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THE DECLINE OF TRADITIONAL
BANKING: IMPLICATIONS FOR
FINANCIAL STABILITY AND
REGULATORY POLICY

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ABSTRACT

This paper outlines the fundamental economic forces that have led to the decline in traditional banking, that is the process of making loans and funding them by issuing short-dated deposits. The declining competitiveness of traditional banking may threaten financial stability by increasing bank failures and by increasing the incentives for banks to take on more risk, either by making more risky loans or by engaging in "nontraditional" financial activities that promise higher returns but greater risk. This paper argues that most nontraditional activities, such as banks acting as derivatives dealers, expose banks to risks and moral hazard problems that are similar to those associated with banks' traditional activities, and that these activities can be regulated as effectively as can traditional activities. One regulatory approach to maintain financial stability and strengthen the banking system is to adopt a system of structured bank capital requirements with early corrective action by regulators. An important element in this approach is that market-value accounting principles would be applied to banks and there would be increased public disclosure by banks of the risks associated with their trading activities. With this regulatory structure in place, banks could be permitted greater freedom to expand into nontraditional activities.

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I. INTRODUCTION

The traditional banking business has been to make long-term loans and fund them by issuing short-dated deposits, a process which is commonly referred to as "borrowing short and lending long". In recent years fundamental economic forces have undercut the role of traditional banks in financial intermediation. As a source of funds for financial intermediaries, deposits have steadily diminished in importance. In addition, the profitability of traditional banking activities (such as business lending) has diminished in recent years. As a result, banks have increasingly turned to new non-traditional financial activities as way of maintaining their position as financial intermediaries.¹

This paper discusses two objectives: to examine the forces responsible for the declining role of traditional banking in the United States as well as in other countries, and to explore the implications of this decline and banks' responses to it for financial stability and regulatory policy. A key policy issue is whether the decline of banking threatens to make the financial system more fragile. If nothing else, the prospect of a mass exodus from the banking industry (possibly via increased failures) could cause instability in the financial system. Of greater concern is that declining profitability could tip the incentives of bank managers towards assuming greater risk in an effort to maintain former profit levels. For example, banks might make loans

¹ Although many banks may be able to maintain their relative position as financial intermediaries by engaging in "non-traditional" banking activities, for policy purposes it is important to focus on the economic forces that have undercut the role of "traditional" banking. Indeed, an important question is whether important public policy issues are raised by banks having to transform themselves into financial intermediaries that look more like nonbank financial intermediaries.

to less creditworthy borrowers or engage in "nontraditional" financial activities that promise higher returns but carry greater risk. A new activity that has generated particular concern recently is the expanding role of banks as dealers in derivatives products. There is a fear that in seeking new sources of revenue in derivatives banks may be taking risks that could ultimately undermine their solvency and possibly the stability of the banking system.

The challenge posed by the decline of traditional banking is twofold: we need to maintain the soundness of the banking system while restructuring the banking industry to achieve long term financial stability. A sound regulatory policy can encourage an orderly shrinkage of traditional banking while at the same time strengthening the competitive position of banks, possibly by allowing them to expand into more profitable nontraditional activities. In the transitional period, of course, regulators would have to continue to be vigilant against excessive risk-taking that could threaten financial stability.

The first part of our paper documents the declining financial-intermediation role of traditional banks in the United States. We discuss the economic forces that are driving this decline, in both the United States and in foreign countries, and how banks have responded to these pressures. Included in this discussion is an examination the activities of banks in derivatives markets, a particularly fast-growing area of their off-balance sheet activities. Finally, we examine the implications of the changing nature of banking for financial fragility and regulatory policy.

II. THE DECLINE OF TRADITIONAL BANKING IN THE UNITED STATES

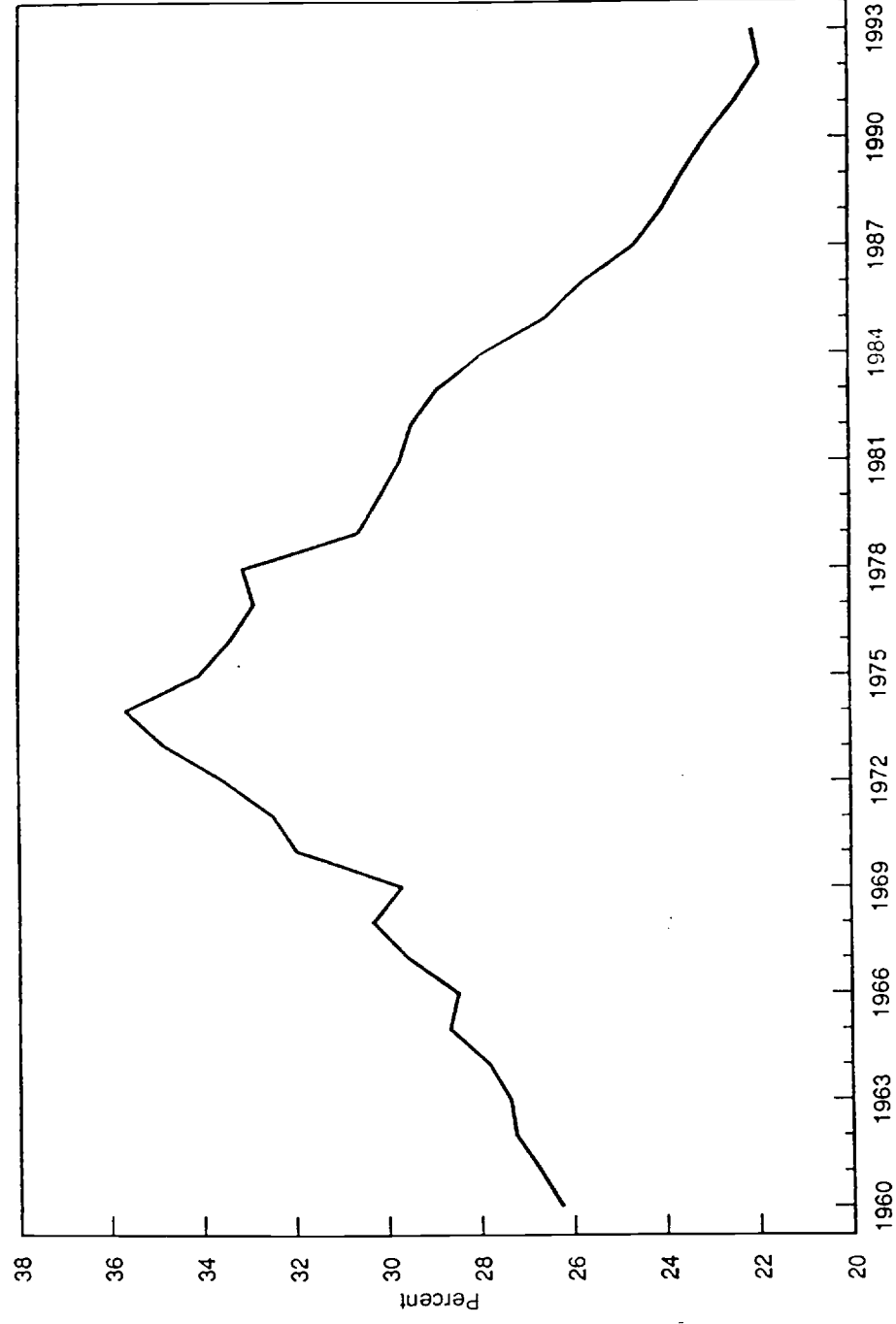
In the United States the importance of commercial banks as a source of funds to nonfinancial borrowers has shrunk dramatically. In 1974 banks provided 35 percent of these funds; today they provide around 22 percent. (See Figure 1) Thrift institutions (savings and loans, mutual savings banks and credit unions), which can be viewed as specialized banking institutions, have also suffered a decline in market share, from over 20 percent in the late 1970's to below 10 percent in the early 1990's. (See Figure 2).

Another way of viewing the declining role of banking in traditional financial intermediation is to look at the size of banks' balance-sheet assets relative to those of other financial intermediaries. (See Table 1.) Commercial banks' share of total financial intermediary assets has fallen from around the 40 percent range in the 1960-80 period to below 30 percent by the end of 1993. Similarly, the share of total financial intermediary assets held by thrift institutions has declined from around 20 percent in the 1960-80 period to below 10 percent by 1993.²

Boyd and Gertler (1994) and Kaufman and Mote (1994) correctly point out that the decline in the share of total financial intermediary assets held by banking institutions does not necessarily indicate that the banking industry is in decline. In particular, banks have been increasing their off-balance sheet activities (an issue we discuss later), and therefore their role in financial markets may be understated by looking solely at the on-balance sheet activities. However, the decline in traditional

