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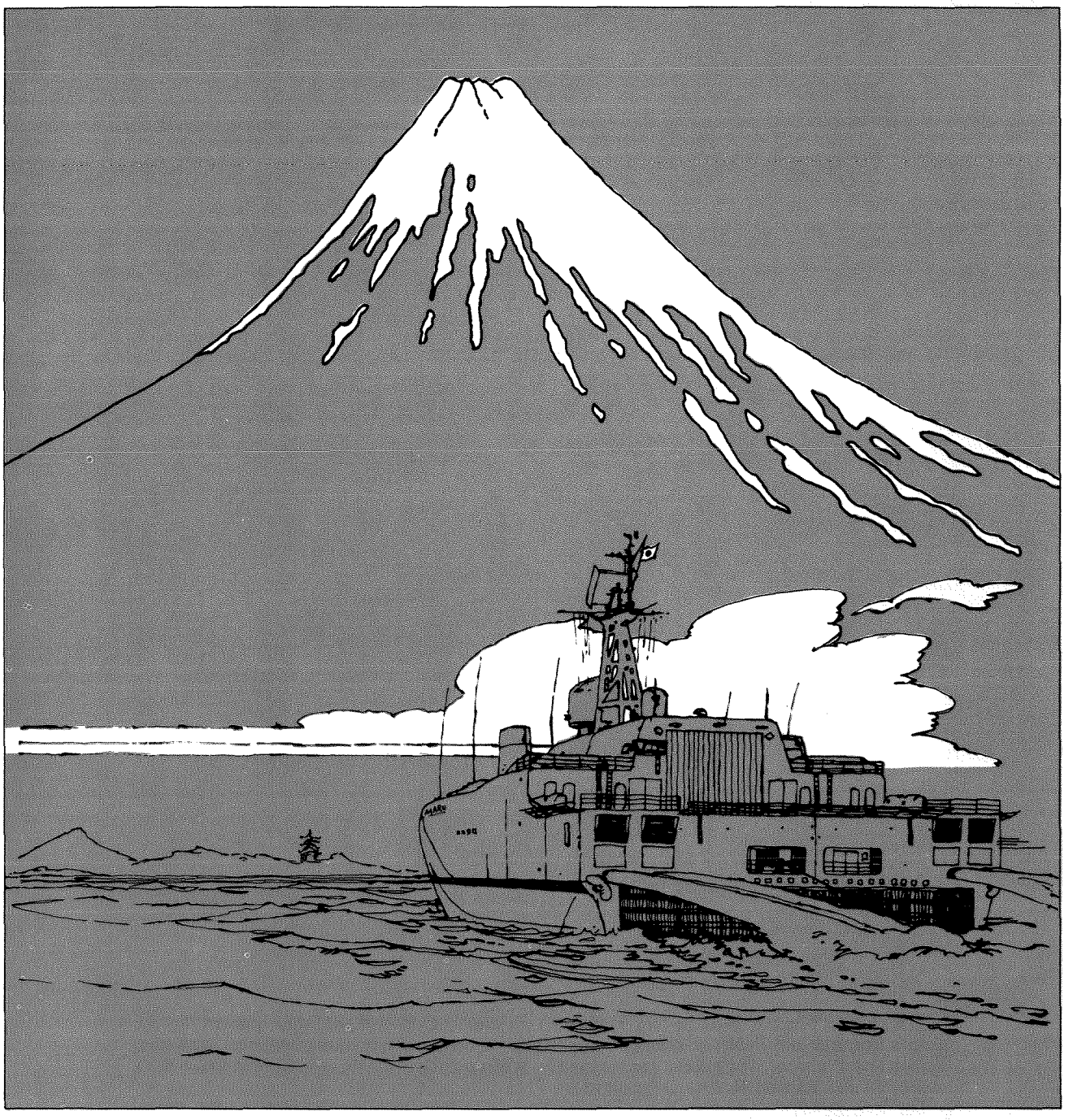

JAPAN: GROWTH AND PROSPECTS

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U.S. Banks in Japan and Japanese Banks in the United States: An Empirical Comparison

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International banking has been a rapidly growing industry since the mid-1960's. This paper will analyze two important aspects of that development, the activities of American banks in Japan and the activities of Japanese banks in the United States. The study will attempt to determine empirically the economic factors (such as growing bilateral trade and expanding local markets) which influence the growth of these institutions, and to determine whether these factors have affected the two groups of banks in a similar manner in the period from November 1972 to November 1978.[1] Numerous studies have analyzed international banking in general, the role of foreign banks in a particular country, or the international activities of banks based in a particular foreign country. However, no previous study has systematically attempted to study international banking on a bilateral basis.[2]

This study will focus primarily on the lending activities of each country's banks from banking offices located in the other country. This focus on banking activities from foreign offices places the paper within a broader context of foreign investment. Such an approach is useful because it isolates for analysis a large and rapidly growing segment of international banking for both countries' banks. The rapid growth of foreign branch and subsidiary activities by both Japanese and American banks indicates a customer preference for obtaining banking services—such as access to credit, deposit, and payment facilities—from the office of a bank with which they are familiar in a country where they are conducting business. Customers much prefer this approach to the alternatives of either dealing with a local institution or, more expensively, dealing with a far-distant banking facility.

