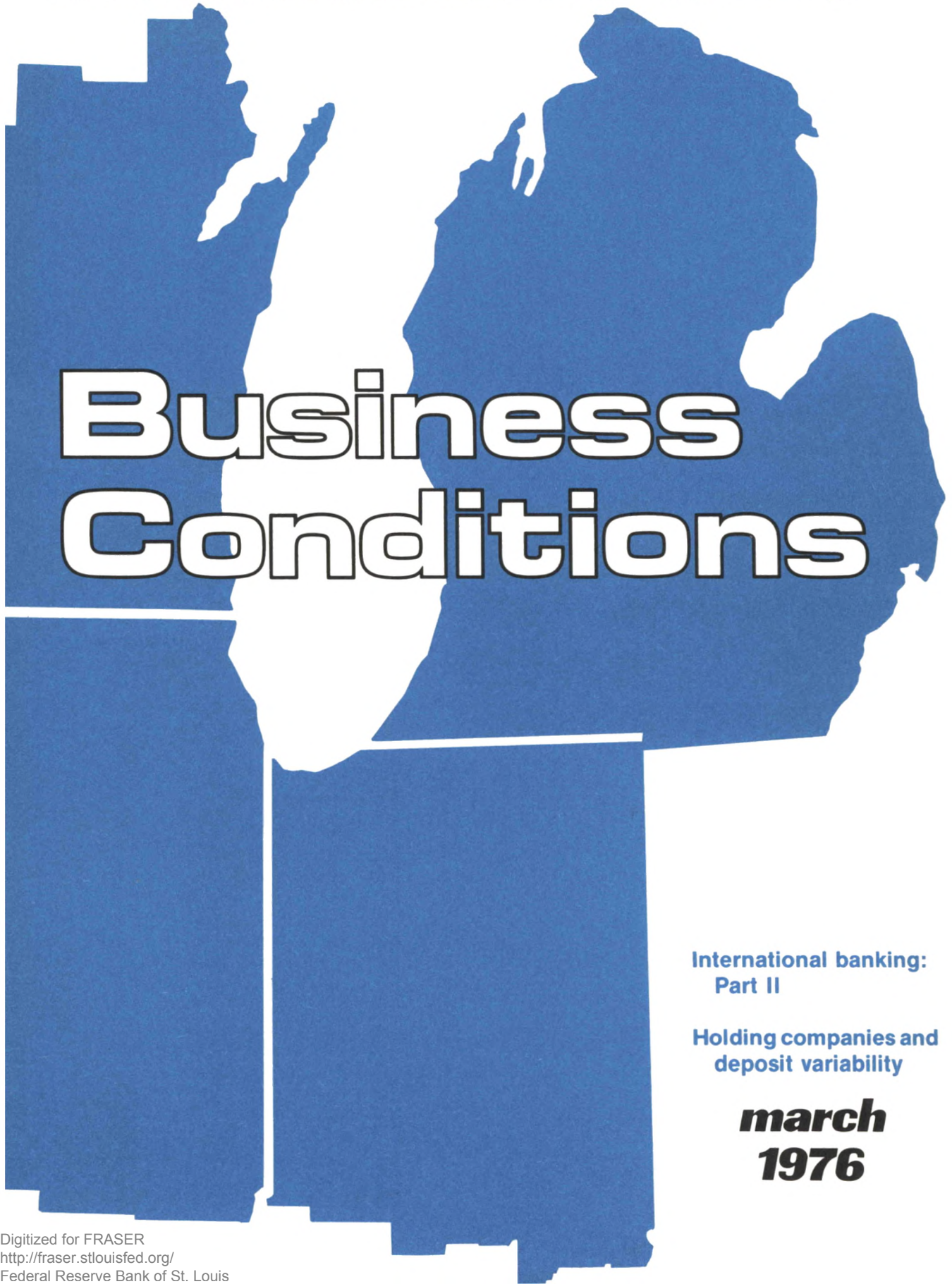
an economic review by the Federal Reserve Bank of Chicago



Business Conditions

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International banking: Part II

The growth of the multinational banking activities of both U.S. and foreign banks has been one of the most remarkable developments in banking industry around the world in recent years. It challenged the validity of traditional concepts about banking markets, as provision of banking services and search for funds beyond national boundaries—either directly through the home office, or through the establishment of offices abroad—increasingly became an integral part of operations of virtually every major bank in the world.

The internationalization of banking operations left a profound mark on the banking industry in the United States as U.S. banks expanded abroad and as foreign banks established offices in the United States. An article in the September issue of *Business Conditions*, "International Banking: Part I," focused on some aspects and consequences of foreign activities of U.S. banks; this article highlights the nature of the scope of activities of foreign banks in the United States.

