transfers for transfers between BOJ offices and between the BOJ and private-sector banks (see Tsurumi [1991, pp. 144–151]).

The Saibu Branch[110] was opened in 1893, making it the BOJ's second branch after Osaka. It was initially established in Akamagaseki (now Shimonoseki) in Yamaguchi Prefecture, but in 1898 was moved to Moji (now Kitakyushu) in Fukuoka Prefecture. The major industries in this region were coal mining and rice production, and this region was known for its active financial dealings with Osaka, which served as the trade center of such industries (Figure 8).[111]

The financial situation in this region prior to the opening of the Saibu Branch is described as "about ¥10 million a year in rice, coal and other industrial sales outside of Kyushu with very few commodities sold other than these. In other words, the funds transfers were always one-sided. Even offsetting payments to the treasury in Kyushu, it was still necessary to send ¥4–5 million in cash every year from Osaka. Therefore, interest rates were ¥0.02–0.03 per day higher than Osaka."[112] The transfer of funds was not sufficient because transfers of cash were both onerous and risky, and it can be assumed that there was insufficient interest rate arbitrage with other regions. By contrast, after the opening of the Saibu Branch, funds transfers could be made over the BOJ network, which presumably facilitated the transfer of funds.

The details of funds transfers can be found in the Bank of Japan Business Report[113] (Table 5). While there were changes over time in the direction of funds inflows and

**Figure 8 Ratio of Transaction Volumes of Money Transfer of the BOJ**




Source: Bank of Japan Business Report (various issues).

110. The territory of the Saibu Branch at its opening was the Chugoku region of west of Hiroshima and the entire Kyushu region. See Mukai (2000, p. 990).
111. Tokyo and Osaka account for the large majority of the total funds transfers of all BOJ offices.
112. Takahashi (1976, p. 35). Korekiyo Takahashi was the first manager of the Saibu Branch.
113. In Bank of Japan (1957, 1958b). The first Bank of Japan Business Report was issued in 1888.

**Table 5 Transaction Volume of Money Transfers of the Saibu Branch**

¥ thousands

| | | 1893 | 94 | 95 | 96 | 97 | 98 | 99 | 1900 | 01 | 02 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Inflow | Total | 406 | 2,378 | 2,095 | 2,618 | 2,716 | 2,238 | 4,441 | 6,180 | 7,261 | 14,906 |
| | Tokyo | 158 | 1,073 | 780 | 917 | 884 | 689 | 1,636 | 3,002 | 4,122 | 9,612 |
| | Osaka | 248 | 1,305 | 1,315 | 1,701 | 1,813 | 1,533 | 2,727 | 3,046 | 3,060 | 5,234 |
| | Others | 0 | 0 | 0 | 0 | 19 | 16 | 78 | 132 | 79 | 60 |
| Outflow | Total | 72 | 965 | 1,018 | 2,997 | 5,468 | 7,434 | 5,880 | 12,375 | 13,790 | 11,591 |
| | Tokyo | 0 | 53 | 51 | 182 | 679 | 709 | 1,087 | 3,133 | 3,755 | 2,371 |
| | Osaka | 72 | 909 | 956 | 2,801 | 4,736 | 6,612 | 4,709 | 9,023 | 9,756 | 9,009 |
| | Others | 0 | 2 | 11 | 13 | 53 | 113 | 83 | 219 | 279 | 211 |
| Net balance (inflow – outflow) | Total | 334 | 1,413 | 1,078 | –378 | –2,752 | –5,196 | –1,439 | –6,195 | –6,529 | 3,315 |
| | Tokyo | 158 | 1,020 | 729 | 735 | 205 | –20 | 549 | –131 | 367 | 7,241 |
| | Osaka | 176 | 396 | 359 | –1,100 | –2,923 | –5,079 | –1,982 | –5,977 | –6,696 | –3,775 |
| | Others | 0 | –2 | –11 | –13 | –34 | –97 | –6 | –86 | –200 | –151 |

Source: Bank of Japan Business Report (various issues).

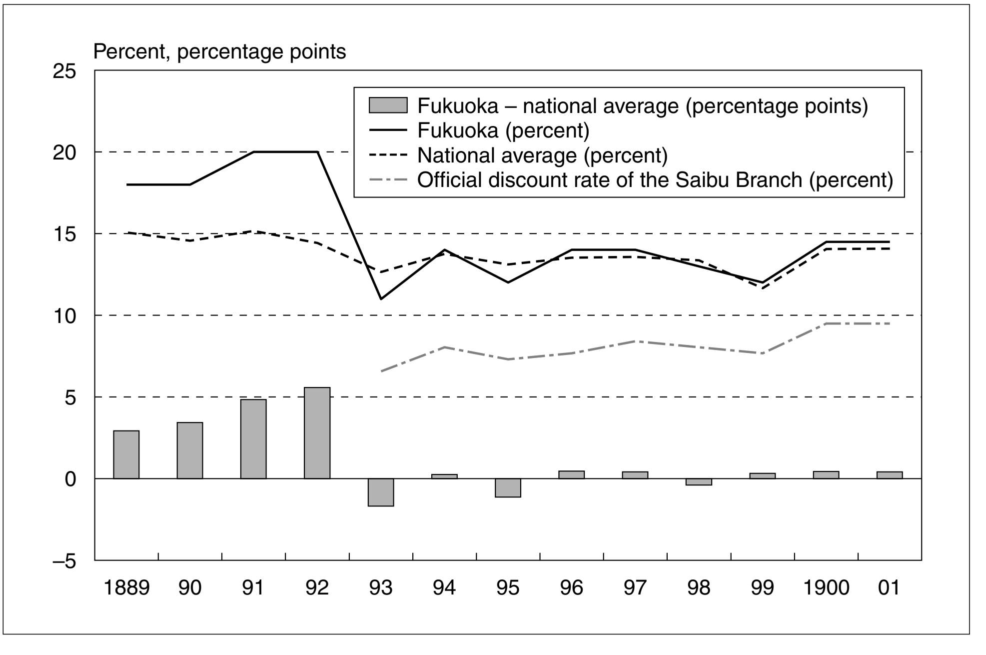
outflows,[114] the volume increased fairly consistently, which indicates that there were more and more movements of funds over the BOJ network each year. Factors behind higher inflows include the fact that coal production in Kyushu increased all the way through the 1887–1906 period,[115] and private-sector banks with nationwide networks can be assumed to have collected funds from other regions and sent them to Kyushu to respond to the booming demand for funding in the coal industry.[116] A prime reason in the increased outflows would be the mergers and acquisitions of smaller coal mines by the *zaibatsu* (conglomerates), so that local sales became probably transferred to the *zaibatsu* head offices in Osaka or Tokyo. Kasuya (1991) says that by 1902 the Moji Branch of Mitsui Bank was "receiving enormous sums of funds over the BOJ telegraphic transfers network from the Head Office and Osaka Branch."[117,118] Mukai (2000) says that "during the Meiji Period, even the *zaibatsu*-affiliated city banks used the BOJ branch and local office network for transfers of funds from the Head Office."[119] This indicates the important role played by the BOJ network in funds transfers.