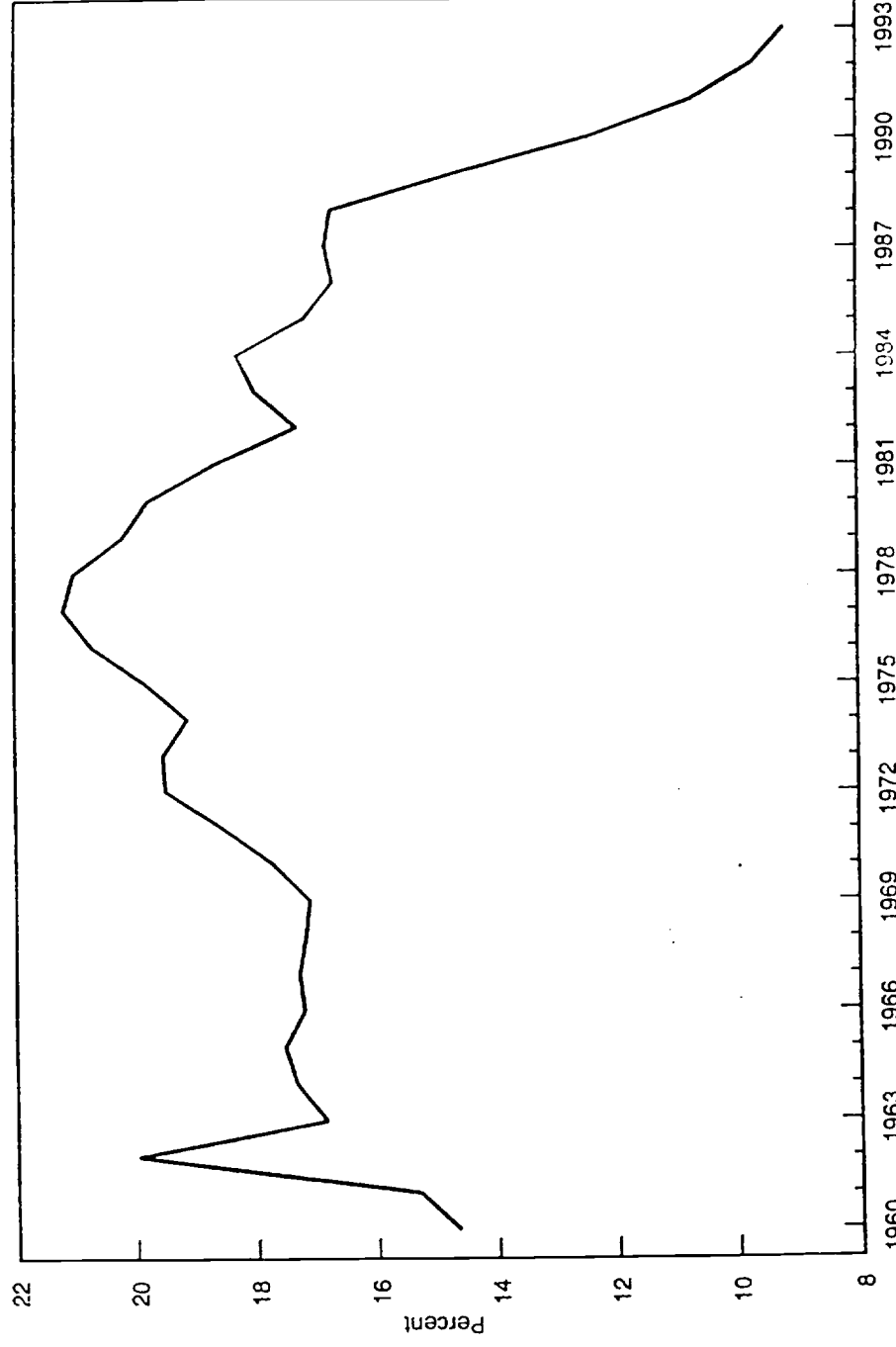
²See also Edwards (1993).

Figure 1
Commercial Banks Share of Total Nonfinancial Borrowing, 1960-1993



Source: Federal Reserve Flow of Funds Accounts

Figure 2
Thriffs Share of Total Nonfinancial Borrowing, 1960-1993



Source: Federal Reserve Flow of Funds Accounts

TABLE 1 -- Relative Shares of Total Financial Intermediary Assets, 1960-1993 (%)

	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>1993</u>
Insurance companies					
Life insurance	19.6	15.3	11.5	12.5	13.0
Property and casualty	4.4	3.8	4.5	4.9	4.6
Pension Funds					
Private	6.4	8.4	12.5	14.9	17.0
Public (state and local government)	3.3	4.6	4.9	6.7	7.7
Finance companies	4.7	4.9	5.1	5.6	4.8
Mutual funds					
Stock and bond	2.9	3.6	1.7	5.9	11.1
Money market	0.0	0.0	1.9	4.6	4.1
Depository institutions (banks)					
Commercial Banks	38.6	38.5	37.2	30.4	28.1
S&Ls and mutual savings	19.0	19.4	19.6	12.5	7.5
Credit unions	1.1	1.4	1.6	2.0	2.1
Total	100.0	100.0	100.0	100.0	100.0

Source: Federal Reserve Flow of Funds Accounts.

banking which is reflected in the decline in their share of total financial intermediary assets raises important policy issues that are the focus of this paper.

III. WHY IS TRADITIONAL BANKING IN DECLINE?

Fundamental economic forces have led to financial innovations which have increased competition in financial markets. Greater competition, in turn, has diminished the cost advantage banks have had in acquiring funds and has undercut their position in loan markets. The result has been reduced profitability of traditional banking, and an effort by banks to diversify into new and more profitable activities.

A. Diminished Advantage in Acquiring Funds (Liabilities)

Until 1980 deposits were a cheap source of funds for U.S. banking institutions (commercial banks, savings and loans, mutual savings banks and credit unions). Banks were subject to deposit rate ceilings that restricted them from paying interest on checkable deposits and Regulation Q limited them to paying specified interest rate ceilings on savings and time deposits. For many years these restrictions worked to the advantage of banks because a major source of their funds was checkable deposits (which in 1960 and earlier years constituted over 60 percent of total bank deposits). The zero interest cost on these deposits resulted in banks having a low average cost of funds.

This cost advantage did not last. The rise in inflation beginning in the late 1960's led to higher interest rates and made investors more sensitive to yield differentials on different assets. The result was the so-called disintermediation process, in which depositors took their money out of banks paying low interest rates (on both checkable and time deposits) and purchased higher yielding assets. In addition, restrictive bank regulations created an opportunity for nonbank financial institutions to invent new ways to offer bank depositors higher rates. Nonbank competitors were not subject to deposit rate ceilings that restricted banks, and did not have the costs associated with having to hold non-interest bearing reserves and paying deposit insurance premiums. A key development was the creation of money market mutual funds (MMMF's), which put banks at a competitive disadvantage because MMMF shareholders (or depositors) could obtain check-writing services while earning a higher interest rate on their funds. Not surprisingly, as a source of funds for banks, low-cost checkable deposits declined dramatically, falling from 60 percent of bank liabilities in 1960 to under 20 percent today.

The growing disadvantage of banks in raising funds led to their supporting legislation in the 1980's to eliminate Regulation Q ceilings on time deposits and to allow checkable deposits that paid interest (NOW accounts). Although these changes helped to make banks more competitive in their quest for funds, it also meant that their cost of funds rose substantially, reducing the cost advantage they enjoyed.

B. Diminished Income (or Loan) Advantages

Banks have also experienced a deterioration in the income advantages they once enjoyed on the asset-side of their balance sheets. The growth of the commercial paper market, the junk bond market and the increased securitization of assets have undercut their traditional advantage in providing credit.

Improvements in information technology, which have made it easier for households, corporations and financial institutions to evaluate the quality of securities, have made it easier for business firms to borrow directly from the public by issuing securities. In particular, instead of going to banks to finance short-term credit needs, many business customers now borrow through the commercial paper market. Total nonfinancial commercial paper outstanding as a percentage of commercial and industrial bank loans has risen from 5 percent in 1970 to over 20 percent today.

The rise of money market mutual funds also has indirectly undercut banks by supporting the expansion of competing finance companies. The growth of assets in MMMF's to over \$500 billion created a ready market for commercial paper because money market mutual funds must hold liquid, high-quality, short-term assets. Further, the growth in the commercial paper market has enabled finance companies, who depend on issuing commercial paper for much of their funding, to expand their lending at the expense of banks. Finance companies provide credit to many of the same businesses that banks have traditionally served. In 1980 finance company loans

to businesses amounted to about 30 percent of banks' commercial and industrial (C&I) loans; today these loans constitute over 60 percent of banks' C&I loans.

The junk bond market also has taken business away from banks. In the past only Fortune 500 companies were able to raise funds by selling their bonds directly to the public, bypassing banks. Now, even lower-quality corporate borrowers can readily raise funds through access to the junk bond market. Despite predictions of the demise of the junk bond market after the Michael Milken embarrassment, it is clear that the junk bond market is here to stay. Although sales of new junk bonds slid to \$2.9 billion by 1990, they rebounded to \$16.9 billion in 1991, \$42 billion in 1992, and \$60 billion in 1993.

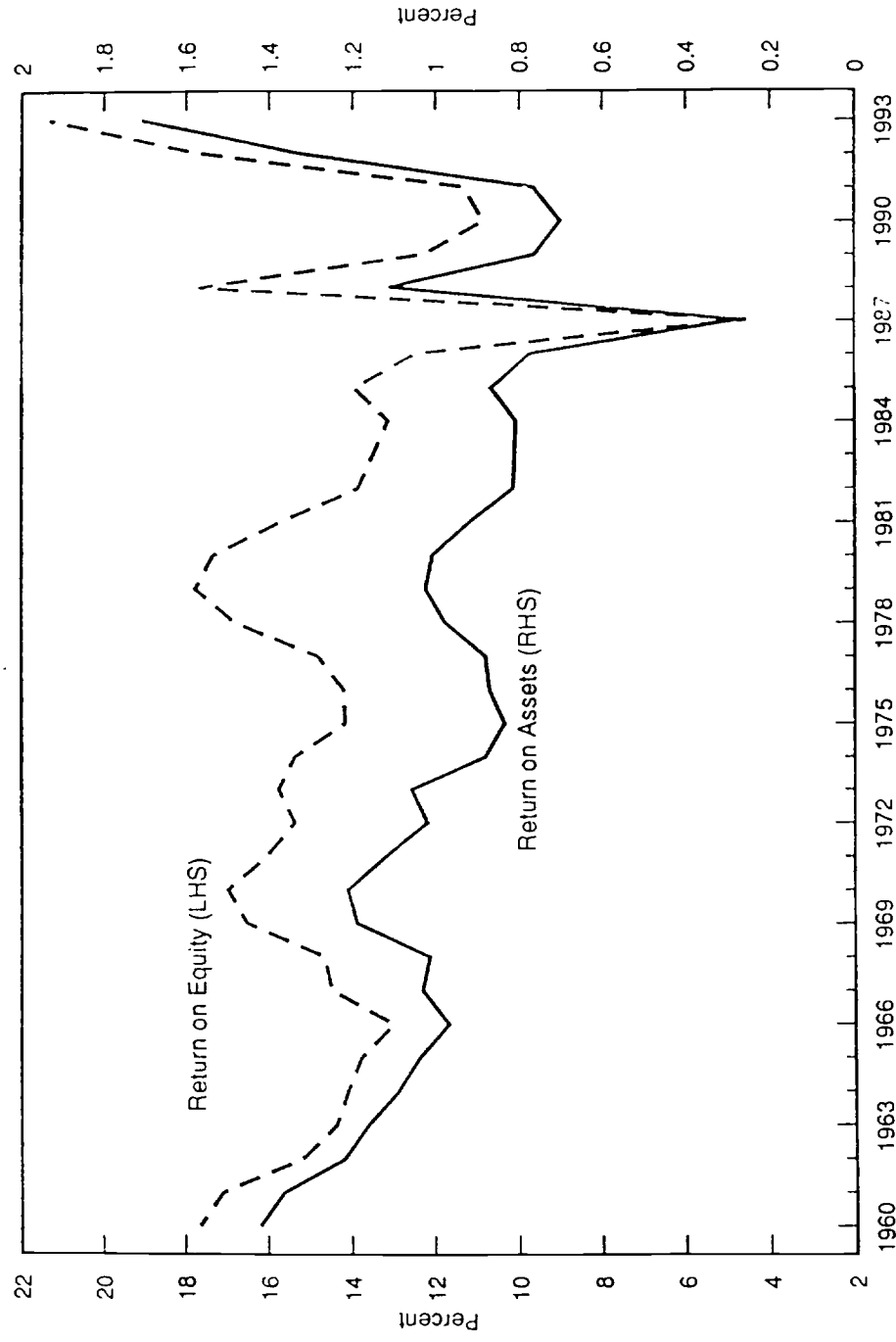
The ability to securitize assets has made nonbank financial institutions even more formidable competitors for banks. Advances in information and data processing technology have enabled nonbank competitors to originate loans, transform these into marketable securities, and sell them to obtain more funding with which to make more loans. Computer technology has eroded the competitive advantage of banks by lowering transactions costs and enabling nonbank financial institutions to efficiently evaluate credit risk through the use of statistical methods. When credit risk can be evaluated using statistical techniques, such as is the case for consumer and mortgage lending, banks no longer have an advantage in making loans. An effort is being made in the United States to develop a market for securitized small business loans as well.

