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A review from the
Federal Reserve Bank
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Is banking a declining industry? A historical perspective

Funding small businesses through the SBIC program

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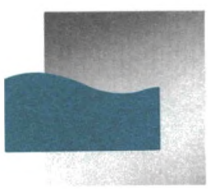
Is banking a declining industry? A historical perspective

George G. Kaufman and Larry R. Mote



Regulation has been widely blamed for contributing to the decline of the commercial banking industry in the United States. Before one can evaluate the truth or falsity of this accusation, it is necessary to determine whether banking is indeed a declining industry. To answer this question, we examine a number of different measures of changes in the size of the banking industry in the United States during the twentieth century.

Few industries are as closely associated in the public image with the growth of modern economies as is commercial banking. Bankers have been widely caricatured as pulling the strings behind the "bosses of industry" and have been viewed with suspicion or fear in many quarters. Indeed, it would be difficult to understand the elaborate set of regulations intended to restrict the growth and thereby the power of commercial banks in the United States without first understanding the widespread distrust of banks and banking dating back to early U.S. history. In the 1800s, some states even went so far as to ban banks altogether.

But the image of bankers as all-powerful has changed dramatically in recent years, especially among bankers themselves, their regulators, and the business community. Over the past decade, banking in particular and depository institutions in general have come to be viewed as declining. This widespread perception is based primarily on their declining share of some measure of assets or liabilities for all financial institutions. An example is provided by figure 1, which shows the decline since 1952 in the combined total assets of U.S.-chartered commercial banks and U.S. offices of foreign banks as a percentage of the assets of all financial institutions. Several presentations at the Federal Reserve Bank of Chicago's 1993 Conference on Bank Structure and Competition noted this decline (Federal Reserve Bank of Chicago 1993).

The common view is that banks are losing out to a wide range of nonbank competitors such as finance companies, mutual funds, and private pension funds that are offering traditional types of banking products more efficiently, either because technological advances have eliminated advantages previously enjoyed by banks or because these competitors are free of costly regulations imposed on banks. The source of any decline is important in judging its welfare implications. If banking were a declining industry because of market forces, as was the fate of horse-drawn carriages, the railroads, and coal mining, then it would be of concern to bankers who lose their jobs but of little public policy concern.[1] Indeed, attempting to prevent the decline would reduce aggre-

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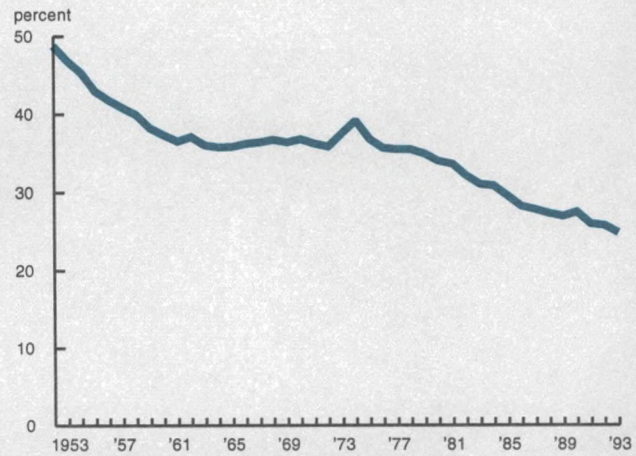
gate economic welfare. On the other hand, if the decline were attributable to excessive regulation that prevents banks from operating more effectively, or from introducing newer products for which demand is growing rapidly, then aggregate economic welfare would be reduced and the decline would be a legitimate public policy concern.

However, before anyone writes the banking industry's epitaph, it may be useful to look a little more closely at the evidence. This article examines a number of data series to determine whether banking is or is not a declining industry and, if it is, whether the decline is the result of market forces or of excessive and discriminatory regulation. Although the evidence is not clear-cut, several of the alternative measures examined in this article suggest that banking may not be declining.

FIGURE 1

Commercial banks' declining share of assets of all financial institutions



Source: Board of Governors of the Federal Reserve System, "Flow of funds accounts," various years.

Alternative measures of the size of the banking industry

There are serious conceptual and practical problems in measuring the output of any industry.[2] Because of the intangible nature of the output provided by service industries generally, and banks in particular, the problem of measuring output has occupied banking scholars for decades. The problem arises in a number of contexts—for example, in calculating shares of output in local markets for antitrust purposes, in measuring banking output and costs for the purpose of determining the relationship between size and efficiency, and in calculating the industry's contribution to gross domestic product (GDP). Some of the issues related to choosing the most appropriate measure of the size of the banking industry are discussed in the accompanying box.

Because each of the measures used in past studies appears to contain conceptual or practical problems—difficulties in obtaining appropriate data, shortcomings in the quality of available data, lack of comparability of data over time, or a failure of the data to correspond closely to the theoretical concept they are used to measure—this article analyzes a number of them. Among the most frequently used measures of the size of the banking industry are 1) assets; 2) employment; and 3) revenues, earnings, and value added. We present data for each of these measures in turn, together with an indication of their strengths and shortcomings. Because assets and related balance sheet data have been, by far, the most frequently used measures of the size of the banking industry, we consider them first.

Assets

Total assets, earning assets, and total deposits have all been used at one time or another as measures or indexes of banking output. Such measures accord with the common perception of banks as firms that use "inputs" such as deposits, labor, and capital to produce "outputs" primarily in the form of loans and investments. This more or less commonsense view has greatly influenced the analysis of banks as firms and the measurement of bank output.

It is therefore not surprising that total assets or deposits, or some variant thereof, has long been the most popular measure of the size or output of the banking industry. Balance sheet data for banks are readily available at frequent intervals and serve as the basis for the widely used flow of funds data published quarterly by the Federal Reserve.[3] Moreover, in contrast with most other businesses, the products and services of banks have traditionally been closely related to the size and composi-

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tion of their asset and liability portfolios. Throughout the nineteenth century and the first half of the twentieth century, the activities of commercial banks were largely limited to accepting and processing deposits and making loans and investments. Indeed, those functions still account for a substantial if declining proportion of the typical bank's activities.

Issues in the measurement of bank output

Analysts have tried to measure bank output for two purposes: to assess economies of scale in banking, and to calculate banks' contribution to gross domestic product (GDP). Earning assets or total assets were the most widely used measures of bank output in early studies of the relationship between scale—that is, size measured in terms of output—and cost in banking. However, critics pointed out that an equal number of dollars of credit extended for a given period of time, as would be reflected in asset measures, do not necessarily imply equal output in an economic sense. For example, a given dollar amount of consumer instalment loans does not necessarily represent the same output as the same dollar amount of loans to a large corporate customer. A consumer loan is likely to require much more risk-bearing, information gathering, credit analysis, and bookkeeping per dollar of loan principal than a loan to a large corporate customer (Benston 1965; Greenbaum 1967). Thus, simply adding the dollar amounts of all the loans on a bank's books would be adding apples and oranges. The only dimensions of output that could be said to be identical for loans of different types but equal dollar amounts outstanding are the amount and duration of the postponement of consumption by one group of economic units that is a prerequisite for making a loan enabling another economic unit to consume beyond its current income. A similar objection applies to adding the outstanding values of loans of the same type but of different sizes.

Another relatively obvious criticism of balance sheet measures of output is that output is a flow, measured in quantity or value per unit of time, whereas assets are a stock at a particular point in time. Only in banking and related financial industries have assets been widely used as a measure of output and relative importance. In other industries, sales or revenues are the preferred measure for some purposes, including the calculation of market shares for antitrust analysis. For most other purposes, there is fairly general agreement among economists that the most relevant measure of the size of an industry is its value added, or contribution to the total output of the economy. Although there may be issues affecting the industry for which assets or liabilities or employment are more useful measures—for example, changes in the importance of banking as a channel for monetary policy or banking's role in creating new jobs—the contribution of banking to GDP is a more general measure of the industry's importance in the economy.

In the search for a single index of banking output, considerable progress had been made by the late 1960s toward achieving consensus that some variant of bank revenue, rather than assets, was the preferred measure of final output. Of course, if one wishes to measure commercial banks' contribution to final output as measured by value added, rather than the value of final output per se, it is necessary to subtract from revenues the value of purchased inputs. Nevertheless, the persistence of conflicting views concerning the nature of the output of financial institutions led to a continuing debate over which measure of value added was most appropriate. Serious questions were raised about the "liquidity principle" used by the U.S. Commerce Department's Office of Business Economics to measure the contribution of banks and other financial intermediaries to GDP. According to the liquidity principle, bank output consists only of interest and other services to depositors, not to borrowers (Hodgman 1969). However, as Hodgman pointed out,

> a closer examination of banking activity and banking costs will reveal that *financial services* (rather than deposits or loans) are the products of banking. . . . When banks are viewed as financial service firms we see that the banking product sold to *borrowers* is not only credit but intermediation and that a portion of a bank's interest receipts is paid by the borrower to cover the costs of intermediation rather than as a payment for liquidity or consumption foregone by the ultimate lender. This portion of "interest" received by banks should be regarded as part of their gross value product in the national accounting sense. The remainder of interest paid to banks will, under competitive conditions, be paid in turn by the banks to the ultimate lenders who are depositors and

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Support for the view that banking is declining in relative importance is typically based on the downward trend in the share of total assets at all financial institutions (see figure 1), or particular categories of assets accounted for by commercial banks or by all depository institutions. As table 1 shows, the decline in banks' share of short-term business credit, the traditional bread and butter lending activity of commercial banks, has been even more dramatic than that of banks' share of total assets. The data are frequently presented with such a sense of urgency that one might be led to believe that the decline in asset share is a sudden, recent development that requires an immediate response.

However, a closer review of the evidence shows that neither this decline nor the concern over it is of recent origin. A pioneering study of U.S. financial institutions conducted by Raymond Goldsmith in the 1950s and 1960s reported that commercial banks' share of total assets of financial intermediaries had declined from 71 percent in 1860 to 63 percent in 1900 and 32 percent in 1963 (Goldsmith 1958, 1969).[4] Table 2 shows commercial banks' share of the total assets of financial institutions for selected dates from 1860 through 1993. Thus, the more recent decline in the market share of commercial banks should not be overly surprising. Much of it simply reflects the fact that, because banks were the first major financial institution in the United States, it was virtually inevitable that they would lose market share over time to newer types of financial institutions offering previously unknown products, for example, pension funds and mutual funds.

Nor is evidence of a decline in banks' market share limited to the United States. As the data in table 3 indicate, banks' share of total liabilities of financial intermediaries in the United Kingdom also declined between 1913 and 1991. Similar declines have occurred in most of the 30 major foreign countries analyzed by Goldsmith (1969).

But even before Goldsmith's study, bankers lamented that the traditional business of banking was shrinking and that if banks were to survive they would have to expand the scope of their activities. Thus, as corporations relied increasingly on internal sources of funds and less on bank loans in the 1920s, banks expanded their lending to include consumer and residential real estate loans. The same decade also saw the rapid expansion of banks and bank securities affiliates into the underwriting and distribution of corporate securities. Retrospec-

stockholders. Conceptually, therefore, the *net* interest received by banks should be included in gross product originating rather than set to zero by definition.*

But while Hodgman and others were gaining considerable support for some variant of revenue as the single index of output in banking, the literature on bank costs moved in a very different direction. First, researchers began to estimate separate cost functions for individual functional areas within the bank (Benston 1965; Bell and Murphy 1968). Later, they began to use the translog and related multiproduct cost functions (Benston, Hanweck, and Humphrey 1982). Neither of these approaches required using a single index of banking output.

The objections noted above to using assets as the measure of banking output apply fully only to attempts to aggregate many different types of loans or other banking products into a single index of banking output. As long as each category of loans is relatively homogeneous—for example, consumer loans that do not vary greatly in size or riskiness—it may be unobjectionable to use total loans outstanding as a measure of the output associated with that category. The reason is that, if all the loans in a particular category are identical in size, maturity, risk, and other important characteristics, then the number of loan accounts, total revenue, and other alternative measures of output associated with that category would be proportional to the amount outstanding. Thus, asset measures may be a reasonable choice for the estimation of multi-product cost functions that utilize a large number of output categories rather than a single index of overall output. Indeed, recent studies comparing the performance of stock and flow measures of output in bank cost studies have concluded that there is not much empirical evidence to favor one over another (Humphrey 1992). But it is still true that this approach finesses the issue rather than addressing it; there is no presumption that a dollar of consumer loans represents the same output as a dollar of commercial and industrial loans.

*Hodgman 1969, p. 191.

