

Economic Commentary

ISSN 0428-1276

Trends in Long-Term Commercial Bank Lending

by Gary Whalen

Interest rates rose to unusually high levels in 1980, fluctuating widely and sharply throughout the year. The prime rate reached an unprecedented high of 20 percent in April, fell to 11 percent in July, then climbed to a historical high of 21 percent in December. Unexpectedly large fluctuations in interest rates create problems for commercial banks, since their profitability crucially depends on their net interest margins—the difference between their interest income and expense. Margins change as earning asset and liability volumes, maturities, and rates are adjusted in response to actual and expected market rate changes.

Commercial banks traditionally borrow short, often at fixed rates; this strategy, however, is potentially dangerous if market rates rise unexpectedly to very high levels. Higher risks stemming from more volatile movements in interest rates have forced commercial banks to alter their traditional pricing and asset-liability management policies. Although various adjustments in these areas have been under way for some time, evidence suggests that commercial banks have made strenuous efforts since 1979 to protect their margins from the effects of high and variable interest rates.¹ This *Economic Commentary* explores recent changes in long-term commercial bank

1. Although it is implicitly assumed that bank balance sheets are adjusted at the initiative of bank management, it is recognized that customers' preferences influence balance sheet changes as well.

lending and loan pricing that reflect this adjustment process.

Impact of Rate Changes on Net Interest Margins

The shorter the average maturity of an institution's fixed-rate instruments and the greater the proportion of its assets or liabilities bearing floating vs. fixed rates of interest, the more rapidly average asset or liability rates can be adjusted in response to market rate changes. Short-maturity instruments roll over frequently and thus bear rates that approximate market rates. Similarly, floating-rate instrument rates are, by contract, adjusted periodically to current market levels prior to final maturity. Short-maturity and floating-rate assets or liabilities are accordingly called *rate-sensitive*.

A rough measure of a commercial bank's exposure to interest-rate changes in the short run can be constructed by comparing the institution's volumes of rate-sensitive assets (RSAs) with rate-sensitive liabilities (RSLs). If a bank's volume of RSAs exceeds its volume of RSLs, the net interest margin of the institution will rise as market rates rise, since a greater proportion of assets than liabilities bear rates that will adjust to changes in market rates in the short run. Conversely, if the volume of RSLs exceeds the volume of RSAs, the institution's net interest margin will deteriorate in the short run as market rates rise. While the short-run

changes in the *ex ante* spread between the average rate on term loans above the prime relative to the same measure of funds for all banks, large banks, and small banks over the same interval. Changes in the spread between the average rate on loans made at rates above the prime and the average prime rate for all sample banks, large banks, and small banks over the 1979-80 period are shown in chart 3.

Ex ante spreads generally widened after August 1979, except during the first quarter of 1980 (see charts 1 and 2). This appeared to be true particularly for loans at rates above the prime—loans presumably made to smaller, marginal borrowers and hence entailing more risk. Similar spread changes were evidenced at both large and small banks. Small banks have attempted to widen spreads on riskier loans at rates above the prime, as shown in charts 2 and 3. Generally 80 percent or more of all term loans were at rates above the prime (see table 1).

Conclusions

In summary, commercial banks altered both their long-term lending and loan pricing practices over the 1979-80 interval

in a manner suggesting an adjustment required to offset interest-rate risks stemming from asset-liability mismatch. Sufficient evidence has not been collected to determine whether these adjustments have effectively insulated margins at banks.⁷ Small banks exhibited more marked adjustments. This might reflect differences in initial asset-liability mismatch, goals or preferences for risk, access to other risk reduction techniques, competitive pressures, or other reasons. Long-term lending and pricing practices obviously changed in 1980. Borrowers desiring term loans from banks, particularly from smaller banks, would be prepared to accept the interest-rate risk that accompanies floating-rate loans.

7. There is some evidence that they did not. A recent article in *American Banker* reported that net income of the top 100 banks in the United States grew 9.6 percent in 1980, the lowest rate of increase since 1976. The impact of interest rates on margins was cited as the culprit. See Teresa Carson, "Bank Earnings Show Smallest Gain since 1976; Interest Margins Cited," *American Banker*, January 26, 1981.