The dynamics of growth

The growth of foreign banking in the United States has been a complex phenomenon that does not lend itself readily to generalizations. The motives that prompted foreign banks to establish presences in the United States have varied over time, as well as between individual banks within a given period of time. Yet several factors related to the changing role of the U.S. economy and the U.S. dollar in the world economy provide a base for a rough identification of three major phases of growth. In the first phase, dating from the early nineteenth century, the major rationale for foreign banks to establish banking facilities in the United States was to facilitate trade and flow of long-term investment between the United States and the home country. The second phase began following World War II with the emergence of the U.S. dollar as the world's major currency and of the United States as the world's money and capital market. The third phase, beginning roughly in the mid-sixties, can be characterized as the worldwide response of the banking industry to the multinationalization of major manufacturing corporations.

Phase I: Financing international trade and investment

The financing of international trade is one of the traditional functions of banks. The provision of banking services in financing international trade has been typically based on the correspondent relationship between unaffiliated banks located in different countries. However, in many instances banks found that it is more efficient—and profitable—if the foreign "correspondent" was an office of the parent institution. Thus, as international trade expanded during the nineteenth century, a number of British, French, and Dutch banks proceeded to establish foreign branches, particularly in the raw

materials producing countries of Latin America, Asia, and Africa. Similarly, as the flows of investment capital between the "Old World" and the newly developing regions increased, foreign offices of major European banks became the conduits, overseers, and points for servicing of the underlying indebtedness.

Several foreign banks, motivated by these considerations, established offices in the United States in the nineteenth century. But it was not until after World War I that the emerging importance of the United States as a trading and capital-producing nation began attracting significant foreign banking presence. The 1920s witnessed a considerable influx of foreign banks, including Japanese and European, in the United States. However, the worldwide depression of the thirties and the war-affected forties stunted further growth.

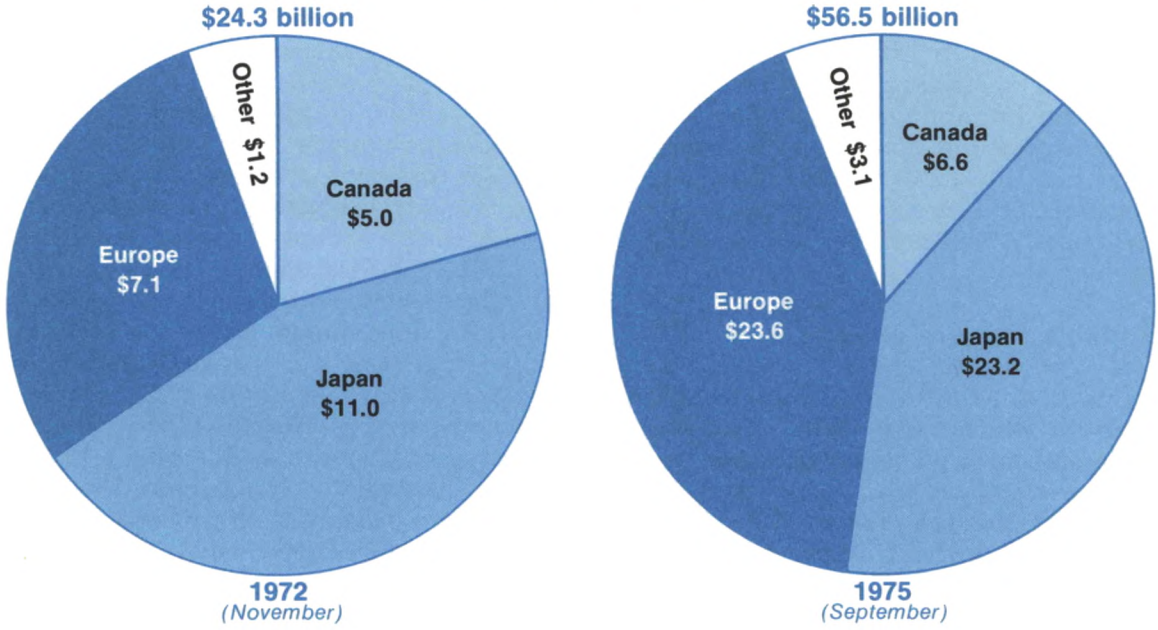
With the gradual resumption of world trade following World War II, the traditional motives for multinational expansion of banking became again relevant. Moreover, additional incentives for foreign banks to establish facilities in the United States were created by the emergence of the dollar as the major world currency.

Phase II: Financing dollar transactions

The emergence of the dollar as the major world currency following World War II was largely predicated on the dominant position of the U.S. economy. The dollar represented a unique purchasing power—the means of acquiring a great variety of goods not available elsewhere. At the international monetary conference at Bretton Woods, it was installed as the kingpin of the postwar international monetary system. It became a standard for defining the value of virtually all world currencies, and was widely used as a currency of denomination and settlement of inter-

U.S. offices of European banks increase their share of the U.S. market

(as measured by total assets)



national transactions. As such, the dollar became sought by prospective buyers in the world markets. Sellers in international markets became willing and eager to accept dollars in payment for goods because dollar balances could be, exchange regulations permitting, lent profitably to prospective buyers. Foreign banks, as well as the foreign branches of U.S. banks, gradually became the intermediaries in the overseas trading in dollar balances, accepting dollar deposits and making dollar loans. Their role was enhanced by certain U.S. regulatory restrictions that made holdings of dollar balances on deposit with banks in the United States less attractive to foreign owners.[1] This overseas market in U.S. dollars became known as the Eurodollar market. It grew rapidly into a multi-billion dollar enterprise.