The United States and Japan present ideal countries for a study comparing international banking activity. Since 1972, trade between the two countries—measured as the sum of exports plus imports computed in dollar terms—has approximately tripled, and their banks' foreign activities have grown rapidly. In addition, the activities of both countries' banks in the other country are heavily concentrated either in local-market activity or in international trade involving the home or host country. Thus data on the activities of these institutions can be analyzed in relation to local economic activity and home or host country trade. By contrast, comparable analysis is impossible for branches of non-local banks in Continental Europe, or in financial centers such as London, Hong Kong, Singapore, and Nassau, since foreign banking offices in these countries deal in large part with customers in other than the home or host country.

A final reason for this interest in a study of Japanese and American banks concerns the differences in regulatory attitudes in the two countries towards banking in general and foreign banks in particular. American regulatory authorities place few restrictions on the balance-sheet structure, such as quantitative ceilings on lending, of banks operating in the United States.[3] By contrast, the balance-sheet positions of banks operating in Japan are much more tightly monitored and controlled by the Bank of Japan.[4]

Many of these same regulatory attitudes carry over to activities of non-local banks. The United States has traditionally been open to entry by foreign banks. In fact, until the passage of the International Banking Act of 1978, foreign banks (subject to state law) had the advantage of

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being able to operate full-fledged banking offices in more than one state, a privilege generally denied to U.S. banks. The state laws of the major financial centers were generally quite liberal with respect to entry by foreign banks. Foreign banks operating in the United States have been permitted agency, branch, and subsidiary forms of operation.[5]

Japanese authorities, however, have used more restraint in permitting foreign bank entry. With a few exceptions extending back to the immediate postwar period, they have limited foreign banks to operations at a single branch facility, which has effectively kept those banks from entering retail banking on any significant scale. In addition, the authorities in the past have adopted some measures designed to limit the access of non-local banks to local sources of funds.[6] This study will attempt to analyze whether differences in the local environment have had any measurable impact on the growth in lending by Japanese branches of U.S. banks.

I. Conceptual Framework

The term international banking covers a wide variety of transactions, including deposit and loan transactions by a bank's indigenous offices with residents of other countries, and the establishment of foreign branches and subsidiaries for the conduct of banking activities in foreign countries. International banking, when conducted through foreign branches and subsidiaries, is really a subtopic of the broader topic of foreign investment, since in theory a bank could conduct international-banking activities from its domestic offices. Richard E. Caves in a survey article suggests that foreign investment is often associated with product differentiation, which may include possession of intangible assets such as a firm's knowledge about how to produce and distribute its product.[7] In Caves' model a firm has a definite home-country identity (including language), but elects to invest abroad to adapt "the firm's basic product to local demand conditions."[8] A firm rarely invests abroad to produce something it does not produce in its domestic market.

The Caves' model of foreign investment can be applied to international banking. Major banks offer a differentiated product and the knowledge (intangible assets) to serve the financial needs of their major corporate customers. Banks establish their branches and subsidiaries abroad to adapt their basic product to local conditions, rather than attempt to "export" banking services from their head offices. Virtually all banks operating abroad were major producers of banking services in their home country prior to their investments abroad.

Caves' model suggests that a U.S. bank establishes its banking presence in Japan largely because its traditional customers have a demand for banking services in Japan, and a preference for conducting business with a bank with whom they have an established relationship. Caves' model is also consistent with the notion of "cross-hauling" of international banking services, since Japanese banks have a specialized differentiated product to market to their traditional Japanese customers seeking banking services in the United States.

Vernon and Wells analyze the expansion of multinational banks in somewhat similar terms.[9] Their explanation centers upon factors such as technological capabilities and trade names, i.e., the preferences of customers to deal with banks that are well-known to them, most often through previous associations. Vernon and Wells also suggest that economies of scale are important in multinational banking. Economies of scale occur when each foreign branch and subsidiary contributes to the bank's profitability by enhancing the bank's ability to portray itself as a worldwide institution. Within a local market, economies of scale may exist because of a bank's ability to collect and disseminate information on local economic conditions, laws, regulations, and business opportunities.

Finally, foreign investment may be the only feasible way for a bank to expand its activities—a point which is ignored by the several authors cited. A bank's home market might be relatively unprofitable due to competition, or legal restrictions might limit its ability to expand locally. For example, U.S. laws prohibiting multistate branches are a constraint on many U.S. banks.

Caves, as well as Vernon and Wells, help explain the motivation for large banks to es-

tablish foreign facilities to service the foreign activities of their large corporate customers, who much prefer to maintain their relationships with certain banks rather than purchase banking services from banks with whom they have had little past contact. In this situation, the typical foreign branch's loan demand would exceed its deposit base, since corporations are on balance large net borrowers from banks. Moreover, while the loan and advisory services of a foreign bank may be tailored to the special needs of its traditional customers, an institution of that type normally would be unable to offer deposit facilities markedly different from those offered by local banks.[10] In essence, foreign banks typically have a core mix of customers who are loan-oriented, and their deposits are not perceived to be superior to local bank deposits—in fact, when denominated in local currency they may be perceived to be inferior, because of their lack of access to local central-bank credit in a liquidity squeeze. Consequently, offices of foreign banks typically would have to rely on non-deposit sources of funds, such as interbank borrowings and net advances from their parent institutions, to finance their loan activities.

The Caves and Vernon-Wells approaches to foreign investment help explain the initial establishment of a foreign office, but they fail to explain the second stage of expansion—the stage when banks go beyond servicing the financial needs of their traditional customers. This stage occurs after a bank has borne the fixed costs of establishing a foreign presence for its traditional relationships. In this second stage, the foreign bank utilizes its contacts in the local market to compete for local business with established banks. The foreign bank may be able to offer a differentiated product, such as advice to local companies desiring to do business in its own home market, or certain international services where it has special expertise.[11] However, the foreign bank may be unwilling or unable to differentiate its product, and so may compete for local business simply on the basis of price, particularly if the local banking market is characterized by a degree of monopoly power.