U. S. banks also have been beset by increased foreign competition, particularly from Japanese and European banks. The success of the Japanese economy and Japan's high savings rate gave Japanese banks access to cheaper funds than were available to American banks. This cost advantage permitted Japanese banks to more aggressively seek out loan business in the United States, which resulted to the erosion of U.S. banks' market share. In addition, banks from all major countries have followed their corporate customers to the United States and have often enjoyed a competitive advantage because of less burdensome regulation in their own countries. Prior to 1980, two U.S. banks, Citicorp and Bank America, were the largest banks in the world. In the 1990's neither of these banks ranks among the top twenty. While some of this loss in market share may be due to the depreciation of the dollar, most of it is not.

IV. EROSION OF BANK PROFITABILITY

Not surprisingly, reduced advantages in raising funds and in making loans has eroded the profitability of traditional banking. Two standard measures of commercial bank profitability (shown in Figure 3), the pre-tax rates of return on assets and equity, both indicate a decline in bank profitability. The before-tax rate of return on equity declined from an average of 15 percent in the 1970-84 period to below 12 percent in the 1985-91 period. Although bank profits improved sharply in 1992 and 1993, many observers believe that these profits are transient and are due to favorable interest rate developments that will not last.

Figure 3
Return on Assets and Equity for Commercial Banks, 1960-1993



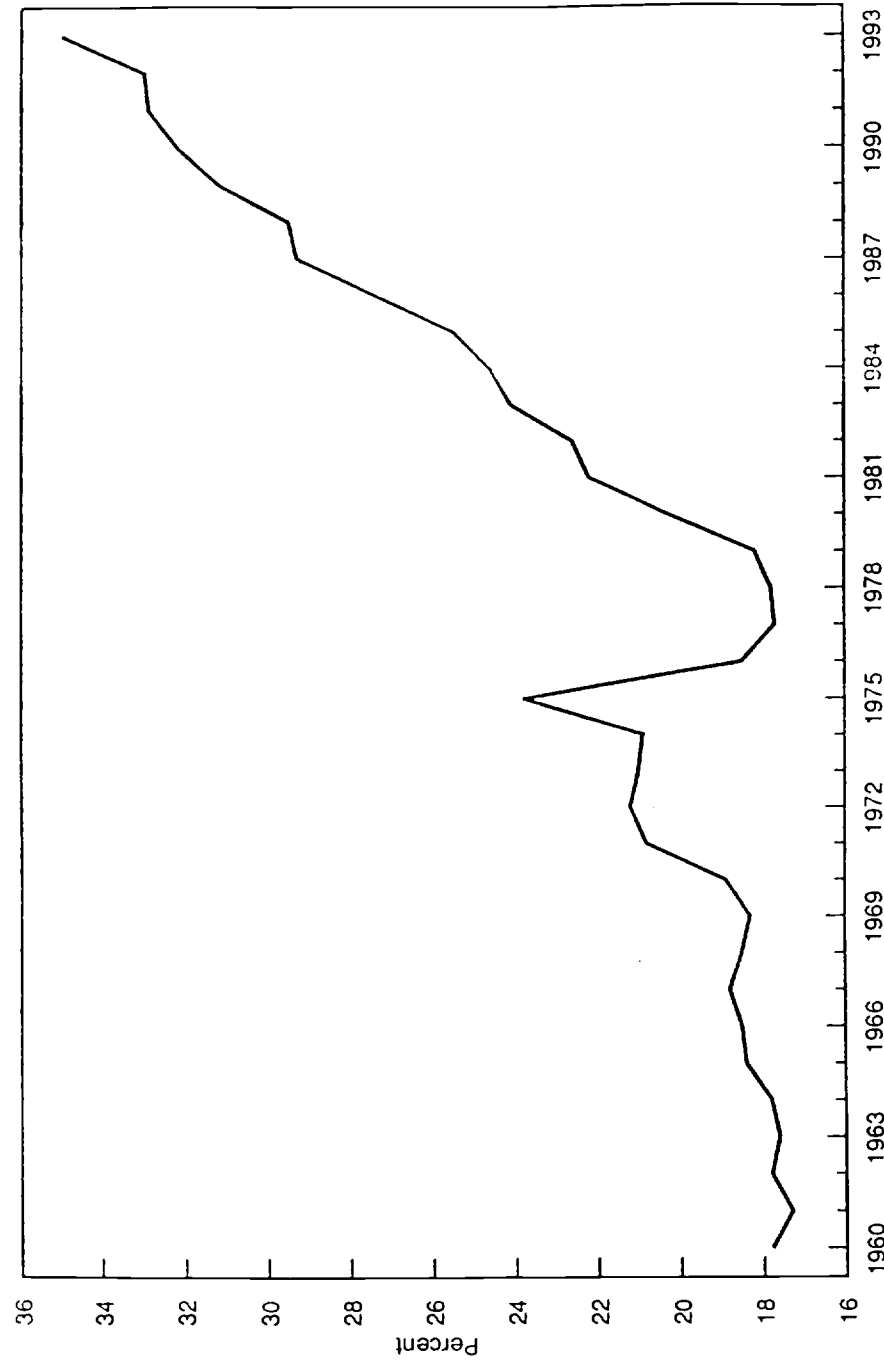
Source: Federal Deposit Insurance Corporation, *Statistics on Banking*

Overall bank profitability, however, provides a misleading indicator of the profitability of the traditional banking business. In the 1980's U.S. commercial banks derived an increasing share of their profits from off-balance sheet activities. (See Figure 4) As a share of total bank income, noninterest income derived from off-balance-sheet activities, such as fee and trading income, averaged 19 percent in the 1960 to 1980 period. By 1993, however, this source of income had grown to in excess of 35 percent of total bank income. Indeed, if we look at bank profitability excluding noninterest income, the declining trend in the profitability of banks' traditional businesses becomes evident. The pre-tax return on equity excluding noninterest income has fallen from plus 10 percent in 1960 to levels that approached negative 10 percent in the late 1980's and early 1990's. (See Figure 5)

The same forces are at work in other countries. The loss of banks' monopoly power over depositors has occurred outside the United States as well. Financial innovation and deregulation are occurring world-wide and have created attractive alternatives for both depositors and borrowers. Japan is a clear example. Deregulation has opened a wide array of new financial instruments to the public, causing a disintermediation process similar to that which has taken place in the United States. European countries which have protected their banking sectors from competition (such as Germany) will no longer be able to do so in the future with the advent of European-wide banking.

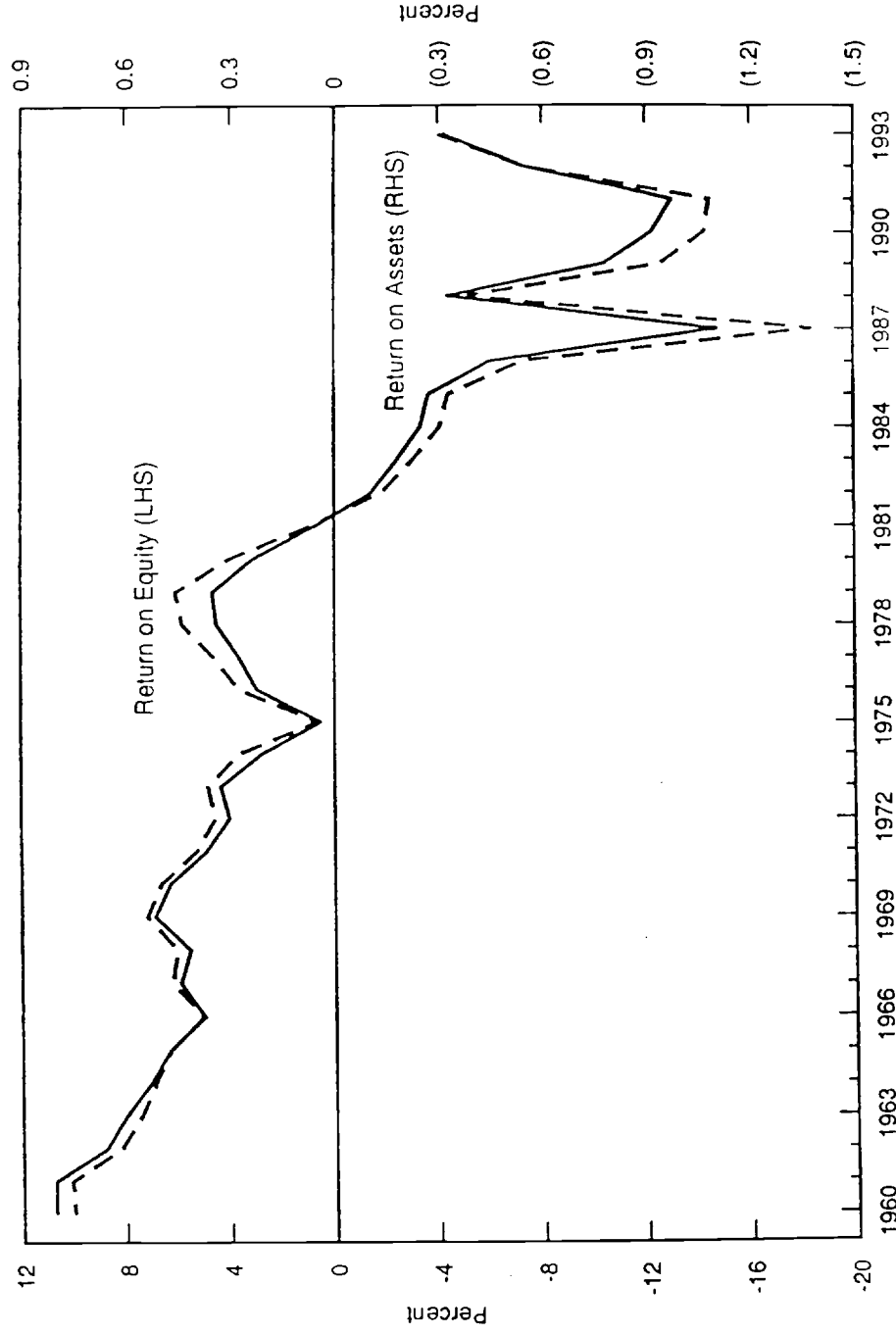
In recent years banks in other countries also have faced increased competition from the expansion of securities markets. Both financial deregulation and funda-