The mechanics of the trading in dollars among banks abroad and their customers, however, placed new demands on the foreign banks. By accepting dollar deposits they incurred dollar-denominated liabilities; while such liabilities were "backed up" by claims on those to whom banks extended dollar loans, the transactions nevertheless opened the banks to the possibility of having to meet dollar deposit withdrawals without always being able to synchronize such withdrawals with the maturity of their dollar-denominated loans. The inter-bank trading in dollar balances that enabled foreign banks to borrow dollars from other foreign banks, and the possibility of converting domestic currency into dollars (regulations permitting), provided the first lines of defense against a liquidity squeeze for any bank confronted with sudden withdrawals. Yet the possibility existed that the inter-bank dollar market as well as the conversion possibilities could dry up in the wake of unsettlements in foreign exchange markets. The banks realized that a banking office in the United States provided an added protection against such possibility: the office could obtain needed funds in the "natural habitat" of the dollar—the U.S. money market. Thus, the desire to establish a banking office within the United States became an integral part of the involvement of major world banks in the Eurodollar market.

In addition to serving this particular function, the U.S. office of a foreign bank could serve a more general function related to the use of the dollar as an international medium of exchange. The U.S. office of a foreign bank could utilize the dollar funds it received as deposits or that it purchased in the U.S. money markets to provide loans to customers of the parent bank or to sister branches located in foreign countries. This accommodation has been particularly important where local authorities restricted residents from obtaining dollars by conversion of their domestic currency into dollars.

As the dollar became more freely convertible into foreign currencies, other considerations provided a motivation for foreign banks to open banking operations in the United States. A banking office in the U.S. money market provided the parent foreign bank an outlet through which it could invest (after conversion) surplus liquid funds accumulated in its own currency when interest rates in the U.S. money markets were higher than at home. This opportunity has been particularly valuable for banks from countries where the short-term money market has not been as well-developed as in the United States and where opportunities for short-term investment have been limited. Similarly, a U.S. office of a foreign bank could be used to supplement the liquidity needs of the parent in its own currency. The branch

[1] Regulation Q of the Federal Reserve's Rules and Regulations prohibits U.S. banks from paying interest on deposits with maturity of less than 30 days and places restrictions on the rates of interest that banks may pay on deposits of longer maturities.

could tap the U.S. money market on short notice and cable the dollars to the parent bank. After conversion into domestic currency, the bank could use the funds to meet its liquidity needs.[2]

Another factor closely related to the uniqueness of the U.S. money and capital market that motivated foreign banks to establish a presence in the United States was the desire of foreign banks to engage in the business of underwriting and trading in securities. Unlike U.S. banks, banks in many foreign countries are permitted (and typically, are heavily involved in) the securities brokerage and underwriting. For many of them it has become a logical extension of their domestic activities to establish a presence in the world's largest capital market through establishment of brokerage operations.

Finally, a banking facility in the United States provided foreign banks an opportunity to participate directly—and thus more efficiently and profitably—in the process of "clearing" dollar transactions undertaken by themselves and their customers outside of the United States. (See box.) Such transactions have expanded tremendously as the dollar increasingly became the medium of exchange in international transactions, as the Eurodollar market and its underlying transfer of dollar balances grew, and as foreign exchange transactions involving conversion of foreign currencies into dollars (and vice-versa) increased in volume. Currently, it has been estimated that the debits and credits in the accounts of U.S. banks involving transfers of balances at instructions from abroad exceeds $40 billion daily.

[2]A good example of these types of functions performed by the U.S. offices of foreign banks can be found in operations of Canadian banks in the United States. For many years these offices have been employing large amounts of surplus liquid balances accumulated by the parent banks to make call loans to U.S. securities dealers and brokers.

Clearing international transactions

"Clearing," in general, refers to the process by which a financial transaction between two parties involving intermediation of commercial banks is "settled." For example, John Doe writes a check on his account at Bank A to make a payment to Joe Smith who deposits it in his bank, Bank B. Bank B sends the check to the Federal Reserve or to a Clearing House (a corporation set up for this specific purpose) where it receives credit to the account the bank maintains there. Simultaneously, the Federal Reserve or the Clearing House debits the account of Bank A and sends the check to it. Essentially the same process takes place when a German importer instructs his bank to make a dollar payment to a Japanese exporter. The all-important thing that must be kept in mind is the fact that a dollar payment involving foreign banks, undertaken any place in the world, invariably entails *transfer of balances in the U.S. banking system*. If the two foreign banks involved in the transaction on behalf of their customers do not maintain offices in the United States, they would rely on their correspondent U.S. banks to affect the transaction. The German bank that maintains correspondent balances at Bank A in Chicago would draw on its balances and instruct Bank A by cable to transfer the appropriate dollar amount to the account the Japanese bank maintains with its correspondent Bank B in Chicago; Bank A would issue a "check" in favor of Bank B that would be cleared in the same way as the transaction between Doe and Smith. In those instances when a foreign bank would maintain an office in the United States, that office would then assume the role of the correspondent.