A foreign bank's ability to compete in a local market will depend upon a variety of factors, including the strength and quality of its management as well as the size and growth of the local market. The latter factor is important, since it is easier to enter and expand in a large and growing market than one that is stagnant or contracting. Indeed, local-market entry depends on a number of factors—the attitude and policies of both host and home country regulatory authorities, the growth of trade between the home and host country and between the host country and the rest of the world, the presence or absence of exchange controls or controls over profit remittances in the host country, the foreign banks' assessment of the host country's ability to maintain political and economic stability, and so on. Profitability of expanding into new markets may also be affected by the ease or tightness of the host country's banking system, and to some extent by both the home and host countries' foreign-reserve positions, to the extent that they affect either country's banking system.

II. Basic Data and Concepts

The relevant data on the activities of U.S. banks in Japan, and on the activities of Japanese banks in the United States, focus on transactions with *nonbank* customers (Tables 1–3). A bank's foreign branches are often active in local interbank markets, for investment and liquidity purposes. Transactions in interbank markets, however, are rarely the *raison d'être* for incurring the costs of entering a foreign market, since margins in such markets tend to be extremely narrow. Moreover, banks can handle interbank transactions at their head offices or in offshore banking centers at a small fraction of the cost of establishing a banking facility in the United States or Japan. On the other hand, a branch can use interbank transactions as a means of adjusting its liquidity position, so that it isn't forced to rely on the bank's head office. Interbank borrowings may be an important net source of funds to a newly-established office of a foreign bank which is not well-known to local nonbank depositors. Overall, transactions with nonbanks represent the best measure of the success of foreign banks in developing a customer base in the local market.

The key comparisons in the tables are those between non-local banking offices and the local institutions with whom the foreign banks would be expected to be in direct competition. For the United States, the offices of Japanese banks are compared to the approximately 300 large banks that reported weekly to the Federal Reserve in the 1972–78 period. These "money center" banks account for slightly over one-half of the assets of all U.S. banks. They also account for an overwhelming proportion of the international capabilities of U.S. banks, and are the principal competitors of the foreign banks operating in the United States.

For Japan, the branches of U.S. banks are compared to the large City Banks which account for about one-half of the assets of all Japanese banks. The City Banks tend to be more heavily involved in international finance and corporate lending than other types of Japanese banking institutions.[12] Thus, they appear to be generally similar to the weekly reporting U.S. banks in size and business orientation.[13] The data in the tables refer to the *ratio* of the foreign balance-sheet item to the comparable item for the domestic banks. Thus, the percentages refer to the size of the foreign banks' activity divided by the closest comparable measure for the local banks, i.e., a *ratio* rather than a share.

Comparisons: Japanese Market

Between late 1972 and late 1976, U.S. bank activity in Japan grew extremely rapidly, as U.S. bank branch claims on nonbanks (mostly loans) nearly quadrupled (Table 1). Also, these claims increased in size from 1.3 percent to 2.7 percent of comparable loans and discounts at the City Banks. Since late 1977, however, lending by U.S. banks in Japan has shown little growth, and has actually declined from 2.7 percent to 2.3 percent of lending by the City Banks.

The record for liabilities to nonbanks (mainly deposits) is roughly similar, although this deposit ratio peaked somewhat earlier than the loan ratio. More strikingly, however, the liabilities (deposit) ratio over time has averaged only about one-third as high as the claims (loan) ratio. This result is consistent with the theory that non-local banks, with their heavy mix of corporate customers, would have loans in excess of their deposit resources.

Comparisons: U.S. Market

Japanese banks operating in the United States have expanded at a different pace than U.S. banks operating in Japan (Table 2). But first, some introductory remarks are needed to explain why the data are arranged as they are.

Table 1
Activities of Branches of U.S. Banks in Japan
(millions of dollars)

	Loans to Nonbanks		Liabilities to Nonbanks	
Date	Amount[1]	As Percent of Japanese City Banks[2]	Amount[1]	As Percent of Japanese City Banks[3]
November 1972	2,020	1.3	633	.6
November 1973	3,263	1.6	1,149	.8
November 1974	4,618	2.1	1,454	1.1
November 1975	6,458	2.5	1,594	1.0
November 1976	7,806	2.7	1,672	.9
November 1977	9,137	2.7	2,127	.9
November 1978	9,384	2.3	2,243	.7

1 For branches of U.S. banks, data refer to claims on and liabilities to nonbanks from FR2052 reports. (Data include customers' liabilities on acceptances.)

2 For Japanese city Banks, data refer to loans, discounts, and customers' liabilities on acceptances from *Economic Statistics Monthly* published by The Bank of Japan.

3 For Japanese banks, data refer to total private deposits (which exclude official and interbank deposits) from *Economic Statistics Monthly* published by The Bank of Japan.

The Japanese-bank data are tabulated for agencies and branches, and separately for all institutions, which include U.S.-incorporated subsidiary commercial banks operated by Japanese banks. This is done because subsidiaries have a different business orientation than agencies and branches, being much more retail oriented; and secondly, because operating a subsidiary commercial bank is a privilege available to Japanese banks in the United States but not to U.S. banks in Japan.