Figure 4
Share of Noninterest Income in Total Income
for Commercial Banks, 1960-1993



Source: Federal Deposit Insurance Corporation, *Statistics on Banking*

Figure 5
Return on Assets and Equity for Commercial Banks
Excluding Noninterest Income, 1960-1993



Source: Federal Deposit Insurance Corporation, *Statistics on Banking*

mental economic forces in other countries have improved the availability of information in securities markets, making it easier and less costly for business firms to finance their activities by issuing securities rather than going to banks. Further, even in countries where securities markets have not grown, banks have still lost loan business because their best corporate customers have had increasing access to foreign and offshore capital markets, such as the Eurobond market. In smaller economies, like Australia, which still do not have well-developed corporate bond or commercial paper markets, banks have lost loan business to international securities markets. In addition, the same forces that drove the securitization process in the United States are at work in other countries, and will undercut the profitability of traditional banking in these countries as well. Thus, although the decline of traditional banking has occurred earlier in the United States than in other countries, the same forces are at work in other countries and will ultimately result in a diminished role for traditional banking in these countries as well.

V. HOW HAVE BANKS RESPONDED?

In any industry a decline in profitability usually results in exit from the industry (often by widespread bankruptcies) and a shrinkage of market share. This occurred in the banking industry in the United States during the 1980's. In the 1960 to 1980 period, bank failures in the United States averaged less than ten per year,

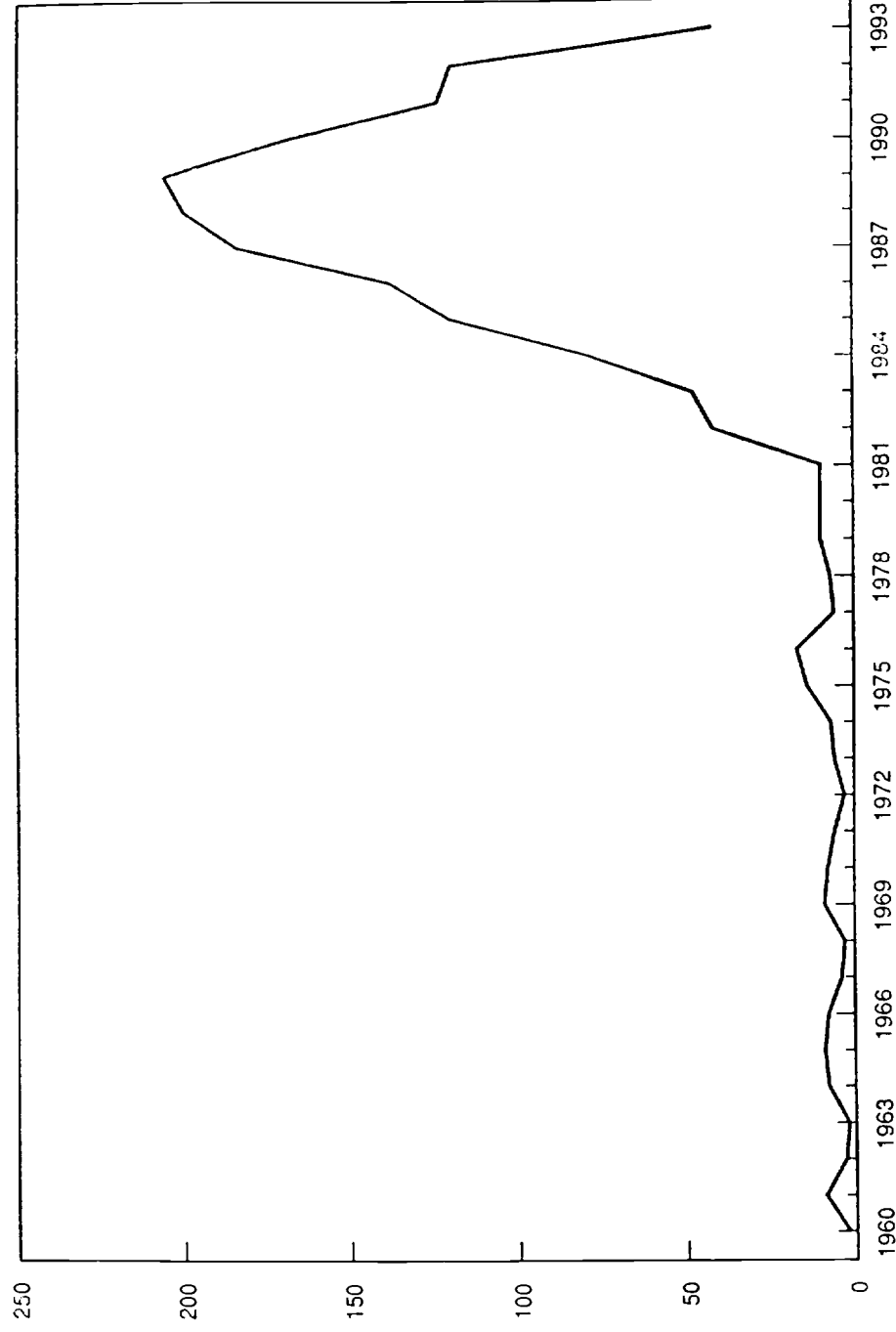
but during the 1980's bank failures soared, rising to over 200 a year in the late 1980's. (See Figure 6)

In an attempt to survive and maintain adequate profit levels, many U.S. banks are facing two alternatives. First, they can attempt to maintain their traditional lending activity by expanding into new, riskier, areas of lending. For example, U.S. banks have increased their risk-taking by placing a greater percentage of their total funds in real estate loans, traditionally a riskier type of loan. (Figure 7) In addition, they have increased lending for corporate takeovers and leveraged buyouts, which are highly-leveraged transactions loans. There is evidence that banks have in fact increased their lending to less creditworthy borrowers. During the 1980's banks' loan loss provisions relative to assets climbed substantially, reaching a peak of 1.25 percent in 1987 and remaining high thereafter. (Figure 8) Recent evidence suggests that large banks have taken even more risk than have smaller banks: large banks have suffered the largest loan losses (Boyd and Gertler (1993)). Thus, banks appear to have maintained their profitability (and their net interest margins -- interest income minus interest expense divided by total assets) by taking greater risk.³ (See Figure 9)

The second way banks have sought to maintain former profit levels is to pursue new, off-balance sheet, activities that are more profitable. As we have seen in Figure 4, U.S. commercial banks did this during the early 1980's, doubling the

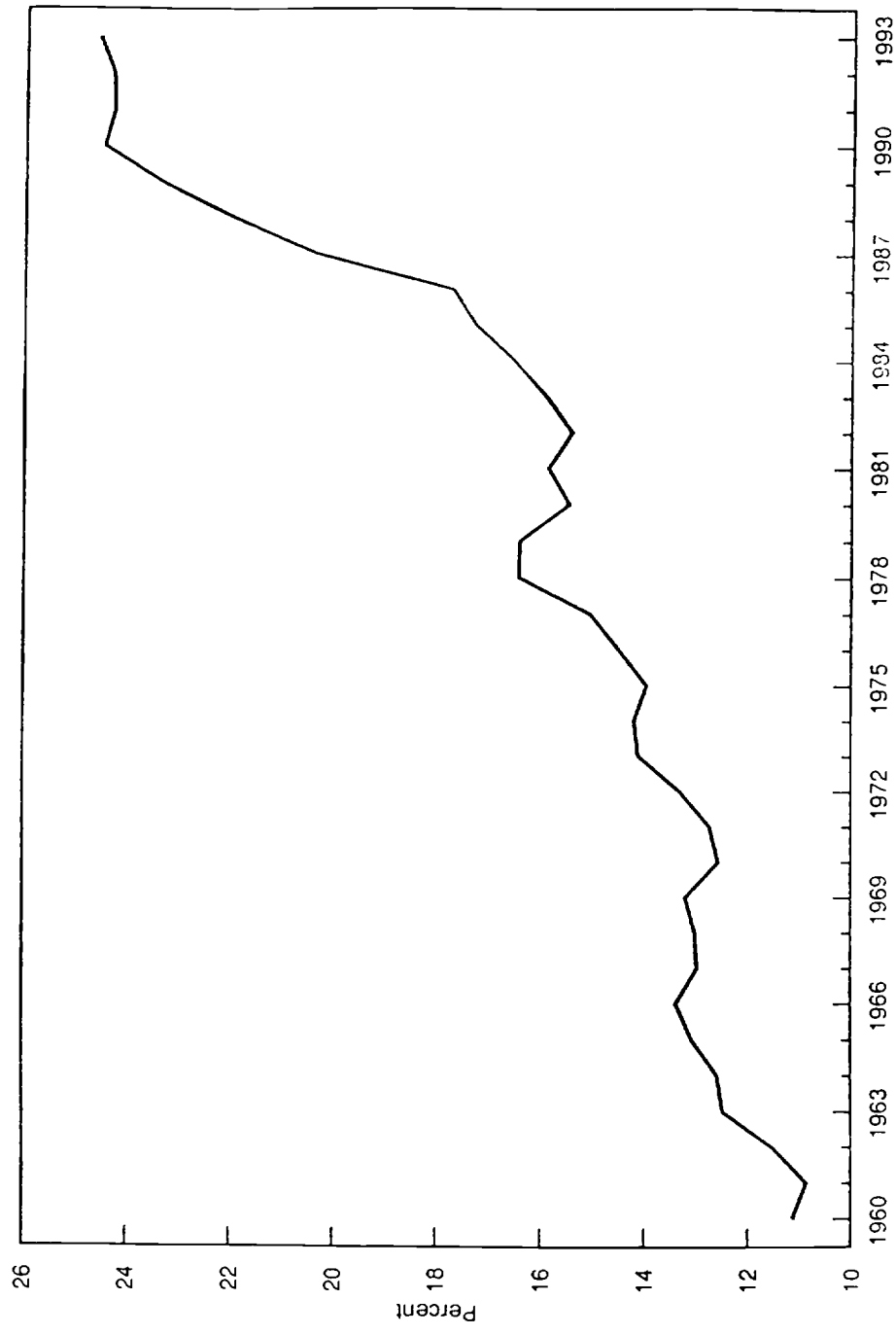
³ U.S. banks have an incentive to take additional risk because of federal deposit insurance. Insured depositors have little incentive to monitor banks and to penalize them for taking too much risk. This moral hazard problem is compounded by our de facto "too-big-to-fail" policy for large banks.