These, as well as other considerations derived from the prominent role of the U.S. economy and its currency, led to a large influx of foreign banks in the postwar period. By the end of 1965 there were 41 foreign banks conducting banking business in the United States, with assets totaling $7 billion. Ten of these banks were Japanese, 18 European, five Canadian, and eight from developing countries. In the latter part of the sixties the emergence of new modes of operation of large manufacturing corporations throughout the world provided additional reasons for banks to come to the United States.

Phase III: Corporate multinationalization

Establishing manufacturing facilities abroad, in close proximity to foreign markets and sources of cheap labor and raw materials, became a new trend in expansion of major world corporations. U.S. corporate giants pioneered such moves early in the sixties, followed by major foreign corporations. Since the United States represented a major market for many foreign corporations, inflow of foreign direct investment into the United States eventually became quite sizable. The book value of the foreign direct investment in the United States rose from $5.6 billion at the end of 1965 to almost $22 billion at the end of 1974. The foreign banks followed their corporate customers into the United States, and in some instances preceded them, in order to continue to provide them with financial services as an extension of long-established relationships.[3]

The impetus of the influx of foreign banks into the United States in that period has not come solely from the multinationalization of their own domestic corporations, however. The U.S. corporate expansion abroad also created conditions that provided incentives for foreign banks to come to the United States. As affiliates of U.S. corporations abroad established relationships with major local banks, these banks found it expedient to extend the relationship to the corporate headquarters of U.S. corporations by establishing offices in the United States. Such relationships have revolved around financing shipments of parts and semifinished products between the corporate headquarters in the United States and the affiliated suppliers in the foreign countries. Also, through their presence in the United States, foreign banks have often been able to provide for specialized financing of exports of U.S. corporations. For example, certain European banks with extensive foreign branch networks dating back to their colonial trade relationships were able to offer U.S. companies easier entry into new markets.

The "customization" of banking services by U.S. branches of foreign banks during this phase of expansion has not been limited to wholesale banking. Some foreign banks have found it profitable to expand into retail banking, with particular focus on their ethnic groups in the United States. For some foreign banks catering to nationals or descendants of nationals became the major reason for establishing their presence in the United States. Many foreign banks have made great efforts to expand the scope of their activities geographically, have entered into close relationships with the U.S. customers, and, in general, have endeavored to become an integral part of the U.S. banking scene.

In many respects Phase III of the foreign bank expansion in the United States can be characterized as an acclimatization and blending of foreign banks' operations with the operations typically carried on by the indigenous U.S. banks—a true multinationalization of

[3]See "International banking: Part I" for a discussion of how the activities of multinational U.S. corporations influence U.S. banks to expand into foreign markets. *Business Conditions*, December 1975.

banking in which national origin almost vanishes as a differentiating characteristic. The numbers reflecting the growth of foreign banks in the United States in the postwar period are quite impressive. By the end of 1975 there were close to 80 foreign banks with 184 banking offices located in the United States. Total assets of these offices as of the end of September 1975 amounted to $56.5 billion. About 42 percent, or some $23.6 billion, of the total assets were held by European banks; a similar proportion, totaling $23.2 billion, was held by Japanese banks while 12 percent, or $6.6 billion, were held by Canadian banks. The remaining $3.2 billion in assets were distributed among the banks of other nationalities.

Patterns of growth

The geographic pattern of growth of foreign banking in the United States has been determined by a number of factors. To the extent that the establishment of the U.S. banking facilities was motivated by the desire of foreign banks to participate in the financing of foreign trade or by the desire to gain access to the U.S. money and capital market, the logical locations were on the East coast, particularly New York City. Major U.S. banks located there traditionally have maintained banking connections with Europe and have specialized in providing international services more aggressively than the inland banks. Moreover, New York City traditionally has been the focal point of the U.S. money and capital markets. Thus, the initial expansion of foreign banks in the United States was concentrated almost exclusively there, with few exceptions involving other major centers such as Chicago and San Francisco.

The operational motives of the foreign banks were not the sole factor that determined their location in the United States, however. The regulatory climate also played a significant role. Chartering of foreign banking institutions in the United States has been the sole prerogative of individual states. Their laws largely determined the location and the organizational form of operations.[4]

Several organizational forms have been available to foreign banks wanting to establish a presence in the United States. The **representative office** has been the most common, but at the same time most restricted form used. While permitted by virtually all states, representative offices have no banking powers whatsoever. Their sole function is to act as a point of contact between the parent bank and its U.S. customers. To be permitted to engage in the full spectrum of banking services, such as accepting deposits, commercial lending, etc., a foreign bank would have to choose some other organizational form.

A **subsidiary** form of organization has been available in a number of states. The procedures and requirements for establishing a subsidiary are essentially the same for foreign banks as for U.S. banks. However, certain requirements concerning citizenship of stockholders and directors, capital requirements, and others have made the subsidiary unattractive to many foreign banks.

