The Bank Credit "Crumble"

by Ronald Johnson

The role played by cutbacks in commercial loan supply in the U.S. economic downturn in 1990 remains a matter of considerable contention. Most observers acknowledge that the recession contributed to a contraction in the demand for business credit. They also recognize that the recession's adverse effect on corporate creditworthiness could alone explain some tightening of bank credit conditions last year.[1] Issues still unresolved, however, are whether and to what extent the 1990 cutbacks in commercial loans reflected not merely lower demand and consistent application of credit standards but also reductions of credit availability to borrowers of a given quality.[2]

A contraction in the supply of commercial loans can result from a traditional *credit crunch*, a nonprice rationing of credit for broad classes of borrowers; a *credit crumble*, a deflation in asset prices; or a broad-based *shortage of bank capital.* In 1990, the latter two forces were at work.

Factors that traditionally set the stage for credit crunches were absent in 1990. Heightened monetary restraint and a run-up in market interest rates, the catalysts in previous crunches, did not materialize last year.[3] Moreover, banks did not experience disintermediation, because Regulation Q interest rate ceilings on saving accounts in banks and thrift institutions had been abolished in 1986.

By contrast, there is considerable evidence of the effects of a credit crumble in the U.S. commercial loan market in 1990. Credit crumbles when a decline in the value or quality of significant classes of bank loans or investments leads to a reduction in either the willingness or the capacity of banks to expand their lending.[4] As a result, firms of a given credit quality find their access to bank credit restricted. A 1990 credit crumble was in large part brought on by the drop in asset values and cash flows in commercial real estate, especially in the Northeast and Southwest, and by the collapse in leveraged buyouts.

Banks operating at low capital levels and those holding sizable amounts of troubled assets may have faced a shortage of capital to support asset growth, including commercial loans, in 1990. As a result, banks with weak capital may have reduced credit to borrowers of a given creditworthiness. Note that a low ratio of capital to

[1]The Federal Reserve's periodic Senior Loan Officers Opinion Survey indicates that banks tightened lending conditions through 1990 and continued into 1991. Some argue that this tightening was long overdue because the credit quality of U.S. corporations had, as Henry Kaufman notes, "deteriorated throughout the just-ended business expansion" in an unprecedented fashion. See Henry Kaufman, "The Great Debt Overload Will Keep the Recovery Feeble," *Fortune*, December 31, 1990, p. 23.

[2]See, for example, *Whether A "Credit Crunch" Exists in the New England or National Economy*, Hearing before the Subcommittee on General Oversight and Investigations of the House Committee on Banking, Finance and Urban Affairs, 101st Cong., 2d sess. (Washington D.C.: GPO, 1990).

[3]For a stimulating and insightful discussion of credit crunches in the post-World War II era, see Albert Wojnilower, "The Central Role of Credit Crunches in Recent Financial History," *Brookings Papers on Economic Activity*, 1980: 2, pp. 277-326.

[4]The concept of a credit crumble orignates with Irving Fisher's debt-deflation mechanism. See Irving Fisher, "The Debt Deflation Theory of Great Depressions," *Econometrica*, 1 (October 1933), pp.337-57. See also Ben Bernanke, "Nonmonetary Effects of the Financial Crisis in Propagation of the Great Depression," *American Economic Review*, March 1983, pp. 257-76.

assets can be the result of a previous policy of deliberate leveraging, unexpected problems with asset quality, or both. A downturn in the economy may expose the risks of low capitalization, which can show up in the risk premium attached to uninsured bank liabilities.

Any credit crumble and bank capital shortage in 1990 could only have been made worse by depressed bank share prices that rendered equity issuance virtually impossible. Thus, banks with troubled assets or inadequate capital may have been compelled to downsize their balance sheets—including retrenching their business lending—in order to stabilize their financial condition.

This article investigates the importance of the credit crumble and bank capital shortfalls in the contraction in commercial loan supply in 1990. Particular attention is given to the link between the strength of bank balance sheets and the recent slowdown in commercial and industrial loans to companies in the United States booked by banks in the United States.[5] The analysis reveals that the uneven pattern across banks in the slowdown in commercial lending growth can be only partly explained by the relative strengths and weaknesses in regional economic activity. A fuller explanation of the variation in rates of credit extension to businesses takes account of the financial strength of individual banks within regions.

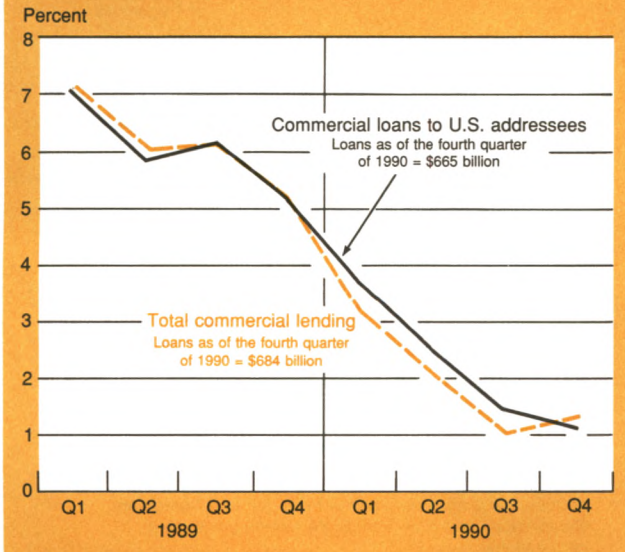
The article shows that banks with weak balance sheets accounted for all of the cutback in commercial lending from U.S.-owned banks in 1990. In the aggregate, only those U.S.-owned banks with weak balance sheets reduced their business lending, while those with strong balance sheets continued to lend. This pattern held true across geographic regions of weak and strong economic activity and across categories of bank size.

[5]These loans include commercial loans to U.S. addressees from U.S.-owned banks in the United States and their overseas branches and from foreign bank subsidiaries, foreign branches and agencies, Edge Act and Agreement Corporations, and New York State foreign investment corporations.