Figure 6
Number of Bank Failures, 1960-1993



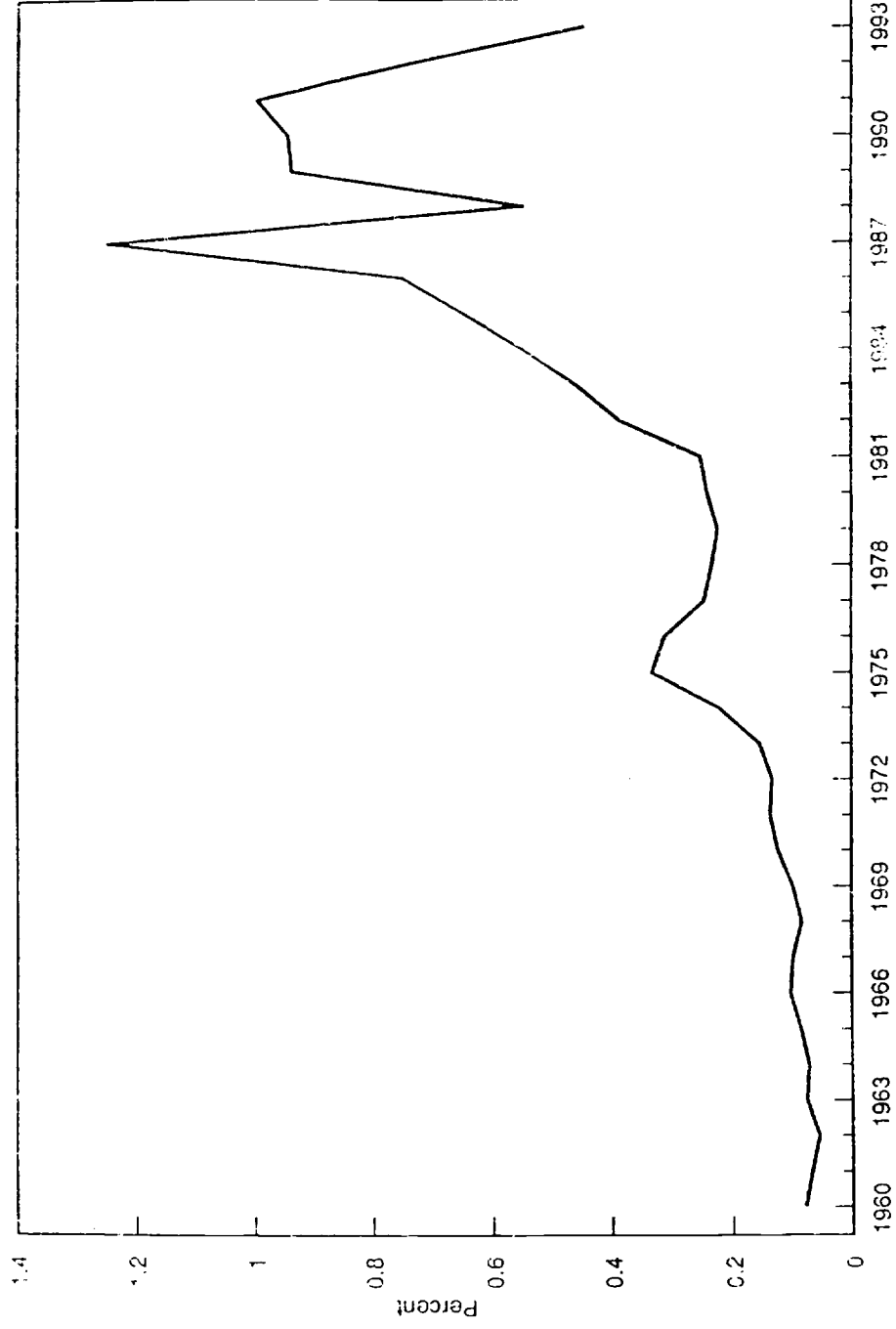
Source: Federal Deposit Insurance Corporation, *Annual Report*

Figure 7
Real Estate Loans as a Percentage of Total Commercial Bank Assets,
1960-1993



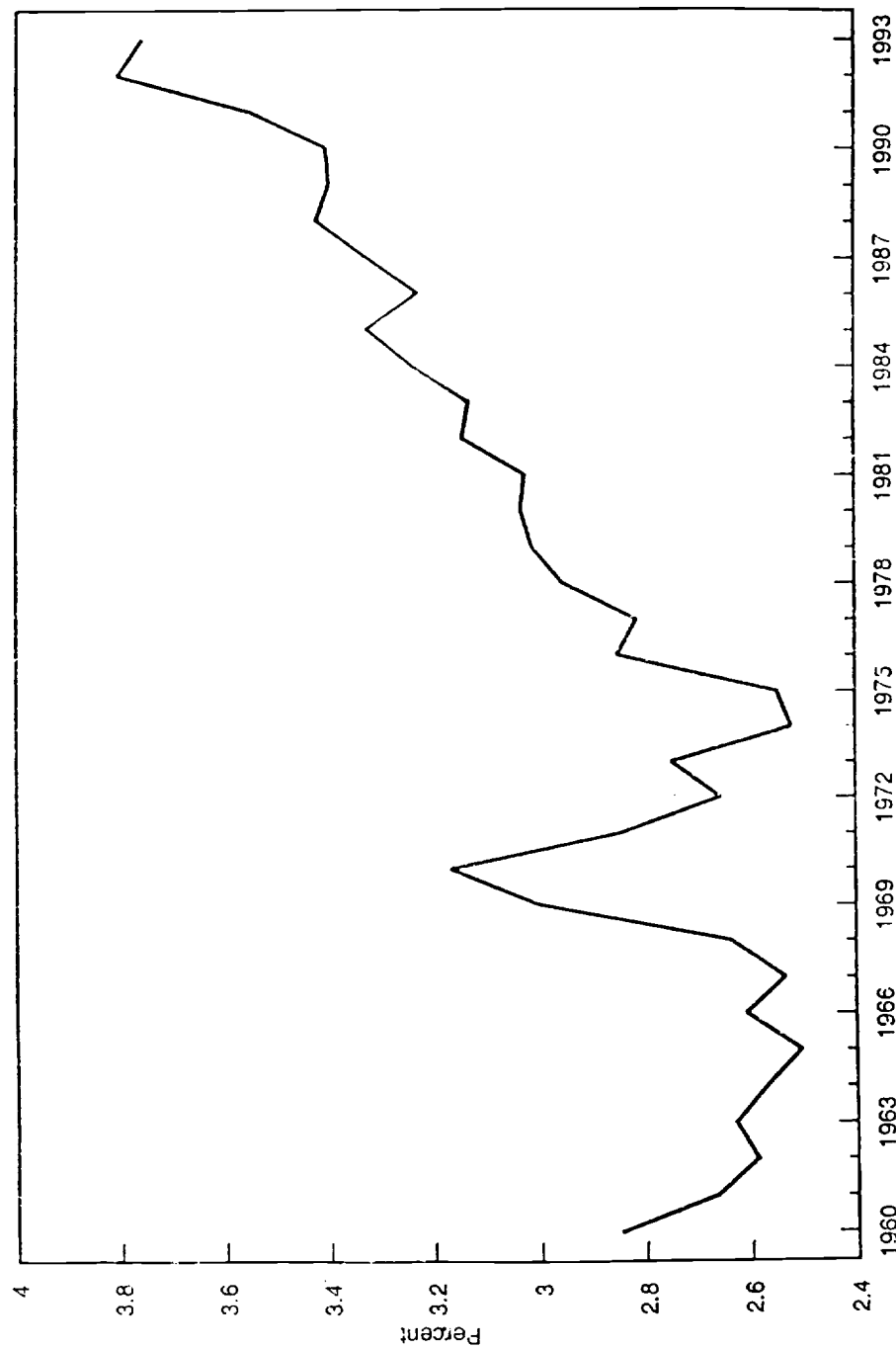
Source: *Federal Reserve Bulletin*

Figure 8
Loan Loss Provisions Relative to Assets for Commercial Banks,
1960-1993



Source: Federal Deposit Insurance Corporation, *Statistics on Banking*

Figure 9
Net Interest Margins for Commercial Banks, 1960-1993



Source: Federal Deposit Insurance Corporation, *Statistics on Banking*

share of their income coming from off-balance sheet, noninterest-income, activities. This strategy, however, has generated concerns about what are proper activities for banks and about whether nontraditional activities might be riskier and result in banks taking excessive risk. For example, there is considerable current controversy about whether banks should be permitted to engage in unlimited derivatives activities, including being off-exchange (OTC) derivatives dealers. Some feel that such activities are more risky than traditional banking and could threaten the stability of the entire banking system. (We discuss this issue more fully at a later point in the paper.)

The United States is not the only country to experience increased risk-taking by banks. Large losses and more bank failures have occurred in other countries. Banks in Norway, Sweden and Finland responded to deregulation by dramatically increasing their real estate lending, which was followed by a boom and bust in real estate sectors that resulted in the insolvency of many large banking institutions. Indeed, banks' loan losses in these countries as a fraction of GNP exceeded losses in both the banking and savings and loans industries in the United States. The International Monetary Fund (1993) reports that government (or taxpayer) support to shore up the banking system in Scandinavian countries is estimated to range from 2.8 to 4.0 percent of GDP, which is comparable to the savings and loan bailout in the United States (which amounted to 3.2 percent GDP).

Japanese banks also have suffered large losses due to riskier lending, particularly to the real estate sector. The collapse of real estate values in Japan left

many banks, such as Sumitomo Trust and Banking Company, one of the world's largest, with huge losses. Official estimates indicate the 21 largest Japanese banks were holding over \$136 billion of nonperforming loans -- loans on which interest payments have not been made for more than six months--but many private analysts think that the amount of nonperforming loans may be twice as large. Japan's banking federation, with the assistance of the government, has set up cooperative arrangements to shore up the banking system.