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TABLE 1

Composition of short-term credit market debt of nonfinancial corporate business
(1950-92)

	1950	1960	1970	1980	1990	1992
	(----------percent----------)					
Bank loans	91	87	83	71	59	59
Nonbank finance loans	6	9	9	14	17	18
Commercial paper	1	2	6	9	12	12
Foreign loans	--	--	--	1	9	9
Bankers' acceptances	2	2	2	5	3	2
Total	**100**	**100**	**100**	**100**	**100**	**100**
Billion dollars	20	43	125	324	951	882

Source: Board of Governors of the Federal Reserve System, *Balance Sheets for the U.S. Economy, 1945-92,* March 10, 1993.

tively, and almost certainly incorrectly, some blamed the banking collapse of the early 1930s on the entry by banks into some of these new and unfamiliar activities.

The 1950s were marked by renewed concern over banks' loss of business, this time to then rapidly growing nonbank depository institutions, such as savings and loan associations, which at the time were free of such regulatory restrictions as interest rate ceilings on deposits and reserve requirements. Indeed, the widely discussed Gurley-Shaw thesis held that if regulation continued to restrain traditional banks relative to their nonbank competitors, the result would be the development of more and more "near monies" such as time and savings deposits at thrift institutions, and the continued shrinkage of the banking industry (Gurley and Shaw 1955, 1956, 1960). Eventually, a point would be reached at which monetary policy, if it continued to operate only through traditional banks, would lose its effectiveness. A quick examination of table 2 shows that, rather than preempting commercial banks, savings and loan associations and savings banks are themselves now declining rapidly in importance. A history of the Office of the Comptroller of the Currency published in 1968 also remarked on the loss of market share by commercial banks in the postwar period and attributed it to excessive regulation of banks in combination with tax and other incentives enjoyed by some nonbank competitors (Robertson 1968). Like most other research on the issue, both the Gurley and Shaw study and that of the Comptroller's office relied on balance sheet data to support the thesis that banking was in decline.

Improving the asset measure

Assets probably give an adequate picture of the size of the banking industry in the nineteenth century. However, there is reason to believe that even for the first half of the twentieth century and certainly for more recent decades, reported assets give a distorted and incomplete view of the output of the commercial banking industry. The asset figures typically used in these analyses include only bank-owned or "on-balance-sheet" assets. But banks also manage or otherwise service assets owned by others. These activities are referred to as "off-balance-sheet." The economics of banking, as opposed to accounting conventions, suggests that banks should be measured by some measure that reflects the full range of their activities, such as revenues, income, or value added. However, because on-balance-sheet assets are the most readily available and frequently used yardstick of the size of the banking industry, it may be worthwhile to try to correct banks' aggregate balance sheet for a number of failings, in particular its exclusion of important off-balance-sheet activities, and bring it closer to what might be called an "economic balance sheet." We will discuss some of these exclusions and the adjustments needed to correct for them in the following sections.

Bank trust services

Among the most important off-balance-sheet activities are bank trust services, perhaps the oldest off-balance-sheet activities engaged in by banks in the United States. Indeed, a number of banks began as strictly trust companies providing only trustee or fiduciary services and expanded into deposit and other banking services primarily as an accommodation to their customers. Today, few strictly trust com-

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TABLE 2

Share of assets of financial institutions in the United States (1860-1993)

	1860	1880	1900	1912	1929	1939	1948	1960	1970	1980	1993
	(percent)										
Commercial banks	**71.4**	**60.6**	**62.9**	**64.5**	**53.7**	**51.2**	**55.9**	**38.2**	**37.9**	**34.8**	**25.4**
U.S.-chartered banks and bank holding companies	71.4	60.6	62.9	64.5	53.7	51.2	55.3	37.6	37.2	32.4	21.7
U.S. offices of foreign banks	--	--	--	--	0.0	0.0	0.6	0.6	0.7	2.4	3.7
Thrift institutions	**17.8**	**22.8**	**18.2**	**14.8**	**14.0**	**13.6**	**12.3**	**19.7**	**20.4**	**21.4**	**9.4**
Savings and loan associations	0.0	2.2	3.1	3.0	6.0	4.2	4.7	11.8	13.0	15.5	7.4[a]
Savings banks	17.8	20.6	15.1	11.8	8.0	9.2	7.4	6.9	6.0	4.2	
Credit unions	--	--	--	--	0.0	0.2	0.2	1.1	1.4	1.7	2.0
Insurance companies	**10.7**	**13.9**	**13.8**	**16.6**	**18.6**	**27.2**	**24.3**	**23.8**	**18.9**	**16.1**	**17.4**
Life insurance	1.8	9.4	10.7	13.6	14.8	23.5	20.6	19.4	15.1	11.5	12.8
Property/casualty	8.9	4.5	3.1	3.0	3.8	3.7	3.7	4.4	3.8	4.5	4.6
Investment companies	**--**	**--**	**--**	**--**	**2.4[c]**	**1.9[c]**	**1.3[c]**	**2.9**	**3.5**	**3.6**	**14.9**
Mutual funds	--	--	--	--	--	--	--	2.9	3.5	3.4	14.2
Stock and bond	--	--	--	--	--	--	--	2.9	3.5	1.5	10.2
Money market	--	--	--	--	--	--	--	--	--	1.9	4.0
Closed-end funds	--	--	--	--	--	--	--	[b]	[b]	0.2	0.7
Pension funds	**--**	**--**	**0.0**	**0.0**	**0.7**	**2.1**	**3.1**	**9.7**	**13.0**	**17.4**	**24.4**
Private	--	--	--	--	0.4	0.8	1.6	6.4	8.4	12.5	16.7
State and local government	--	--	0.0	0.0	0.3	1.3	1.5	3.3	4.5	4.9	7.6
Finance companies	**--**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**2.0**	**4.6**	**4.8**	**5.1**	**4.7**
Securities brokers and dealers	**0.0**	**0.0**	**3.8**	**3.0**	**8.1**	**1.5**	**1.0**	**1.1**	**1.2**	**1.1**	**3.3**
Mortgage companies	**0.0**	**2.7**	**1.3**	**1.2**	**0.6**	**0.3**	**0.1**	[b]	[b]	**0.4**	**0.2**
Real estate investment trusts	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.0**	**0.3**	**0.1**	**0.1**
Total *(percent)*	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total *(trillion dollars)*	**.001**	**.005**	**.016**	**.034**	**.123**	**.129**	**.281**	**.596**	**1.328**	**4.025**	**13.952**

[a]The end of the first quarter of 1993 was the last date for which data for savings and loan associations and savings banks were reported separately. The figures for that date were: savings and loans, 6.0 percent; savings banks, 1.9 percent.

[b]Data not available.

[c]Breakdown between open- and closed-end funds not available.

Sources: Data for 1860-1948 from Raymond W. Goldsmith, *Financial Structure and Development*, Studies in Comparative Economics, New Haven, CT: Yale University Press, 1969, Table D-33, pp. 548-9. Data for 1960-1993 from Board of Governors of the Federal Reserve System, "Flow of funds accounts," various years.

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TABLE 3

Share of total liabilities of intermediaries, United Kingdom (1913-91)

Year	Banks	Building societies	Insurance companies	Pension funds
	(----------percent----------)			
1913	64	4	32	--
1930	61	8	31	--
1939	55	12	32	n.a.
1960	43	12	30	14
1970	32	17	27	16
1980	30	20	25	21
1990	28	17	26	26
1991	27	18	27	26

Note: n.a. indicates data not available.

Source: Harold Rose, "The changing world of finance and its problems," working paper no. 167-93, Institute of Finance and Accounting, London Business School, 1993, p. 29.

panies exist. To serve customers who wish to invest in securities other than bank deposits, many banks have long operated trust departments in which they provide fiduciary, investment, managerial, and custodial services for a fee. Trust department assets are assets that the bank manages or otherwise services but does not own, and that therefore do not appear on the bank's balance sheet.

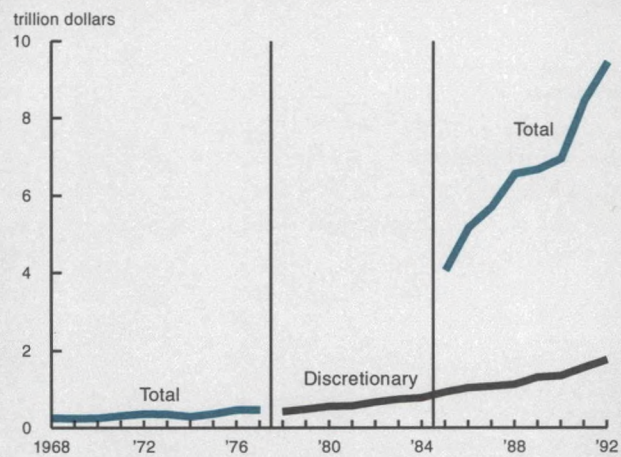
Trust accounts come in various types and require different amounts of servicing by the bank; accordingly, they generate different amounts of fee income for banks. Most trusts can be classified as personal trusts, estates, or employee benefit trusts. The trust contracts with the trustee bank for the kind of services that it requires. Almost all trust contracts call for custodial and recordkeeping services, including performance measurement, timely valuation, portfolio analysis, Employee Retirement Income Security Act (ERISA) and other required disclosure assistance, benefit disbursement, cash management, and proxy monitoring.

Some banks also provide investment management services, either as an agent or as a trustee.[5] Trust accounts whose assets are managed by the bank are generally referred to as discretionary, while accounts that are in the custody of the bank but managed by others are referred to as nondiscretionary. At year-end 1992, bank trust departments, trust companies, and thrift institutions held $1.8 trillion of discretionary assets and $7.7 trillion of nondiscretionary assets; the commercial bank share was 87 percent of the former and 94 percent of the latter (Federal Financial Institutions Examination Council 1992). Total trust assets serviced by commercial banks at year-end 1992 totaled $8.8 trillion, more than 2.5 times the assets on the balance sheets of banks. Moreover, bank trust assets have expanded rapidly in recent years, rising from $283 billion at year-end 1968 to $4.1 trillion in 1985 and $8.8 trillion in 1992. As figure 2 shows, the most rapid growth in recent years has been in nondiscretionary assets.

Banks face little competition for custodial trust services. Few if any financial institutions other than banks or trust companies offer them,

FIGURE 2

Assets of bank trust departments and trust companies



Note: Discretionary and nondiscretionary accounts were not distinguished from 1968 to 1977, and purely custodial accounts were excluded; only discretionary assets were reported from 1978 to 1984. From 1985 on, nondiscretionary assets include purely custodial accounts.

Source: Federal Financial Institutions Examination Council, *Trust Assets of Financial Institutions*, 1992.

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TABLE 4

Ten largest bank trust departments, personal and employee benefit accounts
(1992)

	Trust assets					
	Discretionary	Nondiscretionary	Total	Bank assets	Discretionary trust assets/ bank assets	Total trust assets/ bank assets
	(billion dollars)				(ratio)	
State Street Bank (Boston)	113	1,165	1,278	16.5	6.8	77.5
Morgan Guaranty (New York)	38	695	733	76.7	0.5	9.6
Bank of New York	30	685	715	36.5	0.8	19.6
Citibank (New York)	23	399	422	163.8	0.1	2.6
Northern Trust (Chicago)	37	341	378	11.9	3.1	31.8
Mellon Bank (Pittsburgh)	37	323	361	29.6	1.3	12.2
Bankers Trust (New York)	128	222	351	55.8	2.3	6.3
Chase Manhattan (New York)	17	339	356	74.5	0.2	4.8
Boston Safe Deposit	19	217	236	8.3	2.3	28.4
Bank of America (San Francisco)	112	107	219	133.4	0.8	1.6

Source: Federal Financial Institutions Examination Council, *Trust Assets of Financial Institutions*, 1992.

and only a few trust companies are not chartered as banks. The ten largest bank trust departments according to assets in personal and employee benefit accounts are listed in table 4. Two of the institutions—State Street Bank and Boston Safe Deposit—are basically trust companies rather than banks, although both have bank charters. As the data in the table make clear, the trust assets held by each of these institutions greatly exceed the assets on its balance sheet.

Banks also provide corporate trust services. Such services include serving as trustee for the holders of corporate and municipal securities and as registrar, paying agent, transfer agent, and recordkeeper for publicly issued securities, including mutual funds. As trustee for the debt security holders, the bank trust department monitors scheduled payments for timeliness and represents the holders' interests in disputes. The largest bank trust departments in each corporate trust activity are listed in table 5. Only as mutual fund transfer agents do commercial banks appear to face serious competition.

When personal trust assets held by bank trust departments are added to balance sheet assets for the years since 1900, the share of assets held by banks increases somewhat, but the downward trend is basically unaltered. For the period since 1968, adding personal trusts increases commercial banks' share of total assets by an amount ranging from 4.5 percentage points to 9 percentage points. However, the downward trend remains and is in fact intensified in percentage terms, since the ratio of banks' personal trust assets to total assets of financial institutions fell by 50 percent over that period, whereas banks' share of balance sheet assets fell only about a third. As figure 3 shows, essentially the same conclusion holds when other assets are included over which bank trust departments exercise managerial discretion. These assets, which include roughly one-third of employee benefit trust assets, were nearly three times as large as personal trust assets at year-end 1992 but have grown at roughly the same pace in recent years. Thus, while their inclusion substantially increases banks' average share of the market over the period, it does little to moderate its downward trend. Including trust assets over which banks do not exercise managerial discretion would moderate the decline, but because a narrower range of services is provided in conjunction with such accounts, they should not receive the same weight as discretionary assets.

