

Balance sheet, profitability and regulatory developments affecting US commercial banks, 1988 to 1998

Thomas F. Brady¹

1. Introduction

US banking organizations have grown rapidly over the past decade. Bank holding company assets stood at \$5,285 billion as of June, 1998, up 78.7% from ten years earlier (Table 1). Nonbank subsidiaries of the holding companies grew particularly rapidly, but banks in bank holding companies – which constitute around 95% of bank holding company assets – grew by a significant 71.1%.² Assets at independent banks (those not associated with bank holding companies) showed little net change over the decade and have been declining in recent years, as many of these banks have been acquired by bank holding companies through mergers. US branches and agencies of foreign banks, which mainly do wholesale banking business and account for a little under a fifth of the credit extended by banks to nonfinancial businesses, have expanded even faster than their domestically chartered counterparts, in part owing to shifts of assets to US offices from Caribbean offices in the early 1990s. Assets at all commercial banks (domestically chartered plus branches and agencies of foreign banks) rose 73.7% over the last decade, about 10% faster than the expansion in nominal GDP.

Table 1
Banking organizations in the United States
Assets by entity type, in billions of US dollars

Entity	1988	1990	1992	1994	1996	1998*
Banking holding cos.	2,958	3,266	3,362	3,932	4,541	5,285
Nonbank subsidiaries	103	176	178	243	288	400
Bank subsidiaries	2,855	3,090	3,184	3,689	4,253	4,885
Multibank HC	2,305	2,462	2,513	3,022	3,366	3,825
One bank HC	550	628	671	667	887	1,060
Independent banks	234	269	292	282	276	236
Total domestic banks	3,089	3,359	3,476	3,971	4,529	5,121
Branches and agencies of foreign banks	359	367	509	590	715	869
Total commercial banks	3,448	3,726	3,985	4,561	5,244	5,990

* June.

Sources: Financial Structure Section and Flow of Funds.

¹ This paper represents the views of the author, which do not necessarily reflect those of the Board of Governors or the Federal Reserve System. The paper has benefited from helpful comments from William English, Myron Kwast, Brian Madigan, Edward Ettin, William Nelson, William Watkins and Dennis Farley. The skillful research assistance of Adrian Sosa is greatly appreciated.

² The organizational structure of the banking system in the United States is more complex than in most other countries, as there are several ways in which banks may be organized, and bank holding companies can engage, through nonbank subsidiaries, in activities proscribed for banks themselves.

This paper focuses primarily on domestic US banking organizations, in particular on developments relating to domestically chartered commercial banks over the last decade.³ Section 2 begins with a review of some of the key balance sheet developments of domestically chartered banks since 1988, including the roles of bank capital and of changes in the competitive environment in which banks have operated. The paper next turns to the two major legislative actions affecting domestically chartered commercial banks over the last decade: the FDIC Improvement Act of 1991 and the Riegle-Neal Interstate Banking and Efficiency Act of 1994. The paper then discusses the reasons for and implications of the ongoing consolidation of the US banking system, concluding the overview with an analysis of trends in commercial bank profitability over the last decade. The third and fourth sections of the paper examine the implications of the first section's findings for bank regulation and for monetary policy. The final section presents a brief summary and conclusions.

2. Overview of domestically chartered US commercial banks, 1988-98

2.1 Major on- and off-balance-sheet developments

2.1.1 Bank credit, bank capital and banks' share of financial activity

The growth of bank credit slowed in the late 1980s and early 1990s (Chart 1, top panel), apparently reflecting reductions in both supply and demand. Banks' ability to grow was constrained by regulatory and market pressures to bolster their capital at a time when the quality of their assets was poor and their cost of capital high. Many banks responded by taking active steps to limit asset growth. A substantial portion of respondents to the Federal Reserve's Senior Loan Officer Opinion Survey on Bank Lending Practices reported tightening lending standards for both commercial and industrial and commercial real estate loans in the 1990-91 period (Chart 2). Banks also established more stringent pricing policies and other terms in their commercial lending at that time. According to the Federal Reserve's Survey of Terms of Business Lending, banks substantially increased spreads of loan rates over the federal funds rate – a measure of the marginal cost of short-term funds to banks as well as a base lending rate – for both large (over \$1 million) and for other business loans.⁴ Banks also reported a reduced willingness to make consumer loans at that time.

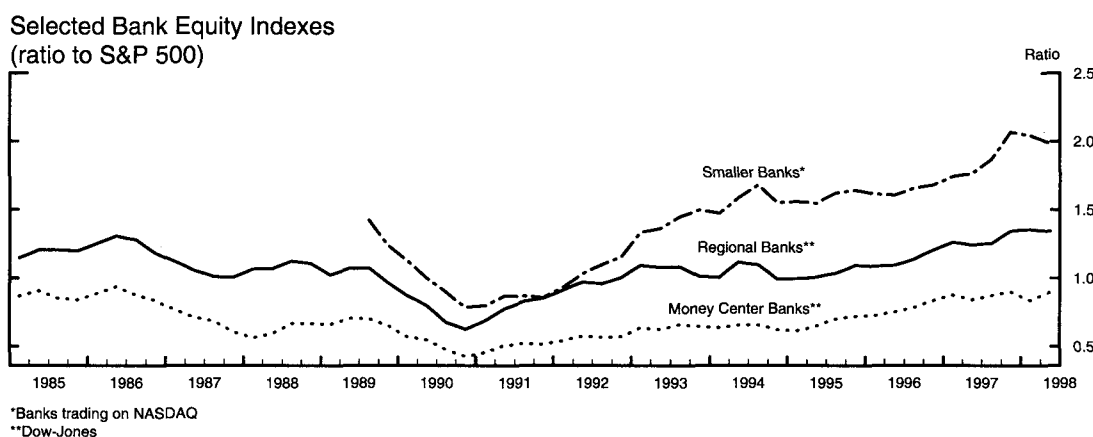
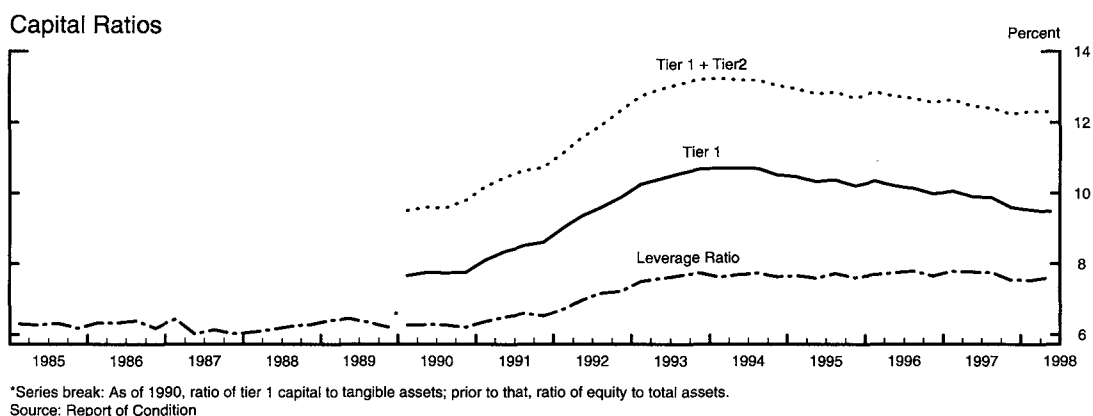
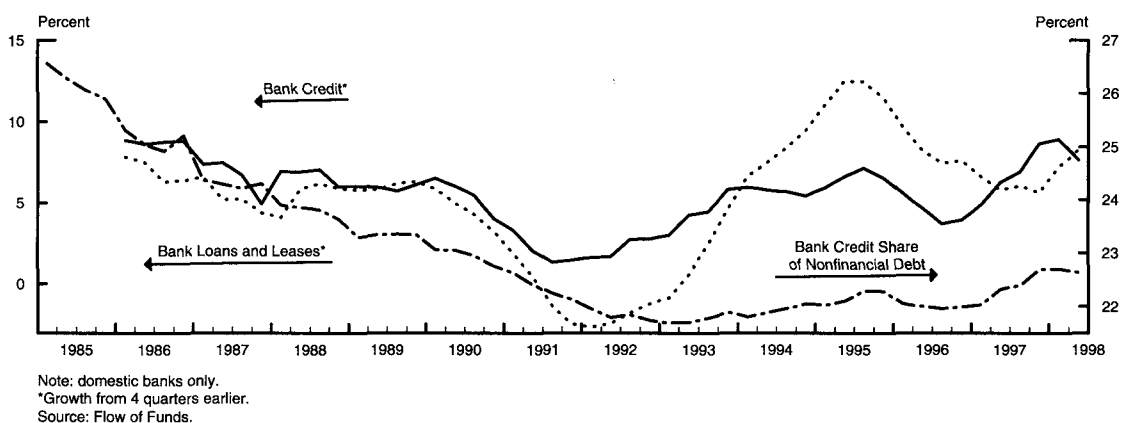
Bank lending was also damped by weak demand, as both the household and the business sectors were burdened by high debt-service ratios in those years. Reflecting the lackluster demand for credit, even the relatively few banks that were well capitalized in those days expanded their balance sheets much more through securities purchases than by making loans.⁵

³ To give a complete overview of commercial banking in the United States, however, an Appendix very briefly describes the major balance sheet changes at US branches and agencies of foreign banks since 1988.

⁴ The wider lending spreads depicted in Chart 2 for large loans in the late 1980s appear to represent a compositional shift in lending toward riskier loans, as banks at that time were substantial suppliers of credit to finance mergers and acquisitions, including leveraged buyouts.

⁵ Thus, the stronger growth of securities relative to the loan component of bank credit over that period appears to reflect the weakness of loan demand as much as or even more than the low or zero Basle risk weights on many securities. The weakness of loan demand is illustrated by the fact that bank loan growth in 1991 and 1992, negative overall, was positive (but weak) at well-capitalized banks, for which supply constraints were presumably small and where fairly strong overall asset growth was centered on securities. Well-capitalized banks likely viewed the higher yields on loans as more attractive than the low risk weights on securities. Confirming the view that well-capitalized banks would meet a strengthening of loan demand was the experience of 1993, when overall loan growth turned sharply positive. At well-capitalized banks, loan growth exceeded that of securities. Adequately and undercapitalized banks, by contrast, expanded mainly by purchasing securities. Growth rates for loans and total assets for these years at banks disaggregated by capital adequacy classifications are presented in Boyd and Gertler (1995).

Chart 1
Bank Credit and Bank Capital



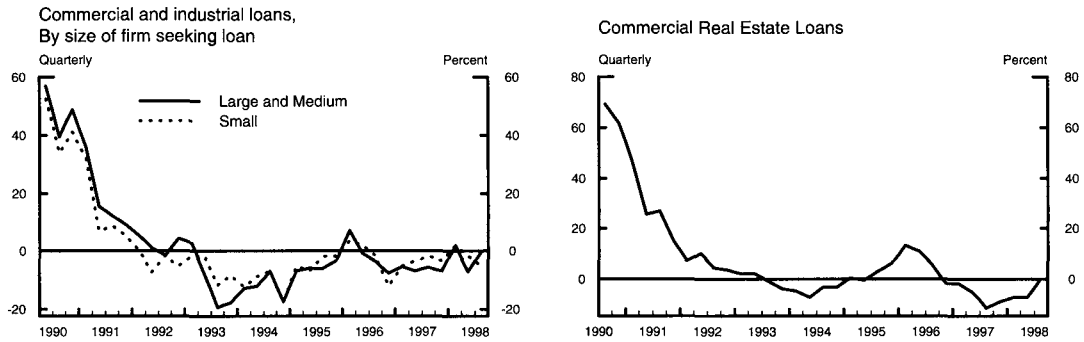
As an economic recovery eventually took hold and banks began to rebuild their capital, lending started to pick up. By the mid-1990s, growth of bank credit became sufficiently robust to reverse some of the drop in banks' share of nonfinancial debt (credit market debt of individuals, nonfinancial businesses, and governments), a decline that had been in train since the mid-1970s. Banks' gains came only after they had begun to improve their capitalization (Chart 1, top and middle panels). Facilitating this recovery was a

strong performance of the share prices for a range of banks that extended over much of the decade (Chart 1, bottom panel). The gains in banks' share prices likely reflected ongoing improvements in their asset quality and the growing efficiency with which they evidently were being operated, as discussed below in Section 2.4 on bank profitability.