Both French and British banks suffered from the worldwide collapse of real estate prices and from major failures of risky real estate projects funded by banks.

Olympia and York's failure is a prominent example. Just as in the United States, the loan-loss provisions of British and French banks have risen in the 1990's, although neither banking system appears to be threatened by major bank collapses. In addition, even in countries with healthy banking systems, such as Switzerland and Germany, some banks have run into trouble. Regional banks in Switzerland failed, and the Germany's BfG Bank suffered huge losses (DM 1.1 billion) in 1992 and needed a capital infusion from its parent company Credit Lyonnais. Thus, fundamental forces not limited to the United States have caused a decline in the profitability of traditional banking throughout the world and have created an incentive for banks to expand into new activities and to take additional risks.

VI. BANKS' OFF-BALANCE SHEET DERIVATIVES ACTIVITIES

A good example of the controversy surrounding banks efforts to diversify into off-balance sheet activities has been the increasing role of banks in derivative markets. Large banks, in particular, have moved aggressively to become worldwide dealers in off-exchange (OTC) derivatives, such as swaps.⁴ Their motivation, clearly, has to replace some of their lost "banking" revenue with the attractive returns that can be earned in derivatives markets.

Banks have increased their participation in derivatives markets dramatically in the last few years. In 1992, U.S. banks held derivative contracts totalling more than \$8 trillion (notional amounts).⁵ Of these, 52 percent were interest rate derivatives, 46 percent were foreign exchange derivatives, and the remainder were equity and commodity derivatives.⁶ In addition, most of these derivatives are held by large banks, and are held primarily to facilitate their dealer and trading operations.⁷ (See Table 2) In 1992, the seven largest U.S. bank derivatives-dealers accounted for more than 90 percent of all derivatives contracts held by U.S. banks (based on notional

⁴ As of the third quarter, 1993, all insured commercial banks held interest rate swaps contracts with a notional value of \$2.79 trillion. See Bank Administration Institute and McKinsey & Company, Inc., (1994) p. 5.

⁵ Federal Reserve call report (RC-L) data for U.S. banks for the first quarter of 1992. See also United States General Accounting Office, (1994), p. 182.

⁶ United States General Accounting Office (1994).

⁷ Salomon Brothers, (1994), p. 8. Based on qualitative statements in the banks' annual reports, much of their derivatives trading is customer-driven.

TABLE 2 -- Derivatives Contracts (Dollars in Billions)

	December 31, 1993				
	<u>Trading</u>	<u>Pct. total</u>	<u>ALM</u>	<u>Pct. Total</u>	<u>Total</u>
BankAmerica	\$ 876	95%	\$ 46	5%	\$ 922
Banc One	0	0	39	100	39
Bankers Trust	1,867	98	40	2	1,907
Chase	919	95	51	5	970
Chemical	2,371	96	108	4	2,479
Citicorp	1,844	93	132	7	1,975
J.P. Morgan	1,424	86	230	14	1,654
NationsBank	208	94	14	6	222
Total/Average	\$9,509	82%	\$660	18%	\$10,168

Source: Annual Reports and Salomon Brothers, Inc.
ALM: Asset/Liability Management

amounts).⁸ (See Table 3) The profitability of derivatives activities for banks has clearly been an important factor. In 1993, derivatives accounted for between 27 and 42 percent of the total trading income of four of the largest bank dealers.⁹ (See Table 4)

The increased participation of banks in derivatives markets has been a concern to both regulators and legislators because they fear that derivatives may enable banks to take more risk than is prudent. There can be little doubt that derivatives can be used to increase risk substantially, and can potentially be quite dangerous.¹⁰ In the last year many banks sustained substantial losses on interest rate derivatives instruments when interest rate continued to rise. Because of the leverage that is possible, derivatives enable banks to place sizeable "bets" on interest rate and currency movements, which if wrong can result in sizeable losses. In addition, as dealers in OTC derivatives markets, banks may be exposed to substantial counterparty credit risk. Unlike organized futures exchanges, there is no clearing house guarantee to mitigate the credit risk involved in OTC derivatives. Finally, derivatives are often complex instruments, and may require sophisticated risk-control systems to measure and track a bank's potential exposure. There is some question about whether banks are currently capable of managing these risks.

⁸ United States General Accounting Office (1994) p. 188, Appendix V, and p. 182, Appendix IV.

⁹ Salomon Brothers, (1994) p. 9, Figure 5.

¹⁰ See Franklin R. Edwards, (1994).

TABLE 3 -- 15 Major U.S. OTC Derivatives Dealers and Their Notional/Contract Derivatives Amounts

Dollars in millions

Banks

Chemical Banking Corporation	\$1,620,819
Citicorp	1,521,400
J.P. Morgan & Co., Inc.	1,251,700
Bankers Trust New York Corporation	1,165,872
The Chase Manhattan Corporation	886,300
BankAmerica Corporation	787,891
First Chicago Corporation	391,400

Securities Firms

The Goldman Sachs Group, L.P.	752,041
Salomon, Inc.	729,000
Merrill Lynch & Co., Inc.	724,000
Morgan Stanley Group, Inc.	424,937
Shearson Lehman Brothers, Inc.*	337,007

Insurance Companies

American International Group, Inc.	198,200
The Prudential Insurance Co. of America	121,515
General Re Corporation	82,729

Total	\$10,994,811
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* The 1992 annual report from which we derived this information was issued by Shearson Lehman.

Source: Annual reports for 1992; and GAO Report, p. 188.

TABLE 4 -- Trading Derivatives -- Contribution to Total Trading Income (Dollars in Millions)

	<u>1993</u>	<u>Percent</u>	<u>1992</u>	<u>Percent</u>
Chase	201	28	\$121	26%
Chemical	453	42	333	39
Citicorp	800	27	400	17
J.P. Morgan	797	39	512	53
Total/Average	\$2,251	34%	\$1,366	34%

NA Not Available.

Source: Company reports and Salomon Brothers, Inc.

An example of the concern about the growing participation of banks in derivatives markets are the remarks of Representative Henry Gonzalez, Chairman of the Banking Committee of the House of Representatives:

"I have long believed that growing bank involvement in derivative products is, as I say and repeat, like a tinderbox waiting to explode. In the case of many market innovations, regulation lags behind until the crisis comes, as it has happened in our case with S&L's and banks. ...

"We must work to avoid a crisis related to derivative products before, once again, ...the taxpayer is left holding the bag."¹¹

In May, 1994, Rep. Henry B. Gonzales (D., Tex.) and Rep. Jim Leach (R., Iowa) introduced The Derivatives Safety and Soundness Act of 1994. This bill directs the Federal banking agencies to establish common principles and standards for capital, accounting, disclosure and examination for financial institutions using derivatives. In addition, the bill requires the Federal Reserve and the Comptroller of the Currency to work with other central banks to develop comparable international supervisory standards for financial institutions using derivatives. In discussing the need for derivatives legislation, Rep. Leach said: "one of the ironies of the development of [derivatives markets] is that while [individual firm] risk can be reduced ...systematic risk can be increased." A second problem, Leach said, is that in many cases derivatives instruments "...are too sophisticated for financial managers."¹²

¹¹ Remarks made on the floor of the House of Representatives, Congressional Record, June 18, 1993, H 3322.

¹² Mark Kollar, (1994), p. 1, col 2.

A further indication of these concerns are the plethora of recent studies which have examined the activities of financial institutions in derivatives markets. Studies have been conducted by the Bank for International Settlements (the "Promisel" Report), the Bank of England, the Group of Thirty, the Office of the U.S. Comptroller of the Currency, the Commodity Futures Trading Commission, and, most recently, the U.S. Government Accounting Office (GAO).

The GAO Report, released in May, 1994, focused on OTC derivatives and concluded that there is some reason to believe that derivatives do pose a threat to financial stability. The GAO Report raises the prospect that a default by a major OTC derivatives dealer (and in particular by a major bank) could result in spill-over effects that could "close down" OTC derivatives markets, with potentially serious ramifications for the entire financial system. The GAO recommends that a number of measures be taken to strengthen government regulation and supervision of all participants in OTC derivatives markets, including banks.

The fear of a major bank failure because of OTC derivatives activities appears to stem from two sources. First, the sheer size of banks' OTC derivatives activities suggests that they may be exposed to substantial market and credit risk due to their derivatives positions. In particular, there is concern that as OTC derivatives dealers banks may be exposed to sizeable counterparty credit risk. This concern has been heightened in recent months by the near-bankruptcy of Metallgesellschaft, Germany's 14th largest firm and a major end-user (and counterparty) in the swap market. Second, there is a fear that regulation (as well as managerial sophistication) has

lagged developments in the derivatives area, and as a consequence banks may be taking more risk than is prudent (and more than they even realize).

A. How Risky are Banks' OTC Derivatives Activities?

Much of the concern about banks' activities in derivatives market has centered on their central position as major dealers in the swap market. At year-end 1992, the notional value of all swap contracts outstanding was \$4.7 trillion.¹³ (See Table 5) Interest rate swaps were 82 percent of this amount, with currency swaps making-up most of the remaining contracts. (See Table 6) Although detailed information about the nature of these swap agreements is not available, it is likely that the bulk of them are "plain-vanilla" swaps -- an exchange of fixed for floating rates. As such, these contracts are similar to "strips" of forward or futures contracts (such as Eurodollar futures strips). Swaps are attractive to end-users because of their customized nature, low cost, and longer maturities.

As major dealers in the swap market, banks have extensive counterparty obligations and may be exposed to substantial market and counterparty credit risk. The notional (or principal) amount of the swap contracts that banks hold, however, is not a good measure of the magnitude of their credit exposure. Unlike credit instruments, such as loans and bonds, derivatives transactions (such as swaps) do not involve payments of principal amounts. Derivatives contracts require periodic

¹³ This amount includes interest rate and currency swaps plus caps, floors, collars, and swaptions outstanding. Equity, commodity, and multi-asset derivatives are not included. The latter totalled \$131 billion at year-end 1992. See Group of Thirty, (1993), p. 58.