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TABLE 5

Largest bank providers of corporate trust services
(1992)

Corporate and municipal security trusteeship	Securities, principal amount (billion dollars)
Citibank (New York)	222
First National Bank (Chicago)	197
Bank of New York	160
Chemical Bank (New York)	149
Bankers Trust (New York)	132
Texas Commerce (Houston)	99
Chase Manhattan (New York)	94
State Street (Boston)	92
Bank of America (San Francisco)	91
United States Trust (New York)	87

Stock or bond transfer agent	Number of issues
Citibank (New York)	16,030
Chemical Bank (New York)	12,109
Bank of New York	8,124
Bankers Trust (New York)	2,961
Seattle-First National	2,849
Ameritrust Texas (Dallas)	2,360
American National (St. Paul)	2,223
Security Pacific (New York)	1,905
First Chicago Trust (New York)	1,542
First National of Boston	1,347

Mutual fund transfer agent	Number of issues
PNC National (Wilmington, DE)	427
Investors Fiduciary Trust (Kansas City)	241
Firstar (Milwaukee)	132
Putnam Fiduciary (Boston)	71
Investors Trust (Boston)	44
NationsBank (Dallas)	32
Norwest Bank (Minnesota)	23
Wells Fargo (San Francisco)	22
Fifth-Third Bank (Cincinnati)	8
Wilmington Trust	7

Source: Federal Financial Institutions Examination Council (1992).

The reentry of banks into securities activities

Primarily through the nonbank subsidiaries of their parent holding companies, banks have also been entering or reentering areas of activity long considered off-limits to banks, at least since the enactment of the Glass-Steagall Act in 1933. Although banks' own aggressiveness and inventiveness have been the driving force in this development, much of it would have been impossible without a series of rulings by the Comptroller of the Currency and the Board of Governors of the Federal Reserve System (Kaufman and Mote 1990). As of today, banking organizations, subject to some quantitative restrictions that are more onerous for smaller institutions, may serve as full-service or discount securities brokers, may underwrite and deal in a full range of municipal and corporate debt, futures, options, swaps, and other derivative securities as well as corporate equities, and may manage or broker (but not underwrite or sponsor) mutual funds.

In recent years, commercial banks have made significant inroads into the underwriting of new securities. In 1993, two bank holding companies—J. P. Morgan and Citicorp—ranked among the top 15 underwriters of all new domestic securities sold in the United States. The remaining 13 were investment banks. Three banks ranked among the top 15 underwriters of both investment-grade and junk bonds and also among the top five underwriters of asset-backed securities. It is of interest to note that only one commercial bank ranked among the top 15 underwriters of municipal revenue bonds, most of which they were not permitted to underwrite until recent years. But this is the same number of banks that rank among the top 15 underwriters of municipal general obligation bonds, which banks have always been permitted to underwrite. As we have noted elsewhere, it is only since the late 1970s that banks have become aggressive in pursuing securities underwriting activities (Kaufman and Mote 1990). In part this may reflect differences in corporate culture between these activities and more traditional commercial banking activities.

Banks and mutual funds

Mutual funds are one of the newer and, since the late 1970s, more rapidly growing types of financial institutions. As figure 4 shows, mutual funds have increased their share of assets of all financial institutions from 1.8 percent in 1977 to 14.2 percent in 1993. This rapid increase is the result of both a rapid inflow of new funds into mutual funds, in part reflecting the introduction of money market funds in the early 1970s, and the sharp increase in stock and bond prices in recent years. Ex-

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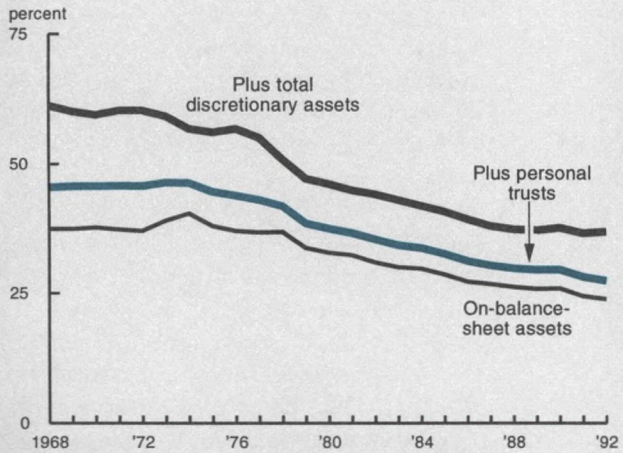
FIGURE 3

Commercial banks' share of assets adjusted for discretionary trust assets



Sources: Board of Governors of the Federal Reserve System, "Flow of funds accounts," various years; and Federal Financial Institutions Examination Council, *Trust Assets of Financial Institutions,* various years.

cept for money market funds, mutual funds are valued at market prices. In contrast, the assets of depository institutions, insurance companies, and finance companies are typically measured by book value.

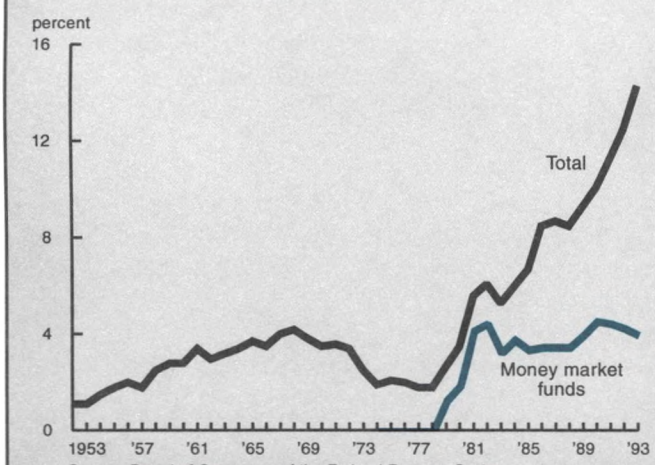
Mutual funds are open-ended investment funds sponsored (organized) by an entity called an investment company that sells shares to raise a third-party pool of funds for investment in securities. The shares represent an interest in the pool and are generally valued at the day-end net asset price of the asset portfolio. The fund stands ready to buy and sell shares continuously at this price. The sponsor investment company may manage the fund by providing investment advice, provide the necessary back-room operations including recordkeeping, custodial, and transfer services, and/or market and sell the shares directly to the public, or it may hire one or more third parties to do so. Thus, mutual funds consist of a sponsor, investment manager, share distributor, and operations agent. These four functions may be conducted by a single entity, four different entities, or something in between.

Commercial banks are traditionally portfolio investors that raise funds by selling primarily debt instruments (deposits) to second parties. Thus, unlike the case with mutual funds, most bank investors are creditors rather than owners, whose returns are fixed. But many bank customers also wish to invest in securities offering greater risks and hopefully higher returns than can be obtained on bank deposits. This has been especially true in recent years as households have become wealthier and older and have placed increasing emphasis on saving for retirement through pension plans. As indicated above, banks have long provided some of these services through their trust departments. It has been common practice for trust departments to commingle trust accounts for investment purposes in order to reduce transaction costs and realize operating economies.

In 1965, however, the Comptroller of the Currency permitted the First National Bank of New York, the predecessor of Citibank, to commingle its managing agency accounts and to advertise them to the general public. Customers would receive participation units in the pool. This change was challenged by the

FIGURE 4

The rise in mutual funds' share of assets of all financial institutions



Source: Board of Governors of the Federal Reserve System, "Flow of funds accounts," various years.

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securities industry and ultimately struck down by the Supreme Court, which ruled that it violated the provisions of the Glass-Steagall Act separating commercial and investment banking. The court ruled that commingling managing agency accounts and selling participation shares in them was in effect dealing in securities, which was prohibited. The court concluded that such a "bank investment fund finds itself in direct competition with the mutual fund industry" (Fischer, Gram, Kaufman, and Mote 1984). The decision temporarily stalled banks' efforts to offer a competitive investment product. However, a 1972 decision by the Board of Governors of the Federal Reserve System that explicitly permitted banks to act as investment managers for mutual funds, while prohibiting them from brokering such funds, helped banks to enter this market.

Although the Glass-Steagall Act prohibited banks from dealing in private securities for their own account, it did not prohibit them from purchasing and selling private securities without recourse upon order of their customers. While some banks offered brokerage services as an accommodation to their customers, few viewed them as a profitable activity. Indeed, in 1936, the Comptroller of the Currency explicitly authorized national banks to offer brokerage services, but only as an accommodation to their customers and not on a profit-making basis. The increase in securities activities and the end of fixed commissions on the New York Stock Exchange in 1975 caused banks to reconsider their interest in brokerage activities. In 1981, BankAmerica Corporation announced its intention to acquire Charles Schwab, the country's largest discount broker. Shortly thereafter, Security Pacific National Bank initiated a cooperative arrangement with the Fidelity Group to broker securities, including mutual funds, to its customers and then organized its own discount broker as a subsidiary of the bank. Both activities were undertaken with the approval of the regulatory agencies. Thus, banks could broker mutual funds either directly through the bank or bank holding company or indirectly through a cooperative agreement with a third-party broker. Some banks began to offer their customers "private-label" mutual funds managed by others. At the same time, some banks also started "proprietary funds" that were managed by the organizing bank but distributed by others. In 1992, the Federal Reserve liberalized its regulations to permit banks and bank holding companies to broker funds that they also managed. Thus, banks could effectively engage in all aspects of mutual fund operations except sponsoring and distributing (underwriting) the shares directly.

Banks have moved relatively slowly into the mutual fund business and were not overly aggressive in lobbying the regulators to lower the barriers. Not until the substantial runoff of time deposits in search of higher yields when market interest rates declined sharply in the early 1990s did many banks awaken to the possibilities of offering money market and other mutual funds to their customers. Nevertheless, by 1992 more than 90 percent of all banks offered mutual funds in some way, more than double the proportion in 1985. Data on bank-managed and proprietary mutual funds since 1983 are presented in table 6. As late as 1987, banks managed less than 5 percent of all mutual fund assets, and by early 1993 this had increased to only 11 percent. Banks made much more substantial gains in money market funds, managing 23 percent of the assets of such funds in 1993, compared with only 6 percent of stock and bond mutual funds. When brokered private-label and other funds are included, banks sold more than one-third of the dollar volume of all mutual funds in the first half of 1992, nearly all of which were money market funds. The ten banking organizations that managed the largest amounts of mutual fund assets in 1993 are shown in table 7.

In recent years, some banks have tried to increase their participation in the mutual fund industry by acquiring large mutual fund investment companies or entering into exclusive joint agreements with them. In 1993, for example, Mellon Bank, the twelfth largest bank in the country, announced its intention to purchase the Dreyfus Funds, the third largest sponsor of money market funds and tenth largest sponsor of other mutual funds. At the same time, NationsBank entered into a partnership that gave Dean Witter Financial exclusive rights to market proprietary NationsBank funds as well as other funds to bank customers from locations in the bank's offices. On the other hand, Chemical Bank and Liberty Financial broke off their attempted joint venture.

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TABLE 6

Bank-managed mutual funds: dollar amount, number of funds, and percent of industry
(1983-93)

	Money market				Other funds				Total			
	Assets		Number		Assets		Number		Assets		Number	
	$[a]	%[b]	#	%[b]	$[a]	%[b]	#	%[b]	$[a]	%[b]	#	%[b]
1993	134	23.1	461	39.9	85	6.0	954	20.2	219	11.0	1,415	24.2
1992	111	19.4	382	36.0	47	4.6	502	14.7	158	9.9	884	19.9
1991	95	16.9	316	32.8	27	3.4	359	12.7	122	10.3	675	17.9
1990	67	13.1	256	33.1	13	2.4	271	11.4	80	7.9	527	16.7
1989	50	11.5	191	28.8	10	1.8	213	9.5	60	7.0	404	13.9
1988	38	11.3	154	26.2	6	1.3	166	8.0	44	5.4	320	12.0
1987	31	10.3	109	21.8	4	0.9	104	6.2	35	4.6	213	9.8
1986	28	10.1	80	19.0	4	0.9	65	4.9	32	4.5	145	8.3
1985	19	8.3	56	15.1	2	0.8	52	4.9	21	4.3	108	7.6
1984	17	7.8	48	15.4	1	0.7	39	4.7	18	5.0	87	7.6
1983	14	8.2	42	15.0	1	0.8	24	3.6	15	5.2	66	7.0

[a]Billion dollars.
[b]Percent of industry.
Source: Courtesy of Lipper Analytical Services.