Chart 1

Growth in U.S. Commercial Loans

Four-Quarter Growth Rate



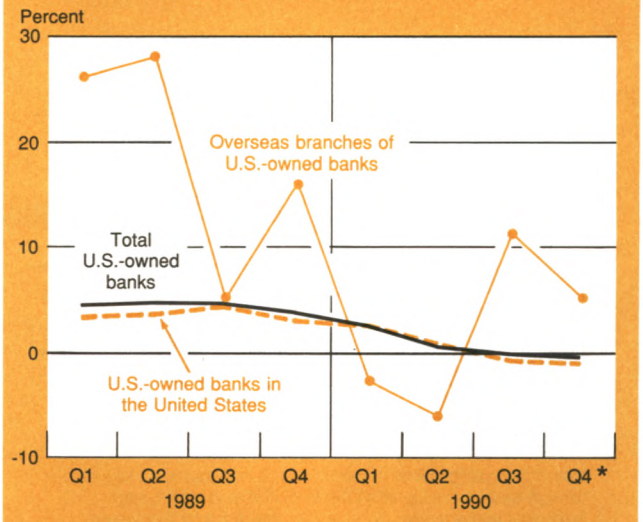
Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Total commercial lending excludes international banking facilities. In the fourth quarter of 1990, it includes commercial and industrial loans from all commercial banking institutions of $659 billion, loans from overseas branches of U.S.-owned banks of about $23 billion, and loans from overseas branches of foreign banks in the United States of roughly $2 billion. Commercial loans to U.S. addressees represent a subset of total commercial lending. Thus, for example, the fourth-quarter 1990 total is equal to total commercial lending minus loans to foreign addressees of $9 billion and banker's acceptances of $10 billion.

Chart 2

Growth in Commercial Loans from U.S.-owned Banks

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

Note: Sample consists of loans to U.S. addressees.

* Commercial loans to U.S. addressees in the fourth quarter of 1990 break down as follows: total from U.S.-owned banks, 71 percent ($473 billion); from U.S.-owned banks in the United States, 68 percent ($450 billion); and from overseas branches of U.S.-owned banks, 3 percent ($23 billion).

Commercial loan growth in 1990

The recent weakness in the economy has undoubtedly had a depressing effect on the demand for business credit and on corporate credit quality. If the decline in commercial loan growth were attributable entirely to falling loan demand and consistent application of credit standards at the onset of the recession, then particularly weak loan growth at a bank should largely reflect a particularly weak regional economy. But if the decline also stems from cutbacks in the supply of loans to businessess, then weak loan growth at a bank would also be closely related to the strength of bank balance sheets.

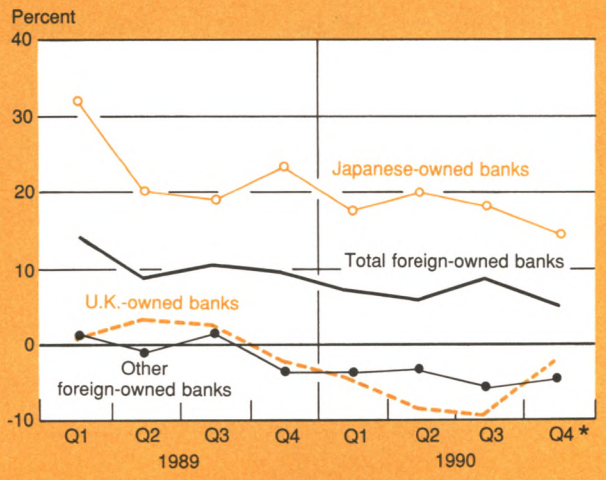
All commercial loans

The growth in total commercial and industrial (C&I) loans from commercial banks to firms in the United States slowed from 5.2 percent in 1989, on a fourth

Chart 3

Growth in Commercial Loans from Foreign-owned Banks

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

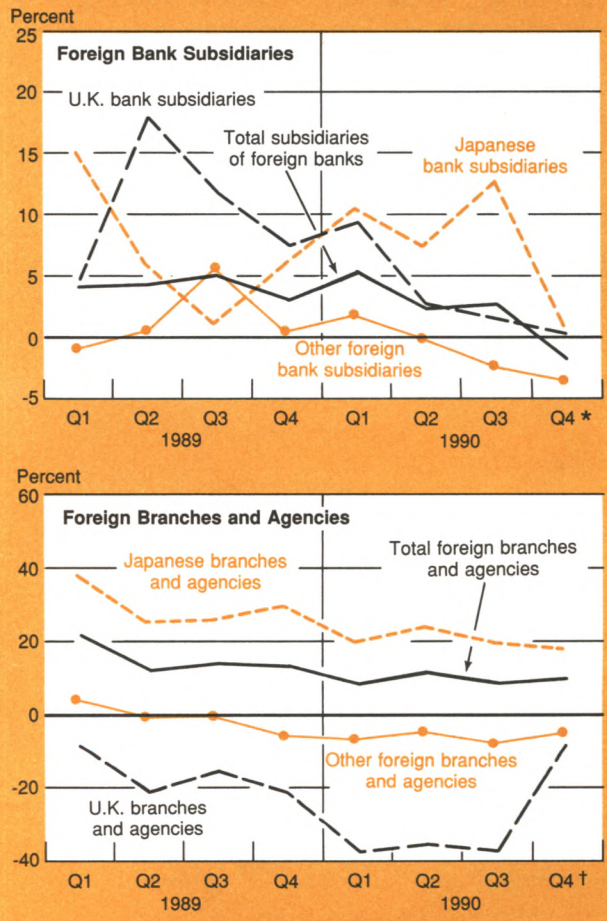
Note: Sample consists of loans to U.S. addressees and includes foreign bank subsidiaries in the United States and foreign branches and agencies as well as Edge Act and Agreement Corporations and New York State foreign investment corporations.