Chart 2

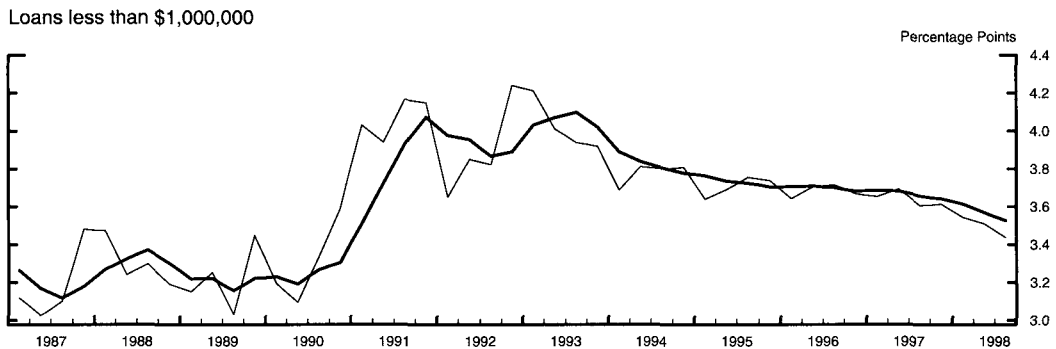
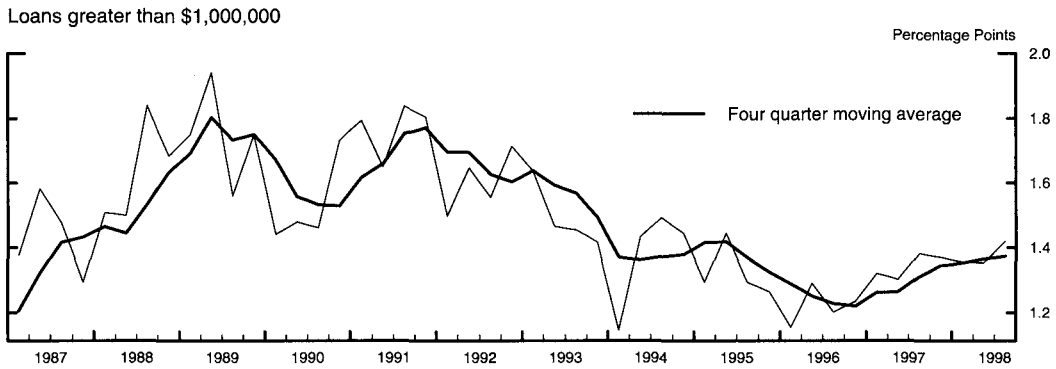
Selected Measures of Lending Standards and Terms

Net Percentage of Banks Tightening Lending Standards



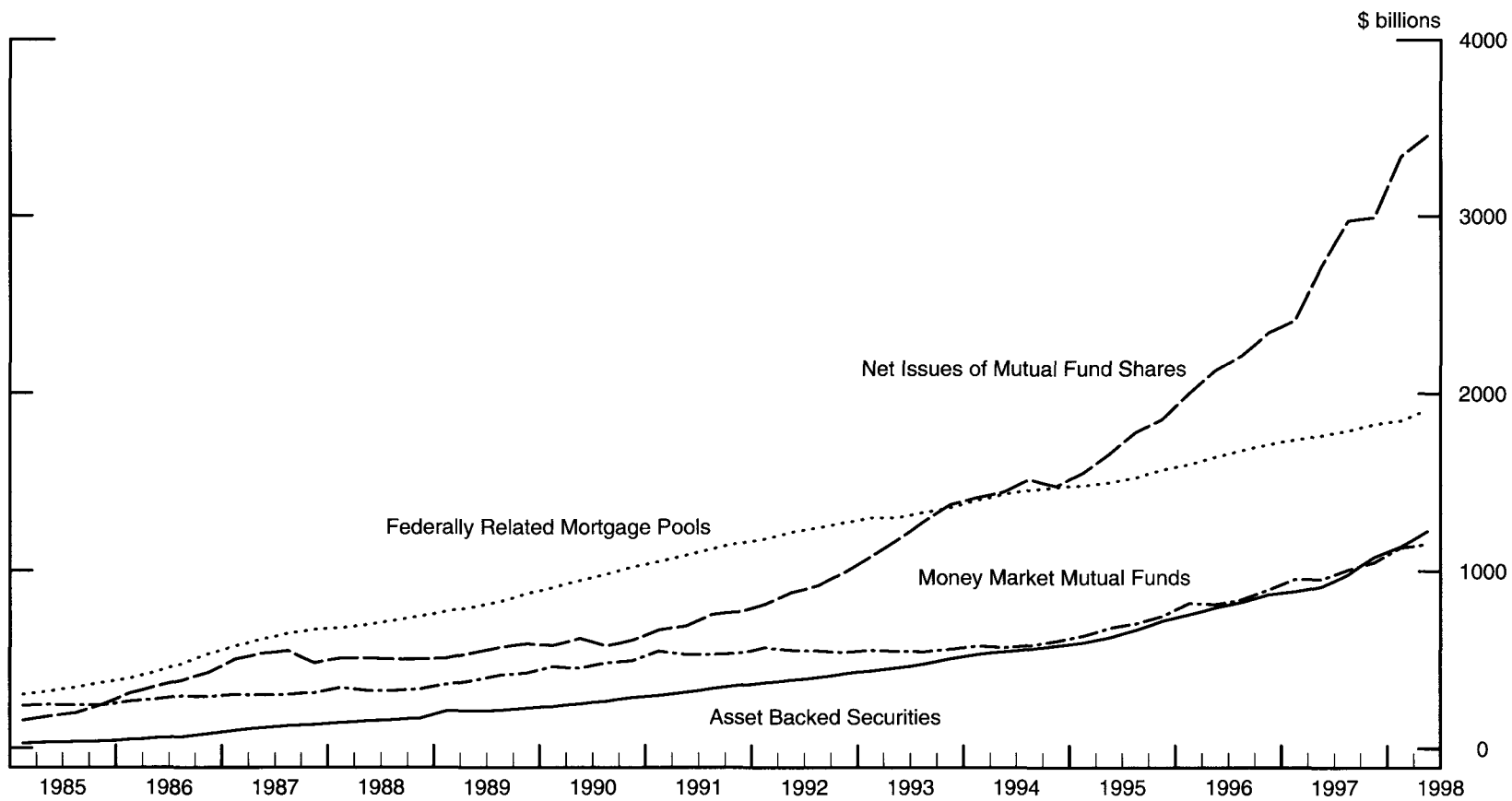
Source: Senior Loan Officer Opinion Survey

Spread of Average C & I Loan Rate over Intended Federal Funds Rate



Source: Survey of Terms of Business Lending

Chart 3
Securitized Assets and Mutual Fund Shares



Source: Flow of Funds.

Banks' strong recovery is particularly notable because it took place at a time when developments in computing, financial technology, and finance theory seemed particularly to favor the capital markets, as reflected in the rise of commercial paper, the junk bond market, and asset securitization. Clearly, advances that provide borrowers increased opportunities to circumvent financial intermediation by issuing debt directly to lenders should act to limit banks' potential size and growth rate by reducing demand for their assets. A parallel development, the explosion of mutual and money market fund shares, which are major purchasers of capital market instruments, simultaneously acted to damp demand for bank's core deposits, a major funding source (Chart 3).⁶

The expansion of securitized nonmarketable assets over the past decade has importantly involved bank loans. By increasing the financial resources available to purchase bank assets, albeit indirectly, securitization acts to lower returns on them and thus to diminish their attractiveness as an asset to hold on the balance sheet. Countering this effect to some degree is the greater liquidity that securitization confers on loans, making them a more attractive balance sheet item from this perspective.

Some banks have been securitizing residential mortgages that they have originated ever since this market was developed in the early 1970s by the Government National Mortgage Association (Ginnie Mae). The scope and nature of banks' securitization activities have changed over the last decade, however, as banks have developed new techniques to securitize assets. Unlike the case of straightforward securitization of residential mortgages, in which banks shed both the need to fund the securitized loans and the risk associated with them, techniques used to securitize credit cards (and, more recently, business loans) are designed to retain almost all of the credit risk at the securitizing banks. Loan securitization was given some impetus by the capital shortages banks suffered in the early years of the decade, but securitization has accelerated since then even though bank capital ratios have risen well above regulatory thresholds.

There are several methods a bank can use to securitize assets while retaining their risk, but they usually rely on a "special purpose vehicle," a trust established and controlled by the bank and having as its sole function the purchase of assets from the bank's balance sheet. The trust uses these assets to back a funding vehicle, asset-backed securities, which it issues in the capital markets. The originating bank takes an interest in a small part of the securitization, the "seller's interest." The rest – the "investors' interest" – is owned by purchasers of the securities. The earnings of the trust are distributed to the seller's interest and the investors' interest on a pro rata basis.

The investors' interest generally consists of three tranches of asset-backed securities, with the second subordinate to the first and the third subordinate to both the first and second. Owing in part to this subordination, the first tranche has an investment-grade rating, but all three tranches are largely insulated from credit losses by three separate layers of protection provided by the bank, where almost all of the risk remains. The first layer of protection consists of the trust's net income, referred to as the "excess yield" – basically the difference between the earnings on the underlying loans and the payments due on the securities, net of loan charge-offs and the trust's servicing expenses. The excess yield accrues to the bank as fee income. As long as this income is positive, it is available to absorb possible increases in charge-offs on the loans. The second layer of protection is a "spread account," an asset of the trust that is set up to fund the pro rata payments to the investors' interest were the excess yield to become temporarily insufficient to do so. The spread account is created by retaining some of the initial flow of the excess yield within the trust, rather than paying it to the bank, until a target level is reached. Finally, there is an "early wind-down" feature, which obligates the trust under certain conditions to accelerate payments of principal to the investors' interest.⁷ This provision is designed to ensure that the investors' interest is paid off fully before

⁶ In short, financial innovation has caused banks to lose cost advantages in acquiring liabilities and income advantages in acquiring assets. See Mishkin (1996).

⁷ Early wind-down is accomplished by allocating to the investors' interest a portion of the total principal payments collected by the trust that is equal to the investors' share of the underlying collateral at the *beginning* of the wind-down period. This paydown formula continues to be used to calculate monthly principal payments, even as the claims of the investors' interest on the underlying loans decline as principal is paid down. As a result, the principal payments going to the investors' interest increasingly exceed its pro rata share. This procedure greatly speeds up the paying off of the investors' interest. Although

deterioration in the underlying assets proceeds to a point that would make this impossible. Early wind-down protection typically is designed to be triggered should the three-month moving average of the excess yield turn negative.

When the underlying loans perform as expected, the bank's net earnings under this type of securitization (in the form of fee income) are what they would have been (in the form of net interest income less provisions) had the loans been held on balance sheet (apart from the expense of setting up the trust and taking into account any difference between the interest paid on the securities and the interest cost of funding the loans with on-balance-sheet liabilities). Similarly, if the loans perform less well than expected, the effect of the additional charge-offs on bank earnings would, in all likelihood, also be the same as if the loans had been held on balance sheet. Only if the loan losses were well above historical experience would the investors' interest share in the loss. To date, a credit card securitization has never defaulted.

The bank benefits from these arrangements by having to hold capital equal to 8% of the sellers' interest rather than 8% of the entire amount of loans sold to the trust. It is generally thought that the cost of capital far exceeds that of debt, so these techniques are attractive to banks. And, to the extent that the capital the market requires behind the loans being securitized is less than the 8% in the Basle standards, banks' use of these techniques could be viewed as a useful "safety valve," allowing beneficial and prudent credit extensions to proceed that banks would otherwise find to be too expensive from a capital standpoint. On the other hand, banks' use of such methods cast some doubt on the meaningfulness of their reported capital ratios. Also, these procedures could be abused to the extent that the Basle 8% capital requirement recognizes the presumed existence of balance sheet loans requiring *more* than 8% capital. Clearly, a suitable balance, from a regulatory point of view, between "below 8%" and "above 8%" loans could be disturbed by the securitization of a bank's better quality loans. This problem – referred to as regulatory capital arbitrage – is addressed below in Section 3.

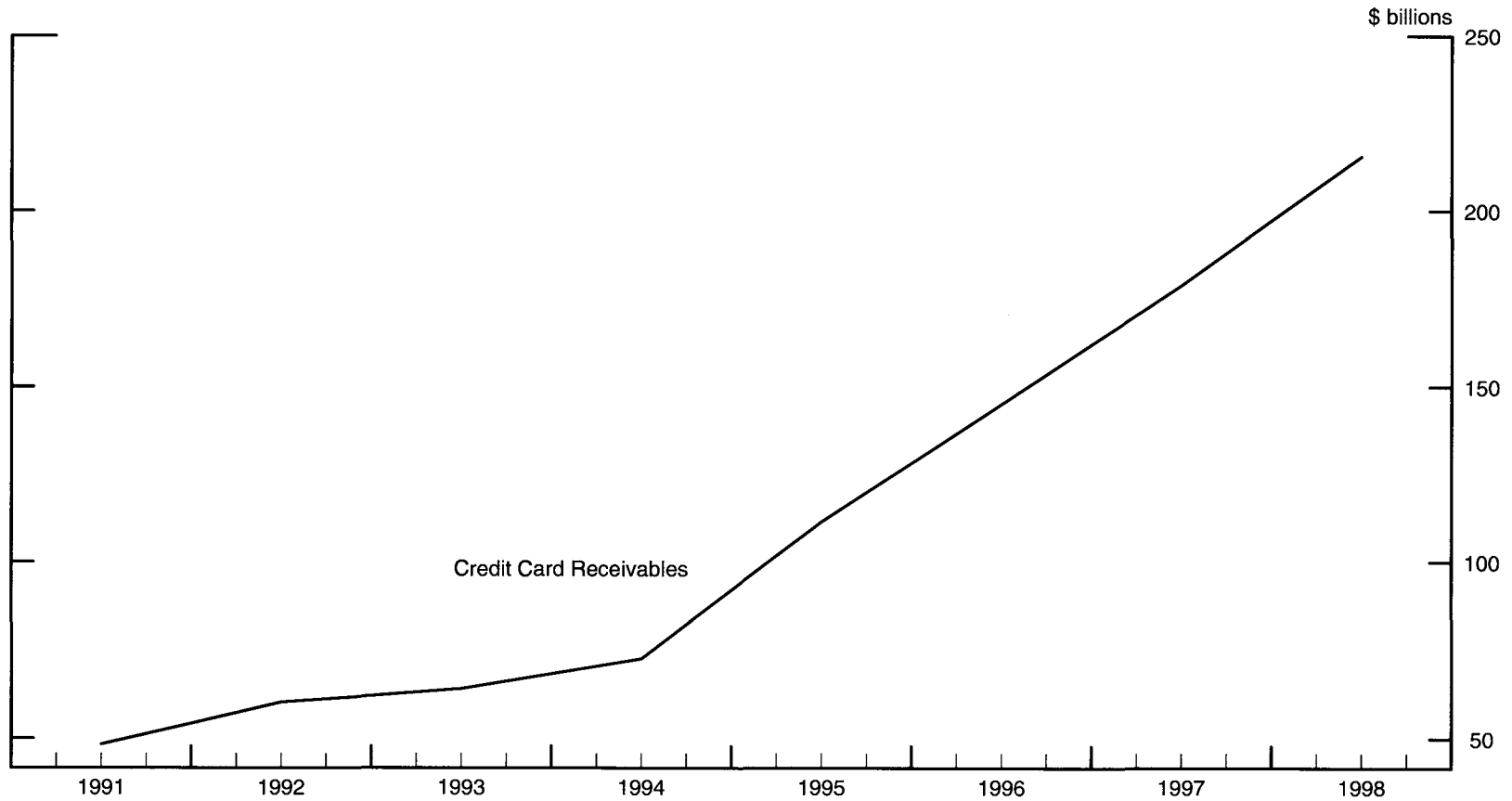
Chart 4 illustrates the volume of credit card receivables that banks have securitized in recent years and also the outstanding amount of collateralized loan obligations (CLOs) issued by domestic banks in recent quarters. CLOs are multi-tranched securities backed by commercial and industrial loans that some banks have employed to remove these assets from their balance sheets. The techniques used are basically the same as those devised to securitize credit card receivables, including the banks' retention of the loans' credit risk.⁸

Apart from driving down the yield on potential loan assets as discussed above, the growth of securitization doesn't necessarily imply that bank balance sheets will be smaller than they otherwise would be. When capital is freed up, it can be used to support other assets. Moreover, the advent of securitization has spawned a variety of new financial instruments that have filled more and more financial niches. Some of these instruments may be attractive to banks. Indeed, banks' holdings of US government agency collateralized mortgage obligations (CMOs) rose from about 13% of assets in 1990 to 3% in 1993, although they have since fallen back to about 2%. There is no evidence that domestic banks have yet begun to add significant volumes of securitized credit card receivables, CLOs, or similar assets to their investment accounts, although trading in these instruments might help to explain a rise in banks' trading account assets from 1.3% of assets in 1988 to 3.1% at mid-year 1998.

the early wind-down feature mitigates credit risk, it presents interest rate risk, i.e. the need to reinvest the funds at interest rates prevailing at the time of the repayment.