TABLE 5 -- National/Contract Amounts for Derivatives Worldwide by Individual Product Type as of the End of Fiscal Years 1989 Through 1992
(Dollars in Billions)

Type of Derivative	1989	1990	1991	1992	Percentage of Total 1992	Percentage Increase from 1989 to 1992
Forwards						
Forward rate agreements*	\$770	\$1,160	\$1,530	\$2,005		
Foreign exchange forwards**	2,264	3,277	4,531	5,510		
Total Forwards	\$3,034	\$4,437	\$6,061	\$7,515	42%	148%
Futures						
Interest Rate Futures	1,201	1,454	2,159	3,048		
Currency Futures	16	16	18	25		
Equity Index futures	42	70	77	81		
Total futures	\$1,259	\$1,540	\$2,254	\$3,154	18%	151%
Options						
Exchange-traded interest rate options	387	600	1,073	1,385		
OTC Interest rate options	450	561	577	634		
Exchange-traded currency options	50	56	59	80		
Exchange-traded equity index options	66	88	132	164		
Total options	\$953	\$1,305	\$1,841	\$2,263	13%	137%
Swaps						
Interest Rate Swaps	\$1,503	2,312	3,065	3,851		
Currency Swaps	449	578	807	860		
Total Swaps	\$1,952	\$2,890	\$3,872	\$4,711	27%	141%
Total Derivatives +	\$7,198	\$10,172	\$14,028	\$17,643	100%	145%
Total Derivatives#	\$4,934	\$6,895	\$9,497	\$12,133		

* GAO estimated forward rate agreements as of the end of fiscal year 1992 on the basis of methodology the New York Federal Reserve used in computing estimates for year-ends 1989, 1990, and 1991.

** GAO estimates for foreign exchange forward contracts are from GAO Report, Table IV.5. These also include an unknown amount of OTC foreign exchange options.

+ Does not include complete data on physical commodity derivatives and equity options on the common stock of individual companies. Table IV.2, of the GAO Report, shows that seven of the databases contain equity and commodity derivatives that ranged from 1.1 to 3.4 percent of total derivatives notional/contract amounts.

Before including GAO estimates for foreign exchange forwards and OTC options.

Source: Bank for International Settlements, GAO Report, ISDA, and the Federal Reserve Bank of New York.

TABLE 6 -- Interest Rate and Currency Swaps Written Annually by Underlying and Outstanding (Notional Principal in Billions of U.S. Dollars: 1987-91)

<u>Type of Swap</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Interest Rate Swaps</i>				
US\$	287	366	545	676
DM	22	33	41	106
Yen	32	43	62	137
Others	47	126	185	345
Subtotal	388	568	833	1,264
<i>Currency Swaps</i>				
Yen-Dollar	24	35	53	48
Others-Dollar	30	35	40	33
Non-Dollar	32	54	86	132
Subtotal	86	124	179	213
Total Swaps Written	474	692	1,012	1,477
Total Swaps Outstanding (at year-end)	867	1,328	1,952	2,890

Source: International Swaps and Derivatives Association

payments based on notional amounts but not payments of the notional amounts themselves. For example, a swap of a variable interest rate for a seven-percent fixed rate on a \$10 million principal (notional) amount commits the swap parties to annual payments to each other of the order of \$700,000, with differences in future payments depending on how interest rates move in the future. A party's credit exposure, therefore, is not the notional value of the contract, as it is for a loan, but the "replacement cost" of the contract.¹⁴ Thus, the typical derivative transaction involves a credit exposure that is only a fraction of its notional principal.

The GAO Report closely examined fourteen major OTC derivatives dealers. Together, these dealers held derivative contracts with a notional principal of \$6.5 trillion, as of year-end 1992. The "gross" credit exposure (or "replacement cost") on these derivatives, however, was far less. The GAO estimated the replacement cost to be only \$114 billion, or about 1.8 percent of the dealers' \$6.5 trillion of notional outstandings.¹⁵

In addition, this figure does not take into account the various risk-management mechanisms that banks use to limit counterparty exposure. Bilateral

¹⁴ Measured as of a point in time, only counterparties with profitable positions have a credit risk. A losing counterparty has no credit risk. For example, assume that, under an interest rate swap agreement, a firm receives fixed-interest payments and pays floating rates. At the inception of this swap, the market value of the firm's position in the swap may be zero. If, subsequently, interest rates decline substantially, the firm will receive more than it will pay, so the firm will have a valuable or profitable position in the swap. This value, created by the change in interest rates, is the firm's "replacement cost" for the swap, and represents the credit risk to which it is exposed. If its counterparty defaults on future swap payments, the replacement cost is the cost to the firm of replacing the swap on the same favorable terms.

¹⁵ These include both swaps and forward contracts.

contractual netting provisions, which allow banks to offset losses with gains from other contracts outstanding with a defaulting party and its corporate affiliates, are common. Also, when swaps are undertaken with lower-quality parties, such counterparties are usually required to post collateral on a mark-to-market basis. After taking these risk-reducing mechanisms into account, the GAO Report estimated the "net" credit exposure of the fourteen dealers to be only \$68 billion, or about 1 percent of the notional value of their outstanding derivative contracts.

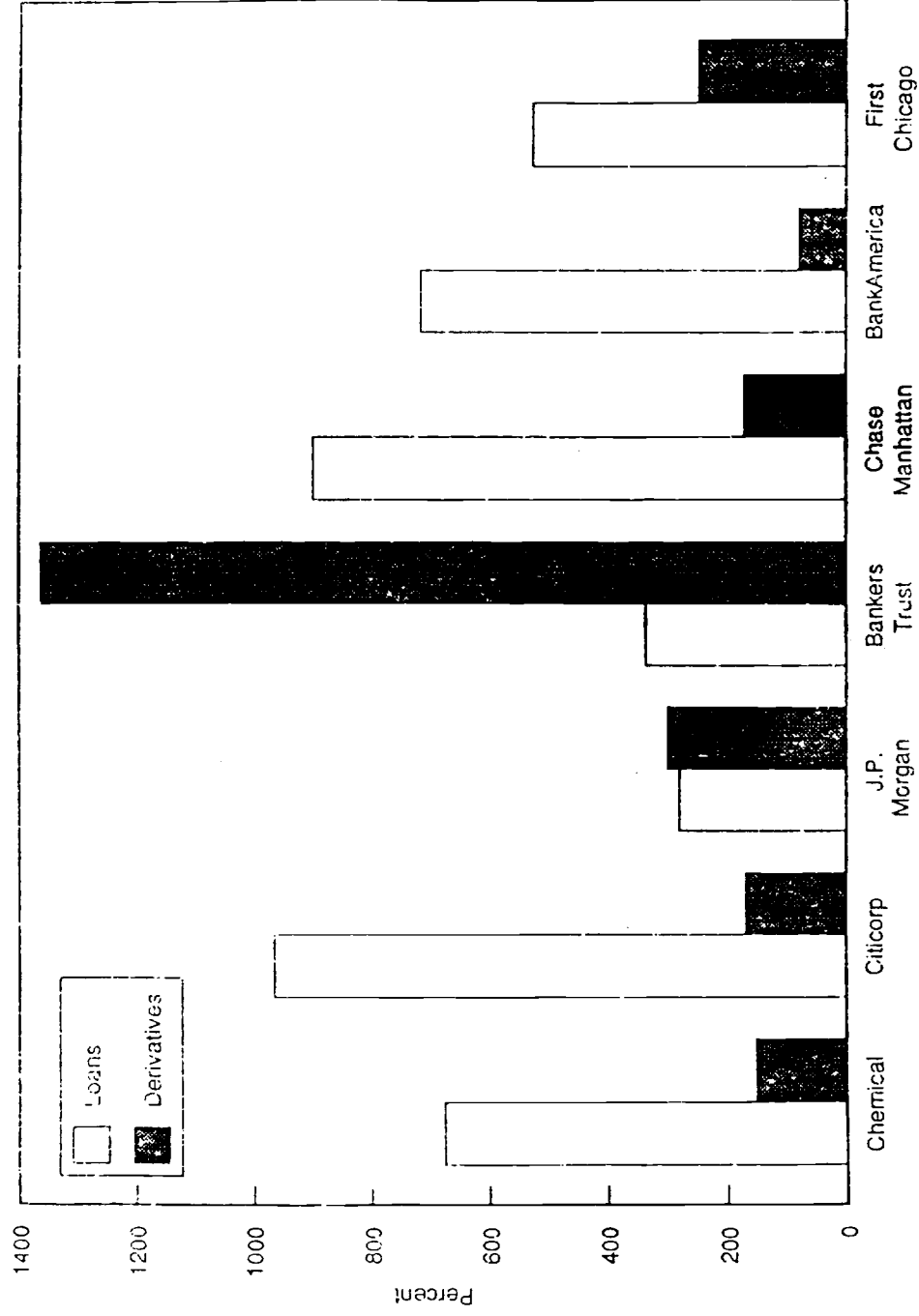
This credit exposure is managed by banks in a variety of ways. Internal credit limits are commonly used to diversify credit risk and to restrict the size of exposures to individual counterparties, industries and countries. Most counterparties in swap transactions are required to have investment grade ratings,¹⁶ and credit "triggers" frequently require the automatic termination of a swap agreement if the credit rating of either party falls below a prespecified threshold (such as a single A rating).

To put banks' derivatives credit exposures in perspective, the derivatives exposures of bank-derivatives dealers' can be compared to credit exposures that the same banks have as a consequence of their loan portfolios.¹⁷ For the seven largest U.S. bank-derivatives dealers, derivatives-related "gross" credit exposures, as a percentage of bank equity, were generally less than a fourth of their loan exposures. (See Figure 10) Only Bankers Trust New York Corporation, which is probably the most active bank in derivatives markets, had a "gross" derivatives credit exposure far

¹⁶ United States General Accounting Office (1994), p. 59, Table 3.1.

¹⁷ United States General Accounting Office (1994), pp. 54-55.

Figure 10
Credit Exposures from Derivatives and Loans of Seven U.S. Banks
Compared as a Percentage of Equity, 1993



Source: Annual Reports for 1993

in excess of their loan exposure. While it is true that banks' credit exposure to derivatives is substantial -- it exceeds 100 percent of the equity of all of the surveyed banks, a bank's capital would be wiped out by derivatives' losses only if all counterparties were to default, there were no offsetting netting agreements or other risk-reduction mechanisms in force, and actual counterparty losses were identical to total credit exposures. Such assumptions are extreme, for loan defaults as well as for derivatives-related exposures.