* Commercial loans to U.S. addressees in the fourth quarter of 1990 break down as follows: total from foreign-owned banks, 29 percent ($191 billion); from Japanese-owned banks, 17 percent ($111 billion); from U.K.-owned banks, 2 percent ($13 billion); and from other foreign-owned banks, 10 percent ($67 billion).

Chart 4

Growth in Commercial Loans from Foreign Banking Institutions in the United States

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: The data on Japanese and U.K. bank subsidiaries in the United States are adjusted for the Japanese takeover of U.K.-owned Union Bank in the fourth quarter of 1988. Foreign branches and agencies include Edge Act and Agreement Corporations and New York State foreign investment corporations.

* Commercial loans to U.S. addressees in the fourth quarter of 1990 break down as follows: total from foreign bank subsidiaries, 9 percent ($60 billion); from Japanese bank subsidiaries, 3 percent ($19 billion); from U.K. bank subsidiaries, 1 percent ($10 billion); and from other foreign bank subsidiaries, 5 percent ($32 billion).

† Commercial loans to U.S. addressees in the fourth quarter of 1990 break down as follows: total from branches and agencies, 19.6 percent ($131 billion); from Japanese branches and agencies, 13.8 percent ($92 billion); from U.K. branches and agencies, 0.5 percent ($3 billion); and from other foreign branches and agencies, 5.3 percent ($35 billion).

quarter-to-fourth quarter basis, to 1.2 percent in 1990 (Chart 1).[6] It is quite interesting, however, that U.S.-owned banks as a group have been withdrawing from business lending, while foreign-owned banks in the United States as a group have continued to lend.

Commercial loans at U.S.-owned banks

Total outstanding commercial loans from U.S.-owned banks in the United States and their overseas branches (71 percent of C&I loans to U.S. firms) declined slightly in 1990 after rising almost 4 percent in 1989, on a fourth quarter-to-fourth quarter basis (Chart 2). U.S.-owned banks excluding overseas branches (68 percent of C&I loans to U.S. firms) reduced their outstanding loans almost 1 percent in 1990 on a fourth-quarter to fourth-quarter basis, while continued, though uneven, growth in lending from overseas branches of U.S. banks offset the decline in stateside lending only slightly.

Commercial loans at foreign-owned banks

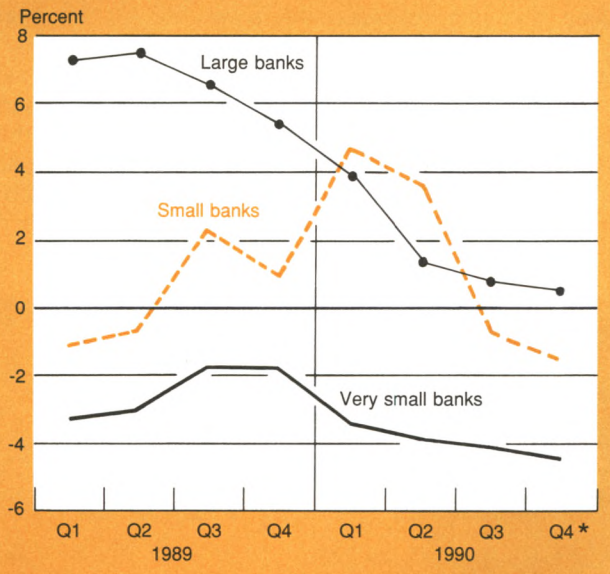
As U.S.-owned banks retrenched their business lending, foreign-owned banks (29 percent of C&I loans to U.S. firms) as a group continued to lend, albeit at a somewhat slower pace. As Chart 3 indicates, commercial loans from foreign-owned banks rose about 6 percent in 1990, down from the almost 10 percent growth

[6] C&I loans from commercial banks to firms in the United States totaled $665 billion in the fourth quarter of 1990. This figure was obtained by summing 1) $659 billion of C &I loans booked at U. S. commercial banking institutions (although the Federal Reserve Statistical Release H.8 (510) Series estimates this aggregate at $651 billion based on the weekly reporting banks), 2) $23 billion of loans from overseas branches of U.S.-owned banks, and 3) about $2 billion of loans from overseas branches of U.S.-chartered foreign banks in the United States; and then subtracting $9 billion of loans to foreign addressees and $10 billion of banker's acceptances.

Chart 5

Growth in Commercial Loans from U.S.-owned Banks by Bank Size

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees. Large banks have assets of $1 billion or more, small banks have assets between $300 million and $1 billion, and very small banks have assets of less than $300 million.

* Commercial loans to U.S. addressees in the fourth quarter of 1990 break down as follows: from large banks, 54 percent ($356 billion); from small banks, 6 percent ($41 billion); and from very small banks, 11 percent ($76 billion).

Table 1

Growth in Commercial Lending and Employment by Federal Reserve District in 1990-IV

Employment Growth (Estimated 1990 Percent in Parentheses)		Commercial Lending Growth (Percent) Decline	Rise
Weak employment districts			
Boston	(−3.3)	−14.9	
New York	(−1.4)	−1.3	
Philadelphia	(−0.0)	−4.5	
Moderate employment districts			
Chicago	(0.4)		3.1
Richmond	(0.4)		3.4
Atlanta	(0.9)		1.9
St. Louis	(1.2)		2.7
Dallas	(1.3)	−8.0	
Strong employment districts			
Cleveland	(1.6)	−2.2	
Minneapolis	(1.6)	−3.0	
San Francisco	(1.7)		5.1
Kansas City	(2.0)		0.0

Sources: Bureau of Labor Statistics; Federal Financial Institutions Examination Council, Reports of Condition.

Notes: The commercial lending sample consists of loans to U.S. addressees from U.S.-owned banks. Districts are ranked by employment growth from the weakest to the strongest. District employment growth is the weighted average of state employment growth rates. For states that are split by district lines, statewide employment growth contributes to the average of two districts, with weights reflecting the population distributions. In 1990, on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, moderate employment districts posted between 0 and 1.5 percent growth, and strong employment districts posted growth in excess of 1.5 percent.

rate posted in 1989. In particular, Japanese-owned banks (17 percent of C&I loans to U.S. firms) increased their business loans by more than 14.5 percent in 1990. U.K.-owned banks and other foreign-owned banks, however, have been reducing their lending to U.S. businesses since 1989.