Although the flow of funds data incorporate the assets of mutual funds managed by banks, they do not attribute those assets to the commercial banking sector. Rather, assets of all mutual funds, regardless of their managers, are listed under a separate mutual funds sector. Adding the data on bank-managed mutual funds from table 6 to banks' total assets for each of the eleven years for which data are available reduces the decline in banks' share of assets over the past decade by nearly 2 percentage points. Taking account of both trust department and bank-managed mutual fund assets would further reduce the downward bias in asset measures of banks' share of financial institutions' output over the past decade.

Unfortunately, because the trust asset data include a large but not precisely determinable portion of the assets of mutual funds managed by banks, the two sets of data cannot be simply added.

In addition to trust, securities, and mutual fund activities, banks also engage in a number of other activities either directly or through nonbank subsidiaries of their parent holding companies that are reported in the "Flow of funds accounts" as part of other financial industries. These subsidiaries include consumer and commercial finance companies, mortgage companies, and savings associations. For example, in September 1993, bank holding companies owned 154 thrift institutions with assets of $107 billion. Citicorp operated Citibank

TABLE 7

Banking organizations with largest managed mutual funds
(1993)

Bank holding company	Assets		
	Money market	Other	Total
	(-------bilion dollars-------)		
PNC (Pittsburgh)	18.0	2.7	**20.7**
NationsBank (Charlotte)	8.3	5.5	**13.7**
BankAmerica (San Francisco)	11.8	1.1	**12.9**
Wells Fargo (San Francisco)	2.5	5.6	**8.1**
Banc One (Columbus)	3.3	4.1	**7.4**
Northern Trust (Chicago)	5.7	1.2	**6.9**
NBD (Detroit)	3.4	2.3	**5.7**
State Street (Boston)	3.3	1.8	**5.1**
Chase Manhattan (New York)	3.0	2.1	**5.0**
Norwest (Minneapolis)	3.9	0.8	**4.7**

Source: Yvette D. Kantrow, "Bank-managed funds grew by 34% in 1993," *American Banker*, February 9, 1994, p. 14.

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TABLE 8

Nonbank assets held by large bank holding companies
(1992)

Activity	Billion dollars	Percent
Securities brokerage and underwriting	77	36
Thrift institutions[a]	34	16
Mortgage banking	19	9
Commercial finance	16	8
Consumer finance	12	6
Leasing	6	3
Small business investment companies	4	2
Data processing	2	1
Insurance underwriting and insurance agency	2	1
Other nonbank	41	19
Total[b]	**212**	**100**

[a]Excludes institutions supervised by the Federal Deposit Insurance Corporation, such as state-chartered savings banks

[b]Columns may not total because of rounding.

Source: Board of Governors of the Federal Reserve System.

Savings, which is the eighth largest savings association in the country. Similarly, at year-end 1992, twelve of the fifty largest finance companies were owned by bank holding companies. These include CIT, the ninth largest company, which is owned by Dai-Ichi Kangyo Bank (Japan). The total assets of nonbanking subsidiaries owned by reporting large bank holding companies (which are estimated to be roughly 95 percent of those of all bank holding companies) were $212 billion in 1992.[6] As table 8 shows, over one-third of these are in securities brokerage and underwriting subsidiaries. Despite their absolute importance, the nonbank assets of bank holding companies are dwarfed by the reported assets of banks. If the total assets of the nonbank subsidiaries of bank holding companies are added to reported bank assets, the market share of banks in 1992 increases only from 25.8 percent to 27.5 percent. But even after one adjusts reported assets for assets either owned by subsidiaries of bank holding companies or managed by banks but reported under other institutions in the "Flow of funds" data, there is still a growing volume of bank activities which are unrelated to either owning or managing assets but which generate income for banks, for example, lines of credit, letters of credit, and futures, options, and swaps.

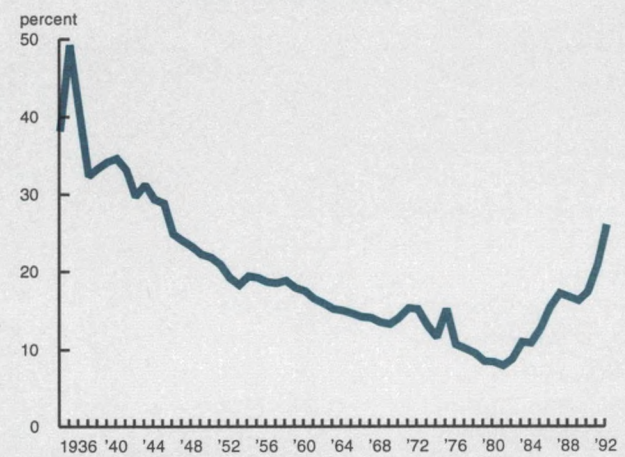
Noninterest income

Although the growing importance of off-balance-sheet activities is not captured by traditional asset measures, it does show up in the growth of noninterest or fee income. While fee income has received much attention over the past two decades, it is not of recent origin or importance, as figure 5 indicates. When loan demand collapsed and interest rates fell to extremely low levels in the 1930s, commercial banks' ratio of fee income to interest income increased sharply. However, because of the steady rise in interest rates in the post-World War II era, the growing importance of fee income was obscured until the early 1980s.[7]

The trend towards an increase in fee income relative to interest income is present not only in the United States but in nearly all developed countries. The percentages of gross bank income derived from fees in fifteen major countries for selected years from 1980 to 1990 are shown in table 9. (Note that these data are

FIGURE 5

Ratio of noninterest income to interest income at commercial banks



Source: Federal Deposit Insurance Corporation, *Historical Statistics of Banking*, 1992.

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TABLE 9

Fee income as a percent of gross income of banks, 15 major countries[a]
(1980-90)

Countries	1980-82	1984-86	1990
United States[b]	30.0	31.4	38.0
Japan[b,c]	20.4	24.6	35.9
Germany[b]	30.6	28.6	34.9
France[b]	14.6	15.3	24.9
Italy	26.0	30.3	26.8
United Kingdom[b]	28.5	36.9	41.1
Canada[c]	21.6[d]	23.7	31.0
Australia[c]	32.1	33.5	34.0
Belgium[c]	19.6	23.4	23.0
Finland	48.8	58.3	46.9
Netherlands	25.0	24.7	29.7
Norway	27.3	35.2	25.9
Spain[b]	15.7	18.1	22.3
Sweden	29.8	33.5	26.2
Switzerland	46.6	47.5	49.1

[a]Share of noninterest income in the gross income of commercial banks; the data are not fully comparable across countries.

[b]Large commercial banks.

[c]Fiscal years.

[d]1982.

Source: Bank for International Settlements, *Annual Report,* 1992, p. 196.

not fully comparable with the data for U.S. banks described above nor across countries.) In all countries except Finland, the importance of fee income increased during this period. Although fee income is relatively more important in the United States than in most other countries, it is considerably less important than in Switzerland or Finland and somewhat less important than in the United Kingdom.

The unbundling and securitization of financial services

The rise in fee income is in part a consequence of another phenomenon. The 1970s witnessed an acceleration of a trend that had been evident for some time, namely the "unbundling" of financial services. Unbundling is the separation of complex banking services, including such fundamental and traditional banking services as real estate and commercial lending, into their component steps or functions and the performance of some of those functions by separate entities. The oldest and most obvious example of unbundling was separating the origination and servicing of residential mortgage loans from the portfolio investment function through the sale of the mortgage from the originator to an institutional investor. Pioneered by mortgage companies decades before, this practice has since been adopted by banks and other mortgage lenders.

A major development in this unbundling was the introduction of the mortgage-backed security by the Federal Home Loan Mortgage Association and the Government National Mortgage Association. This was also the first step in the now familiar process of "securitization," the issuance of securities whose principal and interest payments reflect the behavior of a pool of underlying assets. The 1980s saw an enormous enlargement of the scope of securitization, which now encompasses automobile loans, credit card receivables, and other consumer credit, and is even making inroads into commercial loans, a type of asset that is much more difficult to securitize because of the greater heterogeneity of loan agreements and covenants. The banks receive fees for origination and possibly servicing but frequently do not hold the asset in their portfolios and thus do not receive interest revenue from it.

Sanford Rose, a former associate editor of the *American Banker*, argued vigorously in the early 1980s that costly regulation, inadequate compensation for lending risks, and the futility of trying to outguess the market regarding increasingly volatile interest rate movements were bringing about a fundamental transformation of the banking environment (Rose 1981). He asserted that the most prudent strategy for banks was to reduce their emphasis on portfolio investment, hedge or sell off their interest rate risk, and rely on origination and servicing fees to provide the bulk of their earnings. Indeed, he argued that mortgage companies, which have long operated in this manner, were the model for the financial firm of the future. In the years since this analysis appeared, commercial banking organizations have come more and more to resemble Rose's vision: They originate a large volume of loans—although even here they have lost ground to other institutions—and sell off a growing proportion of them. They also use their financial expertise, reputation, and capital to provide guarantees of financial performance, mostly in the form of standby letters of credit, but increasingly en-

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compassing a growing variety of new and exotic instruments.

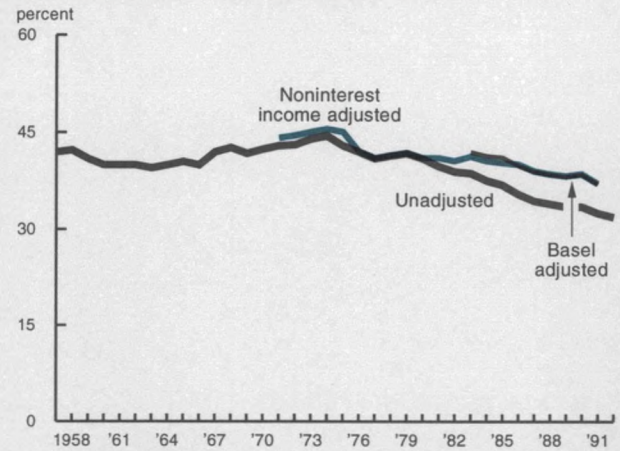
The Boyd-Gertler approach

Two somewhat different approaches to the adjustment of bank assets for off-balance-sheet activities were recently presented by Boyd and Gertler (1994). Both involved developing estimates of the asset equivalents of bank off-balance-sheet and fee-for-service activities. The first approach adjusted for loan commitments and letters of credit, two of the most important types of off-balance-sheet guarantees offered by banks, using the risk weights developed in the Basel risk-weighted capital standards. These weights were used to calculate the level of assets that would represent the same risk exposure to the bank as the off-balance-sheet activities. These asset equivalents were then added to each institution's on-balance-sheet assets to obtain a more complete asset measure of banks' market share. The shortcoming of this approach is that it takes account only of loan commitments and letters of credit and omits such important activities as trust services and mutual funds.

Boyd and Gertler's second procedure was to convert all noninterest income—from loan servicing, asset management, and other services (including trust and securities activities), as well as off-balance-sheet guarantees—into a balance sheet equivalent. Using net interest income (interest income less interest expense and loan losses) as a measure of the return from on-balance-sheet assets, and assuming that the same rate of return is earned in off-balance-sheet activities, the authors capitalized fee income at that rate to generate "imaginary" asset equivalents. They then added the asset equivalents of the noninterest income to on-balance-sheet assets to obtain a more comprehensive measure of bank output for the years since 1971. When they did so, virtually all evidence of a downward trend in banks' share of financial institutions' assets over the period 1957-1990 disappeared, although there was some decline from the 1974 peak. Commercial banks' share of the assets of all financial institutions, both unadjusted and as adjusted by Boyd and Gertler's two alternative methods, is shown in figure 6.

FIGURE 6

Share of commercial bank financial intermediation



Note: Both adjusted series include undercounted off-shore loans, as well as off-balance-sheet credit equivalents.

Source: John H. Boyd and Mark Gertler, "Are banks dead? Or are the reports greatly exaggerated?" unpublished paper, Federal Reserve Bank of Minneapolis, March 1994.

Summary of asset measures

This section has described a number of approaches to adjusting data on bank assets to take account either of assets that are managed by the bank but do not show up on its accounting balance sheet or of activities that are done for a fee and are not associated with assets either owned or managed by the bank. One of the problems with trying to "fix" banks' balance sheets is that the problems associated with them are not limited to banking. For example, life insurance companies also engage in a large volume of off-balance-sheet activities. Thus, to obtain a meaningful measure of banks' relative importance in the financial system, it would be necessary to perform similar adjustments on the balance sheets of other financial industries. Together with the conceptual shortcomings of assets as a measure of output—that is, it is a stock rather than a flow measure, and different levels of output may be associated with the same value of assets of different kinds—this suggests the desirability of also looking at alternative measures of the relative size of the banking industry.