114. Looking at the regional breakdown of the Saibu Branch's flow of funds, in most years the Saibu Branch had a small net inflow of funds *vis-à-vis* the Head Office, while for Kyoto, Nagoya, and Fukushima (listed in aggregate as "others" in the table) Saibu had fairly consistent net outflows. By contrast, *vis-à-vis* the Osaka Branch there were net inflows until 1895, but this reversed in 1896 and there were large, consistent net outflows thereafter.
115. For example, Sumiya (1968, pp. 220–221, p. 295).
116. Mukai(1989, p. 50) says, "Supported by expanding markets, the Chikuho region coal industry began to quickly modernize its quarrying equipment and increase the size of its operations in 1887. The development of the coal industry required large amounts of operating capital to fund quarrying and transportation and also large amounts of fixed capital to pay for mining rights, startup costs and mechanical facilities."
117. Kasuya (1991, p. 178).
118. According to the minutes of a branch managers meeting of Mitsui Bank held in November 1905, Kanezuka Senshiro, the manager of the Moji Branch, spoke on "the reason for the recent sharp falls in interest rates in Shimonoseki and Moji and the prospects for the future." He noted that "money is not flowing in to Kyushu from other regions but flowing out recently to other regions through the BOJ so that the decline in interest rates is not unreasonable." In other words, he believed that declining interest rates for the Kyushu region were related to the relaxation of finance so that funds could be sent to other regions. This statement is an indication that the BOJ branch office network provided an important vehicle for the transfer of funds between regions at this time (Japan Business History Institute [1977, p. 153]).
119. Mukai (2000, p. 966).

As we have seen, more active inflows and outflows of funds through the Saibu Branch substantially closed the deviation between Fukuoka lending rates and those in other parts of the country in comparison with before the opening of the Saibu Branch (Figure 9). Presumably, the Saibu Branch's facilitation of funds transfers between private-sector banks in different regions also enabled greater interest rate arbitrage.

This subsection has looked at the Saibu Branch as an example of the role that BOJ offices played in inter-regional funds adjustments, although further study will be needed to see how this example fits with developments at other BOJ locations. Suffice it to note that "The Bank of Japan and Funds Transfers"[120] found in the Osaka Bank Report of 1907 (Osaka Banking Association [1957]) provides documentary evidence that the flow of funds was substantially smoother in regions that had BOJ offices than in those that did not. This document says, "The benefits to be enjoyed by banks when transferring funds depend entirely upon whether they or the counterparty bank are located in areas where there are Bank of Japan offices." In other words, having a BOJ office benefited the funds transfers of local private-sector financial institutions. This document indicates that the expansion of the BOJ network helped to alleviate the regional funding disadvantage through payments-side funds transfers between remote regions.

**Figure 9 Difference in Interest Rates between Fukuoka Prefecture and the National Average**




120. Osaka Banking Association (1957, pp. 21–24). Published under the name of Midori Kobayashi.

## V. Conclusions

This paper has used documents and data to observe the role played by the BOJ network in the process of financial market integration in Meiji Period Japan. I have demonstrated that regional differences in interest rates contracted in the late 1890s and, at least from the perspective of interest rates, significant progress had been made in financial market integration by the latter half of the decade. This is consistent with the analyses of Tsurumi (1991) and Yamamura (1970).

I also examined the role that the BOJ played in financial market integration and found that the BOJ network, and more specifically the correspondent transactions between the BOJ and private-sector financial institutions and the local BOJ offices, served to activate inter-regional movements of funds through the funds transfer services provided. These analytical findings are consistent with the arguments made by Tsurumi (1991).

Nonetheless, some differences still obtained in regional interest rates even after the 1890s. One topic for future analysis is a longer-term perspective of the process by which financial market integration was deepened after the turn of the century. The focus of this paper was on the alleviation of funding disadvantage and interest rate differences through the facilitation of funds transfers between remote areas. Other important points to consider in any analysis of financial market integration would include the other major services of BOJ offices: credit functions (lending, discounting, etc.), issuing of banknotes, and treasury services. These too are topics for further study.

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