Within the category of foreign-owned banks in the United States, however, there are some clear distinctions in lending growth between foreign-owned bank subsidiaries and the branches and agencies of foreign banks (Chart 4). Most strikingly, subsidiaries of foreign banks as a group have sharply reduced their commercial lending growth, while branches and agencies of foreign banks as a group have slowed loan growth only slightly. This fact is not surprising, however, given that the balance sheets of foreign bank subsidiaries, especially with regard to the proportion of real estate loans, resemble the balance sheets of U.S.-owned banks.

The pattern of commercial lending growth from branches and agencies of foreign banks was also quite uneven in 1990. Japanese branches and agencies slowed commercial loan growth only slightly, recording a still high 19 percent growth rate for 1990. Branches and agencies of the United Kingdom and other foreign countries, however, had been reducing their U.S business loan exposures at least since early 1989.

Summary

Commercial loans to firms in the United States showed an across-the-board slowdown in 1990. On its face, this finding appears consistent with the view that in 1990 *only* recession-induced effects on business credit demand and on corporate credit quality mattered. If this view is correct, however, it is hard to understand why U.S.-owned banks, in aggregate, cut back their business lending in the United States last year, while foreign-owned banks—particularly Japanese branches and agencies—increased their lending and thus their share of the U.S. commercial loan market.

Commercial loan retrenchment and regional economic activity

This section provides some perspective on the relationship between commercial loan retrenchment by U.S.-owned banks and regional economic activity. This relationship can be observed when banks are grouped by size and by Federal Reserve district. Although the measures used are not precise, they indicate that business loan retrenchment by U.S.-owned banks was not solely concentrated in weak economic regions.

Growth in commercial loans extended by U.S.-owned banks decelerated throughout 1990, regardless of the size of the bank (Chart 5). Small-scale banks (encompassing "small banks" and "very small banks"), with less than $1 billion in assets, reduced their outstanding commercial loans last year. Large banks, with more than $1 billion in assets, recorded only a very modest increase in their business lending in 1990.

Growth in commercial lending by small-scale banks may have a particularly close relationship with economic activity in a given region. One reason is that loans by small-scale banks are more geographically concentrated. Moreover, large banks often tie up a portion of their business-lending capacity in the form of

Table 2

Real Estate Loan Quality Ratios by Bank Size and by Regional Employment Growth

	Real Estate Loan Quality Ratio (Real Estate Ratio in Percent; Commercial Loans as of 1990-IV in Parentheses)		
Bank Classification	High-Quality Portfolio	Low-Quality Portfolio	Total
Weak employment districts			
Small banks	9 ($2.5 billion)	90 ($2.9 billion)	53 ($5.4 billion)
Large banks	11 ($18.7 billion)	86 ($111.0 billion)	75 ($129.7 billion)
Moderate and strong employment districts			
Small banks	10 ($17.3 billion)	57 ($4.4 billion)	20 ($21.7 billion)
Large banks	13 ($109.4 billion)	56 ($93.6 billion)	33 ($203.0 billion)

Sources: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of U.S.-owned banks. In 1990, on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, and moderate and strong employment districts posted zero-to-positive growth. Small banks have assets between $300 million and $1 billion, and large banks have assets of $1 billion or more. Low-quality portfolios have a ratio of nonaccrual plus delinquent real estate loans to tier 1 capital that exceeds 25 percent.

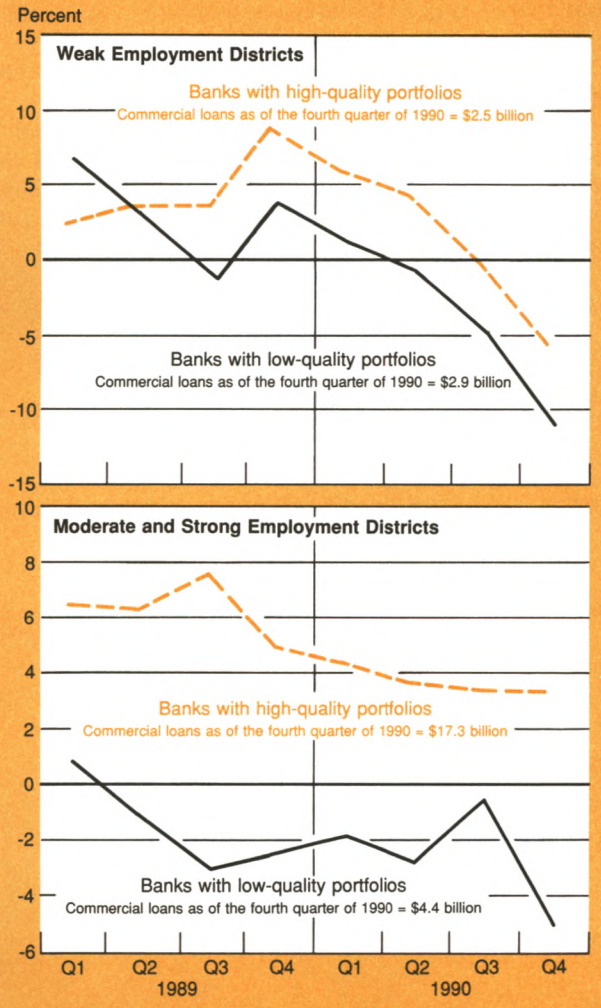
loan commitments in support of commercial paper. In contrast, business lending by small-scale banks may be targeted more directly at the working capital needs of local businesses and thus may show a greater sensitivity to the fortunes of the local or regional economy.