⁸ Typically, loans used to back CLOs are of high quality. They often are selected to provide a great deal of diversity in terms of industry classification and geography, contributing to the frequently large size of CLOs. For example, a NationsBank CLO in October 1997 totaled \$4.2 billion.

Chart 4
**Outstanding Securitized Assets Issued by Domestic Banks
(\$ billions)**

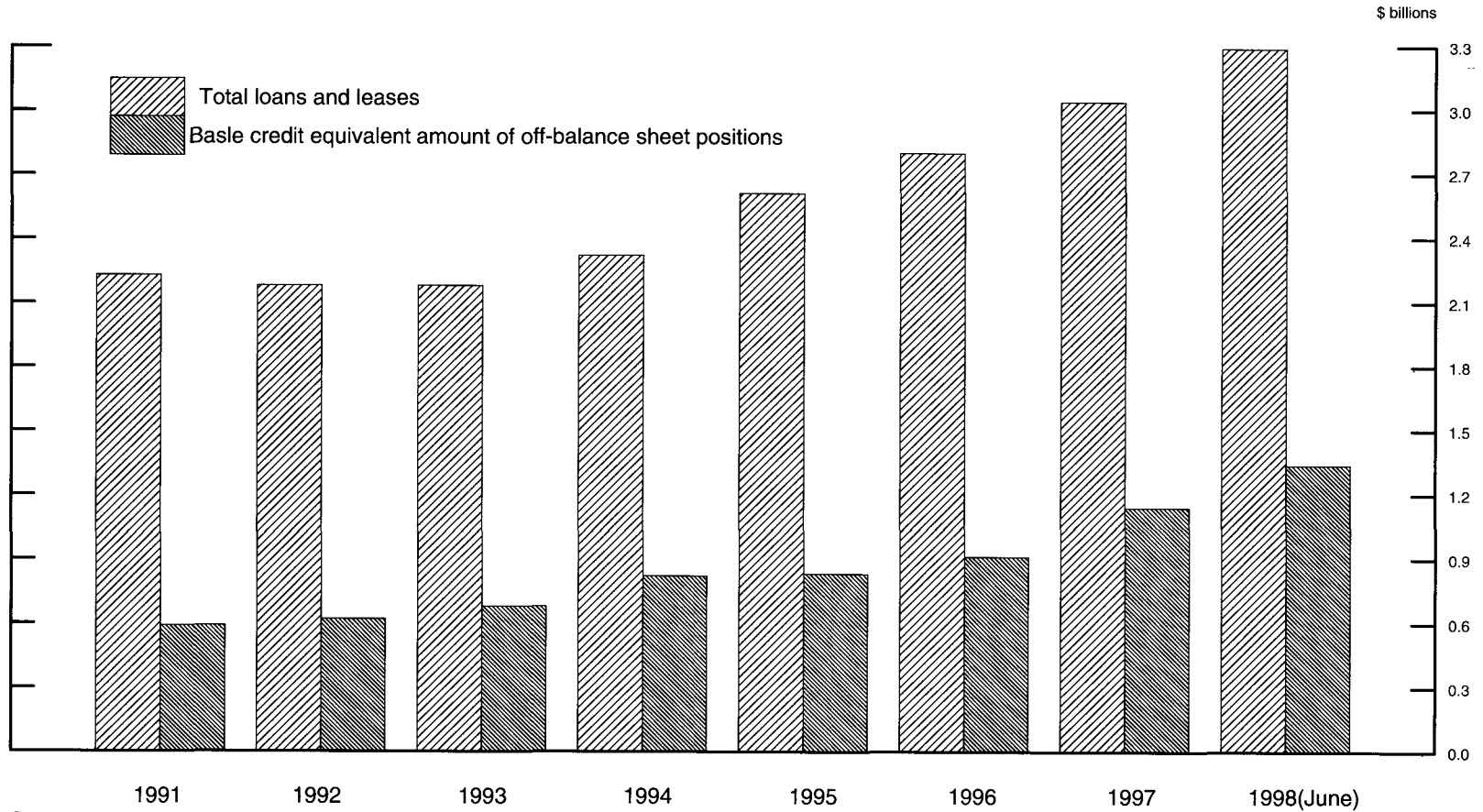


Source: Report of Condition and estimates.

Note: CLOs were \$0.8, 5.6, 7.6, 9.9 and 11.9 billion in the five quarters from 1997Q3.

Chart 5

Measures of On- and Off-Balance Sheet Banking Activities



Source: Report of Condition.

2.1.2 Off-balance-sheet developments

Growth in commercial banks' off-balance sheet activities has been very brisk in recent years. For example, as of June 1998, the notional principal value of banks' interest rate swap contracts was \$10,159 billion, up by a factor of more than ten from a decade earlier. One way that has been suggested to measure banks' off-balance-sheet positions relative to their on-balance-sheet assets is to use the on-balance-sheet credit equivalents that banks are required to report for their off-balance-sheet positions under the Basle Accord.⁹ Using this measure, banks' off-balance-sheet positions have risen from an amount equal to about one-quarter of total interest-earning assets in 1991 to just over 40% of assets as of June 1998 (Chart 5).

An interesting off-balance sheet innovation of the last few years are credit derivatives, which allow banks to swap credit risk on loans. A seller of credit risk, or "beneficiary," contracts to pay a counterparty, or "guarantor," the interest actually earned on a loan it holds in return for receiving some market rate, frequently one tied to LIBOR. For its part, the counterparty agrees to bear all the risks associated with the loan. Of course, a bank may also acquire risk in this market by entering into such an arrangement as a guarantor. As suggested by the positions presented in Table 2, the credit derivative market appears to have been expanding rapidly in recent quarters, at least as judged by banks' participation in it. Not surprisingly, very large banks are major players. As a group, they were in net beneficiary positions at the end of the third and fourth quarters of 1997, but were essentially balanced for the first two quarters of this year.

Table 2
Notional value of credit
 Derivatives held by banks, in billions of US dollars

Bank group (by assets)	1997Q3		1997Q4		1998Q1		1998Q2	
	G	B	G	B	G	B	G	B
Top 10	12.2	23.8	13.7	39.9	43.7	44.0	44.6	44.8
Next 90	2.7	0.2	0.6	0.4	2.7	0.8	1.8	0.1
All others	-	0.3	-	2.3	-	0.2	-	0.7

G: bank is guarantor; B: bank is beneficiary.

Source: Report of Condition.

Credit derivatives can be viewed from one perspective as an extension of the loan sales market that developed in the 1980s. Banks used this market to buy and sell loan participations, that is pieces of loans that had already been booked, thus shedding or adding risk and diversification to their portfolios. Since this market entailed the actual sale and purchase of loans, it caused some bank borrowers not wishing to see their debt obligations traded to stipulate in loan contracts that their loans could not be sold. Another issue that has complicated the loan sales market is settling the role that purchasers of loan participations have in the event a workout becomes necessary. Credit derivatives allow banks to achieve the same risk and diversification goals while avoiding these problems.¹⁰ However, credit derivatives do of course present both parties in a transaction with counterparty risk.

⁹ Boyd and Gertler, *op. cit.* In most cases, banks are instructed to determine on-balance-sheet credit equivalents by multiplying the face value of notional amounts by a credit conversion factor.

¹⁰ The size of the loan sales market peaked at \$80 billion in 1990, according to data on the outstanding volume of loans sold collected in the Senior Loan Officer Opinion Survey. This market has not been surveyed since the early 1990s, so it can't be determined to what extent it has been affected by the development of credit swaps.

2.2 Key legislative developments affecting domestically chartered banks

Two major pieces of legislation affecting banks have been enacted over the last decade.¹¹ The first revamped the regulatory structure so that regulators' decisions would tend to simulate market responses. The second overturned two federal laws, one that had prevented interstate bank branching and another that had allowed individual states to prevent banking organizations located in other states from establishing banks within their borders.

2.2.1 The Federal Deposit Insurance Corporation Improvement Act of 1991

In response to the banking problems that developed in the 1980s, the US authorities supplemented the Basle Accord with the provisions of the FDIC Improvement Act (FDICIA). The underlying logic of this legislation is to improve regulation by designing it so as to encourage regulators to act in a market-like way, while allowing them to retain necessary flexibility. For example, FDICIA attempts to mimic the market by linking the cost of a bank's deposit insurance to its capitalization. In addition, just as a nonregulated institution lacking the safety net enjoyed by banks would find itself encountering increasing difficulties in raising funds were its capital ratios to decline, regulators under the prompt corrective action (PCA) provision of FDICIA are required to impose controls on banks' deposit-taking activities as capital falls below specified levels.¹² PCA under FDICIA also requires that banks be shut down once capital becomes critically low. Finally, under least-cost resolution, the Act requires the FDIC to close failed banks using the least costly available procedure without regard to the implications for uninsured depositors and other creditors.

This final provision raises the issue of "too big to fail" since it contemplates closing critically undercapitalized banks regardless of size. To address this problem, FDICIA provides that when at least two-thirds of the members of the Board of Governors of the Federal Reserve System and two-thirds of the Directors of the FDIC, in addition to the Secretary of the Treasury (in consultation with the President), determine that least-cost resolution requirements would "have serious adverse effects on economic conditions or financial stability" the FDIC can "take other action or provide assistance as necessary to avoid or mitigate such effects." FDICIA further provides that any insurance fund losses arising from such exceptional actions must be recovered through special assessments on all depository institutions that are members of the relevant fund, with the assessment rate determined by the FDIC and applied to an institutions' total assets (including foreign assets) less total tangible equity and subordinated debt.

2.2.2 The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994

A movement toward interstate banking had been underway for some time prior to the Riegle-Neal Interstate Banking and Branching Efficiency Act, as a growing number of states – frequently as parts of regional compacts – began opening themselves up to each others' banks. Indeed, by 1987, states in which 91.7% of US banking assets were located had enacted provisions allowing some form of out-of-state ownership of banks.¹³ This ratio had risen to over 99% by 1992, and the Riegle-Neal Act completed this process by removing all substantial remaining barriers to interstate banking. Under its provisions, adequately capitalized and managed bank holding companies are able to acquire a bank in any state, providing that the

¹¹ A third important piece of legislation of the last decade was the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, which, among other things, established the Resolution Trust Corporation to dispose of the assets of failed depositories and set up two separate deposit insurance funds, one for banks and one for thrift institutions.

¹² The use of insured brokered deposits by undercapitalized banks is prohibited, and other banks may accept insured brokered deposits only with an FDIC waiver. Limitations have also been imposed on interest rates paid on such deposits.

¹³ The regional movement began in New England and then emerged in the Southeast. It led to the birth of "super regional" banks such as NationsBank. The Bank Holding Company Act had allowed bank holding companies to acquire banks in other states only with the statutory approval of the target state, while the Garn-St Germain Act of 1982 allowed out-of-state holding companies to purchase failing banks.

deposits of the resulting bank holding company do not exceed 30% of total bank deposits in the state of the acquired bank and 10% of deposits nationwide.

The Riegle-Neal Act also addressed interstate branching.¹⁴ The Act allowed, as of June 1, 1997, interstate bank branching to occur through the consolidation of banks in existing bank holding companies or through interstate bank mergers. The Act permitted states to “opt in” or “opt out” of its interstate branching provisions; only two states, Texas and Montana, opted out. De novo interstate branching is still restricted to those states allowing it. Since the Riegle-Neal Act took effect, several bank holding companies have converted their banks into branches. Functionally, these holding companies often had operated their banks as though they were branches in any case. Converting them to branches for legal purposes is more efficient because it allows the elimination of separate boards of directors and other expenses.

2.3 Consolidation of the banking system

As noted, consolidation of the US banking system has been underway for some time. During the 1980s, bank mergers and assets acquired in mergers averaged 435 and \$62.7 billion per year, respectively. The frequency of mergers has slowed a bit in the 1990s, to an average of 357 per year, but the average amount of assets acquired per year has jumped, to \$148.5 billion (through 1997). Thus, over the 1980-97 period, a cumulative \$1,806 billion in bank assets has been acquired through mergers, an amount exceeding a third of all insured commercial bank assets at the end of 1997.