The loan focus is confined to commercial and industrial loans, which account for about four-fifths of the U.S. lending activities of Japanese banks. Narrowing the focus in this way restricts the comparisons to similar lending by large U.S. banks. Also, this facilitates comparisons with the activities in Japan of both U.S.-bank branches and large Japanese City Banks, since both groups of banks limit their lending primarily to commercial and industrial enterprises.[14]

Over the period studied, Japanese bank lending increased steadily relative to lending by large domestic U.S. banks[15]—except for the period between late 1974 and late 1977, when Japanese banks' foreign activities were restrained by the Ministry of Finance and the Bank of Japan. Altogether, between November 1972 and November 1978, the ratio of commercial-industrial lending of Japanese agencies and branches to U.S. weekly reporting banks increased from 5.2 percent to 9.7 percent, while the ratio for all Japanese institutions (including subsidiaries) increased even faster, from 6.1 percent to 11.5 percent. Thus, the ability of Japanese banks to operate subsidiary commercial banks in the United States enhanced their ability to grow faster than domestic banks.[16]

Japanese-bank liabilities to nonbanks (deposits) showed a similar upward trend. As in the case of U.S. banks in Japan, Japanese-bank deposits in this country have lagged considerably behind their loans to nonbanks, reflecting their concentration with corporate customers. But their deposits have risen sharply because of two important factors. First, many Japanese banks previously operated in New York as agencies (which cannot accept deposits) rather than as branches (which are deposit-taking institutions).[17] But between January and September 1977, the number of agencies of Japanese banks in the United States declined from 32 to 23, and the number of branches increased from 9 to 25.[18]

Japanese banks made this conversion largely to take advantage of the domestic CD market. In some earlier years, they had been forced to pay a premium to attract CDs in the U.S. market. However, in more recent years, Japanese banks

Table 2
Activities of Japanese Banks in the United States
(millions of dollars)

	Commercial and Industrial Loans				Liabilities to Nonbanks[2]			
	Amount		As Percent of U.S. Weekly Reporting Banks		Amount		As Percent of U.S. Weekly Reporting Banks	
Date	Agencies and Branches	All Institutions[3]	Agencies and Branches	All Institutions[3]	Agencies and Branches	All Institutions[3]	Agencies and Branches	All Institutions[3]
November 1972	4,558	5,391	5.2	6.1	170	1,647	.06	.60
November 1973	6,875	7,774	6.4	7.2	280	1,943	.09	.64
November 1974	9,213	10,414	7.2	8.1	307	2,351	.09	.70
November 1975	8,643	10,138	7.2	8.6	635	3,910	.19	1.14
November 1976	8,278	9,989	7.4	8.8	679	4,459	.20	1.30
November 1977	8,843	10,775	7.3	8.9	1,447	5,887	.38	1.54
November 1978	13,498	15,965	9.7	11.5	2,652	8,453	.64	2.05

1 For U.S. offices of Japanese banks, data derived from FR886a monthly reports.
2 Liabilities to nonbanks include deposits and credit balances.
3 Includes subsidiary commercial banks in addition to agencies and branches.

have been able to market their CDs on comparable (or nearly comparable) terms as U.S. banks.[19] The shift reflected the growing financial strength of the Japanese banks, combined with the growing reserves of the Bank of Japan, which assured the Japanese banks a strong lender of last resort. As a result of these changing conditions, total nonbank deposits of Japanese agencies and branches tripled between November 1976 and May 1978, and their size increased relative to total nonbank deposits at large U.S. banks.[20]

A second factor contributing to the rapid growth of deposits at U.S. offices of Japanese banks is the growth of the subsidiary commercial banks, with their ability to offer a wide range of deposits. The data in Table 2 indicate that subsidiaries accounted for nearly two-thirds of the increase in the growth of the ratio of deposits of Japanese banks in the United States relative to the large weekly reporting banks.

Sources of Funds

U.S. banks in Japan, and Japanese banks in this country, have both had to rely heavily on nondeposit sources of funds (Table 3),[21] because for both groups of banks, liabilities to nonbanks represent a relatively small proportion of claims on nonbanks. However, while for the offices of U.S. banks in Japan, the proportion of nonbank claims financed by nonbank liabilities has generally declined in recent years, the reverse has been true for agencies and branches of Japanese banks.

Net liabilities to unrelated banks typically have represented a major funding source for non-local banks. However, until recently U.S.-bank branches in Japan were actually suppliers of funds to the Japanese interbank market—reversing the role played by most other foreign branches of U.S. banks.[22] This unique situation came about largely because of the very tight (overloaned) position of Japanese City Banks, who were forced to depend on interbank borrowing, as well as the Bank of Japan, to meet heavy loan demands. In contrast, Japanese agencies and branches in the United States have tended to be large net borrowers of funds from other banks, since 1973 funding from one-half to three-fifths of their U.S. lending from that source.

Net advances from parent banks have represented yet another source of funds.[23] Typically nonlocal banks, both in the United States and abroad, fund a proportion of their local activity with advances from their related offices. U.S. bank branches in Japan have relied heavily on such advances to finance their lending activities, particularly in the 1974–76 period when the

Table 3
Major Balance Sheet Characteristics of Branches of U.S. Banks in Japan, and of Agencies and Branches of Japanese Banks in the United States (millions of dollars)

	Branches of U.S. Banks in Japan				U.S. Agencies and Branches of Japanese Banks			
		As Percent of Claims on Nonbanks				As Percent of Claims on Nonbanks		
Date	Amount Claims on Nonbanks	Liabilities to Non-banks	Net liabilities to Banks	Advances from Parent	Amount Claims on Nonbanks[1]	Liabilities to Non-banks	Net liabilities to Banks	Advances from Parent
November 1972	2,020	31.3	-32.4	55.8	4,558	3.7	21.6	81.7
November 1973	3,263	35.2	-10.1	40.2	6,875	4.1	57.8	35.6
November 1974	4,618	31.5	-61.4	96.6	9,213	3.3	61.3	26.0
November 1975	6,458	24.7	-26.6	83.2	8,643	7.3	56.8	32.5
November 1976	7.806	21.4	-10.8	73.5	8.278	8.2	56.3	29.2
November 1977	9.137	23.3	- 2.5	61.8	8.843	16.4	47.7	19.9
November 1978	9,384	23.9	10.7	52.4	13,498	19.6	53.2	28.0