Evidence of the relationship between the current economic slowdown and the decline in commercial lending by Federal Reserve district can be pieced together by examining employment growth in different parts of the country. Using employment growth as a measure of regional economic activity, one finds that the shrinkage in commercial loans outstanding in 1990 was not concentrated solely in the regions that posted the weakest economic activity (Table 1). To be sure, all three of the

Chart 6

Growth in Commercial Loans from Small U.S.-owned Banks by Real Estate Loan Quality

Four-Quarter Growth Rate



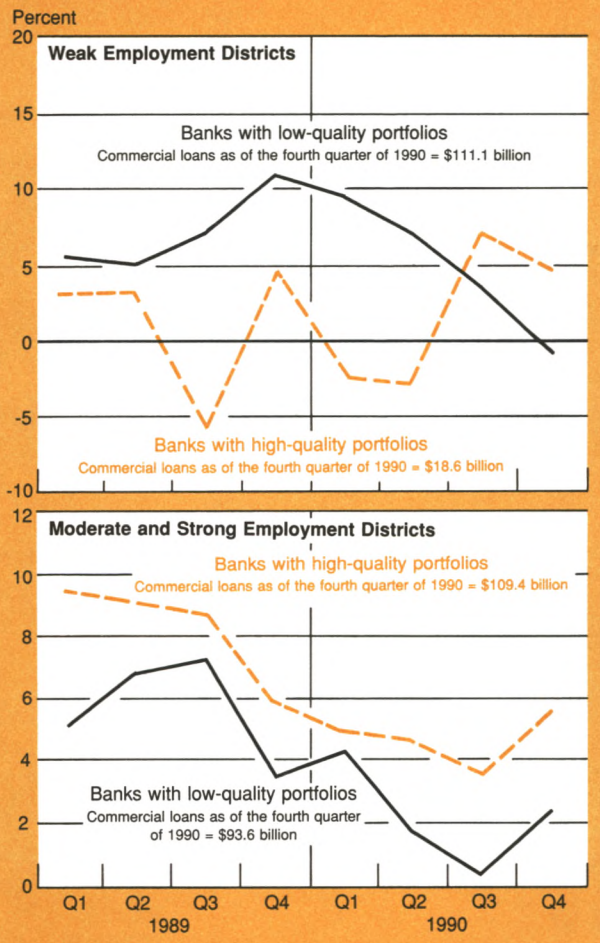
Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees from banks with assets between $300 million and $1 billion. Low-quality portfolios have a ratio of nonaccrual plus delinquent real estate loans to tier 1 capital that exceeds 25 percent.

Chart 7

Growth in Commercial Loans from Large U.S.-owned Banks by Real Estate Loan Quality

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees from banks with assets of $1 billion or more. Low-quality portfolios have a ratio of nonaccrual plus delinquent real estate loans to tier 1 capital that exceeds 25 percent.

Federal Reserve districts showing job losses in 1990 (Boston, New York, and Philadelphia) also reported shrinkage in commercial loans outstanding in 1990 on a fourth quarter-to-fourth quarter basis. At the same time, however, three other districts posting job gains last year (Cleveland, Dallas, and Minneapolis) also recorded contractions in commercial loans outstanding.

Table 3

Change in Commercial Lending Growth from 1989 to 1990 and Real Estate Loan Quality

Bank Classification	Change in Commercial Loan Growth (Percentage Points)	
	High-Quality Portfolios	Low-Quality Portfolios
Weak employment districts		
Small banks	−14.7	−14.7
Large banks	−0.1	−11.8
Moderate and strong employment districts		
Small banks	−1.6	−2.5
Large banks	−0.4	−1.1

Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Table shows change in the four-quarter growth rate of commercial lending from the fourth quarter of 1989 to the fourth quarter of 1990. Sample consists of U.S.-owned banks. In 1990, on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, and moderate and strong employment districts posted zero-to-positive growth. Small banks have assets between $300 million and $1 billion. Large banks have assets of $1 billion or more. Low-quality portfolios have a ratio of nonaccrual plus delinquent real estate loans to tier 1 capital that exceeds 25 percent.

Commercial lending growth and bank balance sheet characteristics

This section examines the link between the strength of bank balance sheets and commercial loan growth to measure the effect of a credit crumble and bank capital shortfalls on the ability of banks in 1990 to make commercial loans. The strength of a bank's balance sheet is measured in three ways: 1) the quality of the bank's real estate portfolio at end-1990, 2) the bank's capital ratio at end-1990, and 3) the stability of the bank's Standard and Poor's bond rating in 1990.[7]

To isolate the effect of supply cutbacks, it is necessary to control for the downward shift in the demand for business credit. Unfortunately, a straightforward way to control for demand shifts is only available for the first two measures of the strength of bank balance sheets (the quality of the bank's real estate portfolio and the bank's capital ratio). In both cases, banks are sorted by the condition of their regional economies and by their size. Banks in weak districts—districts with negative

[7]The commercial loan sample size for both the real estate loan quality ratio and the bank capital ratio is $27.1 billion for small banks and $332.7 billion for large banks in the fourth quarter of 1990. These samples represent 67 percent (94 percent) of all C&I loans to U.S. firms from small (large) U.S.-owned bank in the fourth quarter of 1990. In the case of Standard and Poor's bond ratings, the sample consists of fifty-one bank holding companies with commercial loans of $313 billion in the fourth quarter of 1990, representing 47 percent of C&I loans to U.S. firms.

Table 4

Bank Capital Ratios by Bank Size and by Regional Employment Growth

Bank Classification	Bank Capital Ratio (Capital Ratio in Percent; Commercial Loans as of 1990-IV in Parentheses)		
	Well-Capitalized Banks	Low-Capital Banks	Total
Weak employment districts			
Small banks	12 ($4.5 billion)	7 ($0.9 billion)	11 ($5.4 billion)
Large banks	10 ($71.6 billion)	7 ($58.1 billion)	9 ($129.7 billion)
Moderate and strong employment districts			
Small banks	15 ($20.9 billion)	7 ($0.8 billion)	15 ($21.7 billion)
Large banks	10 ($149.5 billion)	7 ($53.5 billion)	9 ($203.0 billion)

Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of U.S.-owned banks. In 1990, on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, and moderate and strong employment districts posted zero-to-positive growth. Small banks have assets between $300 million and $1 billion, and large banks have assets of $1 billion or more. Capital is measured on a risk-weighted basis. Low-capital banks have less than the 8 percent capital that is required as of December 31, 1992.

employment growth on a 1990 fourth quarter-to-fourth quarter basis—form one group; banks in moderate-to-strong districts—districts with zero to positive employment growth—form another. The analysis is performed in terms of the growth in commercial loans and the *change* in commercial lending growth from 1989 to 1990 to check for the robustness of the findings. A more formal test of the robustness of the findings that employs the analysis of variance procedure is also presented in the appendix.