Employment

A second measure of banking's size or importance is the number of employees in the industry. For some purposes, employment may

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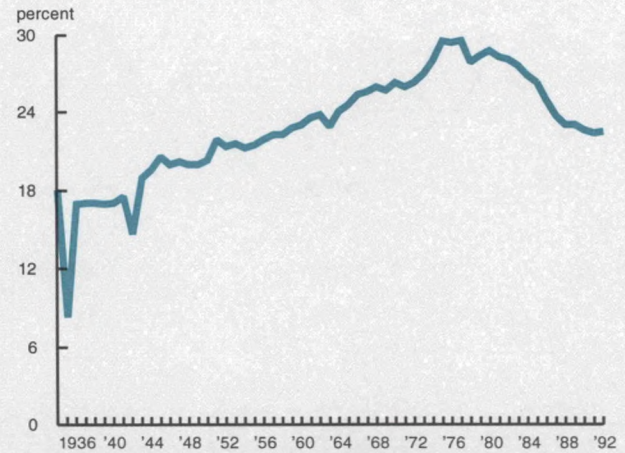
be the most relevant and useful measure. This is most obviously true in regard to the industry's impact on the economy of a particular city or region. However, because employment is a measure of input rather than output, it is much less appropriate as a measure of the size or competitiveness of an industry relative to other industries producing similar products or services. Moreover, employment does not adjust for differences in productivity between sectors of the economy or changes in productivity over time. Nevertheless, it may serve as a useful check on the accuracy of other measures.

FIGURE 7

Commercial bank employees as a percent of total for financial, insurance, and real estate sector



Sources: U.S. Department of Labor, Bureau of Labor Statistics, *Employment, Hours, and Earnings, United States, 1909-90*, Bulletin 2370, Vol. 2, March 1991 and *1981-93*, Bulletin 2429, August 1993; and Federal Deposit Insurance Corporation, *Historical Statistics on Banking*, 1992.

As figure 7 indicates, between 1934 and 1977, employment in the commercial banking industry more than kept pace with that in the entire financial, insurance, and real estate sector. Thereafter it declined by roughly one-fourth through 1992. As a percentage of total employment in the private nonfarm economy, employment in commercial banking continued to rise through 1983, when it peaked at 1.67 percent. Since then, that number has fallen as well. The absolute level of employment in the industry continued to rise through 1986, peaking at 1.56 million. By 1992, it had fallen to 1.48 million.

The decline in employment in the banking industry in recent years is not surprising given the large number of bank closings and consolidations in the 1980s and the acceleration of consolidation in the early 1990s. However, the rise over the preceding decades suggests two possibilities: either commercial bank productivity was falling continuously over that period, as the declining ratio of bank assets to employment would suggest,[8] or total assets is an inadequate measure of financial institution output. Although a decline in the productivity of banking extending over five decades cannot be dismissed as a logical possibility, it seems inconsistent with the increased use of computers and other advanced technology by banks and with the continued rise of productivity in the economy as a whole. Moreover, the great expansion of off-balance-sheet activities in banking described in detail in the preceding sections casts further doubt on the hypothesis that productivity in banking has declined over any extended period in recent years.

Revenues, earnings, and value added

A third set of measures of the importance of banking is based on revenue and earnings data that reflect the full range of services offered. Such measures have the advantage of being flow rather than stock measures of output. Indeed, in most industries, market share is typically measured by revenues, sales, or value added rather than assets. These measures are also used by the Department of Justice in antitrust actions. Revenue and value added measures are available for banks and other depository institutions from data reported to the bank regulatory agencies in their periodic *Reports of Income and Dividends* or from data reported on a regular basis to the Internal Revenue Service (IRS). Virtually since the IRS was established in 1916, it has published annual compilations of income and expenses of corporations and individuals. For the earliest years, these reports were based on the universe of federal income tax returns; more recently, they have been based on a sample. The advantage of the IRS data is that they can be obtained on a relatively uniform basis for all categories of financial institutions.

A measure of the size of the banking industry based on IRS data that takes account of both lending and off-balance-sheet activities is

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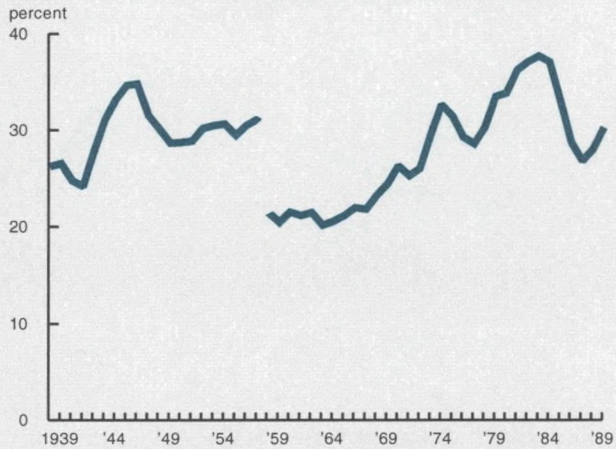
FIGURE 8

Banks' share of total receipts of the financial sector



Note: A break in the series for the financial sector occurred between 1957 and 1958 because of a redefinition of receipts of life insurance companies to include premiums and other income as well as investment income.

Source: U.S. Treasury Department, Internal Revenue Service, *Statistics of Income, Part 2, Corporation Income Tax Returns*, 1938-89.

simply total receipts or revenues. Figure 8 shows the ratio of total receipts for banks to those for the entire financial sector, including insurance, for the years 1938-82. Unfortunately, this measure is strongly influenced by movements in the general level of interest rates, and its volatility tends to obscure the basic trend in the data. Moreover, as was suggested in the earlier discussion of the conceptual problems in measuring the importance of banking in the financial services industry, there is much to be said for using a measure of value added—the value of the products sold by an industry less the value of intermediate goods and raw materials purchased by it.

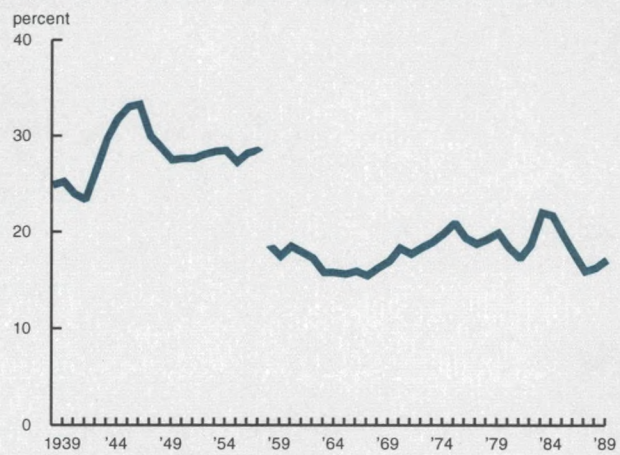
The IRS data permit the calculation of commercial banks' share of a variable that closely approximates a measure of value added for total financial institutions proposed by Donald Hodgman (see box). This is the difference between total receipts, including interest received, and interest paid. The netting of interest received and paid greatly reduces but does not eliminate the enormous variation in bank revenues stemming from changes in the level of market interest rates. Unfortunately, because of changes in definitions and reporting categories and the amount of detailed information published by the IRS, the measure is available only from 1938 on.

As figure 9 shows, this measure of commercial banks' share of the total output of the financial sector gives a considerably different picture than reported asset measures. Rather than declining monotonically over the entire period like the asset measure, it averages around 25 percent in the late 1930s, rises to the low 30 percent range in the 1940s and early 1950s, declines to just over 15 percent in the 1960s, rises above 20 percent in the mid-1970s and again in the early 1980s, and declines to about 16 or 17 percent by the late 1980s. There was clearly a decline in the banking industry's share of the output of all financial institutions through the mid-1960s, although the greater part of the apparent sharp decline between 1957 and 1958 was spurious, reflecting a change in the reporting of revenues of life insurance companies. However, there has been no obvious trend since then.[9]

Relative to the entire economy, the output of both banks and the entire financial sector has increased over the past half-century. As

FIGURE 9

Banks' share of value added of the financial sector



Note: See note to figure 8.

Source: U.S. Treasury Department.

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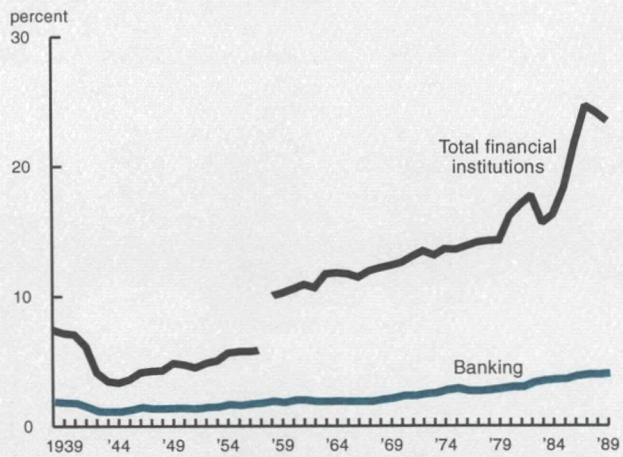
FIGURE 10

Value added of banks and the financial sector as a percent of gross domestic product*



Note: A break in the series for the financial sector occurred between 1957 and 1958 because of a redefinition of receipts of life insurance companies to include premiums and other income as well as investment income.
*1938-1958 is gross national product. 1959-1989 is gross domestic product.
Source: U.S. Treasury Department.

figure 10 shows, the value added of the financial sector as a proportion of GDP rose from 7.5 percent in 1938 to 23.5 percent in 1989, while that for commercial banks increased from 1.9 percent to 4.0 percent.

Conclusion

Is banking a declining industry? There is a widespread perception that the size of the commercial banking industry relative to that of all financial institutions in the United States has been declining rapidly in recent years. Restrictive regulations imposed primarily in earlier years when banking was relatively more important are often blamed as contributing to the decline. Most of the evidence for the belief that banking is declining consists of data on commercial banks' share of reported assets or of specific categories of assets, such as commercial loans. Similar results obtain for banks in countries with greatly different regulatory environments, such as the United Kingdom. However, when one analyzes other measures of the size of the banking industry, such as employment, revenues, and value added, the same conclusion does not always emerge. In part, this is because the nature of bank activities has changed drastically over the past several decades and many of the newer activities are not reflected in balance sheet assets. When asset figures are adjusted to incorporate some measure of the new activities, they show either no decline or a much attenuated rate of decline for banking in recent years.

In summary, the evidence does not clearly support the widespread perception that banking has declined, either absolutely or relative to the financial services industry or the entire economy, since the early 1960s. Nonetheless, this conclusion is consistent with the belief that banking has not grown as rapidly as it might have if banks had not been constrained from providing new products quickly in response to changes in market conditions. Unfortunately, we do not know how rapidly banking would have grown under alternative regulatory regimes, or what the social costs and benefits of those alternatives would have been. Nor do our measures of the relative size of the banking industry shed light on whether the regulations, by preventing individual banks from expanding or opening branches across state boundaries, have restricted the efficiency of banks and thereby increased the cost of banking to consumers. Those, however, are the types of questions that need to be answered in order to improve public policy towards banking.

FOOTNOTES

[1]It has been argued that a major decline in the size of the banking industry, regardless of its cause, would create problems for the implementation and effectiveness of monetary policy. This article does not attempt to address this issue.

[2]The National Bureau of Economic Research has sponsored a number of conferences on this and related issues (National Bureau of Economic Research 1961, 1969).

[3]Board of Governors of the Federal Reserve System, "Flow of funds accounts."

[4]A recent book by Robert E. Litan (1987) also presents data for 1835 (figure 2.2, p. 18). These data were obtained from a Census publication (U.S. Bureau of the Census 1975).

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[5]The major difference between an agent and a trustee is that in an agency relationship the principal (customer) retains legal title to the assets, whereas in a trust relationship, legal title passes to the fiduciary. In addition, a trust relationship will involve more duties and responsibilities on the part of the fiduciary even in the absence of specific written authority and, unlike an agency relationship, which terminates on the death of the principal, may continue beyond the death of the grantor of the trust.

[6]The data on nonbank subsidiaries of bank holding companies reported here were obtained from the FR-Y11Q and FR-Y11AS reports, which are filed with the Federal Reserve by all bank holding companies with consolidated assets of more than $1 billion and by those with assets of more than $150 million that have nonbank activities exceeding specified levels. These figures are larger than reported in table 8 because they include FDIC-supervised savings banks that are excluded from the data used to construct the table.