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Chart 2 Average Rate on Above-Prime Loans Minus Expected Funds Cost

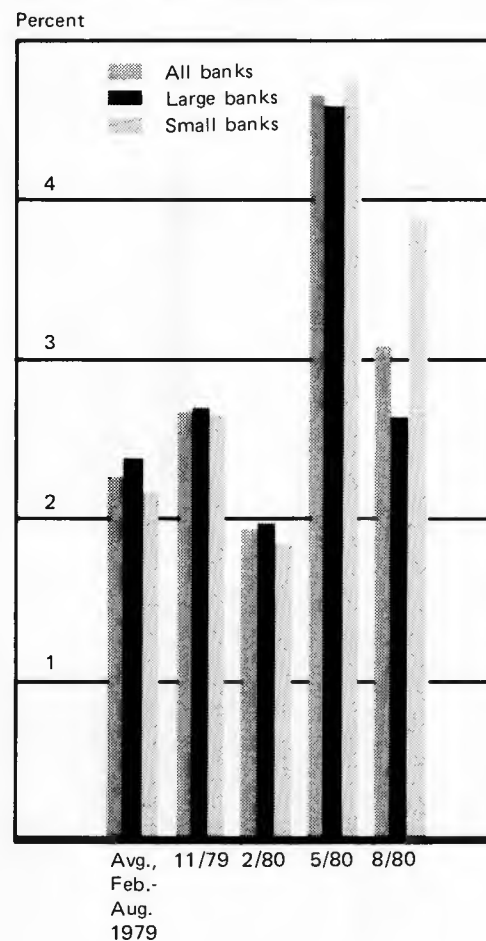
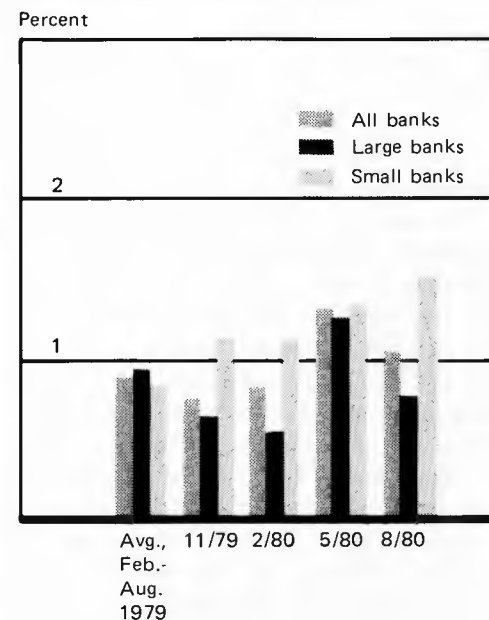


Chart 3 Average Rate on Above-Prime Loans Minus Average Prime Rate



the floating-rate convention to shield themselves from rate-induced margin impacts. Smaller banks exhibited much sharper asset adjustments after August 1979. In addition to booking more term loans at floating rates, long-term loan volume fell absolutely and relative to total loans, and loan maturities on both fixed- and floating-rate loans were sharply reduced.

Changes in Loan Pricing

Banks also may attempt to offset perceived interest-rate risks by increasing rates on long-term commercial loans relative to expected funding costs. Suggestive evidence drawn from the surveys of terms of lending appears in charts 1 through 3. Chart 1 shows changes in the *ex ante* spread between the average rate on all term loans and a measure of the expected cost of funds for all sample banks, large banks, and smaller banks over the 1979-80 interval.⁶ Chart 2 illustrates

6. The spreads calculated are rough approximations to expected or *ex ante* target bank-lending margins and should not be construed as representing the actual margins realized. The funds cost proxy was the six-month CD rate average over the survey month and two previous months.

The data suggest that banks altered at least the loan portion of their asset portfolios over the 1979-80 period. The most notable changes were the decreased proportion of long-term loans beginning in February 1980, the shortened average loan maturities, and the increased use of the floating-rate convention on term loans. The adjustment in lending behavior was most marked when market rates were highest and sharply rising, specifically in the second quarter of 1980. By August 1980, however, there was some evidence of a reversal in these behavioral changes.

Examination of the changes broken down by size class of responding banks reveals differential adjustments at large vs. small banks. Large banks mainly utilized

margin impact produced by a given change in rates will be directly related to the size of the RSA-RSL imbalance, the precise magnitude of the impact will depend on the exact rate-maturity profile of a particular institution's assets and liabilities. The long-run impact of a given change in market rates on a bank's interest margin due to RSA-RSL mismatch depends on the speed at which any sensitivity imbalance can be adjusted in the appropriate direction.

Commercial banks traditionally have been liability-sensitive (RSLs have exceeded RSAs), although asset/liability postures have varied among banks and even at the same bank over the interest-rate cycle. In the past decade, commercial banks have relied increasingly on short-term, interest-sensitive liabilities as permanent sources of funds, a trend that accelerated with the introduction of six-month money market certificates in mid-1978. By deliberately decreasing the proportion of RSAs in their portfolios, banks typically have attempted to lock in high yields in periods in which interest rates were expected to decline. Consequently, when interest rates increased unexpectedly, margins were squeezed as bank interest expense rose faster than interest income.