Boosting the dollar amount of assets acquired during the 1990s have been so-called “mega-mergers” of some very large bank holding companies. Examples include BankAmerica-Security Pacific (1992), Chemical Bank-Chase Manhattan (1995), First Union-First Fidelity (1995), Wells Fargo-First Interstate (1996), and NationsBank-BankAmerica (1998). Largely as a result of mergers, the number of multi-bank holding companies has declined from 968 in 1988 to 734 as of June 1998. Over the same period, mergers have been the major factor reducing the number of one-bank holding companies from 4,851 to 4,337 and independent banks from 3,899 to 1,913.¹⁵ Thus, over this period, the number of banking organizations declined more than a fourth, from 9,718 to 6,984.

On a national basis, consolidation has markedly increased concentration in the banking system. For example the share of domestic commercial bank assets held by the top five banking organizations rose from 12.6% in 1987 to almost 24% in mid-1998; for the top 100 banking organizations, these shares rose from 61.9% to 75.4% (Table 3).

There have been several economic forces behind these mergers. Some banks have entered into mergers in order to attain a size that they believe would better allow them to provide certain services efficiently. Securities underwriting and market making, for example, require a certain size to be competitive. In addition, new financial technology is frequently expensive, meaning that it benefits larger banks disproportionately. Credit scoring models, which are used to price consumer loans, mortgages, and small business loans, require large databases. Similarly, securitization programs require a minimum size to be economic, and some tools to improve risk management are more valuable to larger banks (Berger et al. (1999)). Second, natural banking areas frequently did not conform with state boundary limitations, and so the US banking system has been adjusting through mergers to the form it might have taken many years ago had legal constraints on interstate banking never existed. A third factor encouraging mergers has been the move toward generally more efficient banking, as exemplified, for example, by the adoption of more systematic recognition of relative levels of risk in loan pricing (discussed below in Section 2.4). Combined with, and spurred on by, the increased competition made possible by the elimination of barriers to interstate

¹⁴ It supersedes the McFadden Act of 1927, which had prohibited all bank branching across state lines.

¹⁵ Following the allowance of interstate branching, some multi-bank holding companies have become one-bank holding companies.

banking, these efficiency advances inevitably have revealed some banks to be too weak to survive in the new environment and so made them desirable candidates for takeover.¹⁶

Table 3
Shares of domestic commercial banking assets held by largest banking organizations, 1985-98
 In percent

Year	Top 5	Top 10	Top 25	Top 50	Top 100
1985	12.8	20.4	33.2	45.8	57.9
1986	12.7	20.2	34.1	47.3	60.4
1987	12.6	19.9	34.8	48.5	61.9
1988	12.8	20.4	35.7	51.1	64.0
1989	13.3	21.7	36.9	51.8	64.7
1990	13.1	21.8	37.8	52.7	65.4
1991	16.0	24.4	40.3	53.4	65.5
1992	17.3	25.6	41.8	55.6	67.1
1993	17.6	26.9	43.8	58.0	69.2
1994	18.2	27.9	45.7	59.9	71.3
1995	17.8	28.8	47.5	61.4	72.2
1996	21.1	32.9	51.0	64.3	73.5
1997	22.5	33.8	52.7	66.1	74.6
1998*	23.9	35.4	54.1	67.3	75.4

* June.

Sources: NIC Database and Reports of Condition.

Research based on banking data for the 1980s had suggested that banks' average cost curve was fairly flat between \$100 million and \$10 billion, and that gains in scale efficiency through merging were relatively small.¹⁷ More recent work, based on data from the 1990s, suggests that increasing bank size up to \$25 billion may improve efficiency, and by a substantial amount. The different findings may reflect the larger presence of technology and the reduced influence of geographic limitations in the second study.¹⁸

Although the increases in national concentration ratios noted above are dramatic, national measures are not generally useful for assessing the competitive effects of mergers. For nationally competitive banking activities, for example, syndicated lending, securities underwriting, and so on, the number of banks operating in these markets is still large and likely to remain so for the foreseeable future. Moreover, nationally active banks face competition from other entities, for example investment banks and foreign banks, as well as from the capital markets.

Rather, competitive issues raised by mergers are generally thought to be limited to local markets. Standard measures of concentration reveal that competitive conditions in local markets have changed relatively little since 1980, despite the substantial reduction in the number of banks over that period.¹⁹ There are a number

¹⁶ If the US banking system is evolving toward a structure that already might exist had it not been for legal and regulatory restrictions, what will that structure look like? One approach to answering this question uses a model of banks' response to earlier partial moves toward deregulation. The model suggests that the United States could end up with about 5,000 or so banks. This result is roughly consistent with the prediction of approximately 4,000 banks obtained by multiplying the number of banks in California, where full statewide branching has been in effect since early in the century, by the reciprocal of its share of assets in the banking system. See Berger et al. (1995).

¹⁷ Berger et al. (1999), p. 28.

¹⁸ Ibid., p. 30.

¹⁹ Two commonly used measures of local competition are the share of deposits held at the three largest banks in urban and rural markets and the Herfindahl-Hirschman index. The former measure has remained steady or declined over the last two decades; the latter measure, the sum of the squares of market shares, has not increased over the same period. See Meyer (1998a).

of reasons why local market competitive conditions appear to have been immune to banking consolidation. First, some mergers are between banks serving different geographic areas. More fundamentally, barriers to entry are not especially high in banking, and de novo banking has been present to one degree or another throughout this period.²⁰ Third, banks that are acquired by large out of town banks tend to lose market share to local rivals. Fourth, small banks tend to perform very well, even when competing against very large rivals.²¹ Finally, vigorous enforcement of antitrust laws has limited the degree of increased concentration resulting from mergers. For example, some mergers are allowed only after the divestiture of banking offices, and the presence of these laws doubtless has prevented some anti-competitive combinations from even being proposed.²²

If competition has not been significantly diminished at either the national or local levels by the declining number of banks, there are reasons to expect the impact of consolidation on the cost and availability of bank credit to be generally positive. Acquiring banks typically are much larger than acquired banks, and larger banks tend to be more highly leveraged and have greater concentrations of loans than smaller banks (Chart 6). On the assumption that surviving banks in a merger will more closely resemble the acquiring than the acquired bank(s), the leverage of the banking system and its propensity to lend should be raised as a result of mergers. Table 4 illustrates the results of mergers over last few years, excluding mergers between banks in the same holding company. There has been a clear tendency for acquiring banks to be more highly leveraged; they have not consistently had higher concentrations of loans, however.²³

Table 4
Banks involved in mergers¹

Characteristics prior to merger	1995		1996		1997		1998 ²	
	S	P	S	P	S	P	S	P
Average assets(\$ billion)	2.41	0.15	2.20	0.68	3.48	0.43	6.34	0.73
Equity/assets (%)	7.72	8.24	8.42	9.10	8.02	8.76	7.84	9.28
Loans/interest-earning assets (%)	71.0	71.0	76.4	69.4	76.0	76.0	76.9	80.1

S: successor bank; P: predecessor bank. ¹ Excludes mergers between banks in the same holding company. ² First two quarters. Sources: NIC Database and Report of Condition.

Notwithstanding these reasons to expect that overall credit availability may be favorably affected by bank mergers, questions have been raised about the implications of mergers for the supply of credit to small borrowers. Commercial banks are the single most important source of credit extended to small businesses.²⁴ Larger banks, however, tend to hold much smaller shares of assets in the form of loans to small businesses than do smaller banks. For example, as of June 1998, the sum of small (under \$1 million) business loans and commercial real estate loans as a share of total business and commercial real estate loans at the 100 largest banks, the next 900, and all others were, respectively, 20.9, 48.9 and 81.8%. Thus, one might worry that industry consolidation would constrain lending to small businesses.

²⁰ There were 400 de novo banks in 1984, but the number fell to under 100 in the early 1990s. With bank profitability again on the rise, de novo banks numbered 207 in 1997. Ibid.

²¹ Community banking flourishes in California, where statewide branching has been in effect since early in the century. Another example is provided by New York State, where the introduction of statewide branching in 1962 revealed that large banks based in New York City were unsuccessful in competing with small upstate banks. See Mishkin, op. cit., p.16.

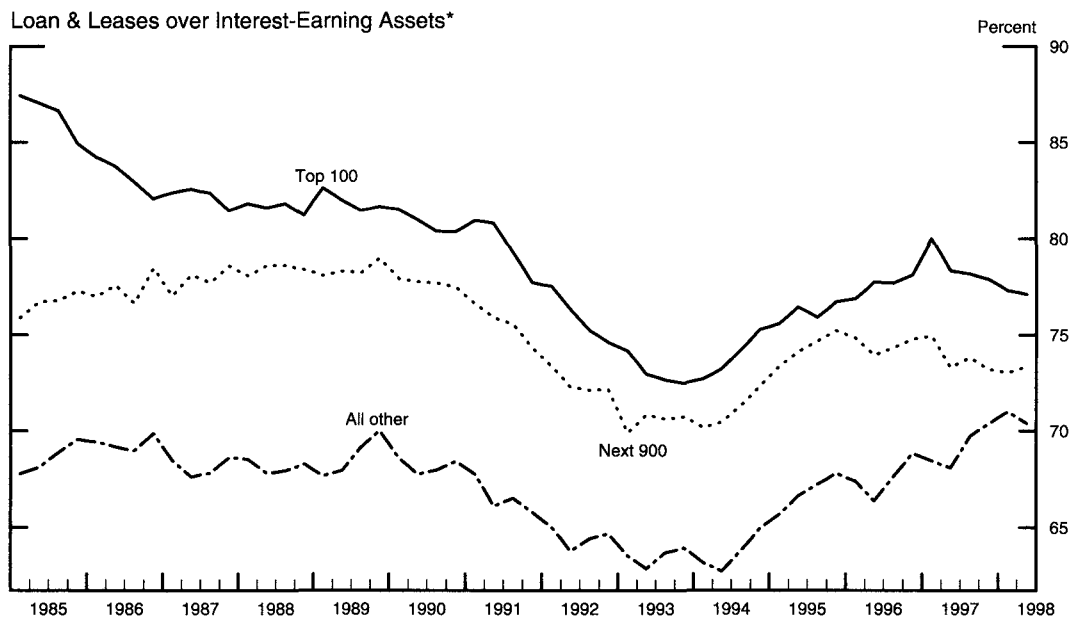
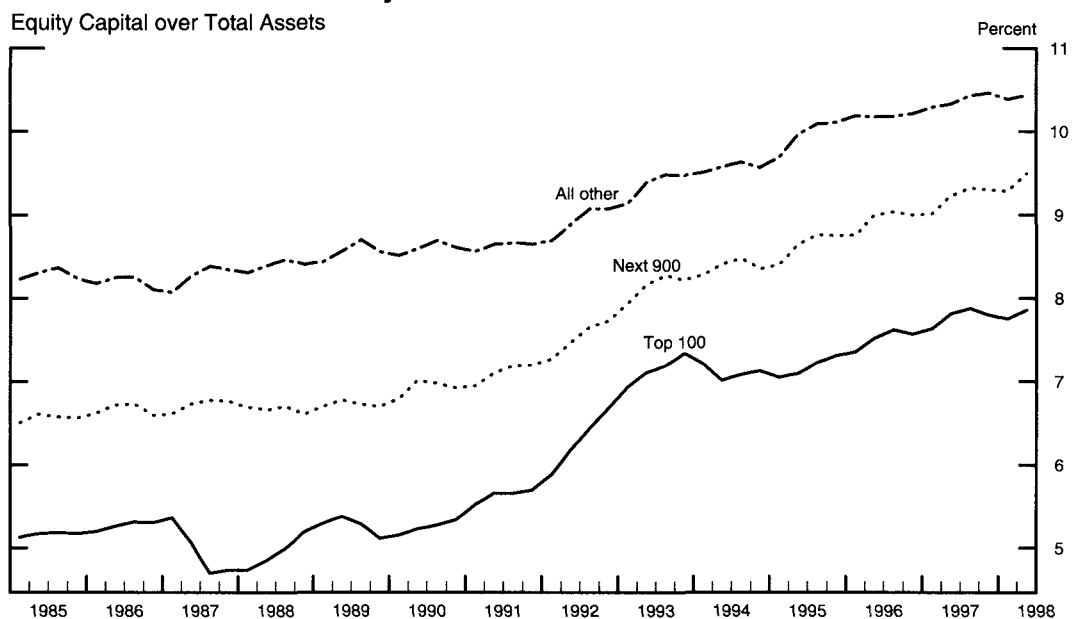
²² See Kwast (1996).

²³ Recent studies find that, after merging, banks tend to shift assets from securities toward loans, raise the ratio of assets to equity, and hold more diversified loan portfolios. In addition, the cost of uninsured purchased funds decline, as the market rewards the greater diversification of assets in the merged bank. See Berger (1998) and Akhavein et al. (1997).

²⁴ See Cole and Wolken (1996).

Chart 6

Capital and Lending Ratios By Asset Size of Bank



*Interest-earning assets exclude interbank loans.
Source: Report of Condition.

Of course, a large bank may buy small banks precisely to reach small businesses. In many cases, however, the organizational complexity of large banks suggests that they would incur high costs in dealing with small borrowers in a market served by an acquired bank. On the other hand, large banks may be better able to provide credit to small customers, particularly in times of banking weakness, owing to their advantages as gatherers of funds. Evidence obtained regarding these aspects of lending have been mixed, although the most

common findings are that consolidation of large bank organizations tends to reduce small business lending while consolidation of smaller organizations tends to increase it.²⁵

Even if credit to small businesses is initially disrupted or even diminished by particular mergers, economic theory would lead one to predict that over time other lenders would emerge to exploit the resulting profitable lending opportunities. This notion is supported by studies that have found that in geographic areas where credit supply to small businesses has been negatively affected by mergers, other local lenders have tended to fill the gap. Another study found that de novo banks tend to lend more to small businesses than do other small banks of comparable size.²⁶

Nevertheless, small businesses might be affected in a more permanent way by banking consolidation to the extent that it eliminates banks whose inefficient lending practices had resulted in a tendency to fund low or even negative present value projects.²⁷ To some degree offsetting such effects of consolidation would be benefits accruing to small businesses from the recent technical advance in lending and credit scoring. As noted, credit scoring models use large databases to predict the outcome (in terms of portfolio performance) of small business loans based on characteristics of the borrowers. By reducing the number of loan officers required to underwrite small business loans, credit scoring models lower the cost of lending to small businesses and so contribute to increased supply.