[7]In the early 1960s, many of the larger banks sought to increase the variety and volume of services that they offered on a fee-for-service basis. A series of favorable rulings by then Comptroller of the Currency James Saxon encouraged national banks in their efforts to expand their activities. The services that they, or subsidiaries of their bank holding companies, began to offer included such relatively minor extensions of existing activities as providing investment advice, payroll accounting, data processing, armored car and courier services, and insurance agency services. Because the courts eventually disallowed many of these activities as violating the National Banking Act, the Banking Act of 1933 (Glass-Steagall Act), or the Bank Holding Company Act, the activities did not contribute greatly to banks' fee income.

[8]Bert Ely of Ely Associates, Inc., a financial institutions consulting firm, has argued that, largely as a consequence of regulatory constraints, the efficiency of the entire financial system has declined and that many widely heralded "innovations" in finance represent nothing more than "regulatory arbitrage" (Ely 1992).

[9]This result accords with that of Boyd and Gertler (1994), who also presented data on value added. They found a slight upward trend in the share of value added of bank-related industries relative to that for the entire finance, insurance, and real estate sector over the period 1947 to 1990. However, their "bank-related industries" category contained all depository institutions.

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Funding small businesses through the SBIC program

Elijah Brewer III and Hesna Genay

"Ensuring the availability of sufficient amounts of credit for small- and medium-sized businesses, at affordable interest rates, is vital in any effort to bring this nation out of recession, create new jobs, and build a strong U.S. economy."[1] These remarks reflect the growing concern over the availability of funding to small businesses. Because small businesses are perceived to be a major source of growth for the U.S. economy, a number of policy initiatives have been proposed recently in the Congress to increase the availability of funds to these firms.

The debate about the availability of capital to small business is not new. In 1958, the Federal Reserve Board concluded that there was a shortage of funds available to these firms.[2] In response, Congress authorized the Small Business Administration (SBA) to charter private small business investment companies (SBICs) to act as financial intermediaries for small firms.

SBICs differ from other financial institutions that fund small businesses. Traditional financial intermediaries such as banks provide short-term working capital financing to small firms, while SBICs provide long-term funds, not only through loans, but also through equity investments.[3] Furthermore, banking organizations are allowed to participate in the program; hence, while banks are restricted from making direct equity investments, they can do so indirectly by establishing SBIC units. SBICs are also unique in that they have access to government subsidies and thus can leverage their private capital with government funds, unlike other venture capital firms.

These and other features raise a number of interesting issues about the role of SBICs in funding small businesses. In perfect capital markets, firms can always raise funds for positive net present value projects. Capital market imperfections that are caused by conflicts of interest between outside investors and managers of firms and differences in the amount of information available to them, however, can impose costs on firms and inhibit the flow of funds for profitable investment projects. It has been argued that the characteristics of small businesses exacerbate these problems.

A central issue in financing small firms is the conflict between the types of investors and financing that are most appropriate for these firms. On one hand, because it is hard to evaluate and monitor small firms, and because they

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have few assets that can be collateralized, long-term debt financing is likely to be costly for them. On the other hand, equity financing involves sizable fixed costs, and while banks may have a comparative advantage in financing small firms, they are unable to provide equity capital. Together, these facts restrict the amount of equity financing available to small firms. The SBIC program addresses these issues by increasing the pool of long-term debt and equity financing and by allowing banking organizations to provide equity capital to small firms.

If the SBIC program provides investment opportunities that minimize the problems associated with external finance, the type of financing provided by an SBIC should vary according to the riskiness of the project and the identity of the SBIC. In particular, we expect SBICs to provide debt financing primarily for those activities that generate tangible assets that can be pledged as collateral. By contrast, we would expect equity financing to be dominant in funding activities that generate relatively few tangible assets. Moreover, if the SBIC program affords banking organizations the opportunity to utilize their comparative advantage in evaluating and monitoring investments, then we would expect bank-owned SBICs to provide the majority of capital in the program and to pursue a strategy of extensive equity investments.

In this article, we explore these issues using proprietary data obtained from the SBA. To determine whether SBICs that are associated with banking organizations behave differently than other SBICs, we separated the SBICs into two groups, bank-owned and non-bank-owned.[4] The results indicate that bank-owned SBICs do, in fact, pursue a strategy of extensive equity financing, while non-bank-owned SBICs appear to rely more on nonequity financing and on direct government subsidies. Interestingly, bank-owned SBICs are more profitable even though they rely far less on government subsidies in the form of matching funds to invest. This suggests that allowing banks to participate in the SBIC program provides some advantages over alternative methods of financing small business, and that direct government subsidies are not required to enable investments in small businesses to be profitable.

The article is organized in four sections. The first section discusses the economic implications of the SBIC program. The second section examines the types of investments SBICs make, the cross-sectional differences in characteristics and investment strategies, and the differences between bank-owned and other SBICs. The third section presents evidence concerning the impact of SBICs' asset-mix decisions on profitability. The final section contains concluding remarks.

The economics of financing small businesses and the SBIC program

One of the central questions in the debate over small business financing is how the characteristics of these firms affect their funding. It is often argued that in small firms, the information gap between outside investors and managers of firms is greater and the conflicts of interest among different stakeholders are more severe.

Small businesses tend to be newer, private companies without established public track records.[5] Moreover, most small firms are in trade and service industries, which tend to have high ratios of intangible assets that cannot be pledged as collateral for loans. Small businesses also tend to have high failure rates and are concentrated in highly volatile industries.[6] Although the probability of failure is higher for small firms, comparisons of small and large surviving firms indicate that small firms grow faster. In other words, while young firms are likely to have very little cash flow in the short run, their future growth opportunities tend to be high.

These features of small firms tend to exacerbate the problems associated with capital market imperfections that raise the cost of external financing and inhibit the flow of funds to them. Evidence suggests that collateral, restrictive covenants, mixed equity and debt financing, and long-term relationships with investors mitigate some of these problems.[7] But such solutions involve fixed costs that are burdensome to firms that need to raise only small amounts of funds. The usual response to these problems has been either to provide government subsidies to defray the fixed costs, or to relax regulations on financial institutions to encourage the flow of funds to small businesses.[8] The SBIC program offers both of these features.

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Under the program, a company may be chartered to operate as an SBIC if it satisfies minimum private capital requirements. SBICs provide equity capital or long-term loans to firms having net worth less than $6 million or average net income less than $2 million in the preceding two years.[9] In addition, SBICs may receive government-guaranteed funds through issuances of debentures and other obligations which can be purchased directly or guaranteed by the SBA. At present, SBICs must have a minimum of $2.5 million in private capital and may receive up to $3 in SBA funds for every $1 of private capital.

SBICs are also subject to restrictions on the types and forms of their investments, summarized in box 1. Because the SBIC program was designed to encourage the flow of long-term capital to small firms, the regulations specify a minimum maturity for loans and a maximum rate of interest that can be charged. Although regulations allow SBICs to invest in the equity of small businesses, they are not permitted to gain control of a small business without prior SBA approval or a plan of divestiture. SBICs may invest only in qualifying small businesses, or, if an SBIC has temporarily idle funds, in certain short-term investments.

In addition to providing subsidized funds through the SBA, the SBIC program allows banking organizations to provide equity financing to small firms. If, as has been argued, banks have a comparative advantage in evaluating and monitoring small firms, then bank

BOX 1

Current SBIC regulations: a summary

Sources of SBIC funds

- Minimum private capital requirement is $2.5 million in capital and paid-in surplus.
- SBICs can obtain up to $3 in SBA funds for every $1 of private capital.
- SBA funds can be obtained either through sales of debentures to the SBA or through issues of SBA-guaranteed debentures. The majority of the outstanding SBA-guaranteed debentures issued by SBICs are ten-year debentures. Currently, the SBA is restructuring the regulations of the SBIC program. Once the restructuring is completed, SBICs will also be able to obtain SBA funds through issues of preferred securities. In addition, the maximum amount of SBA funds that any one SBIC can obtain is to be raised from $35 million to $90 million.
- The interest rate on SBA-guaranteed debentures is the interest rate on Treasury securities of comparable maturity. In addition, the SBA charges a premium averaging 60 to 100 basis points over the interest rate of comparable Treasury securities.

Uses of SBIC funds

- SBICs may invest only in qualifying small business concerns or, if the SBIC has temporarily idle funds, in certain short-term investments. SBICs may not invest in other SBICs, investment or finance companies, finance-type leasing companies, unproved real estate, companies with less than one-half of their investments in the U.S., or companies not engaged in regular and continuous business.
- SBICs may not acquire a controlling interest in a small business unless a plan of divestiture is filed with the SBA. SBICs may not invest more than 25 percent of their capital in any one small business.
- The minimum maturity of SBIC loans is 5 years. The maximum interest rate that can be charged on these loans (the "maximum cost of money") is determined by the SBA. If the current rate on ten-year debentures sold by the SBA is less than 8 percent, then the maximum cost of money is 15 percent on loans and 14 percent on debt securities. If the debenture rate is more than 8 percent, then the maximum cost of money is the debenture rate plus 800 basis points on loans, or the debenture rate plus 700 basis points on debt securities.

Oversight

- Each SBIC must be audited by an independent accredited auditor to determine whether the SBIC's financial statements conform to generally accepted accounting rules and to SBA regulations. In addition, SBICs are subject to annual SBA examinations.

Note: The information in this table is not exhaustive but only highlights the principal regulations of the SBIC program. The formal text of the full SBIC regulations is given in section 13 CFR 107 of the SBA regulations.

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participation in such programs as the SBIC program should increase the amount of funds available to small firms.[10] Until 1976, banks were prohibited from owning more than 50 percent of any one SBIC, and no bank could invest more than 2 percent of its capital and surplus in SBICs. Now, the only constraint on bank ownership is that no bank or bank holding company may invest more than 5 percent of its capital and surplus in SBICs. Furthermore, directors, officers, and employees of a bank may also serve as officers, directors, or employees of an SBIC.

The increase in the pool of equity capital available to small firms should offer several advantages. Because residual claimants can share in the potential benefits of the investments and share the risk with fixed claimants, the program may lower the cost of capital to small firms. Additional capital also improves the balance sheets of these firms, making it easier for them to obtain funds from other sources. Moreover, if SBICs are better able to process information about small firms, then an investment by an SBIC would signal to other investors that the firm offers profit opportunities.

According to SBA statistics, 1,320 companies became licensed as SBICs between 1959 and 1992.[11] At the end of fiscal year 1992, there were 204 active SBICs with $3 billion in capital resources. Over two-thirds of this capital was obtained from private sources; the remainder was supplied by the SBA either through guarantees of debentures issued by the SBICs or through purchases of such debentures. The majority of SBA leverage is provided through guarantees of debentures, which require direct outlay of SBA funds only in the event of a default by an SBIC.

SBICs' financial characteristics and investments

The SBA has an extensive database on all SBICs. For this article, we examined its files on SBICs' history, reports of condition, and investments in order to determine whether SBICs offer different types of financing to different types of small businesses, and to examine the relationship between SBICs' profitability and their financial characteristics. The reports of condition cover each year from 1986 to 1991, while the investment data cover each year from 1983 to 1992. The sample changes each year because many institutions were liquidated, merged, or voluntarily surrendered their licenses.[12]

Table 1 reports some of the developments in the SBIC program from 1986 to 1991. During this period, the total assets and capital of SBICs increased by more than 28 percent and 50 percent, respectively. By the end of fiscal year 1991, the total assets of the companies in the program were over $4 billion and capital resources had reached almost $3 billion. As table 2 shows, these total dollar figures represent an average of $24.1 million in total assets and almost $17 million in total capital per firm in 1991.[13]

The higher growth rate of total capital relative to total assets indicates that SBICs leveraged less of their assets in 1991 than in 1986. In fact, SBICs' total amount of SBA financing outstanding actually declined over that period. This decline is indicative of two general trends within the SBIC program. First, the number of active SBICs declined signifi-

TABLE 1

Development of the SBIC program

	All SBICs		Bank-owned SBICs	
	1986	1991	1986	1991
TA	$3.30 billion	$4.24 billion	$1.89 billion	$3.08 billion
TOTCAP	$1.99 billion	$2.99 billion	$1.35 billion	$2.46 billion
PRIVCAP	$1.28 billion	$2.16 billion	$0.83 billion	$1.75 billion
SBAFUND	$878 million	$575 million	$246 million	$129 million
N	292	176	100	68

Note: Variables are defined in box 2.