1 Includes only commercial and industrial loans.

Japanese banking system was in a very tight position. But U.S. banks' reliance on their related offices for funding has declined considerably since 1976. The U.S. agencies and branches of Japanese banks have followed a somewhat similar pattern, reducing their reliance on parent institutions in recent years as they developed alternative sources of funding.

III. An Empirical Model

It was suggested in Section I that the growth and character of banking activities in a foreign country could be explained by various economic factors, such as the level of international trade, the growth of the local market, and banking conditions in both the host and home countries. In this section a simple model is constructed to test whether lending to nonbanks by U.S. banks in Japan and Japanese banks in the United States can be explained by such economic variables.

As noted earlier, the principal reason why foreign banks establish banking offices in either Japan or the United States is to make loans to nonbank borrowers. It is expected that such lending would be affected by several directly observable economic factors. Since nonlocal banks tend to be trade oriented, their activities should be affected by international trade flows. For both U.S. banks in Japan, and Japanese banks in the United States, the most likely measure would be total Japanese trade, defined as the sum of Japanese imports and exports—or alternatively, total trade between the United States and Japan. U.S. bank branches in Japan, however, help finance Japanese trade with countries other than the United States, and thus their growth should be more closely related to total Japanese trade rather than simply U.S.-Japan trade.

For Japanese banks in the United States, the picture is somewhat different. Because of the importance of New York as a financial center, and because of the role of the dollar in settling international transactions, a large proportion of total Japanese trade (including non-U.S. trade) is financed at the U.S. offices of Japanese banks.[24] There is little evidence to indicate that these offices finance significant amounts of non-Japanese related trade, i.e., trade which is neither an export from nor an import into Japan. Thus total Japanese trade will be utilized as an explanatory variable in the equations for lending by U.S. offices of Japanese banks.

A second variable affecting the growth of nonlocal banks is the growth in the size of the local market. Clearly it is easier for a foreign bank to expand its activities in a growing market. For the United States, the local market is defined as commercial and industrial loans by weekly reporting banks; for Japan, it is defined as total loans and discounts of City Banks.

A third set of variables affecting nonindigenous banks includes the tightness or ease of banking conditions in both the host and home countries. In particular, tight conditions in the *host* country, as measured by a high loan/deposit ratio, would be expected to encourage lending by nonlocal banks, because local banks would experience difficulty servicing their loan demand with existing resources. Conversely, a high loan/deposit ratio in the *home* country might exert a negative effect, as banks which were loaned up in their home market would be less able to expand lending at their foreign branches. The loan/deposit ratios function as proxies for the profitability of bank lending. By assumption, a banking system with a high loan/deposit ratio will provide foreign banks with profitable opportunities, particularly if they are able to bring in funds from abroad. In effect, a relatively tight position in local markets should mean higher interest spreads earned by banks.[25]

Another explanatory factor would be Japan's international-reserve position.[26] Because of Japan's growing reserve accumulation, the Bank of Japan has placed dollar balances with Japanese banks, usually at attractive rates, and thus put those banks in a better competitive position to extend dollar credits at their home offices (often termed "impact" loans) and at their offices abroad.[27] Moreover, because of those growing reserves, the Bank of Japan can now act as a powerful lender of last resort, a feature lacking in 1974 and 1975 when Japanese banks were required to pay a premium over market rates to obtain deposits.[28]

To test these several hypotheses, regression equations were computed for lending by the two groups of banks. To avoid problems of serial correlation, the equations were run on first differences in total lending to nonbanks, and also for all the explanatory variables. In the case of U.S.-based Japanese banks, serial correlation in the first differences was eliminated by use of Cochrane-Orcutt procedures. Because of the severe inflation of the 1972–78 period, the data were transformed to real (November 1972) dollars to estimate the various effects in real terms.[29] By doing so, the lending impact of changes in loan/deposit ratios could be analyzed without overweighting the later observations because of inflation-caused increases in nominal values.

Increases in lending based on increases in the size of the local market and the growth in total Japanese trade were assumed to be nearly simultaneous, because trade requires immediate financing and the growth of the local market affects loan demand fairly quickly. Changes in lending in response to changes in home and host country loan/deposit ratios were estimated using Almon lags with third-degree polynomials. Distributed lags were used because, in a given month, a nonlocal bank generally does not adjust its lending immediately to conditions prevailing at the end of the previous month, but rather responds to a weighted average of previous conditions in the home and host countries' banking systems. For example, a nonlocal bank may not adjust its lending at all to a single month's sharp increase in the loan/deposit ratio in the host country if it believes the increase has been caused by temporary factors. A longer lag was utilized for the host country (18 months) than for the home country (6 months), because a

Table 4
Regression Equations Explaining Monthly Changes in Loans to Nonbanks (millions of dollars)