2.4 Commercial bank profitability

The profitability of US commercial banks underwent a major transformation in the mid-1990s, moving to significantly higher levels not only relative to the difficult years early in the decade but also to longer-term norms (Chart 7). Indeed, the industry's average return on equity over the years 1993 to 1997 was 4 percentage points higher than the average over the forty years from 1948 to 1987.²⁸ Elevated profits in recent years can be attributed to a number of factors, the most important being the low level of provisioning for loan losses (Table 5). The low provisioning seems to be in step with a decline in banks' overall loan delinquency rate from 6.14% in early 1991 to 2.17% in mid-1998 (Chart 8). The apparent very high quality of most bank loans, particularly those to the business sector, evidently reflects, at least in part, the extended period of economic growth that followed the recession of 1990-91. It may also have been influenced by the substantial tightening of lending standards at the beginning of the decade, although these standards have been eased on balance since 1992.

Bank profits also have benefitted in recent years from net interest margins, which widened to historically high levels earlier in the decade. Although margins have narrowed steadily in recent years, partly reflecting intense lending competition among banks, they have remained somewhat elevated through mid-1998 (Chart 9). The high level of the net interest margin during the 1990s has reflected several factors. First, banks had a particularly strong incentive to keep loan rates high and deposit rates low in the early 1990s, as such pricing served the dual purposes of constraining asset growth and boosting earnings and capital. Despite the competition from money and stock and bond mutual funds, banks have kept yields on core deposits low even after restoring their capital ratios, evidently expecting to benefit from the inertia of some depositors (Chart 10).²⁹

²⁵ See Berger and Udell (1998).

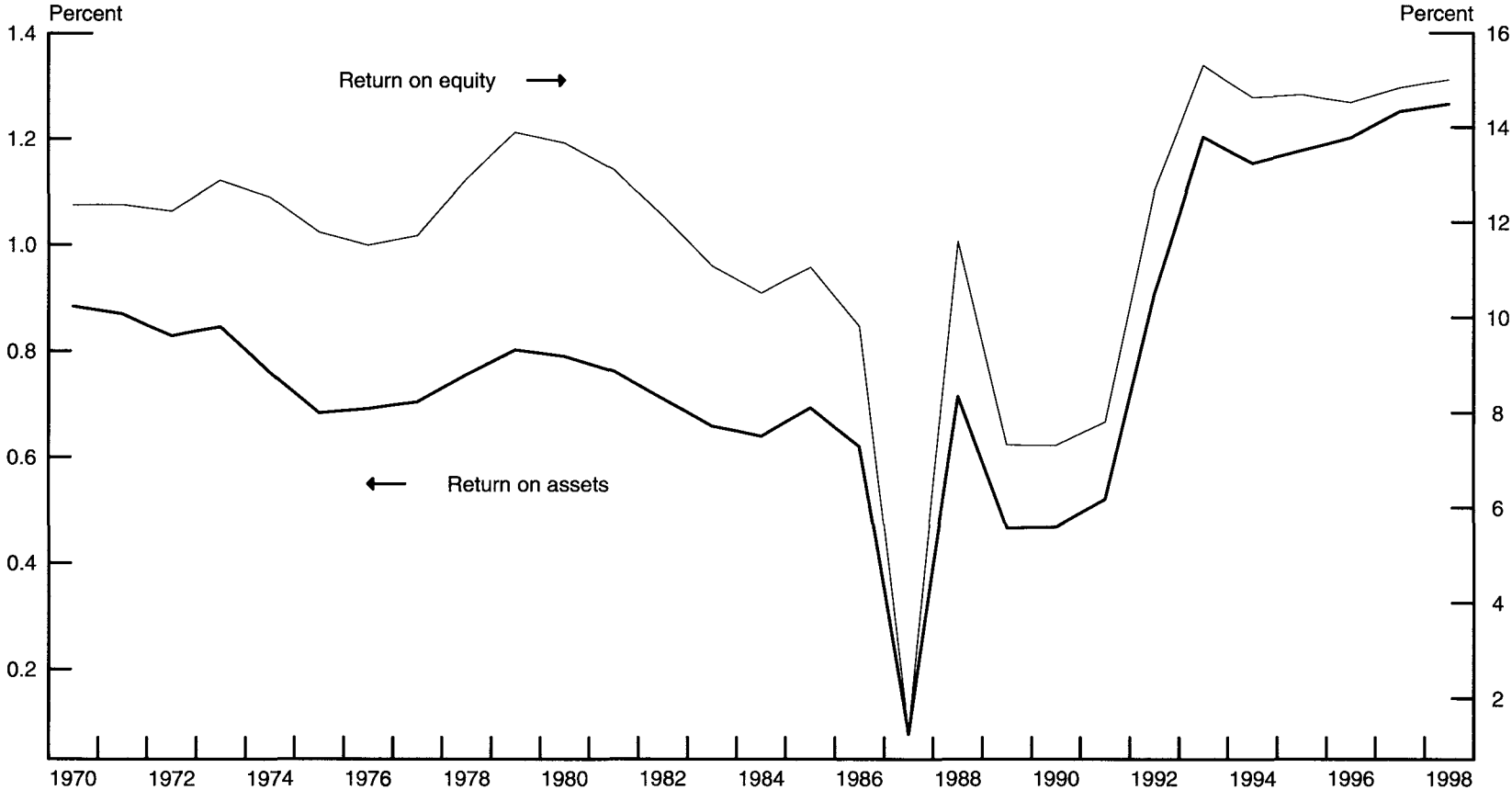
²⁶ Ibid.

²⁷ See Gertler (1995).

²⁸ See English and Nelson (1998).

²⁹ The retail deposit data shown in Chart 10 refer to the most commonly posted rates and so would not pick up the effects of deposit rate tiering.

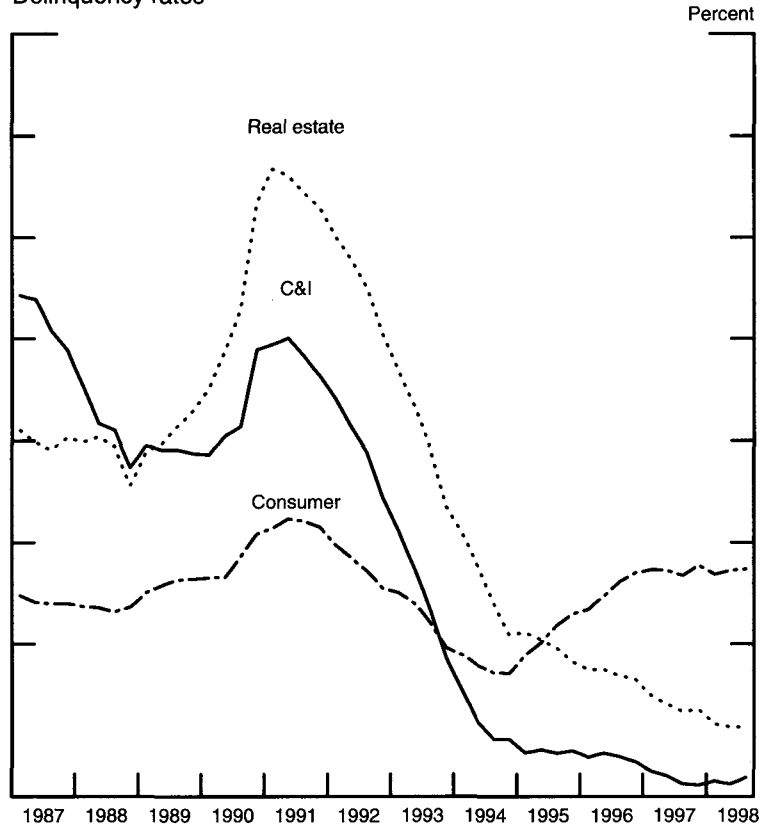
Chart 7
Measures of Commercial Bank Profitability



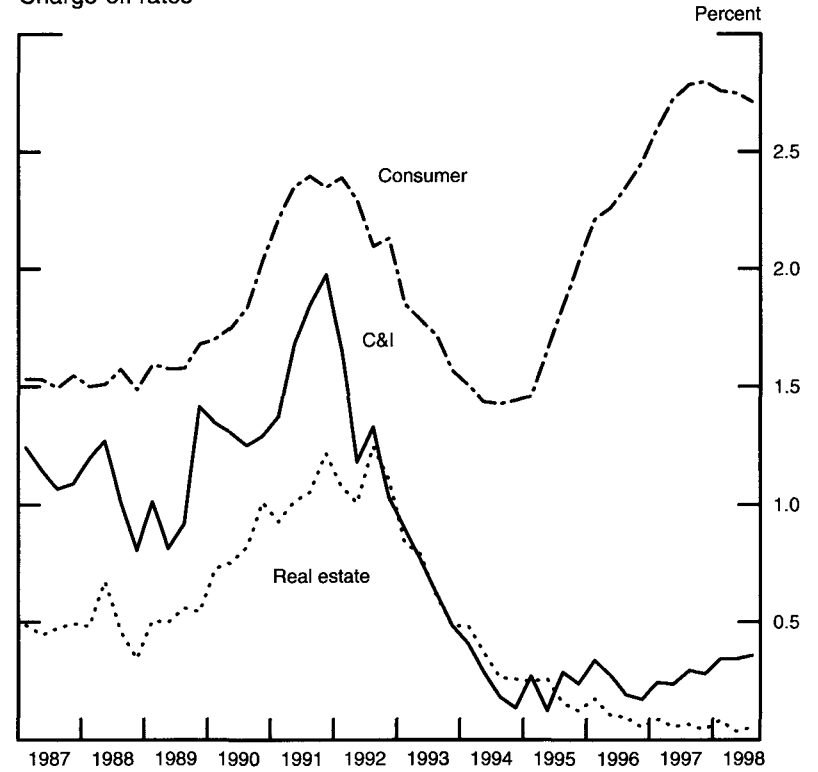
Source: Report of Condition.

Chart 8
Loan Performance at Commercial Banks
 (Quarterly, seasonally adjusted)

Delinquency rates



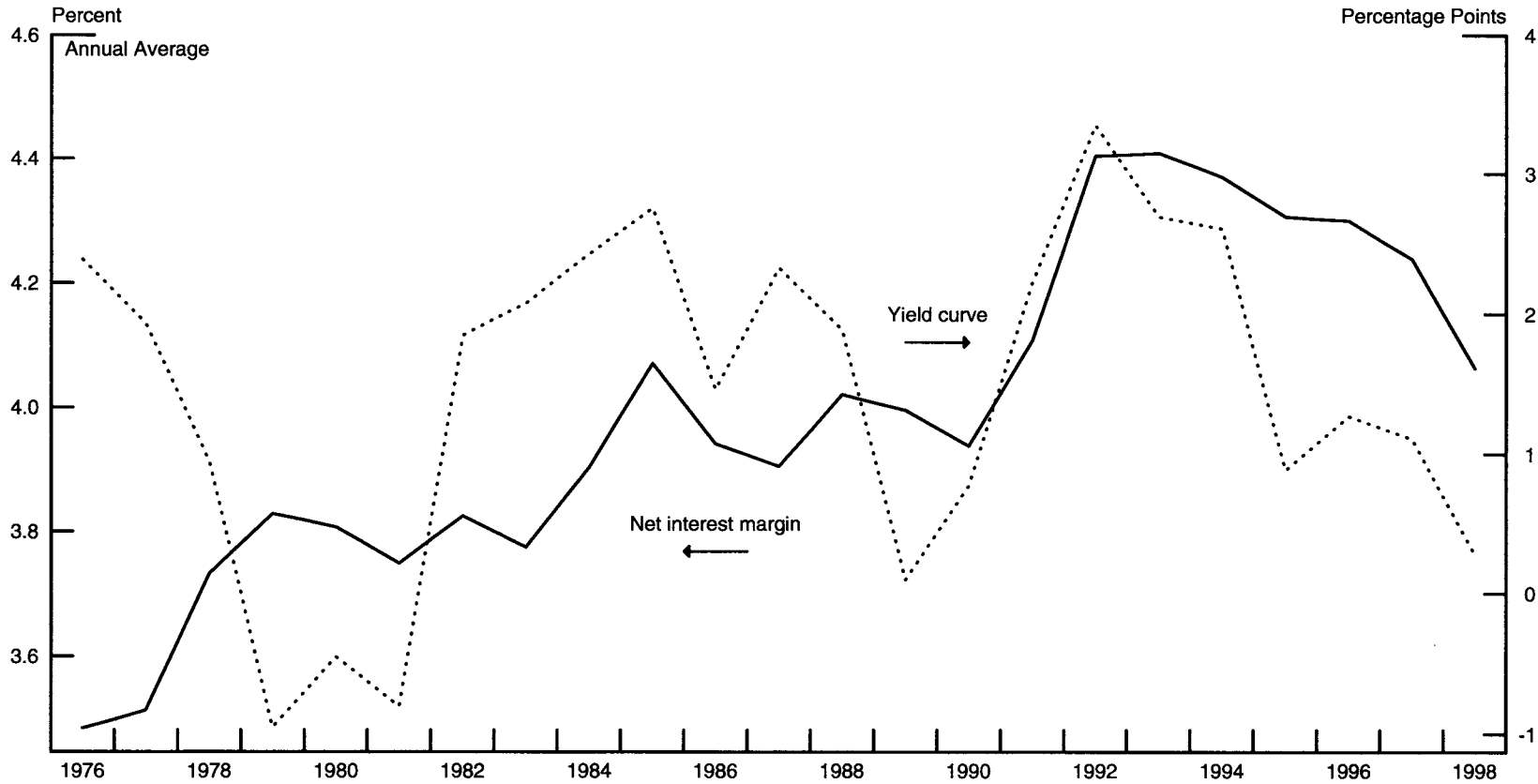
Charge-off rates



Note: Data are from FFIEC's quarterly Reports of Condition. Delinquent loans include those past due 30 days or more and still accruing interest, as well as those on nonaccrual status. Charge-off rates are annualized, net of recoveries. Source: Report of Condition.