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BOX 2

Definitions of variables

DEBT	SBIC disbursements as purchases of debt instruments with equity features, such as convertible bonds
EQUITY	SBIC disbursements as purchases of equity
EQUITY and DEBT	SBIC disbursements as simultaneous purchases of equity and debt instruments
LOANS	SBIC disbursements as loans
LOSS	the ratio of provision for losses on accounts receivables to gross expenses
N	number of observations
PDEBT	the ratio of the stock of debt securities with equity features to total portfolio of investments, with all assets measured by their market value
PEQUITY	the ratio of the stock of equity securities to total portfolio of investments, with all assets measured by their market value
PLOANS	the ratio of the stock of loans to total portfolio of investments, with all assets measured by their market value
PRIVCAP	private capital defined as capital plus paid-in surplus
ROE-BV	the three-year average ratio of net income to book value of equity, 1989-91
ROE-MV	the three-year average ratio of net income to total capital (market value), 1989-91
SBAFUND	total amount of funds owed to the SBA
SBALEV	SBAFUND/PRIVCAP
TA	market value of total assets, including unrealized gains or losses on portfolio securities
TOTCAP	market value of total capital, including unrealized gains or losses on securities held

cantly during those years. While a few SBICs were formed during the period, a substantial number either surrendered their license or went into liquidation. At time of liquidation, those firms held about $467 million in outstanding SBA loans, which accounts for part of the decline in the SBA leverage. Second, the groups of SBICs that experienced the largest growth in assets and capital—bank-owned SBICs—used less SBA leverage on average.

During the 1986-91 period, of all SBICs, bank-owned companies had the highest growth rates in total assets and capital. In fact, over the same period, the total assets of non-bank-owned SBICs actually declined. Bank-owned SBICs typically financed their growth through private capital and relied less on SBA funds. As table 2 shows, in 1991 bank-owned SBICs had approximately $0.21 in SBA funds for every $1 of private capital, which was significantly lower than the comparable figure for non-bank-owned SBICs. Bank-owned SBICs also tended to be larger and to have more total capital relative to assets than non-bank-owned SBICs. The higher capital ratios at bank-owned SBICs suggest that those SBICs had a greater cushion against unanticipated losses on investments. The differences between bank-owned and other SBICs are also evident in the composition of their portfolios. In 1991, non-bank-owned SBICs had, on average, 41 percent of their portfolios in loans and the remaining 59 percent in securities with equity features, such as straight equity and convertible debt securities. Among bank-owned SBICs, loans represented only 11 percent of their portfolios.

The differences in the portfolio compositions of bank-owned versus other SBICs may also explain the differences in their capital structures. Until 1992, prepayment of SBA financings entailed prohibitive costs. As a result, SBICs that received SBA financing when interest rates were high could not refinance their debt when interest rates started to fall, as they did in 1986. In other words, the *ex post* costs of SBA funds were relatively

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TABLE 2

Financial characteristics of SBICs, 1991

Variable	All SBICs		Bank-owned SBICs	
	Mean	St. deviation	Mean	St. deviation
TA	$24.12 million	64.72	$45.33 million[a]	98.54
TOTCAP	$16.97 million	49.83	$36.21 million[a]	75.94
PRIVCAP	$12.28 million	32.24	$25.71 million[a]	48.55
SBALEV	$0.82	0.97	$0.21[b]	0.42
PLOANS	0.29	0.39	0.11[b]	0.24
PDEBT	0.52	0.39	0.68	0.34
PEQUITY	0.15	0.26	0.18[a]	0.27
ROE-MV	–0.06	0.29	–0.03	0.29
ROE-BV	0.02	0.58	–0.02	0.23

Note: All figures are for the fiscal year 1991 except ROE-MV and ROE-BV, which are the three-year averages for the period 1989-91. Variables are defined in box 2.

[a]Significantly higher than the comparable number for non-bank-owned SBICs; $p < .05$.

[b]Significantly lower than the comparable number for non-bank-owned SBICs; $p < .05$.

high for these firms. A General Accounting Office report indicates that the costs of SBA funds were particularly high for SBICs that specialized in equity investments.[14] Firms that had a large fraction of their portfolio in equity investments did not have regular cash flows from their investments and frequently experienced difficulties in meeting their obligations. Bank-owned SBICs, however, were less likely to be subject to these forces. Although a large fraction of their portfolios consisted of equity investments, they had more equity capital and less SBA leverage than other SBICs.

The differences in the growth rates of total assets of bank-owned and other SBICs are also reflected in their total disbursements. As table 3 shows, between 1983 and 1992, SBICs invested almost $4.7 billion in over 18,900 transactions. Bank-owned SBICs provided about $2.8 billion in over 5,300 of these transactions. Of the $4.7 billion invested by all SBICs in the 1983-92 period, $1.3 billion was in loans; the remaining $3.4 billion was divided among equity-related investments.

On a year-by-year basis, investments by all SBICs increased between 1983 and 1988; thereafter, they declined. This suggests that if a small firm was unable to obtain funding from banks during the years 1990 to 1993, it was unlikely to obtain funding from an SBIC. Furthermore, the decline in SBIC investments between 1989 and 1992 was not confined to

TABLE 3

Types of investments made by SBICs

Investment type	All SBICs		Bank-owned SBICs	
	Total amount	Average size	Total amount	Average size
	(million dollars)	*(dollars)*	*(million dollars)*	*(dollars)*
LOANS	$1,279.99	$127,782	$311.08	$209,341
DEBT	723.68	237,117	357.19	358,899
EQUITY	1,798.22	366,610	1,423.62	577,533
EQUITY and DEBT	859.96	895,792	704.30	1,623,811
Total	**4,661.85**	**246,217**	**2,796.19**	**519,738**

Note: Numbers are the dollar amounts of the *flow* of investments made in the period 1983-92. Variables are defined in box 2.

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bank-owned SBICs; in fact, investments by non-bank-owned SBICs declined more than those by bank-owned SBICs.

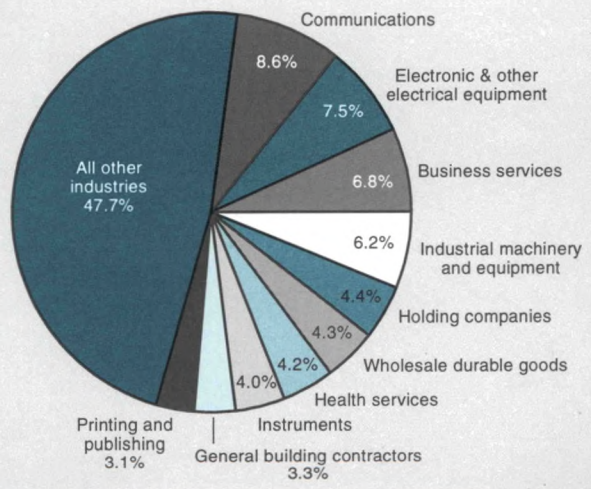
A comparison of the flows of investments by bank- and non-bank-owned SBICs indicates that their investment patterns are consistent with the composition of their portfolios. During the period 1983-92, more than one-half of the $2.8 billion invested by bank-owned SBICs was in the form of straight equity investments. Moreover, bank-owned SBICs accounted for about three-fourths of all investments with equity features.

Figure 1 shows the ten industries in which SBICs invested the largest amounts over that period. Investments in these top ten industries accounted for more than one-half of total investments. The largest amounts of investments were made in communications, electronic equipment, and in business services. While investments of all SBICs appear to be concentrated mostly in service and high-technology industries, there are significant cross-sectional differences in the industries invested in and the degree of diversification. SBICs owned by banks and other financial institutions invested mostly in firms in the semiconductor and computer equipment industries. In contrast, SBICs owned by nonfinancial firms made a little less than one-half of their investments in grocery stores.

There are also differences between bank-owned and other SBICs in terms of their degrees of diversification across industries.[15] As table 4 shows, the top three and top ten industries in which bank-owned SBICs made investments accounted for approximately 23 percent and 57 percent of the portfolio of these institutions, respectively. In contrast, the shares of the three largest industries in the portfolios of other SBICs were 26 percent and 62 percent, respectively.

FIGURE 1

The top industries in which SBICs invested
1983-92



We also examined the investments of SBICs according to the purpose for which financing was obtained. Figure 2 shows the main reasons for which small businesses obtained SBIC financing. Of the $4.7 billion invested by all SBICs, about one-half was used for operating capital, one-third to acquire existing businesses, and the remainder to consolidate debts, fund research and development (R&D) and marketing activities, and acquire or construct plants, buildings, machinery, and land.

Figure 3 shows the percentage of funds that were provided as loans, as well as the percentage of funds provided by bank-owned SBICs for each type of activity. When SBIC funds were provided for activities generating little collateral (such as R&D, marketing, and acquisition of existing businesses), a large fraction of the funds was provided through equity investments and by bank-owned SBICs. For example, bank-owned SBICs supplied more than three-fourths of the funds for R&D activities, primarily through equity participa-

TABLE 4

Portfolio shares of the top three industries in which SBICs invested
1983-92

Industry	Percentage of all investments
Bank-owned SBICs	
Top three industries	22.6
Top ten industries	57.0
Non-bank-owned SBICs	
Top three industries	26.1
Top ten industries	61.5

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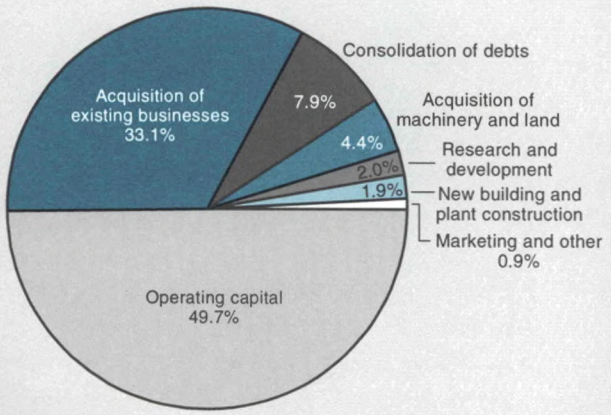
FIGURE 2

Percentage of funds allocated by all SBICs to different activities
1983-92

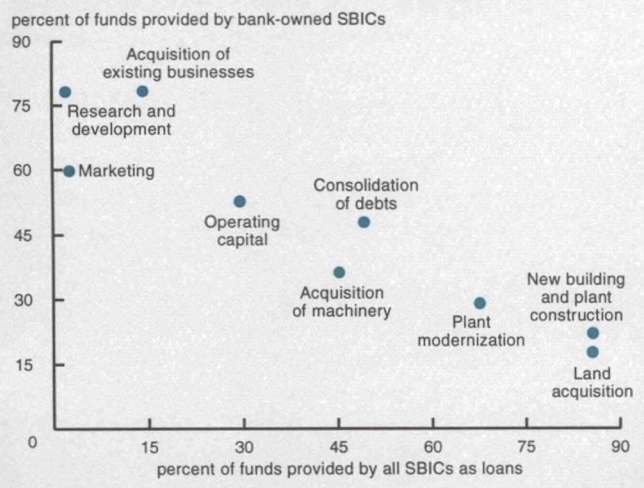


tion. Research and development, marketing, and acquisition of existing businesses are risky activities that are difficult to monitor and that allow managers a great deal of discretion over the disbursement of funds. As a result, the agency costs of debt are likely to be high, and funds are more likely to be supplied through equity participations. On the other hand, when funds financed such activities as new building and plant construction, more than 85 percent was provided through loans, and banks provided only 22 percent. This type of activity generates tangible assets and allows little management discretion. Consequently, the agency costs of debt are likely to be lower; lenders can monitor managers easily, minimizing the ability of managers to shift funds to riskier projects.

Similarly, firms in high-technology industries tend to invest in risky projects that generate very small or negative cash flows in the short term, yet the future profit opportunities of these firms are relatively high. As a result, when these firms borrow funds, their probability of bankruptcy is high. Furthermore, investors that lend to these firms cannot share in the surplus of high-growth opportunities. In contrast, when SBICs invest in the equity of these firms as residual claimants, they share in the surplus. The fact that bank-owned SBICs, which tend to specialize in equity investments, invest in high-technology firms suggests that agency costs of debt financing are significant for these firms.

FIGURE 3

Sources and types of investments by activity



The profitability of SBICs

As in any other business, an SBIC's asset quality, financial leverage, and investment mix are likely to affect its profitability. Return on equity (ROE), as measured by the ratio of net earnings to equity, is perhaps the most commonly used measure of profitability. From the standpoint of financial theory, ROE provides a proxy for the returns available to shareholders. An SBIC with low earnings as a percentage of shareholder claims is likely to experience falling share prices and therefore increased costs of external capital. In such a case, the company's growth potential is likely to be lowered commensurately.

Examination of the mean values of ROE in table 2 reveals that bank-owned SBICs were more profitable than non-bank-owned SBICs during the years 1989 to 1991. Although it appears that all SBICs had negative or very low average ROEs in that period, there were significant cross-sectional differences.

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Some of these differences are related to SBA leverage and the mix of SBICs' investment portfolios.

An SBIC's investment portfolio consists of loans, debt securities with equity features, and equity interest. Because SBICs assume credit risk exposure on these investments, asset quality is particularly important for them. If an SBIC is highly leveraged, large loan or security losses can bring insolvency. The quality of assets will be affected both by management's control over its credit review function and by economic conditions. A decline in credit quality can lead to write-offs and reduced earnings on the investments.