Variable	Monthly Change in Loans by Japanese Branches of U.S. Banks	Monthly Change in Loans by U.S. Offices of Japanese Banks	
		Agencies and Branches	All Institutions
Constant	40.8	16.7	23.2
	(5.34)	(1.06)	(1.44)
Change in loans by local banks (billions)	13.8	39.5	40.7
	(7.75)	(2.12)	(2.09)
Change in Japanese trade (billions)	12.1	131.1	134.9
	(1.52)	(3.63)	(3.55)
Change in loan/deposit (Japan)	76.2[1]	-80.8[2]	-85.9[2]
	(2.63)	(1.78)	(1.83)
Change in loan/deposit (U.S.A.)	-57.4[2]	186.0[1]	197.8[1]
	(3.29)	(4.00)	(4.11)
Change in Japanese reserves (billions)	-122.7[1]	28.8[1]	43.3[1]
	(4.31)	(.53)	(.77)
December	--	-27.2	36.5
	--	(.31)	(.48)
January	--	200.0	177.7
	--	(2.17)	(1.75)
October 1975	--	-39.1	37.5
	--	(.33)	(.30)
May 1978	-195.9	--	--
	(3.87)	--	--
November 1978	-53.4	593.9	614.0
	(.81)	(4.75)	(4.62)
$\bar{R}^2$	.794	.615	.625
DW	1.970	2.067	2.151

1 Coefficient based on 18-month Almon lag. 2 Coefficient based on 6-month Almon lag. t statistics in parentheses

foreign office's lending can be adjusted more quickly by home-office direction than by responses to changing local-market developments. Changes in lending in response to changes in Japanese reserves were estimated with six-month lags.

Despite problems of random fluctuations resulting from using banking data derived from single-date observations, and problems associated with using data from different sources, the model does quite well explaining growth in lending by the two countries' banks (Table 4).[30] Changes in lending by U.S. banks in Japan are positively related to growth in lending by local banks, growth in total Japanese trade (although only at the 90-percent confidence level), and changes in the tightness of the Japanese banking system. Changes in U.S. bank lending in Japan are negatively related to changes in the tightness of the domestic U.S. market, and to changes in the growth of Japanese reserves. This last result suggests that the reserve accumulation of the Bank of Japan has reduced somewhat the demand for dollar loans from branches of U.S. banks.

Changes in lending by Japanese banks in the United States can be explained by these same economic variables. Growth in lending by such banks is positively related to the growth of the local U.S. market, and is very strongly related to growth in total Japanese trade. Also, their growth is positively related to changes in the U.S. loan/deposit ratio and negatively related to changes in the Japanese loan/deposit ratio. The coefficient for the impact of changes in Japanese reserves on changes in lending by U.S.-based Japanese banks had the expected positive sign, but was not statistically significant.

In addition to these variables, dummy variables for December and January were added as a simple seasonal adjustment to capture differences in year-end behavior of Japanese banks in this country. The coefficients for the agencies and branches, which tended to be negative for December and positive in January, suggested that Japanese banks were less active than U.S. banks in end-of-year windowdressing.

For Japanese banks, a dummy variable was added for October 1975 to capture a major acquisition by the Bank of Tokyo, but this does not appear to have had a significant impact on growth in commercial and industrial lending. For U.S. banks, a dummy variable was added for May 1978 to capture a modification in statistical reporting procedures, which reduced the number of U.S. bank branches required to report, and modified the definitions of claims on nonbanks to exclude claims on publicly-owned corporations. For both groups of banks, a dummy variable was added for November 1978 to account for the impact of the U.S. policy measures to support the dollar. The large and highly significant positive coefficient for Japanese banks in the United States suggests that the measures may have induced Japanese banks to expand lending from their U.S. offices because of a shift in their exchange-rate expectations, since lending by these institutions is predominantly dollar-denominated.

Since the overall model performed quite well, it is useful to compare the coefficients for the two groups of banks for certain key variables. The most striking difference between the two equations was in the estimated impact of local-market growth on the activity of foreign banks. For Japanese branches of U.S. banks, a $1-billion increase in the size of the local market was associated with a $13.8-million increase in total lending to nonbanks; for U.S. offices of Japanese banks, a $1-billion increase in the local market was associated with a $39.5-million loan increase for agencies and branches, and a $40.7-million loan increase for all institutions. Thus the local-market coefficient for Japanese banks in the United States was about three times as large as the coefficient for U.S. bank branches in the Japanese market.[31]

This striking difference in impact of local-market growth on foreign-bank lending can be attributed to a variety of reasons, including some factors such as managerial preferences, which could not be included as explanatory variables. One important reason for the difference is that Japanese corporate borrowers have a much stronger preference than U.S. corporations for dealing with their own national banks. Thus, growth in the local-market demand for credit in Japan would be directed largely to Japanese banks.

The empirical model has been developed with the intention of analyzing if restraints on the entry and expansion of U.S. banks in Japan have hindered their ability to grow. The results of the equations in Table 4 are consistent with such a hypothesis, after taking into account all the economic factors discussed above, because of the significantly lower coefficient for local-market influence for U.S. banks in Japan than for Japanese banks in the U.S. The results are suggestive and not conclusive since other factors, including managerial decisions which are not embodied in the model, may account for the difference.

Another important difference concerns the impact of growth in total Japanese trade on the growth of the two groups of banks. For Japanese branches of U.S. banks, a $1-billion increase in total Japanese trade was associated with a $12.1-million loan increase. However, the coefficients were ten times greater for U.S. offices of Japanese banks. In these cases, a $1-billion increase in total Japanese trade was associated with a $131.1-million loan increase by Japanese agencies and branches, and a $134.9-million loan increase for all Japanese institutions. The large coefficients estimated for the U.S. offices of Japanese banks confirm the market impression that those offices are in fact very active in financing Japanese trade.