Chart 9

Net interest margin* and slope of the yield curve**



*Net interest margin is net interest income divided by interest earning assets.

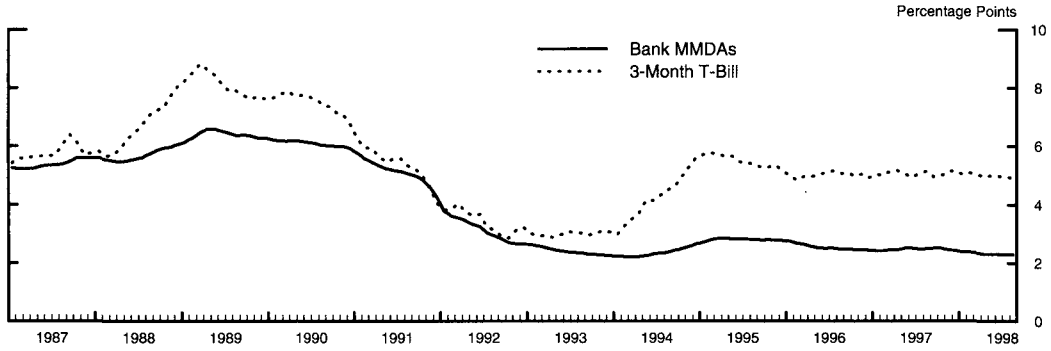
**Yield on the 10-year Treasury note less the coupon-equivalent yield on the 3-month Treasury bill.

Source: Report of Condition and H.15 statistical release.

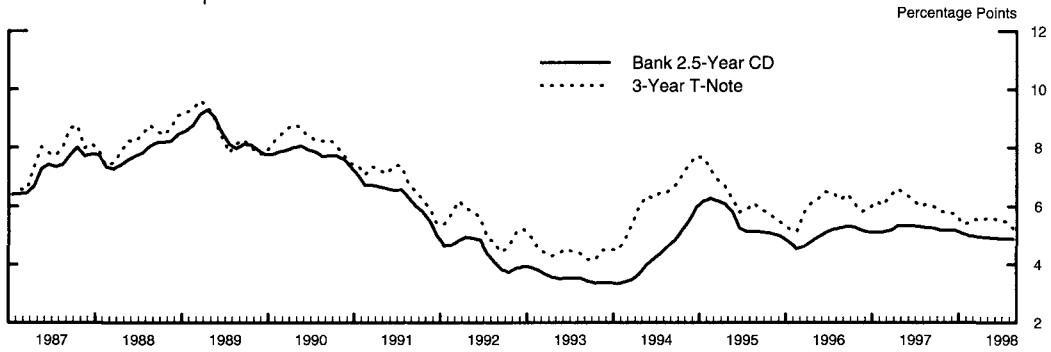
Chart 10

Bank Retail Deposit Rates and Managed Liabilities' Share of Funding

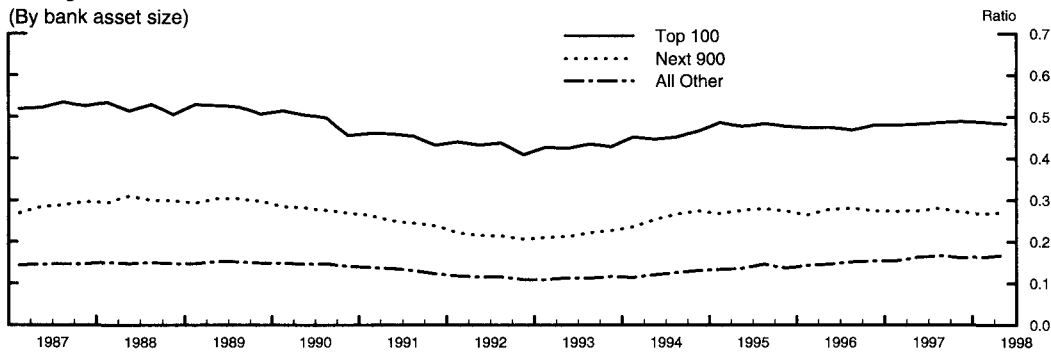
MMDA Rates



2 1/2 Year Time Deposits



Managed Liabilities as a Share of Total Liabilities*
(By bank asset size)



* Excludes trading liabilities

Source: Bank Rate Monitor; Report of Condition.

Table 5
Income and expense as a percentage of average net assets

Item	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Net interest income	3.46	3.61	3.89	3.90	3.78	3.72	3.73	3.67	3.51
Noninterest income	1.67	1.81	1.95	2.13	2.00	2.02	2.18	2.23	2.38
Noninterest expense	3.49	3.75	3.86	3.94	3.75	3.64	3.71	3.61	3.63
Loss provisions	0.97	1.03	0.78	0.47	0.28	0.31	0.37	0.40	0.38
Securities gains	0.01	0.09	0.11	0.09	-0.01	0.01	0.03	0.04	0.05
Income	0.68	0.73	1.32	1.70	1.73	1.81	1.85	1.93	1.92
Taxes and extraordinary items	0.21	0.22	0.41	0.50	0.58	0.63	0.65	0.68	0.66
Net income	0.47	0.52	0.91	1.20	1.15	1.18	1.20	1.25	1.26
Dividends	0.42	0.46	0.41	0.62	0.73	0.75	0.91	0.90	0.73
Retained earnings	0.05	0.05	0.49	0.58	0.42	0.43	0.30	0.35	0.53
<i>Memo item:</i>									
<i>Return on equity</i>	7.31	7.80	12.64	15.32	14.63	14.69	14.53	14.84	15.01

* First half, at an annual rate.

Source: Report of Condition.

Second, the net interest margin subsequently was supported by a cyclical shift in the banking system's portfolio from securities to higher yielding loans as the economic recovery took hold and credit demands rose. Third, banks have been funding a greater share of assets with capital than they did in the early 1990s, and dividends to equity owners are not included in interest income. Finally, banks' interest earnings have benefitted from the better loan pricing procedures they have developed. A key element has been the movement toward assigning risk ratings to loans and setting hurdle rates of return for various risk categories of loans sufficiently high to cover the cost of capital assigned to these categories.³⁰

One factor that has been commonly cited by financial analysts for the widening of the net interest margin in the early 1990s was the very low levels to which monetary policy had pushed short-term interest rates and the resulting steepness of the yield curve at that time. In response to widespread imbalances in the economy, which Chairman Greenspan characterized as creating "50 mile an hour headwinds" holding back economic growth, the federal funds rate was lowered from about 8% in early 1990 to 3% in late 1992 and kept at that level until early 1994. Long rates also fell, but by much less. The resulting steep yield curve suggests that banks may have earned substantial profits by funding longer-term securities with short-term liabilities. However, an analysis of the historical relation between the net interest margin and either the slope of the yield curve or changes in the slope does not support this interpretation (Chart 9). The alternative explanation cited above, that banks were pricing assets and liabilities at that time with an eye toward restoring badly eroded capital positions, seems more persuasive.³¹

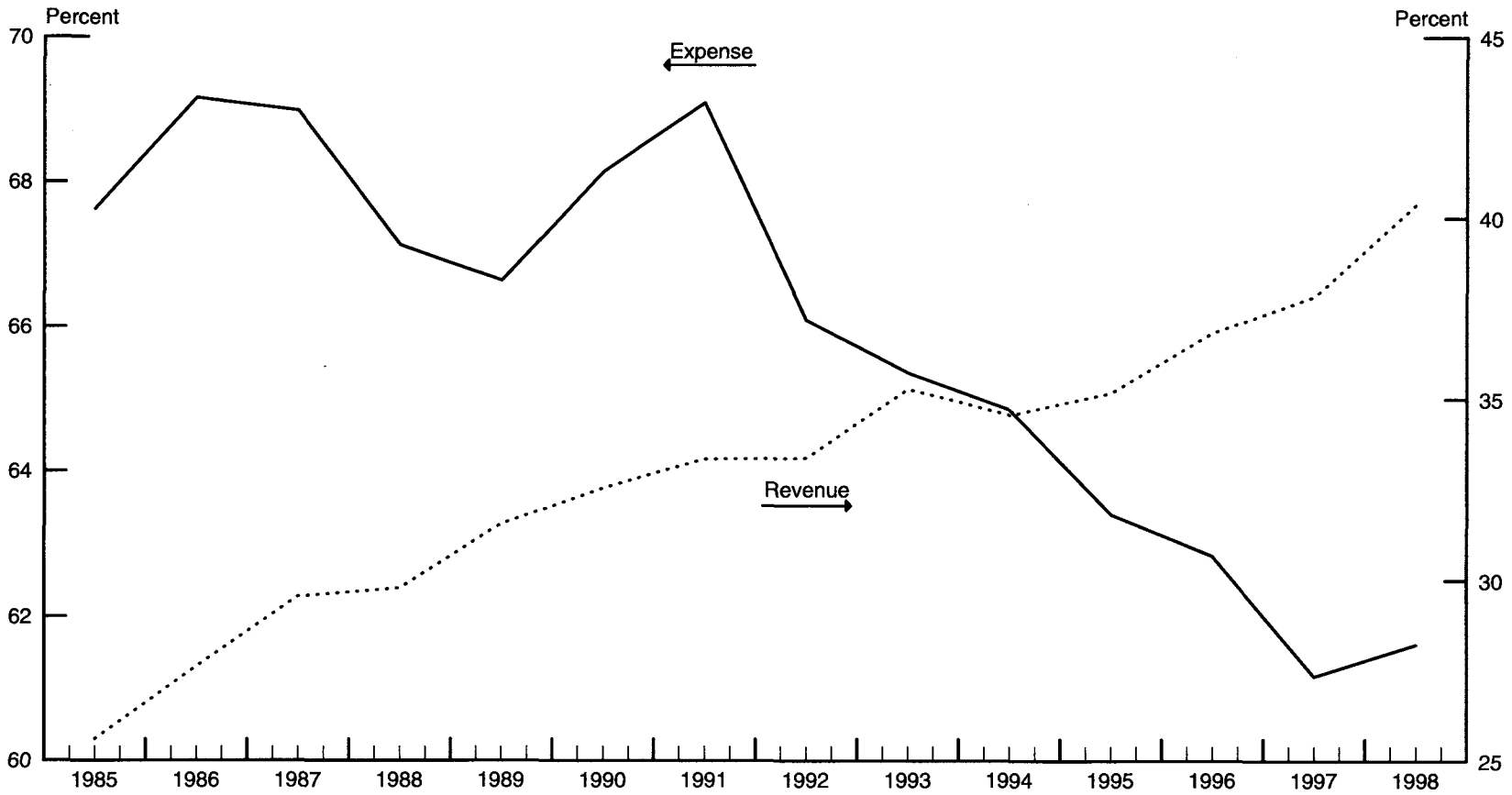
It is interesting to note that since 1993, banks of all sizes have moved steadily, albeit modestly away from core deposits – largely retail transaction and savings deposits, which tend to be held in amounts under \$100,000 and thus are fully insured – and toward managed liabilities – uninsured nondeposit instruments and large time deposits, which are insured only for the first \$100,000 (Chart 10). Banks' success in increasing their reliance on uninsured liabilities in an era of mandatory least cost resolution may reflect in part comfort provided by banks' strong capital positions. Indeed, cognizance of the need to attract uninsured liabilities at a reasonable cost under the provisions of FDICIA helps to explain banks' decisions to keep capital ratios generally high.

³⁰ See Treacy and Carey (1998) and Brady et al. (1998).

³¹ See English (1996) and English and Nelson, op. cit., pp. 401-2.

Chart 11

Noninterest Expense and Noninterest Income As a Percent of Total Revenue



Source: Report of Condition.

Also contributing importantly to banks' high profitability in recent years has been steady rises in the share of total revenue accounted for by noninterest income even as noninterest expenses, also measured relative to revenue, have trended down (Chart 11). The rise in noninterest income reflects banks' shift toward off-balance-sheet and other fee-generating activities. Credit card fees, mortgage servicing fees, fees from the sale and servicing of mutual funds, ATM surcharges, and income from securitized loans have all been important contributors to bank fee income. Trading revenues are also included in noninterest income; while highly variable from quarter to quarter, these revenues have generally trended higher over the decade.

Table 6
Share of US bank assets at foreign offices and share of income from foreign operations
In percent

Share	1993	1994	1995	1996	1997	1998
Assets	12.2	13.2	13.6	14.8	15.0	15.0 ¹
Income	16.3	11.9	11.6	12.0	10.3	11.9 ²

¹ June. ² First half; compares to 15.4% for the first half of 1997.

Source: Report of Condition.

Noninterest expenses have been held down by restraint placed on labor and occupancy costs. Since the mid-1980s, for example, employment has declined 2% and the number of bank offices has increased less than 20% while revenue, adjusted for inflation, rose 60%. In other words, average revenue per employee increased more than 60% while revenue per office rose more than 30%. In addition, inflation-adjusted occupancy cost per bank office fell over this period.³²

Table 7
Country exposure of US banks
In billions of US dollars

	June 1982			March 1998		
	Money center	Other large	All banks	Money center	Other large	All banks
	(1)	(2)	(3)	(4)	(5)	(6)
Total	204	66	344	368	75	479
To troubled areas*	52	17	87	100	19	132
To Japan	20	9	42	29	5	39
<i>Memo items:</i>						
<i>Exposure as % of capital</i>						
a. to troubled areas*	191	135	131	81	26	37
b. to Japan	73	70	64	23	7	11

* 1982: Latin America and Eastern Europe; 1998: Latin America, Eastern Europe and Asia, excluding Japan.