A far more popular corporate form has been the **branch**—even though only few states provide for the chartering of branches of foreign banks in their banking laws. A branch of a foreign bank may offer full banking services. Unlike a subsidiary, whose regulatory loan limit is determined by its own capitalization, the regulatory loan limit of a branch is determined by the capital position of the foreign parent bank. However, while permitted a full spectrum of banking activities just as domestic

[4]Several proposals that would provide for federal chartering of foreign banks are currently under consideration in the U.S. Congress. For a review of underlying issues, see "International banking: Structural aspects of regulation," *Business Conditions*, October 1974.

Assets and liabilities of offices of foreign banks in the United States

(December 1975)

Assets

	Agencies	Branches	Commercial banks	Investment companies	Total U.S.	Total Chicago
			(millions of dollars)			
TOTAL ASSETS	**27,875**	**20,285**	**13,386**	**2,753**	**64,300**	**1,555**
Loans and credits	**13,040**	**5,702**	**6,400**	**1,253**	**26,394**	**732**
U.S.	*10,390*	*3,392*	*3,464*	*901*	*18,147*	*596*
Foreign	*2,618*	*2,147*	*657*	*326*	*5,748*	*127*
Misc. U.S. loans including retail	*32*	*163*	*2,279*	*26*	*2,500*	*10*
Money market assets	**3,584**	**6,258**	**3,474**	**557**	**13,873**	**518**
Interbank assets	2,940	5,677	1,179	317	10,113	484
U.S. banks	*2,175*	*4,153*	*1,049*	*161*	*7,538*	*387*
Foreign banks	*764*	*1,524*	*131*	*156*	*2,575*	*97*
Loans to security dealers	286	145	62	0	492	5
U.S. government and agency securities	359	436	2,233	240	3,268	30
Miscellaneous assets	**844**	**624**	**1,545**	**310**	**3,323**	**54**
Assets from parent and affiliates	**10,407**	**7,702**	**1,967**	**633**	**20,709**	**251**
Clearing balances due from others	1,390	3,673	1,632	464	7,159	115
Due from U.S. banking affiliates	4,445	721	102	22	5,290	33
Due from foreign parent and affiliates	4,571	3,307	234	147	8,260	103

Liabilities

	Agencies	Branches	Commercial banks	Investment companies	Total U.S.	Total Chicago
			(millions of dollars)			
TOTAL LIABILITIES AND EQUITY	**27,875**	**20,285**	**13,386**	**2,753**	**64,300**	**1,555**
Liabilities to nonbanks	**2,139**	**6,765**	**9,539**	**765**	**19,208**	**485**
Deposits of U.S. residents	873	2,929	8,667	189	12,657	347
Deposits of foreigners	1,266	3,837	873	576	6,551	138
Interbank liabilities	**9,384**	**3,153**	**748**	**787**	**14,072**	**267**
U.S. banks	9,282	2,449	468	138	12,336	256
Foreign banks	102	704	280	649	1,736	11
Miscellaneous liabilities	**2,796**	**557**	**564**	**326**	**4,243**	**49**
Liabilities to parent and affiliates	**13,259**	**9,643**	**1,300**	**703**	**24,904**	**734**
Clearing balances due to others	1,515	1,509	721	434	4,179	35
Due to U.S. banking affiliates	3,182	2,136	326	22	5,667	433
Due to foreign parent and affiliates	8,561	5,997	253	247	15,058	266
Capital accounts and reserves	**298**	**167**	**1,235**	**173**	**1,872**	**21**
Number of reporting institutions	*82*	*65*	*33*	*4*	*184*	*24* *

NOTE: Details may not add to totals due to rounding.

*Includes 22 branches and 2 wholly owned subsidiaries.

banks, the branches of foreign banks are typically subject to the same regulatory requirements as domestic banks. To avoid some of these requirements (such as maintenance of fractional reserves against deposits), some foreign banks have chosen the **agency** form of organization, where available. Agencies generally are permitted to engage in all banking functions *except* receiving and maintaining deposits. However, agencies are permitted to maintain credit balances incidental to their lending activities and other lawful functions, and are not subject to loan limits. Therefore, this organizational form has been popular with banks whose operational objectives are predominantly wholesale banking, trade financing, and money market operations. Finally, an institutional form known as **investment company** is available for the foreign banks wishing to establish a U.S. presence in New York. Such companies are essentially permitted the same activities as agencies.