Banks' real estate loan quality and lending to business

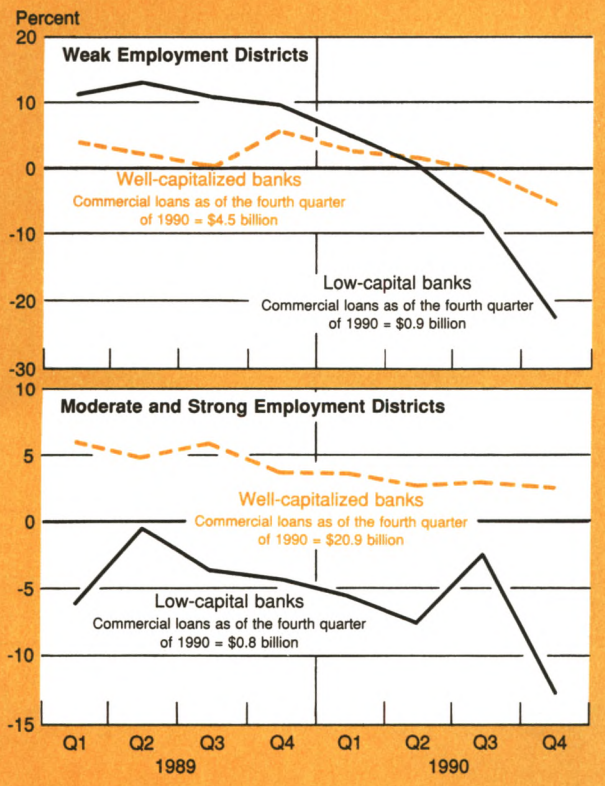
The real estate loan quality ratio is introduced to capture, at least in part, the effect of the credit crumble on the commercial lending capacity of banks. This ratio is obtained by dividing nonaccruing real estate loans (those for which interest is recorded only as received) plus delinquent real estate loans by tier 1 capital.[8] The sample is then sorted into banks with real estate loan quality ratios above 25 percent and banks with ratios below 25 percent. Note that within the category of banks with troubled real estate portfolios, problem property loans bulk much larger in relation to capital at

[8]Tier 1 capital for bank holding companies includes common equity, minority interests in equity accounts of consolidated subsidiaries, and qualifying perpetual preferred stock. Perpetual preferred stock is limited to 25 percent of tier 1 capital.

Chart 8

Growth in Commercial Loans from Small U.S.-owned Banks by Bank Capital

Four-Quarter Growth Rate



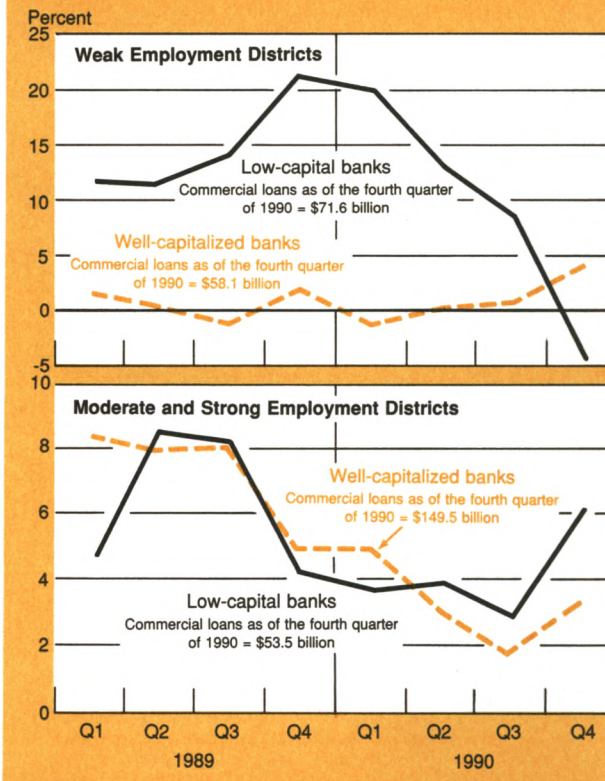
Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees from banks with assets between $300 million and $1 billion. A capital requirement of 8 percent becomes effective on December 31, 1992.

Chart 9

Growth in Commercial Loans from Large U.S.-owned Banks by Bank Capital

Four-Quarter Growth Rate



Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees from banks with assets of $1 billion or more. A capital requirement of 8 percent becomes effective on December 31, 1992.

those banks located in districts with weak employment growth than at the banks in districts with stronger growth (Table 2). Further, note that the dollar share of large bank commercial loans extended by large banks with serious real estate loan problems far exceeds the share of small bank commercial loans extended by small banks with serious real estate loan problems.

The effect of a credit crumble on the U.S. commercial loan market in 1990 is quite clear. Chart 6, which groups small banks by the quality of their real estate portfolios, shows that in both weak and moderate-to-strong districts, commercial lending by small banks with high-quality real estate portfolios has been growing faster than the lending by small banks with low-quality portfolios. Similarly, Chart 7, which groups large banks by the quality of their real estate portfolios, demonstrates that in moderate-to-strong districts, commercial lending by large banks with high-quality portfolios has been growing faster than the lending by large banks with low-quality portfolios. Table 3 provides evidence of the change in commercial lending growth: it shows that, except for small banks in weak districts, banks with low-quality portfolios slowed the growth of their commercial loans to a greater extent than did banks with high-quality portfolios.