IV. Summary and Conclusions

To summarize, the lending activities of Japanese and U.S. banks in each other's markets can be analyzed in terms of certain economic variables, such as growth in trade and growth of the local banking market. While the variables explaining the activities of the two groups of banks are generally the same, the estimated coefficients vary. In particular, the coefficients indicate that growth in total Japanese trade strongly affects lending by U.S. offices of Japanese banks, reinforcing the widely-held view about the importance of those institutions in financing Japanese trade. It is interesting to speculate whether the recent movement towards yen-financing of Japanese trade ("yen-shift") will reduce the role of Japanese banks in the United States, since trade financing in dollars is such an important part of their activity.

A second important finding concerns the coefficient estimating the impact of local-market growth on foreign-bank loan growth, which is substantially smaller for American banks in Japan than for Japanese banks in the United States. These coefficients have been estimated after accounting for the effects of all other major variables, such as trade, banking conditions, exchange-rate changes, and Japanese reserves. While a variety of factors may account for this difference, the significantly lower coefficient for U.S. banks in Japan is consistent with the interpretation that regulatory restraints have affected their ability to participate in the growth of the local market. By contrast, Japanese banks in the United States have been more free to expand their branch networks, operate subsidiary banks, and develop local sources of funding, and thus have been better able to benefit from growth in the local market.

Appendix
Alternative Definitions of Local Market Activity

The text of the paper analyzed the growth of the activities of foreign banks relative to the growth of local-market institutions. Clearly such comparisons are influenced by the choice of the local banks with which the foreign banks are compared. The text used the Japanese City Banks as the relevant local-market comparison for branches of U.S. banks in Japan, and the U.S. weekly reporting banks as the frame of reference for U.S. offices of Japanese banks. Since the definition of local markets must by necessity be somewhat arbitrary, this appendix will consider alternative definitions of competing banks.

The regression equations have been recomputed using alternative definitions of local-market competitors (Table 5). For U.S. banks in Japan, the local market is defined to include the Long-term Credit Banks as well as the City Banks, since U.S. bank branches in Japan extend long-

term credits. For U.S. offices of Japanese banks, the alternative local-market comparison is with the large weekly reporting banks in New York, California, and Illinois. These three financial markets contain most of the major money-center banks with whom the Japanese banks compete most closely, and account for the vast majority of the activities of Japanese banks in the United States.

The regression results in Table 5 appear generally similar to the results in Table 4, except for a significant change in coefficients caused by the modification of the definition of local market. For U.S. bank branches in Japan, inclusion of the Long-term Credit Banks *reduced* the estimated impact of a $1-billion increase in loans by local banks from $13.8 million to $11.2 million. For Japanese agencies and branches in the United States, restricting the local market to weekly reporting banks in the three major financial centers *increased* the estimated impact of a $1-billion increase in loans by local banks from $39.5 million to $43.4 million.[32]

The local-market definitions used in Table 4 resulted in a local-market impact three times as great for Japanese banks in the United States as for U.S. banks in Japan. We may conclude that that figure represents a conservative estimate of the difference in local-market impact on the two countries' banks, judging from the results obtained from the different local-market definitions in Table 5.

Table 5
Regression Equations Explaining Monthly Changes in Loans to Nonbanks Using Alternative Local Market Definitions
(millions of dollars)

Variable	Monthly Change in Loans by Japanese Branches of U.S. Banks	Monthly Change in Loans by U.S. Offices of Japanese Banks	
		Agencies and Branches	All Institutions
Constant	44.0	17.5	19.8
	(5.73)	(1.11)	(1.24)
Change in loans by local banks (billions)	11.2	43.4	54.8
	(7.68)	(2.48)	(2.21)
Change in Japanese trade (billions)	13.2	129.4	139.6
	(1.66)	(3.59)	(3.68)
Change in loan/deposit (Japan)	87.3[1]	−96.5[2]	−98.2[2]
	(7.53)	(2.06)	(2.03)
Change in loan/deposit[1] (U.S.A.)	−59.2[2]	186.1[1]	185.8[1]
	(3.30)	(4.11)	(3.81)
Change in Japanese reserves (billions)	−122.2[1]	44.3[1]	76.6[1]
	(4.26)	(.83)	(1.41)
December	--	−27.6	25.7
	--	(.39)	(.33)
January	--	213.2	191.7
	--	(2.19)	(1.81)
October 1975	--	−9.4	82.3
	--	(.08)	(.66)
May 1978	−199.7	--	--
	(3.93)		
November 1978	−51.0	573.3	584.9
	(.77)	(4.52)	(4.33)
$\bar{R}^2$	.791	.618	.624
DW	1.939	2.087	2.217

1 Coefficient based on 18-month Almon lag. 2 Coefficient based on 6-month Almon lag. 3 Local market includes long-term credit banks in addition to city banks. 4 Local market refers to weekly reporting banks in New York, California, and Illinois. t statistics in parentheses

1. November 1972 is the first date for which comprehensive statistics were collected for the U.S. offices of foreign banks.

2. For papers discussing U.S. operations of foreign banks and foreign operations of U.S. banks, see **Key Issues in International Banking, Proceedings of Conference held in October 1977,** Federal Reserve Bank of Boston, Conference Series No. 18, and **Compendium of Papers Prepared for the FINE Study,** U.S. House of Representatives, June 1976, Book II, pp. 733-981.

3. Exceptions to this would be required reserves and efforts by bank regulatory agencies to have banks increase their capital ratios.

4. In part, this concern results from the "overloaned" position (loans exceeding deposits) and the relatively low capital ratios of the major Japanese banks.