Foreign banks in the Seventh District

Illinois has been the only state in the district with a significant foreign banking presence. In the latter part of the nineteenth century several Canadian banks established banking offices in Chicago.[5] They became active in foreign investments associated with railroad construction, and foreign trade revolving around Chicago's grain and meat packing industries. However, in 1922 and 1923 the Illinois State banking laws were revised, and for the first time, included specific prohibition against establishment of agencies and branches of foreign banks in the state. During the following fifty years only three foreign-affiliated banks were established in Illinois as state-chartered banks.[6]

A major change occurred in 1973 when the state legislature passed the Illinois Foreign Banking Office Act, which permitted foreign banks to establish branches

Anticipated sources and uses of funds cited by branches of foreign banks in Chicago

Expected source of funds	Percent of banks
Consumer deposits	41
Local business deposits	23
Multinational corporate deposits	100
Interbank money market	4
Foreign official institutions	23
Parent institutions	18
Expected uses of funds	
Consumer loans	23
Local business loans	27
International corporate loans	100
Export-Import financing	54
Eurocurrency market	9
Interbank money market	18

[5]The first foreign bank to establish a banking facility in Chicago was the Bank of Montreal, which opened an agency on September 24, 1861. It was followed in the 1870s by the Bank of Commerce and the Bank of British North America, and in the 1890s by the Bank of Nova Scotia that opened for business on September 20,1892. Extensive involvement of the Canadian banks in financing the rebuilding of Chicago following the Great Fire in 1871 is said to have caused the state banking authorities to "close their eyes" to their presence following prohibition of foreign banking in Illinois in the 1920s. While the Bank of Commerce and the Bank of British North America closed their agencies long before the ban, the Bank of Nova Scotia (that converted to a branch in 1897) was not closed until 1940; the Bank of Montreal (that opened as a branch in November 1871) remained open until 1952. Both banks currently maintain representative offices in Chicago.

[6]In 1930 Banco Di Napoli was established in Chicago as a state bank; it was liquidated in 1942 by the federal authorities under the Foreign Asset Control Act. In 1964 the Chicago-Tokyo Bank was chartered under the state banking laws with a Japanese bank, the Bank of Tokyo, as a minority stockholder. In 1971 another Japanese bank, the Daiichi Kangyo Bank, established a wholly owned subsidiary, the First Pacific Bank, under the provisions of the Bank Holding Company Act.

Assets of foreign banks in Chicago

	Total assets December 1975	Total assets December 1974
	(thousands of dollars)	
Branches		
Algemene Bank Nederland N.V.	92,473	12,059
Banca Commerciale Italiana	221,082	153,340
Bank Lenmi Le Israel	26,793	—
Barclays Bank International Ltd.	13,121	14,248
Banque Nationale de Paris	63,715	33,082
Banque De L'Indochine et De Suez	923	135
The Chartered Bank	2,894	—
Commerzbank	52,952	6,556
Credit Lyonnais	122,042	14,655
Dresdner Bank, AG	22,887	11,868
European Banking Company, Ltd.	25,157	12,022
Hong Kong and Shanghai Banking Company	473	262
The International Commercial Bank of China	3,803	—
Korea Exchange Bank	15,017	—
Lloyds Bank International Ltd.	49,614	25,578
National Bank of Greece	29,201	21,769
National Westminster Bank Ltd.	63,616	15,279
The Sanwa Bank Ltd.	177,088	74,494
State Bank of India	2,336	—
The Sumitomo Bank Ltd.	152,565	97,831
Swiss Bank Corporation	158,304	44,761
Union Bank of Bavaria	23,256	—
Subtotal	1,319,312	537,946
Subsidiaries		
Banco Di Roma	133,006	82,524
First Pacific Bank	102,751	65,754
Subtotal	235,757	148,278
Grand Total	**1,555,069**	**686,224**

within the limited downtown area known as the Chicago "Loop." Patterned after laws of other states, the Illinois act permitted branches of foreign banks a full spectrum of banking functions, subject to essentially the same restrictions and requirements as Illinois-chartered domestic banks.

Foreign banks responded aggressively to the opportunity the act opened to them. The Midwest has represented a major source of the country's international trade and foreign investment because a great number of the nation's corporate giants are headquartered in the area. The act provided foreign banks an opportunity to establish themselves in close proximity to their major U.S. customers. Twenty-two foreign banks opened branches in Chicago since the Illinois law was enacted. One additional bank established a subsidiary under provisions of the Bank Holding Company Act, bringing the total number of foreign banks in Chicago to 24.

The intended nature of activities of the newly established branches has ranged over the full spectrum of banking. Some insights in this area may be gleaned from statements made to the chartering authorities at the time application for charter was made. Current data on their activity appear to bear out the banks' expectations: during 1975 total assets of foreign banks in Chicago have more than doubled, from $686 million at the end of 1974 to $1,555 million at the end of 1975. Their presence in Chicago has contributed to the development of the city as a major international banking center.

Joseph G. Kvasnicka

Holding companies and deposit variability

The effects that holding company affiliations have on the operations and performance of banks have received much attention lately. Studies comparing banks affiliated with holding companies and banks not affiliated with holding companies have found important differences in portfolio composition and in price structures between the two types of banks.

The thesis of this article is that banks affiliated with multibank holding companies (MBHCs) are significantly different from banks unaffiliated with multibank holding companies as regards long-range planning. That is, the adoption of the holding company form of organization reflects a management philosophy that stresses two long-range goals: growth and stability. The point to be investigated is whether managements of holding company banks engage in more systematic long-range planning to achieve these goals.