Table 5

Change in Commercial Lending Growth from 1989 to 1990 and Bank Capital

Bank Classification	Change in Commercial Loan Growth (Percentage Points)	
	Well-Capitalized Banks	Low-Capital Banks
Weak employment districts		
Small banks	−10.5	−31.8
Large banks	2.3	−25.9
Moderate and strong employment districts		
Small banks	−1.4	−8.3
Large banks	−1.6	1.9

Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Chart shows change in the four-quarter growth rate of commercial lending from the fourth quarter of 1989 to the fourth quarter of 1990. Sample consists of U.S.-owned banks. In 1990 on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, and moderate and strong employment districts posted zero-to-positive growth. Small banks have assets between $300 million and $1 billion. Large banks have assets of $1 billion or more. Capital is measured on a risk-weighted basis. Low-capital banks have less than the 8 percent capital that is required as of December 31, 1992.

Banks' capitalization and lending to business

Bank capital is measured as the ratio of shareholders' equity and certain long-term debt to risk-adjusted assets. Note that well-capitalized small banks have higher capital ratios than large banks regardless of the condition of their regional economies and that low-capital banks account for a much smaller proportion of small bank commercial loans (Table 4).

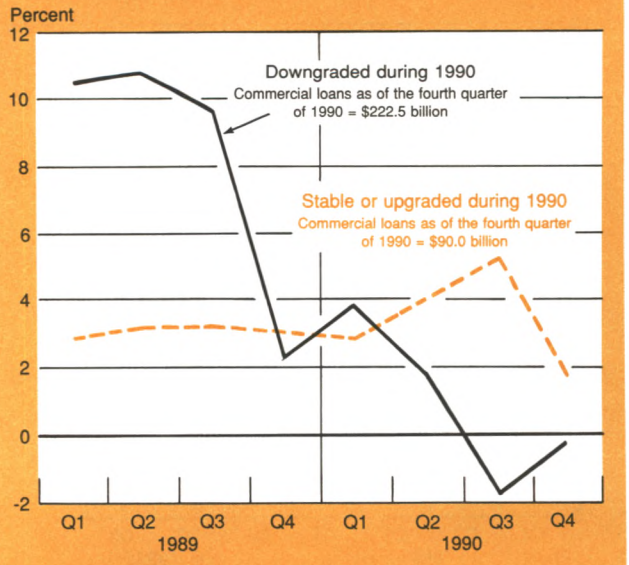
In general, bank capital shortfalls appear to have constrained commercial lending growth in 1990. In weak employment districts, small banks with low capital have cut back their lending by much more than banks with capital levels exceeding 8 percent (Chart 8). In moderate-to-strong employment districts, low-capital small banks have reduced their loans, while well-capitalized small banks have continued to increase lending.

Before 1990, large banks with low capital had been increasing their commercial loans faster than large banks with high capital in the weak employment districts but, starting in 1990, they began to slow their loan

Chart 10

Growth in Commercial Loans from Bank Holding Companies by Stability of Standard and Poor's Bond Rating

Four-Quarter Growth Rate



Sources: Federal Financial Institutions Examination Council, Reports of Condition; Standard and Poor's Corporation, Bank Compustat.

Notes: Sample includes fifty-one bank holding companies assigned Standard and Poor's bond ratings for 1990. Thirty-six bank holding companies had downgraded ratings and fifteen had stable or upgraded ratings.

growth sharply, and by the fourth quarter of 1990 they were actually shrinking their business loans (Chart 9). As in the case of large banks grouped by the quality of their real estate portfolios, the lending behavior of low-capital and well-capitalized banks in the moderate-to-strong employment districts is similar. For the weak and moderate-to-strong districts taken together, there was virtually no growth in commercial lending by large banks with low capital, while loans from well-capitalized large banks increased by more than 3 percent. Moreover, with the exception of large banks in moderate-to-strong employment districts, banks with low capital slowed their commercial loan growth more than banks with high capital (Table 5).

Bank debt ratings and lending to business

Pressure on banks from the money and capital markets is measured by whether a bank's debt was downgraded by Standard and Poor's in 1990. Grouping bank holding companies by the stability of their Standard and Poor's ratings in 1990 confirms the previous finding that the quality of bank portfolios is linked to the decline in business credit. Chart 10 shows that downgraded banks for the most part have been reducing their business loans. The weight of the evidence is particularly strong for banks that ended 1990 rated AA (Table 6). In addition, note that banks rated A or above with stable or upgraded ratings have continued to show positive commercial loan growth.

Summary and conclusions

In 1990, the pattern of the slowdown in U.S. commercial lending growth across banks was quite uneven. Nevertheless, despite the inconsistency in commercial loan extensions last year, certain clear-cut trends emerged. For example, in aggregate, U.S.-owned banks reduced their business loans, while foreign-owned banks continued to extend business credit at a relatively fast pace.

Even among U.S.-owned banks, only *certain* groups of banks have cut back on their business loans. When U.S.-owned banks are grouped by size, only banks with assets under $1 billion posted reductions in business credit. When U.S.-owned banks are grouped by Federal Reserve district, only six districts (Boston, Dallas, Philadelphia, Minneapolis, Cleveland, and New York), accounting for 32 percent of C&I loans to U.S. firms, posted declines in their 1990 commercial lending.

The article's main conclusion is that both a cutback in the supply of loans and the effects of the current economic slump contributed importantly to the uneven pattern across U.S.-owned banks in the extension of commercial loans in 1990. As is typical during recessions, the demand for business credit waned and the

Table 6

Growth in Commercial Lending from Bank Holding Companies in 1990 by Stability of Standard and Poor's Bond Rating

	Growth in Commercial Loans in 1990 (Percent)	
Bond Rating	Downgraded in 1990	Stable or Upgraded in 1990
AAA		5.2
AA	−7.0	3.4
A	6.5	4.0
BBB	−5.3	−4.8
Non-investment grade	−9.7	
Total	−0.3	2.0

Sources: Standard and Poor's, Bank Compustat; Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of loans to U.S. addressees. Thirty-six bank holding companies had their ratings downgraded one or more steps in 1990. Fifteen bank holding companies had rating upgrades or stable ratings in 1990.