Source: FFIEC E.16 Release.

Until very recently, bank profits have been boosted by strong earnings from foreign operations. Just over 10% of bank income last year derived from foreign operations, somewhat below the previous several years even though the share of assets at foreign offices rose slightly, to 15% (Table 6).³³ The weakening of

³² English and Nelson, p. 403.

³³ Relatively few very large banks account for the bulk of the US commercial banking industry's activities abroad; some of these banks hold very substantial shares of their assets overseas.

foreign earnings of late has reflected economic problems in Asia. Banks doing business abroad continue to be vulnerable to problems in Asia and other troubled areas. Exposure to such regions is notable for some banking groups, but distinctly less than it was in the 1980s. As of March 1998, exposure to Latin America, Eastern Europe, and Asia (excluding Japan), expressed as a percentage of capital, was 37% at all banks (Table 7). Money center banks were much more prominent, at 81% of capital. In June 1982, exposure of money center banks (to Latin America and Eastern Europe) stood at 191% of capital; for all banks, this measure was 131%.

3. Regulatory implications of the developments of the 1990s

The exceptional health of the banking system, at least as reflected in data through mid-1998, has so far left the new features of FDICIA basically untested. In recent years, only a few small banks have failed. Nevertheless, concerns about some other aspects of the regulatory structure, in particular the “one size fits all” aspect to the Basle 8% risk-based capital requirement and the resulting incentive to engage in regulatory capital arbitrage, have grown. At the same time, the growing size and complexity of some banks has added to regulatory challenges. Also, pressures have continued to mount to alter the structure of the banking system to allow more competition between banks, securities firms, and the insurance business. This section reviews some problems associated with the current regulatory structure and then looks ahead to the banking system that would emerge if current legislation, The Financial Services Act of 1998 (H.R. 10), or something like it, becomes law.

3.1 Banking issues that have emerged following FDICIA

3.1.1 Implications of regulatory capital arbitrage

As noted in Section 2, techniques used by some banks to reduce their capital levels relative to the risk they hold, such as by securitizing loans, cast some doubt on a literal reading of their capital ratios, a key trigger mechanism to many of FDICIA’s provisions. The regulatory response to this development has been to convey to bank examiners and to commercial banks themselves the full implications of regulatory capital arbitrage. The vehicle for doing this is “Supervision and Regulation (SR)” Letters, sent out by the Board’s Division of Supervision and Regulation to Federal Reserve examiners and to the banks they examine. For example, an SR letter dated July 11, 1997, included the following statement:

“Supervisors and examiners should review the substance of secondary market transactions when assessing underlying risk exposures. For example, partial, first loss direct credit substitutes providing credit protection to a securitization transaction can, in substance, involve much the same credit risk as that involved in holding the entire asset pool on the institution’s balance sheet. However, under current rules, regulatory capital is explicitly required only against the amount of the direct credit substitute... Supervisors and examiners should ensure that banking organizations have implemented reasonable methods for allocating capital against the economic substance of credit exposures...”

If, in the supervisor’s judgment, an institution’s capital level is not sufficient to provide protection against potential losses from such credit exposures, this deficiency should be reflected in the banking organization’s CAMEL or BOPEC ratings.”

Thus, examiners are directed to make judgmental adjustments to banks’ capital needs and assign CAMEL ratings appropriately. Such a flexible approach in effect allows banks to adjust their capital on some loans below the 8% Basle requirement as long as this seems appropriate to their examiners. According to the information on capital ratios contained in Table 8, which are adjusted for examiner ratings, to date at least regulatory arbitrage has not significantly eroded the banking system’s capitalization.

Table 8
Distribution of bank assets by capital status*
 As a percentage of industry assets

	1990:Q1	1993:Q3	1998:Q2
Under-capitalized	32.6	8.9	0.1
Adequately capitalized	36.8	17.8	1.3
Well capitalized	30.5	73.3	98.5

* Adjusted for examiner ratings.

3.1.2 *Bank consolidation and mega-mergers*

Mergers of very large banks raise special questions of supervision. Steps the Federal Reserve has taken in response to the recent rash of such mergers include formal efforts to coordinate state and federal supervisory activities, reviews of staffing requirements to ensure that personnel are properly trained to deal with evolving financial techniques and instruments used by very large banks, and continued reliance on other agencies in the case of some nonbank activities carried on within bank holding companies.³⁴ In addition, Federal Reserve supervision has become more “risk focused” in recent years, particularly regarding large and complex organizations. This has meant putting relatively less emphasis on balance sheets and asset quality measures and more on institutions’ risk management policies and procedures, including associated information systems and internal controls. Indeed, bank examiners now separately evaluate a bank’s risk management as part of the overall management component of their CAMEL rating.³⁵ In short, greater attention is being paid to the roles of banks’ senior managements and boards of directors.

3.2 Looking ahead

3.2.1 *Market-driven regulation using mandatory subordinated debt*

Recently, regulators have begun to express interest in the possible benefits of requiring banks, particularly large banks, to issue some minimum amount of subordinated debt.³⁶ Several regulatory benefits are seen to derive from such a step. Subordinated debt holders own an uninsured instrument whose value can fall to zero if a bank fails but, unlike the value of equity, cannot rise to share in extraordinary gains that might derive from a bank’s risk taking. Hence, the presence of investors holding a bank’s subordinated debt (particularly if they don’t also hold its equity) could work to limit its incentives for risk taking. Secondly, the yield at which such debt can be issued by individual banks (or the price at which it trades if a liquid market in this instrument were established), would provide information on the market’s view of the bank’s riskiness that, in principle, regulators could use to price deposit insurance or trigger other regulatory mechanisms. Some proposals for mandatory subordinated debt would make it a much more powerful regulatory tool by setting a ceiling rate, relative to a riskless Treasury instrument, at which banks are allowed to issue it.³⁷ In this case, market perceptions about an institution’s riskiness would limit its size, or could even force its liquidation.

³⁴ Meyer, loc. cit. pp. 15-17.

³⁵ Mishkin, p. 20. Four aspects of risk management are evaluated: the quality of oversight provided by the board of directors and senior management; the adequacy of policies and limits established to control all activities that present significant risk; the quality of risk measurement and monitoring systems; and the adequacy of internal controls with respect to fraud.

³⁶ See Meyer (1998b).

³⁷ See Calomiris (1997) and Walls (1998).

Thinking about proposals for mandatory subordinated debt is in its early stages at the regulatory level. There likely would be practical problems to overcome in order to implement such a proposal. For example, at the end of 1997, subordinated debt issued by commercial banks amounted to \$62 billion, or 1.2% of assets. This is a bit below the low end of the range of required levels of subordinated debt in various proposals.³⁸ Moreover, much of banks' subordinated debt apparently is held by their parent holding companies, as opposed to the market participants who would have to be involved for the suggested benefits to materialize.³⁹

The doctrine of prompt corrective action has some interesting interactions with mandatory subordinated debt proposals. For example, if subordinated debt holders were fully confident that a troubled bank would be closed while its net worth was still positive, the debt's price would be virtually immune to changes in the bank's perceived health. Conversely, shifts in the market's assessment of the likelihood of implementing PCA successfully would presumably affect the yield on troubled banks' subordinated debt. Moreover, yields on the subordinated debt of banks the market believed to be "too big to fail" might be less responsive to changes in their perceived health than would be true of other banks. Another complicating factor is that the spread of the rate on a bank's subordinated debt over a riskless rate is susceptible to shifts in investor demands both for the subordinated debt or the riskless instrument for reasons that are unrelated to changes in the condition of a particular bank (for example, liquidity demands for the riskless instrument owing to some economic shock).

Finally, the proposal to set a regulatory ceiling on the rate at which subordinated debt can be issued relative to the rate on a riskless security raises the issue of how the maximum allowable spread between the two rates is to be set. Doing so would be a crucial regulatory decision, since it could essentially determine the trade-off between a desire to avoid discouraging financial intermediation and other banking practices that are sometimes risky but on balance beneficial, on the one hand, and a need to protect the safety and soundness of the banking system and prevent abuse of the safety net, on the other. In this respect, the ceiling rate is analogous to capital requirements: they may fail to protect the safety and soundness of the banking system if set too low but would tend to discourage desirable and productive bank lending if set too high. Our ongoing experience with the banking system's and regulators' responses to the Basle Accord on required capital levels, specifically the emergence of regulatory capital arbitrage, seems very instructive here. While this practice can be viewed with some concern, its "safety valve" feature has been seen as valuable.⁴⁰ Because it is not clear that such a safety valve would emerge in the case of the proposed interest rate ceiling for subordinated debt, it would be all the more important that the ceiling be fixed at an appropriate level.

3.3 Expanding banking activities: The Financial Services Act of 1998 (H.R. 10)

As noted in the first section of this paper, the nonbank subsidiaries of bank holding companies have grown faster than their bank subsidiaries over the past decade, largely owing to the growth of "section 20" subsidiaries, which carry on underwriting activities for corporate debt and equity.⁴¹ Pressures on regulators to expand what banking organizations are permitted to do have been evident for years, and they have mounted recently along with the acceleration of change in financial technology. On May 13, 1998, the House of Representatives passed a bill addressing these problems, H.R. 10. While the bill does not allow

³⁸ See Hancock (1998).

³⁹ Some proponents of mandatory subordinated debt argue that its owners should not have direct or indirect interest in the stock of the banks that issue the debt. *Ibid.*

⁴⁰ Meyer (1998c).

⁴¹ The Federal Reserve Board gave some bank holding companies limited authorization to underwrite corporate debt and equity in so-called section 20 subsidiaries in 1987. Initially, gross revenues from underwriting ineligible securities were capped at 10% of the subsidiary's total gross revenues. This ceiling was subsequently raised to 25%.

a FHC to mix banking and commerce, its essential feature is the provision allowing banking organizations to enter into the businesses of securities and insurance underwriting. Further, it would require that this be done using the structure of the bank holding company.

The Act provides for the establishment of financial bank holding companies (FHCs) whose subsidiaries, in addition to commercial banks, could include securities firms that underwrite debt and equity and insurance subsidiaries that underwrite insurance.⁴² To qualify as a financial holding company, each of the bank holding company's depository institution subsidiaries must be well capitalized and well managed.

The Act also establishes a new type of financial institution, the Wholesale Financial Institution (WFI). WFIs would be prohibited from accepting retail or FDIC-insured deposits, but would have access to the discount window and the payments system. WFI holding companies would be able to engage in the same activities as FHCs except that they could not own insured banks or savings associations, other than certain limited-purpose institutions. There is some scope for commercial activity, since a company that becomes a WFI may retain any commercial holdings it holds as of the date on which the Act becomes law.

Supervision would employ the "umbrella" concept – the Federal Reserve would have supervisory authority over all bank holding companies, but its authority over their nonbank subsidiaries would be limited, and these would be supervised on a functional basis by appropriate regulators; for example, securities subsidiaries of a FHC would be supervised by the SEC. H.R. 10 also requires the Secretary of the Treasury to conduct a study and prepare a report to Congress concerning the impact of the bill on the Community Reinvestment Act.⁴³

4. Implications for monetary policy

The changes that have affected the US banking system over the last decade appear to have fairly limited implications for the techniques used to implement monetary policy as well as for its transmission to the economy.

4.1 Implementation of monetary policy

Controlling the federal funds rate. The Federal Reserve carries out its monetary policy through open market operations that affect the supply of reserves in the banking system relative to the demand for them and hence exert a substantial influence over the federal funds rate, the price of these reserves in interbank markets. One development that initially raised some concerns about the adequacy of control over the federal funds rate is banks' use of deposit "sweep" arrangements to reduce their levels of required reserves.⁴⁴ In addition to fulfilling reserve requirements, banks hold reserves to meet clearings against their accounts at the Federal Reserve. With required reserves reduced, reserves became less able to cushion against adverse clearings. The resulting increase in the likelihood that adverse clearings would force banks to scramble to

⁴² Other activities that would be permitted to financial bank holding companies: merchant banking activities; any activity in the United States that the Federal Reserve Board determines is usual in connection with banking overseas; and any other activity the Board determines to be financial in nature or incidental to financial activities.

⁴³ The Community Reinvestment Act of 1977 (CRA) calls on the federal banking agencies to encourage the institutions they supervise to help meet the credit needs in all sections of the local communities they are chartered to serve and requires the agencies to make public records of compliance with the CRA and to take into account CRA performance when considering applications for mergers and acquisitions.

⁴⁴ Sweep accounts link checking accounts, with a reserve requirement of 10%, with money market deposit accounts (MMDAs), which have a reserve requirement of zero and which allow up to 6 withdrawals per month. In a manner invisible to the account holder, the bank automatically sweeps all funds over some minimum level in the checking account into the MMDA. Funds are shifted back into the checking account to prevent its close-of-business balance from falling below zero. Through August 1998, checking accounts totaling about \$298 billion have been converted into sweep accounts.

find balances to avoid overdrafts could potentially make the federal funds rate more volatile.⁴⁵ Indeed, volatility did rise for a short time in the early 1990s, but since then banks have become more adept at working with lower reserve balances.

The role of M2. The relation between M2 and income became less predictable for a period in the early 1990s, as M2 velocity rose even as interest rates and the opportunity cost of M2 declined. This shift is likely to be in part attributable to growth of mutual funds, which compete with the components of M2 as vehicles for household savings. Although there has since been some re-establishment of a predictable relationship among M2, its opportunity cost, and income, it remains too weak to allow M2 to be considered as a monetary target or indicator. This influence of mutual funds on the behavior of M2 can be viewed as one in a long series of institutional changes beginning in the mid-1970s that have acted to place limitations on the monetary aggregates as guides to monetary policy.