While it is not possible to measure quantities of planning directly, indirect tests of this thesis can be made. If managers of MBHC banks do devote more resources to planning, then their efforts should be rewarded by improved performance. One relevant aspect of performance is deposit variability.

Variability of deposits

Short-run deposit variability, or fluctuations in deposit levels over periods of days, weeks, or months, is a familiar concept to all bankers in that it affects the frequency with which banks resort to the discount window, the necessary level of bank liquidity, and the maturity structure of a bank's portfolio. Variability of deposits around a long-term growth trend, while less familiar, is particularly important in long-range planning. A smoothly growing stock of deposits forms a secure base for investments in long-term assets. When deposits show minimal divergence from a trend of constant long-run growth, expenses involved in borrowing funds can be minimized and the cost of funds needed to support current assets can be predicted with relative precision. Stable deposit growth allows a bank to plan its portfolio maturity schedule with some assurance that the cost of funds will not change dramatically in the foreseeable future. Also, stable deposit growth is conducive to, but does not guarantee, steady growth in bank earnings, bank capital, and stockholder dividends.

While both rapid and stable deposit growth are worthwhile objectives, these two goals conflict with each other. Generally speaking, slow change or slow growth implies stability, rapid change or growth implies increased variability. Moreover, rapid deposit growth often is characteristic of new banks, many of which are less stable than established banks simply because they are not yet fully adapted to their environments. Sharp demographic or technological changes can lead to rapid deposit growth.

In view of this conflict, increased deposit growth probably can be attained

only at the cost of increased long-run deposit variability. If, as suggested, holding company managements devote more resources to planning, banks affiliated with MBHCs should be able to improve the trade-off between deposit growth and variability, displaying less long-run deposit variability for a given growth rate of deposits.

Data from a sample of 160 member banks in the Seventh Federal Reserve District were analyzed to determine if such a difference did exist. Of the sample banks, 21 were affiliated with MBHCs. Other general characteristics of the sample banks are described in "Advertising for demand deposits" in the September 1975 issue of *Business Conditions*.

Multiple regression techniques were used to analyze the data for this article. Empirical results are presented in the accompanying table, which is organized as four columns. The left-most column lists the variables used to explain long-run deposit variability. The other three columns present regression coefficients and their standard errors for separate analyses of total deposits, demand deposits, and time deposits. Reading down a column locates regression coefficients for all variables in one regression equation. One can read across a row to compare regression coefficients of a single variable for the three classes of deposits.

Regression results explaining long-run deposit variability

Variable	Total deposits	Demand deposits	Time deposits
Size	-.0001	-.0006	.0006
	(.0003)	(.0005)	(.0007)
Concentration	-.0225**	-.0424***	-.0294**
	(.0106)	(.0120)	(.0139)
Market share	-.0031	-.0064**	-.0116***
	(.0029)	(.0031)	(.0047)
Population density	.0036**	-.0001	.0042*
	(.0020)	(.0021)	(.0028)
Deposit growth rate—all banks	.0848***	.0879***	.0785***
	(.0057)	(.0076)	(.0064)
Deposit growth rate—new HCs	-.0691	-.0825*	-.0572
	(.0596)	(.0580)	(.0563)
Deposit growth rate—old HCs	-.0504***	-.0456**	-.0564***
	(.0186)	(.0227)	(.0221)
New HCs	.5698	.3554*	.6892
	(.4514)	(.2497)	(.6414)
Old HCs	.3189	.2096	.5236*
	(.2509)	(.2277)	(.3969)
Intercept	-.4142**	.4760**	-.2682
	(.2182)	(.2168)	(.3031)
R^2 (adjusted)	.613	.503	.544

*Denotes significance at 10% level.
**Denotes significance at 5% level.
***Denotes significance at 1% level.

Empirical results

That there is a trade-off between growth and stability is amply illustrated by the data examined. As indicated by "Deposit growth rate—all banks," higher rates of deposit growth result in more variability of deposit growth. For total deposits an increase in the rate of growth of one percentage point results in a 20 percent rise in long-run deposit variability.[1]

Banks affiliated with MBHCs should be able to improve this trade-off to the extent they plan more effectively. But holding company management techniques often require a relatively long time to take hold. New operating procedures must be learned and new relationships must be established with clients and correspondents. Organizational restructuring often is required. Most important, the old management must be thoroughly retrained in the new corporate philosophy and methods, or new management must be brought in.

[1]Measured from the mean value of the dependent variable = .4161.

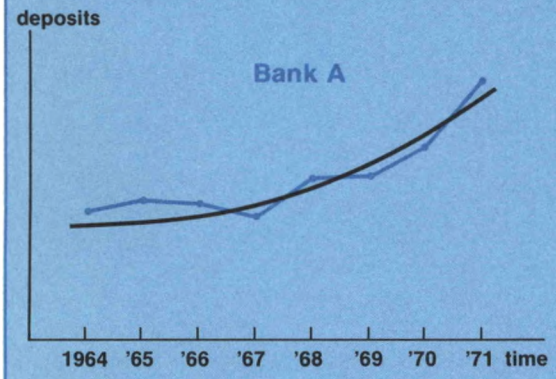
Therefore, the length of time a bank has been a holding company affiliate would be expected to have an important influence on how successful management is in achieving rapid growth with minimum deposit variability.