Table 7

Growth of Commercial Lending in 1990 by U.S.-owned Banks

(Percent)

Bank Characteristics	Weak Employment Districts	Moderate and Strong Employment Districts
Real estate loan quality ratio		
High-quality	3.4	5.2
Small banks	−5.9	3.3
Large banks	4.7	5.5
Low-quality	−1.1	2.0
Small banks	−11.1	−5.0
Large banks	−0.8	2.4
Bank capital ratio		
Well-capitalized	3.4	3.2
Small banks	−5.3	2.1
Large banks	4.2	3.3
Low-capital	−5.0	5.7
Small banks	−22.7	−12.8
Large banks	−4.7	6.1

Source: Federal Financial Institutions Examination Council, Reports of Condition.

Notes: Sample consists of U.S.-owned banks. In 1990, on a fourth quarter-to-fourth quarter basis, weak employment districts posted negative growth, and moderate and strong employment districts posted zero-to-positive growth. Small banks have assets between $300 million and $1 billion. Large banks have assets of $1 billion or more. Low-quality portfolios have a ratio of nonaccrual plus delinquent real estate loans to tier 1 capital that exceeds 25 percent. Capital is measured on a risk-weighted basis. Low-capital banks have less than the 8 percent capital that is required as of December 31, 1992.

riskiness of borrowers' projects and overall financial conditions increased. The effect of the recession on the U.S. commercial loan market last year is quite clear. For example, as Table 7 shows, the growth of commercial loans from banks in weak employment districts was generally much lower than the growth in commercial lending from banks in strong employment districts.

A falloff in the supply of business loans occurred last year as banks with weakened balance sheets restricted lending. The evidence is most striking for large banks in weak employment districts and small banks in moderate-to-strong employment districts. In both cases, banks with weak balance sheets reduced their outstanding commercial loans, while banks with strong balance sheets increased their outstanding loans.

In the case of small banks in weak employment districts and large banks in moderate-to-strong employment districts, commercial lending by those banks with weak balance sheets has more closely resembled the pattern of lending by banks with strong balance sheets. Nonetheless, with the exception of low-capital large banks in moderate-to-strong employment districts, banks with weak balance sheets posted lower growth in commercial loans on a fourth-quarter 1990 basis than did banks with strong balance sheets.

It appears that the contraction in commercial loan supply in 1990 was precipitated by both a credit crumble and bank capital shortfalls. The evidence suggests that the credit crumble, as measured by bank exposure to bad real estate, was the more important of the two factors last year. Banks with the lowest lending growth in 1990 on average had greater exposure to bad real estate loans on a fourth quarter-to-fourth quarter basis. The article also indicates that the effects of both the credit crumble and the bank capital shortages are most pronounced in weak economic conditions.

On balance, therefore, the evidence is consistent with the view that both recession-related factors and diminished lending capacity at certain banks were at work in the U.S. commercial loan market in 1990. Recession-related factors included a decline in the demand for loans because of weak economic conditions and a tightening of credit stemming from the application of customary standards of creditworthiness to borrowers whose financial condition had deteriorated from the recession. In addition, diminished bank lending capacity reduced the supply of credit from certain classes of banks to borrowers of a given credit quality.

Appendix: A Test of the Significance of Bank Balance Sheet Effects

The findings reported in the text on the contraction of commercial loan supply in 1990 were obtained by grouping banks by particular balance sheet characteristics and then examining each group's 1990 commercial lending growth. Although these findings offer evidence that the group of banks with weak balance sheets have on balance retrenched their commercial loans while the group of banks with strong balance sheets have on balance continued to lend, it is not evident that the identified differences in bank lending behavior are significant. To address this issue, a formal test of the statistical significance of the article's findings is made.

This section examines whether the differences observed in 1990 commercial lending growth between banks with contrasting balance sheet characteristics are indicative of actual differences. The procedure employed is generally known as the analysis of variance and involves a comparison of the weighted-average fourth-quarter 1990 growth of commercial lending from banks grouped by economic region, size, and the strength of their balance sheets. The procedure uses the F-statistic as a summary measure to test whether the estimated group averages are distinct. The analysis determines whether the estimated test statistic, which is designed to compare the 1990 commercial lending behavior of banks whose balance sheets are weak with that of banks whose balance sheets are strong, is significant. A significant F-statistic indicates that there was a meaningful difference in the lending behavior of banks grouped by the strength of their balance sheets in 1990.

The estimated F-statistics and their associated confidence levels are shown in the table. For the most part, the identified differences in the lending behavior of banks grouped by their balance sheet characteristics are significant. Oddly enough, insignificant test statistics are found only in the case of comparisons of commercial lending growth by bank capital ratio. For both small banks in weak employment districts and large banks in moderate-to-strong employment districts, the estimated test statistics comparing commercial lending are insignificant.

Summary of Test Results Comparing Commercial Lending Growth for Banks with Different Balance Sheet Characteristics

	Real Estate Loan Quality Ratio		
Bank Classification	Degrees of Freedom (Numerator, Denominator)	F-Statistic	Confidence Level (Percent)
Weak employment districts			
Small banks	267, 83	1.9	99
Large banks	78, 144	2.2	99
Moderate and strong employment districts			
Small banks	34, 36	23.0	99
Large banks	53, 32	4.0	99

	Bank Capital Ratio		
Bank Classification	Degrees of Freedom (Numerator, Denominator)	F-Statistic	Confidence Level (Percent)
Weak employment districts			
Small banks	334, 15	1.8	83
Large banks	34, 188	2.8	99
Moderate and strong employment districts			
Small banks	61, 9	4.5	97
Large banks	67, 18	1.9	86

Sources: Federal Financial Institutions Examination Council, Reports of Condition.