4.2 The transmission of monetary policy

Some of the channels through which monetary policy is transmitted may have been strengthened somewhat, on balance, by the changes in the banking system and by the developments elsewhere in the financial sector over the last decade. For example, the increased securitization of loans has probably made some loan rates more sensitive to market developments, since loans must be competitively priced to be sold in capital markets. Thus, some bank borrowers may now find the cost of credit more sensitive to changes in monetary policy than previously. Also going in the direction of strengthening the effects of monetary policy actions has been growth of securities and equity holdings as a share of household wealth. This development should reinforce the “wealth effect” of monetary policy actions. For example, between 1988 and 1998, the ratio of household wealth to disposable income is estimated to have risen from 5.0 to 5.6. Moreover, the share of household wealth that is financial, including equity, has risen from about 71 to 80%. Thus, changes in the price of financial assets resulting from changes in monetary policy are likely to produce larger effects now than they did a decade ago.

Working in the other direction has been the weakening effect of the expansion of securitization on the “credit” channel of monetary policy. The credit channel focuses on the unique nature of some bank loan assets and asserts that, because central banks operate through the commercial banking system in their open market operations, banks and at least some of their customers are affected by changes in monetary policy by more than is captured in the resulting increase or decrease in short-term interest rates. The ability to securitize more and more bank assets, however, provides a way for banks to arrange for the provision of credit without having to expand their balance sheets. In addition, the Federal Reserve lowered to zero the reserve requirement on all nontransactions deposits in the early 1990s as part of its efforts to stimulate bank lending and economic activity at that time.⁴⁶ Thus, banks have substantial scope to raise funds to support asset expansion at the margin that is independent of the level of reserves in the banking system.

⁴⁵ Part of the solution to the problem which lower required reserves has caused for clearing needs has been for banks to hold additional reserves in the form of required clearing balances. These are reserves banks agree to hold voluntarily and that earn interest in the form of credits used to defray some costs of Federal Reserve services (such as check clearing). The statutory and clearing balance requirements are met on a two-week average basis, so that low reserve levels on a particular day can be made up for with higher holdings on another day of the maintenance period. Clearing needs, by contrast, must be met on a day by day basis.

⁴⁶ The reserve requirement on nonpersonal time deposits was reduced from 3% to zero, effective December 27, 1990. The reserve requirement on transactions deposits was reduced from 12 to 10%, effective April 2, 1992.

5. Conclusions

The US banking system has changed considerably over the last decade. It has simultaneously become more competitive and more profitable. While the length of the economic expansion following the 1990-91 recession evidently has given important support to banks' earnings, the numerous facets of the overall rise in profitability – lower loan provisioning, wider interest margins, and steady improvements in noninterest revenues and expenses – suggest some fundamental advances in the way many banks are managed. Increased competitive pressures associated with the persistent advance of interstate banking, culminating in the Riegle-Neal Act, doubtless have helped to raise managerial standards, and average performance levels ought to rise also as a result of less efficient banks being acquired by more efficient competitors. Banking also has been improved by the spreading practice of assessing and pricing loans on the basis of relative risk. Recent setbacks in Asian and other markets indicate that bank profits will fall from their lofty recent levels, at least for a while. Even so, the extended period of strong profits has contributed to high capital ratios, as have regulatory pressures. Changes to the regulatory structure contained in FDICIA – making it more market like – have made it harder for banks to take advantage of the safety net and made it more likely that troubled banks will be closed in a timely fashion.

While changes to the US banking system over the past decade have had only limited implications for monetary policy, they have raised a number of important regulatory questions. Banks' efforts to engage in regulatory arbitrage points up the problem inherent in setting appropriate capital standards in a broad fashion, and how to alter or replace the Basle 8% risk-based capital requirement is an area of much ongoing work. A step that has already been taken is allowing banks to use internal Value at Risk models to calculate risk-based capital requirements against specified risks in their trading accounts. This approach may point the way for further reliance on internal models, although much more work needs to be done before this can happen.⁴⁷ Another possible tool for improving regulatory control is the use of mandatory subordinated debt. Here, too, more work is necessary.

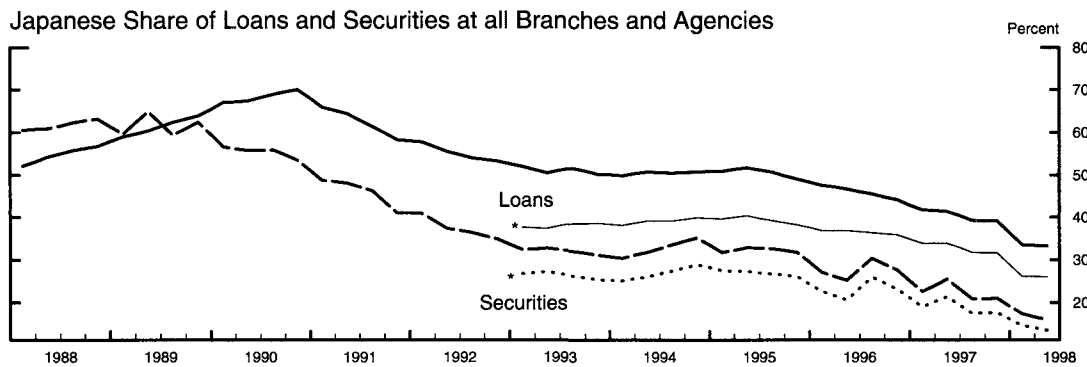
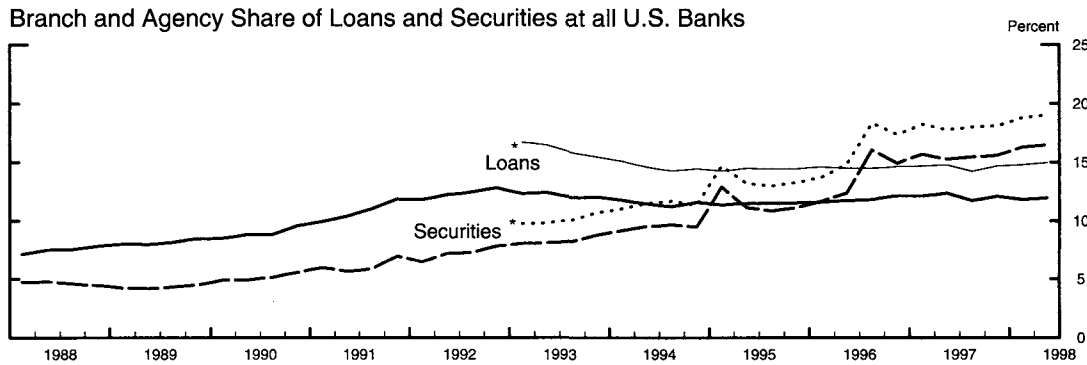
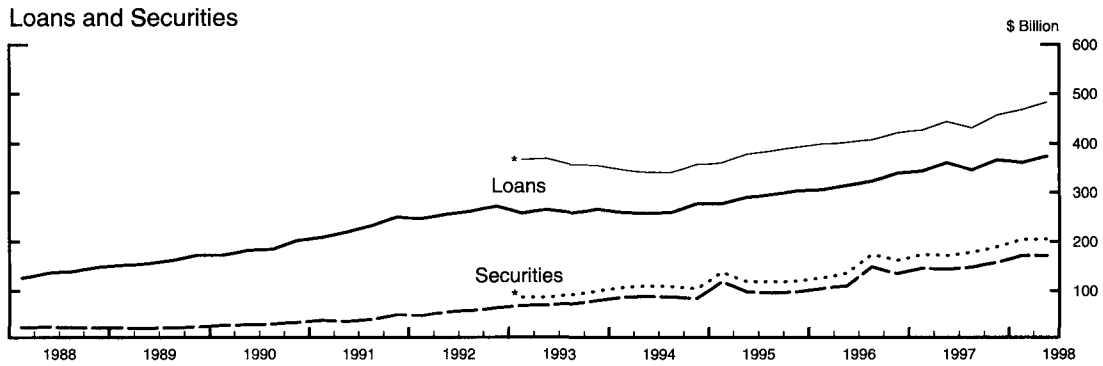
Mega-mergers, the growing complexity of banking, and pressures to expand banking powers, vividly illustrated in the Citicorp – Travellers Group merger, raise other regulatory issues. The direction the solutions take may already be foreshadowed in the concept of risk-focused regulation and the legislative ideas contained in H.R. 10. The need to address these problems likely will guide much of the research/regulatory agenda at the Federal Reserve and elsewhere over the coming decade.

⁴⁷ See Mingo (1998).

Appendix: loans and securities at US branches and agencies of foreign banks, 1988-98

The amount of bank credit supplied by US branches and agencies of foreign banks over the last decade has been distorted by shifts in the early 1990s of assets from the Caribbean offices of these institutions to their

Chart A-1
U.S. Branches and Agencies of Foreign Banks



Note: Securities are adjusted for the effects of FIN39.

* Includes loans and securities held at Caribbean offices managed or controlled by U.S. branches and agencies of foreign banks.

Source: FFIEC 002/002S.

US offices.⁴⁸ Much of the growth in branch and agency loans and the consequent rise in the share of these loans relative to loans made at all US banks – domestically chartered banks plus US branches and agencies of foreign banks – during the years 1990-92 reflect these shifts (Chart A-1). Balance sheet data for the Caribbean offices of branches and agencies only became available in 1993. Since then, the share of loans at branches and agencies relative to all US bank loans (inclusive or exclusive of claims on US nonbank residents booked at the Caribbean office) has declined on balance, although it has been fairly steady in recent years. The composition of branch and agency loans by nationality of parent bank has shifted, however, with the share of Japanese banks declining markedly, evidently in reflection of capital constraints at their parent banks.

In contrast to loans, the share of securities at branches and agencies has risen since 1993, particularly in recent years. This recent growth has been concentrated at several large European branches and agencies and has been in largely in their trading account securities.

⁴⁸ The shift was a response to the Federal Reserve's reduction from 3% to zero in the reserve requirement on nonpersonal time deposits in December 1990. US branches and agencies are subject to reserve requirements, but their offshore offices are not. Branches and agencies often use their US offices to offer the banking services of their offshore offices to their US customers. A remaining incentive to book business at offshore offices is state and local taxation. See Terrell (1993).

References

- Akhavein, J. D., A. Berger and D. B. Humphrey (1997): "The Effects of Megamergers on Efficiency and Prices: Evidence from a Bank Profit Function". *Review of Industrial Organization*, 12, pp. 95-139.
- Boyd, John H. and Mark Gertler (1995): "Are Banks Dead? Or, Are the Reports Greatly Exaggerated?" in *The (Declining?) Role of Banking*, Federal Reserve Bank of Chicago, pp. 85-117, Table 4.
- Berger, Allen N., Anil K. Kashyap and Joseph M. Scalise (1995): "The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been". *Brookings Papers on Economic Activity*, pp. 55-218.
- Berger, Allen (1998): "The Efficiency Effects of Bank Mergers and Acquisitions: A Preliminary Look at the 1990s Data", in Y. Amihud and G. Miller (eds.) *Bank Mergers and Acquisitions*, Kluwer Academic (Boston), pp. 79-111.
- Berger, Allen N. and Gregory F. Udell (1998): "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle". *Journal of Banking and Finance*, Vol. 22.
- Berger, Allen N., Rebecca S. Demsetz and Philip E. Strahan (1999): "The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future". *Journal of Banking and Finance*, Vol. 23, forthcoming.
- Brady, Thomas F., William B. English and William R. Nelson (1998): "Recent Changes to the Federal Reserve's Survey of Terms of Business Lending". *Federal Reserve Bulletin*, August.
- Calomiris, Charles W. (1997): "*The Postmodern Safety Net: Lessons from Developed and Developing Countries*". American Enterprise Institute.
- Cole, Rebel and John D. Wolken (1996): "Bank and Nonbank Competition for Small Business Credit: Evidence from the 1987 and 1993 National Surveys of Small Business Finances". *Federal Reserve Bulletin*, pp. 983-95, November.
- English, William B. (1996): "Historical Information on Bank Net Interest Margins". *Mimeo*, Federal Reserve Board, 11th April.
- English, William B. and William R. Nelson (1998): "Profits and Balance Sheet Developments at U.S. Commercial Banks in 1997". *Federal Reserve Bulletin*, June.
- Gertler, Mark (1995): comments on Berger et al. (1995), *Brookings Papers On Economic Activity*.
- Kwast, Myron L. (1996): "United States Banking Consolidation: Current Trends and Issues". Prepared for a presentation at the OECD, *mimeo*, November.
- Hancock, Diana (1998): "Summary of Subordinated Debt Proposals and Empirical Findings". *Mimeo*, Federal Reserve Board, 23rd June.
- Meyer, Laurence H. (1998a): *Statement before the Committee on Banking and Financial Services*, U.S. House of Representatives, 29th April.
- Meyer, Laurence H. (1998b): "Issues and Trends in Bank Regulatory Policy and Financial Modernization Legislation". Remarks delivered to the Bank Administration Institute, *Financial Accounting Management Conference*, Washington, D.C., 9th June.
- Meyer, Laurence H. (1998c): "Recent Developments in Banking and Financial Markets". Remarks delivered at the Financial Institutions Center, University of Tennessee, Knoxville, Tennessee, 18th September.
- Mingo, John J. (1998) "Policy Implications of the Federal Reserve Study of Credit Risk Models at Major US Banks". *Mimeo*, Federal Reserve Board, September.
- Mishkin, Frederic S. (1996): "Bank Consolidation: A Central Banker's Perspective". *NBER working paper*, No. 5849, December.

Terrell, Henry S. (1993): "U.S. Branches and Agencies of Foreign Banks: A New Look". *Federal Reserve Bulletin*, October.

Treacy, William F. and Mark S. Carey (1998): "Credit Risk Rating at Large U.S. Banks". *Federal Reserve Bulletin*, November.

Walls, L. D. (1998): "Alternative Rules for Subordinated Debt". *Mimeo*, Federal Reserve Bank of Atlanta.