Properly measured, therefore, banks' credit-risk exposures associated with their OTC derivatives activities do not seem out of proportion to their other credit exposures, such as the exposure they have to defaults on their loan portfolio. Banks also appear to be managing these derivative-related exposures reasonably well. Indeed, the GAO reported that actual losses incurred by derivatives dealers as a result of counterparty defaults have been quite small: 0.2 percent of their combined gross credit exposure.¹⁸

Finally, derivatives activities also clearly can be used by banks to increase their exposure to changes in interest rates and exchange rates (or to increase their market risk). This kind of risk, however, is hardly new to banks. Banks have always been exposed to such risks because of their holdings of fixed-rate, long-term, loans and securities, and because of their foreign operations and foreign currency positions. Derivatives can be used either to increase or decrease these risks. Derivative exposures, just as all other market risks, must be managed prudently.

¹⁸ United States General Accounting Office (1994), p. 55.

B. Regulation of Banks' Derivatives Activities

There has also been concern that banks may be taking excessive risk in their derivatives activities because of lax regulation.¹⁹ Indeed, the GAO Report suggests that there may be an intrinsic regulatory problem associated with banks' dealing in OTC derivatives.

"The regulation of banks is essential, because they have deposit insurance and direct access to the Federal Reserve's discount window. At the same time, however, this combination of deposit insurance and access also can result in potential problems because it may induce the banks and their customers to inappropriately rely on such backing. Therefore, banks may be willing to run greater risks in their trading activities -- in relation to their capital -- than otherwise would be the case. In addition, market participants may prefer using banks for derivatives and related trading activities simply because banks are perceived to be safer counterparties. In the past, similar concerns caused us to recommend that nontraditional banking activities, such as those associated with underwriting and dealing in corporate debt and equity securities, be conducted only by well-managed and well-capitalized banks in separate subsidiaries of the bank holding company. Whether derivatives should be placed in this category depends on regulators' determinations on how they are being used by individual banks."²⁰

An important question, therefore, is whether banks' derivatives activities are different from other bank activities such that they cannot be effectively regulated. Is there something special about derivatives that makes it more difficult or even impossible for prudential regulation to protect the federal deposit insurance fund and taxpayers? A key issue is whether bank capital requirements, the central component of prudential regulation, can be successfully applied to banks' derivatives activities. If not, there may be an argument for either prohibiting derivatives activities (or

¹⁹ For a review of the current regulation of banks' derivatives activities, see United States General Accounting Office (1994), pp. 69-84.

²⁰ United States General Accounting Office (1994), p. 125.

possibly dealer activities) or segregating them into separately-capitalized bank affiliates.²¹

Banks' derivatives activities are already subject to extensive prudential regulation. Both U.S. and Basle Accord capital requirements apply to U.S. banks' derivatives activities. U.S. banks are required to comply with two different types of capital requirements -- a risk-based requirement and a leverage ratio requirement. The risk-based requirement applies to the credit risk associated with derivatives contracts or activities. The leverage ratio requires banks to hold capital as a cushion against losses arising from other risks associated with derivative positions, such as operations risk. Not surprisingly, there is considerable controversy about whether these capital requirements are too low or too high.

The more important question, however, is whether any capital requirements on derivatives activities can successfully control banks' risk-taking. Some argue that derivatives are so complex and so non-transparent that it is impossible for regulators to devise capital regulations to control banks' risk-taking (or, for that matter, for the market to monitor banks' derivatives activities).

We are skeptical about this view. Although some derivatives instruments are undoubtedly complex, exposure to derivatives risk does not seem much different from exposure to many other bank activities, such as credit risk in a loan portfolio or interest-rate risk on a variety of fixed-income securities. Banks can achieve high

²¹ Alternatively, there may be an argument for some form of "narrow banking," where the deposit-taking function of the bank is separated from other activities of banks, such as their derivatives activities.

leverage in a number of ways other than through derivatives, and can quickly change (or increase) their risk exposure in many different ways. While it is not clear how much capital should be required for a given derivatives risk exposure, and regulators may need to do some "catching-up," these implementation problems are not unique to derivatives activities. All new bank activities are likely to present similar problems.

Thus, banks' recent push into derivatives activities raises all of the questions commonly raised when banks engage in new off-balance sheet activities. Are these activities too risky for banks? Do banks have the managerial capacity to engage in these activities in a safe way? Can these activities be effectively regulated? The challenges posed by these questions are no different for derivatives than they are for other banking activities.

VII. IMPLICATIONS FOR POLICY

The decline of traditional banking presents a challenge to regulators and policy-makers. On the one hand, banks may respond to their shrinking intermediary role and diminished profitability by taking greater risk, which, if unchecked, could undermine the stability of the banking system. There is some evidence that banks have in fact increased their risk-taking, either through riskier strategies in their traditional business lines or by seeking out new and more riskier activities. On the other hand, long-run financial stability would benefit from a restructuring of the banking industry that strengthens the competitive position of banks. To achieve this may

require eliminating unnecessary (non-prudential) regulations and permitting banks to enter new markets and to engage in new activities.

One approach to achieving these dual objectives is to couple adequate capital requirements for banks with early corrective action by regulators in order to prevent capital from falling below specified levels.²² Requiring banks to hold adequate capital promotes financial stability in two ways. First, it provides a greater cushion with which banks can absorb losses, lessening the likelihood of failure. Second, with more capital at risk, banks have less incentive to take excessive risk -- they have more to lose if their bets go wrong.²³ To assure that banks hold the requisite amount of capital and do not engage in either excessively risky or illegal activities, supervision and field examinations of banks would continue to be necessary.²⁴

Requiring early corrective action by regulators, to recapitalize a bank that has suffered an erosion in its capital, promotes stability in three ways. First, it provides predictability for banks and bank shareholders. Certain regulatory actions predictably follow certain economic events. Second, it prevents a bank's capital from falling to levels that threaten losses to the bank insurance fund. In addition, by

²² This approach is discussed extensively in Benston and Kaufman (1988).

²³ To ameliorate the problem of potentially higher capital requirements imposing additional costs on banks, bank capital could be defined to include subordinated debentures with a remaining maturity of at least two years and which are unredeemable for at least two years.

²⁴ As Gorton and Rosen (1994) point out, corporate control (agency) issues may also contribute to excessive risk-taking when traditional banking business declines. Thus steps to control this agency problem may also be needed to control risk-taking. How to accomplish this requires additional research and is beyond the scope of this paper.

requiring banks always to have a positive net worth, the moral hazard problem is mitigated -- banks will have something to lose by taking excessive risk. Lastly, early corrective action mitigates the regulatory forbearance problem by preventing regulators from using their discretion about whether or not to take action.²⁵ Regulators can no longer gamble with taxpayer funds.²⁶

A benefit of this regulatory strategy is that regulation need no longer restrict banks' activities. As long as banks must hold sufficient capital against whatever activities they engage in, taxpayers will be protected and banks will have an incentive to avoid excessive risk-taking. Further, freedom to offer additional products and services will better enable banks to compete with nonbank competitors (and with foreign banks), and will make banks less susceptible to failure because they will be better diversified. (An example of such diversification benefits is casualty insurance, where losses are due principally to acts of god and have a very low correlation with the losses that banks typically incur, which are due primarily to adverse economic events.)

A key component of this approach is that bank risk exposures need to be measured accurately and capital requirements be set high enough to deter excessive

²⁵ As capital declined below certain "trigger" levels, for example, regulatory authorities would be required to take specific actions, such as restricting the ability of the bank to expand and preventing the bank from paying dividends and interest on subordinated debentures.

²⁶ The FDIC Improvement Act of 1991 enacted a weaker version of this regulatory approach. The legislation, nevertheless, appears to be working reasonably well in reducing the costs associated with bank failures and in producing a healthier banking industry. See Kaufman, (1994).

risk-taking. This requires, among other things, the adoption of market-value accounting principles for valuing bank assets and liabilities. Historical-cost accounting principles do not assure that changes in the economic value of a bank's assets and liabilities will be reflected in its true net worth. It is the market value of a bank's assets and liabilities, and the market value of its equity capital, that determines a bank's economic solvency. Further, the market value of a bank's net worth is what the bank risks when it takes additional risk.

Objections to market-value-based capital requirements center on the difficulty of making accurate market-value estimates of assets and liabilities. Historical-cost accounting has an important advantage in that it is easier to value assets and liabilities. Market-value accounting, in contrast, requires estimates and approximations that are harder to justify and are often more expensive to obtain. Despite these difficulties, market-value accounting may still be able to provide a more accurate picture of a bank's economic condition. Clearly, an important research topic for regulatory authorities is to examine the feasibility of applying market-value accounting principles to banking institutions.

Adoption of market-value accounting would have the additional advantage of making a bank's condition more transparent and therefore making regulators and politicians more accountable. Regulators and politicians are subject to a principal-agent problem: they often have an incentive to hide potential problems, even though taxpayers would be better off if they dealt with these problems sooner rather than later (or not at all). Market-value accounting would make it easier for taxpayers to

monitor the actions of regulators and politicians, and would make it more difficult for regulators to engage in policies of forbearance. Finally, better public disclosure of the risks that are incurred by all financial institutions, including banks, would increase market efficiency and bolster market discipline. In particular, banks should have to provide a meaningful depiction of the risks associated with their trading activities, both in derivatives and in on-balance sheet securities, and of their ability to manage these risks. More public information about the risks incurred by banks will better enable stockholders, creditors and depositors to evaluate and monitor banks, and will act as a deterrent to excessive risk-taking. This view is consistent with a recent discussion paper issued the Euro-currency Standing Committee of the G-10 Central Banks (1994), which goes so far as to recommend that estimates of financial risk generated by firms' own internal risk management systems be adapted for public disclosure purposes.²⁷ Such information would supplement disclosures based on traditional accounting conventions by providing information about risk exposures and risk management that is not normally included in conventional balance sheet and income-statement reports.

VIII. CONCLUSION

The decline of traditional banking entails a risk to the financial system only if regulators fail to adapt their policies to the new financial environment which is

²⁷See also the Federal Reserve Bank of New York (1994), which is a companion piece to the Euro-currency Standing Committee's report.

emerging. A constructive regulatory approach is to adopt a system of structured bank capital requirements together with early corrective action by regulators. An important element of this system is the adoption of market-value accounting principles for all financial institutions. In addition, greater public disclosure by all financial institutions of the risks associated with their trading activities would be beneficial. Lastly, to enhance the competitiveness and efficiency of financial markets, banks could be permitted to engage in a diversified array of both bank and "nonbank" products and services. This general regulatory strategy, we believe, can successfully keep in check excessive risk-taking by banks while providing the flexibility for both banks and regulators to restructure the banking system in order to achieve greater long-term stability. Finally, we do not view banks' off-balance sheet activities, such as their derivatives activities, to be a threat to financial stability. Properly used and regulated, derivatives can facilitate the management of risk and increase the long-term viability of banks and the financial system.

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