Loans are likely to be the least risky of these types of investments. While higher risk investments should be positively associated with higher ROE, imprudent use of asset powers and inadequate risk management practices will produce lower or negative ROE. Thus, changes in investment mix can either increase or decrease ROE. We calculated investment mix (PLOANS) by dividing loans by total portfolio of investments.

A more direct measure of the riskiness of the investment portfolio is the loss experience (LOSS), measured by the provision for losses on accounts receivable divided by gross expenses. Other things being equal, a higher loss provision reflects a higher degree of expected loss in the investment portfolio. Therefore, this ratio should be negatively related to ROE.

Another variable that can influence ROE is the amount of SBA leverage (SBALEV). We calculated this variable by dividing the dollar value of debt that an SBIC owes to the SBA by the sum of the private paid-in capital and paid-in surplus of the SBIC. We expect that the higher the leverage, the more likely it is that an SBIC will have trouble repaying its obligations. On the other hand, greater leverage may enable some SBICs to earn higher returns. Thus, across SBICs, high SBA leverage may or may not be indicative of lower ROEs.

The return on equity may also be related to asset size (TA) because firm size may serve as a proxy for SBIC asset diversification. Large SBICs are more likely to have better diversified investment portfolios than small SBICs. Moreover, larger SBICs are more likely to have professional managers with considerable expertise and thus should show better performance.

The following equation provides a simple econometric specification of the relationship between ROE and the above-mentioned variable,

$$(1)\quad ROE = \alpha_0 + \alpha_1 PLOANS + \alpha_2 LOSS + \alpha_3 SBALEV + \alpha_4 TA + \varepsilon,$$

where ε is an error term. We estimated equation 1 using time-series cross-sectional data over the period 1986-91. To determine whether the portfolio decisions of bank-owned SBICs have a different impact on ROE than those of other SBICs, we estimated separate coefficients for the two types of institutions.

SBICs must report each investment using historical cost (book value) and historical cost plus any unrealized gains or losses embedded in the security (market value). We used book values in the estimation of equation 1 to check the reasonableness of our results using market values. Finally, we transformed each of the independent variables to examine how a one standard deviation change in that variable translates into changes in ROE. We calculated the transformed variables by taking each variable, subtracting its mean value over the sample period, and dividing by its standard deviation. Assuming that each variable is a normal random variable, one can show that the transformed variable is its standard normal variate.

The results of estimating equation 1 appear in table 5. The first two columns present the results using the non-transformed variables, and the last two columns present the results for the transformed variables. The market value results in column one show that SBA leverage is negatively correlated with ROE for both bank-owned and other SBICs. Greater use of subordinated debt and debentures provided by the SBA tends to reduce profitability. Losses on accounts receivable (LOSS) are negatively correlated with ROE for both types of SBICs, but they have a significant impact only for non-bank-owned SBICs. Since non-bank-owned SBICs tend to hold relatively more loans than equity compared to bank-owned SBICs, it is not surprising that the ROEs of non-bank-owned SBICs are more sensitive to changes in loss experience.

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TABLE 5

The relationship between ROE and portfolio decision variables

Variables	Market ROE	Book ROE	Transformed market ROE	Transformed book ROE
INTERCEPT	–0.0353 (–2.015) *	–0.0447 (–2.185) *	–0.0296 (–2.015) *	–0.0342 (–2.185) *
BLOSS[a]	–0.1491 (–1.554)	–0.1457 (–1.524)	–0.0104 (–1.554)	–0.0102 (–1.524)
BSBALEV[a]	–0.0679 (–2.613) *	–0.0668 (–2.554) *	–0.0275 (–2.613) *	–0.0271 (–2.554) *
BPLOANS[a]	0.1310 (3.249) *	0.1421 (3.311) *	0.0237 (3.249) *	0.0258 (3.311) *
OLOSS[b]	–0.4167 (–4.670) *	–0.4537 (–4.398) *	–0.0413 (–4.670) *	–0.0449 (–4.398) *
OSBALEV[b]	–0.0213 (–2.483) *	–0.0310 (–2.542) *	–0.0224 (–2.483) *	–0.0271 (2.542) *
OPLOANS[b]	0.0813 (3.734) *	0.1042 (3.835) *	0.0327 (3.734) *	0.0427 (3.835) *
TA	0.8229 (5.573) *	1.1230 (6.191) *	0.0360 (5.573) *	0.0426 (6.191) *
BDUM[c]	0.0025 (0.116)	0.0057 (0.234)	0.0025 (0.116)	0.0057 (0.234)
R^2	0.051	0.056	0.051	0.056
F–statistic	10.393	11.356	10.393	11.356
N	1,398	1,398	1,398	1,398

Note: The independent variables ROE, PLOANS, and TA in the "Book ROE" column are measured as market value less the unrealized gains or losses on securities. An estimation of the residuals from the ordinary least squares regression equation indicated the presence of heteroscedasticity in the error term. As a result, we use White's (1980) heteroscedastic-consistent estimate of the coefficient standard errors to compute the t-statistics (in parentheses).

[a]The letter B before a variable refers to a bank-owned SBIC variable.

[b]The letter O before a variable refers to a non-bank-owned SBIC variable.

[c]BDUM is a dummy variable taking on a value of one for bank-owned SBICs, zero otherwise.

* $p < .10$.

Larger SBICs tend to have higher ROE. This suggests that large SBICs can diversify their investment portfolio so as to achieve superior performance. The variable measuring investment composition is positively correlated with ROE. A shift in the investment portfolio from equity to loans tends to raise ROEs for both bank-owned and other SBICs. This is an important result because much of the discussion about banking organizations' involvement with SBICs has to do with their using SBICs to hold equity securities. Banks claim they are losing market share in their traditional areas of lending and deposit-taking and therefore need, among other things, to be able to invest directly in business enterprises. Regulators worry, however, that these direct investments may increase the riskiness of banking organizations and lower their profitability. We find that bank-owned SBICs with above-average investment in loans tend to have above-average ROEs. This implies that a shift in the investment mix from loans to equity is likely to reduce profitability. However, to assess the effect of equity investments on the riskiness of banking organizations, it is not enough to show that SBICs specializing in equity investments have below-average ROEs; one must also evaluate whether they have higher or lower variability of ROE. When we used book value

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measures, reported in the second column of table 5, the results are qualitatively the same as the market value results in the first column. This suggests that differences in accounting practices apparently have very little effect on the estimated relationships between profitability and the portfolio decision variables.

The results also suggest that SBICs with above-average investments in loans and below-average SBA leverage will have above-average ROEs. Furthermore, as the third and fourth columns of table 5 show, the implied differences in ROE are not trivial. For instance, the market value results in column three indicate that for bank-owned SBICs, a one standard deviation increase in loans as a percentage of investments would yield a 237 basis point increase in ROE. A one standard deviation decrease in SBA leverage causes ROE to rise by 275 basis points. The sensitivity of non-bank-owned SBICs' ROE to change in the above two variables is not different from that of bank-owned SBICs. The book value results in column four yield similar results in these cases.

Overall, the results seem to indicate that SBICs receiving above-average SBA leverage perform more poorly than other investment companies. SBICs that specialize in equity investments are less profitable, on average, than other firms. Nevertheless, the results suggest that banking organizations, like other firms, tend to perform better when allowed to provide mixed loan-equity financing.

Our preliminary examination of the sources of these relationships between profitability and characteristics of SBICs suggest that the results in table 5 are particularly strong for those institutions that did not survive our sample period.[16] Furthermore, even though bank-owned and other SBICs had similar parameter estimates, test results indicate that the two groups had significantly different regression equations. In other words, the relationship between profitability and firm characteristics is different for bank-owned and non-bank-owned SBICs.

Conclusions

The SBIC program appears to go a long way toward resolving the conflict between the types of institutions that are appropriate for financing small businesses and the types of financing they need. If, as has been argued, banks have a comparative advantage in evaluating and monitoring small firms, allowing banks to participate in such programs as the SBIC program may offer significant advantages in small business financing.

The empirical results in this article support this argument. SBICs associated with banking organizations play a significant role in the program. On average, bank-owned SBICs were significantly larger, had more capital, obtained less SBA leverage, and invested a greater portion of their portfolio in equity investments than non-bank-owned SBICs. Furthermore, while the total assets and capital of non-bank-owned SBICs declined over the period from 1983 to 1992, the total assets and capital of bank-owned SBICs grew.

These results suggest that bank-owned SBICs were an essential part of the program and that they took advantage of their expanded powers by pursuing an extensive strategy of equity investments. The evidence also suggests that such equity investments were particularly important in funding activities and industries that are perceived to have high costs of debt financing. Specifically, equity financing and financing by bank-owned SBICs were prominent for activities and industries that generate few tangible assets and give greater management discretion in the use of funds.

The empirical results on the relationship between SBIC profitability and portfolio decisions indicate that profitability is positively related to size, the measure of asset quality, and the ratio of loans to total investments. On the other hand, profitability is negatively related to SBA leverage. In addition, bank-owned SBICs, which typically relied less on SBA leverage, had higher returns on equity than other SBICs. These results suggest that offering SBA subsidies was relatively less effective in encouraging the flow of funds to small firms in the long term than was allowing banking organizations to participate in the program.

Our analysis in this article and our preliminary results on the percentage of disbursements that were repeat financings raise some interesting questions.[17] Do the investment patterns of SBICs change over the course of their relationship with small firms? In other words, do SBICs learn more about small firms as their relationships with them develop, and is this reflected in their investment patterns? Does the type and amount of investment in first-time financings differ from those in subsequent financings? Are SBICs more likely

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to provide management services at the beginning of their relationship with firms, or in subsequent financings? Do small businesses tend to obtain funds from more than one SBIC? How do the SBIC units of banking organizations contribute to the overall performance and riskiness of banks? We plan to address these questions in our future research. We also plan to examine in more detail the relationship between the profitability of SBICs and their characteristics.

FOOTNOTES

[1]See Kanjorski (1993).

[2]Board of Governors (1958).

[3]See U.S. Small Business Administration (1992) for a discussion of a recent survey on small business financing.

[4]An SBIC is classified as bank-owned if at least 10 percent of its equity is controlled by a banking organization.

[5]Petersen and Rajan (1994) report that nearly 75 percent of the firms in their sample, which consists of 3,404 small firms, are less than 10 years old. Furthermore, the majority of firms in the sample are partnerships, sole proprietorships, and Chapter S corporations.

[6]Evidence on the industries that are dominated by small businesses and the failure rates of these firms is reported in White (1982); Brown, Hamilton, and Medoff (1990); and U.S. Small Business Administration (1992).

[7]Berger and Udell (1990, 1994) report that two-thirds of commercial bank loans and over 50 percent of lines of credit to small firms are secured by collateral. Bank lending to small firms also appears to be positively correlated with the amount of assets that can be pledged as collateral (Hooks and Opler 1993). Furthermore, according to Diamond (1991) and others, asymmetric information problems decrease as lenders learn more about firms through deposit-taking and previous lending arrangements. Empirical evidence in Petersen and Rajan (1994) and Berger and Udell (1994) supports this argument.

[8]For example, the SBA offers guarantees on bank loans to small businesses and the Small Business Incentive Act, recently introduced by Senator Christopher Dodd, would make it easier for investors to finance small businesses by amending the Securities Act of 1933 and the Investment Company Act of 1940.

[9]In the last year, the SBA has proposed to increase the coverage of the program by redefining small firms as those that have net worth less than $18 million or two-year average net income less than $6 million. At present, these revisions are under review.

[10]The special role of banking organizations in the financial system is examined in Diamond (1984), James (1987), and Haubrich (1989).

[11]U.S. Small Business Administration (1993).

[12]Although the data comprise the SBA's entire computer database on SBICs, there are a few missing observations. According to our calculations, there are 94 companies for which there are missing financial statements in the 1986-91 period and 14 firms that have no data for investments. Since these represent a small fraction of the database, we do not expect our qualitative results to be affected significantly by the missing observations.

[13]Despite the healthy gains in the 1986-91 period, SBIC funds represent a small fraction of the total funds in venture capital. According to statistics reported in Deger (1993), venture capital firms managed $32.87 billion in total capital in 1991, representing a 36 percent increase from 1986.

[14]U.S. General Accounting Office (1993).

[15]Diversification across industries was calculated using the flow of investments in the 1983-92 period. Therefore, this is a measure of diversification for new investments during this period and does not, necessarily, reflect the degree of diversification for the entire portfolio. Nevertheless, the period examined is sufficiently long for the diversification of new investments to be a good measure of diversification of the entire portfolio.

[16]These are institutions that either surrendered their licenses, went into liquidation, or merged during 1986-91.

[17]More than one-half of all transactions in our sample were repeat financings. Bank-owned SBICs accounted for more of the repeat transactions than did other SBICs, and equity-related investments were more likely to be repeat financings than were loans.

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