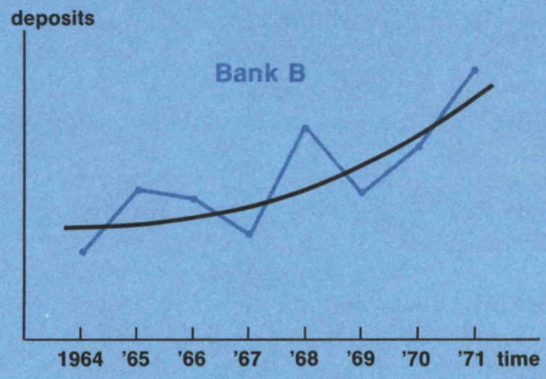
In comparing old and new affiliates (affiliations made before and after December 31, 1963), banks with longer periods of affiliation showed better ability to manage deposit growth. As shown by "Deposit growth rate—old HCs," older holding company affiliates (banks affiliated before 1964) reduced the destabilizing effects of rapid deposit growth by almost 60 percent, on average.[2] On the other hand, "Deposit growth rate—new HCs" results show the new affiliates exhibited only marginal success in reducing the destabilizing effects of demand deposit growth and no success in managing time deposits or total deposits.

The ability to manage rapid deposit growth aside, empirical testing for "new HCs" and "old HCs" indicates that affiliation, in and of itself, has no significant impact on long-run deposit variability.

[2]The 60 percent reduction estimate is derived from the total deposits equation by summing the regression coefficients of "Deposits growth rate—all banks" and "Deposit growth rate—old HCs" and expressing the sum as a proportion of "Deposit growth rate—all banks." In numerical terms, (.0848 - .0504) ÷ (.0848) = .4057.

How long-run deposit variability is measured





These diagrams illustrate the definition and measurement of long-run deposit variability. The irregular plottings represent hypothetical annual observations on deposits; the smoother trend lines are statistically fitted compound annual growth paths. By intent, the trend lines are constructed to be the same for Bank A and Bank B.

Deposit growth rate is the rate of increase along the compound growth path. Long-run deposit variability measures how widely actual deposit levels depart from the smooth trend. In the diagram, Bank B's deposits fluctuate widely around their growth path, while Bank A's deposits fall close to the trend line. As a consequence of this, Bank B will experience considerably greater difficulty estimating the level of future deposit funds available for investment.

Other factors

Several factors, basically unrelated to corporate structure, were included in the analysis because they were expected to influence long-run variability of deposits.

• *Bank size.* Large banks generally have larger staffs and greater managerial resources to devote to planning than do small banks. Also, studies of short-run deposit variability have found that large banks exhibit decreasing deposit variability as time horizons lengthen from days to weeks to months.[3] It was thought this finding would hold true as the horizon was extended to years, but the statistical analysis showed otherwise. The failure of bank size to influence long-run deposit variability reflects the fact that, on average, multibank holding company affiliated banks in the sample were the same size as nonaffiliated banks.

• *Market concentration.* Concentration, measured by the numbers equivalent,[4] is an important explanatory variable. In concentrated markets there is a high degree of interdependence between banks; for example, a successful advertising effort by a bank results in market share reductions for its rivals. Rivals may respond with advertising campaigns (or other competitive tactics) of their own. Such action/response patterns impose an erratic trend on year-to-year growth rates of deposits. Indeed, as shown by the concentration variable, banks in more concentrated markets exhibit greater long-run deposit variability.

• *Market share.* Banks commanding large market shares display less long-run variability of demand and time deposits, but insignificantly different long-run variability of total deposits. A bank enjoying a large market share will feel less competitive pressure from its rivals than a bank with a small market share. The loss of any given amount of deposits will be proportionately less important the larger the bank's market share. Thus, banks with larger market shares need not react quickly to competitors' promotional activities.

• *Population density.* In highly urbanized areas dense concentrations of buyers and sellers make banks acutely aware of rivals and thus increase interdependence. Population density, measured as the percentage of the population living in urban areas, is not statistically significant for variability of demand deposits but is significant for total deposits and marginally significant for time deposits.

Two basic findings emerge from the data analyzed. First, rapid deposit growth leads to more variable deposit growth. Second, rapid deposit growth has less of a destabilizing effect on banks that have been holding company affiliates for a relatively long time. By virtue of the finding that banks affiliated with multibank holding companies are able to improve the growth/stability trade-off, one can draw the inference that multibank holding companies do indeed stress long-range planning more than other forms of corporate organization.

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[3]George G. Kaufman, "Deposit Variability and Bank Size," *Journal of Financial and Quantitive Analysis*, Vol. VII, No. 5 (December 1972), pp. 2087-96.

[4]The numbers equivalent is the reciprocal of the Herfindahl index. (For a definition and explanation, see "Advertising for Demand Deposits," *Business Conditions*, September 1975, p. 14.)