5. The principal types of institutions operated by foreign banks in the United States are: *agencies,* which may lend funds but cannot accept deposits (although they do accept credit balances which for many purposes are the functional equivalent of deposits); *branches,* which may accept deposits, make loans, and are integral parts of their parents, with lending limits and deposit support based on the resources of their parent banks; and, *subsidiaries,* which are separately-incorporated U.S. banks (of which at least 50 percent of the stock is owned by a foreign bank) and which have lending limits based on their own capital.

6. See Andreas Prindl, "Foreign Banks in Tokyo Lose One Role and Look for Another," **Euromoney,** March 1979, pp. xxxi-xxxiv.

7. Richard E. Caves, **International Trade, International Investment, and Imperfect Markets,** Princeton, International Finance Section, Princeton University, 1974.

8. *Ibid.,* p. 18.

9. Raymond Vernon and Louis T. Wells, Jr., **Economic Environment of International Business,** Englewood Cliffs, New Jersey, Prentice-Hall Inc., 1976, esp. pp. 61-64.

10. As one possible exception, a nonlocal bank may have some advantage offering deposits denominated in its home currency if investors believe that banks would always have preferential access in world markets to their home currencies.

11. For example, a particular bank might be known to be very efficient in the area of funds transfer.

12. For a description of Japanese banking institutions, see Wilbur F. Monroe, **Japan: Financial Markets and The World Economy,** Praeger Publishers, New York, 1973; Federation of Bankers Associations of Japan, **Banking System in Japan;** Tokyo, 1976; L.S. Pressnell, editor, **Money and Banking in Japan,** MacMillan, London, 1973; Bank of Japan, **The Japanese Financial System,** Tokyo, 1978; and Ichiro Matsudaira, "Recent Developments in Japanese Commercial Banking," in **The World Banking Challenge,** American Bankers Association, Washington, D.C., 1972.

13. Restricting the analysis of groups of competing banks has definite advantages. In particular, it eliminates the activities of many smaller banks which conduct retail-oriented businesses in areas in which foreign banks are typically not interested in competing. Therefore, the focus on the larger banks eliminates the influence of factors affecting smaller banks, which may have little or no impact on the customers for whom the foreign and local banks are competing.

14. While preferable for purposes of comparability, both within the United States and between countries, confining the comparisons to commercial-industrial loans excludes the limited growth in retail lending by these institutions. As of November 1978, total retail (non-C&I) lending by all Japanese institutions in the United States amounted to only $3.1 billion, or less than one-sixth of total lending to nonbanks by U.S. offices of Japanese banks.

15. For a brief description of the restraints, see "The Restrictions Are Going," in **Euromoney,** February 1978, p. 13.

16. The data for subsidiary commercial banks for November 1975 are affected by the acquisition of California First National Bank by the Bank of Tokyo in October 1975.

17. California state law restricts foreign banking offices to deposits from non-U.S. residents, because of their ineligibility for FDIC insurance. The Japanese preference for operating agencies in New York reflects the fact that agencies, because they are not deposit-taking institutions, are generally not subject to lending limits.

18. Agencies do in fact accept credit balances, which are usually undrawn portions of a credit. Credit balances are, however, a very limited way to raise funds from nonbank sources.

19. The desire of Japanese banks to expand their CD base is also indicated by activity at their offices in London. CDs (and other negotiable paper) at the London offices of Japanese banks increased from $1.5 billion in November 1976 to $4.6 billion in November 1978. Source: **Bank of England Quarterly,** various issues.

20. While precise quantification is not possible, the difference in orientation of the agencies and branches suggests that there are limits to the ability of Japanese banks to shift business from their subsidiaries to their agencies and branches.

21. For Japanese banks, the structural characteristics refer to the agencies and branches. The subsidiary commercial-bank structure is closer to the structure of domestic U.S. banks.

22. In recent years, branches of U.S. banks have in fact shifted from net borrowers to small net suppliers of funds in foreign interbank markets, largely because of inflows of funds from oil-producing countries as well as large advances of funds from their head offices.

23. This total includes advances from the head office and related branches in other foreign countries.

24. It is estimated that in 1976, 80 percent of Japanese exports and 99 percent of Japanese imports were invoiced in non-yen currencies, mainly dollars. Andreas Prindl, "What's Happening to the Yen Shift?," **Euromoney,** September 1973, p. 30.

25. Simply using dollar and yen lending rates would not have been practical, since nominal rates are influenced by inflation and exchange-rate expectations. Also, U.S. banks in Japan extend dollar as well as yen-denominated credits to nonbank borrowers.

26. Since the United States is a reserve-currency country, it is not meaningful to consider its international reserve-asset position.

27. For a description of the decline in the "impact" loan activity by U.S. banks, see Thomas H. Hanley, "The Economic, Financial, and Competitive Challenges Facing Mutlinational Banks in Japan," Salomon Brothers, May 1978.

28. This was part of the "tiering" of the Euromarkets that occurred following the Herstatt and Franklin incidents.

29. All statistical series, including trade data compiled by the *Bank of Japan,* are in dollar amounts, *except* total loans and discounts of the Japanese City Banks, which were converted into dollar terms using prevailing exchange rates.

30. Single-date balance-sheet data may exhibit some random fluctuations, due to financial conditions prevalent on the particular day for which the data are observed.

31. For all Japanese institutions (including subsidiary commercial banks) in the United States, the estimated impact of a $1-billion increase in local bank lending was *increased* from $40.7 million to $54.8 million when the comparison was limited to weekly reporting banks in the three major states.