Such behavior was not necessarily a problem in the past, when rates were more stable and the relationship between short-term and long-term rates was more predictable. As long as a liability-sensitive posture resulted in margins that were positive on average, this strategy may have been profit-maximizing and worth the risk. Because it is more difficult to forecast interest rates in the current environment, and because short-term rates have remained above long-term rates for extended periods, penalties for inappropriate portfolio composition are more probable and will be more severe.

Banks may alter their behavior in many ways to mitigate rate-generated, adverse impacts on margins. On the asset side, banks might attempt to reduce the volume of term loans in their portfolios and/or

increase the proportion of long-term loans bearing floating vs. fixed rates of interest. They can adjust securities portfolios in a similar manner. On the liability side, banks might attempt to increase the proportion of their liabilities bearing fixed rates and/or extend liability maturities and so achieve a closer match between RSAs and RSLs.

Other margin-preserving options exist. Banks could react to greater perceived rate risk due to asset/liability mismatch by widening the average margin between their lending rates and expected cost of funds. Alternatively, banks might choose to hedge perceived rate risks stemming from RSA-RSL imbalances through the use of the interest-rate futures market.

Although various adjustment strategies are possible, the easiest, and hence most probable, reaction to volatile rates should be asset adjustments and pricing changes. The other adjustments noted previously are generally more difficult. Liability adjustments are constrained by the preferences of suppliers of funds for rate-sensitive instruments. Bank utilization of the interest-rate futures market tends to be limited by the difficulty of effectively integrating futures trading operations with traditional asset-liability management, the absence of a market for bank-liability futures, and the required accounting treatment of futures hedges, which can produce unacceptable fluctuations in reported net income.² By comparison, the asset adjustments noted earlier would decrease bank exposure to interest-rate fluctuations, while permitting banks to retain operational flexibility.³ Raising lending rates relative to funding costs is also feasible, because all competing

2. The dominant problem is the last. Losses from futures hedges must be recognized immediately, while gains can be deferred. For a discussion of this problem, see Sanford Rose, "A Plea for Accounting Reform," *American Banker*, December 16, 1980.

3. Interest-rate risk is not eliminated by these adjustments; it is shifted to borrowers.

Table 1 Terms of Lending on Long-Term Commercial and Industrial Loans

Lending characteristics	Average, February-				
	August 1979	November 1979	February 1980	May 1980	August 1980
All banks					
Loan volume, millions	1485	1646	1886	1340	1803
Long-term loans as percent of total ^a	14.4	16.2	14.9	9.7	11.0
Floating rate, percent	52.6	71.7	65.6	74.0	67.7
Weighted average maturity—all loans ^b	50.0	48.5	43.2	42.8	45.8
Floating-rate loans	41.0	49.6	42.8	42.5	44.3
Fixed-rate loans	53.3	45.7	41.3	43.7	49.2
Loans under commitment, percent	49.2	63.3	71.4	71.1	72.6
Loans at rates above the prime, percent	89.4	77.5	84.0	72.1	91.9
Large banks					
Loan volume, millions	615	1031	1095	830	1099
Long-term loans as percent of total ^a	15.0	19.5	15.6	13.7	11.3
Floating rate, percent	76.7	86.5	80.3	85.0	80.2
Weighted average maturity—all loans ^b	42.9	54.6	47.2	46.6	51.1
Floating-rate loans	39.1	53.6	46.1	44.6	48.4
Fixed-rate loans	55.5	61.0	51.6	57.7	61.9
Other banks					
Loan volume, millions	870	616	792	510	704
Long-term loans as percent of total ^a	13.0	11.1	14.0	6.6	10.7
Floating rate, percent	35.7	46.9	45.4	56.0	48.2
Weighted average maturity—all loans ^b	50.0	38.3	37.7	36.7	37.6
Floating-rate loans	44.1	37.3	35.1	37.3	33.7
Fixed-rate loans	52.4	39.1	36.7	35.9	41.7

a. Total loans include all loans reported except agricultural loans.

b. All loan maturities in months.

financial intermediaries face similar rate-related risks.⁴

Evidence of Changes in Long-Term Lending

Changes in long-term commercial and industrial bank lending behavior should indicate whether banks have adjusted their loan-pricing behavior in response to volatile interest rates. Suggestive evidence on these adjustments can be drawn from quarterly surveys of the terms of bank lending conducted by the Federal Reserve Board. These

4. Although space considerations and data availability do not permit examination of lending and pricing changes in this article, there is some suggestive evidence that RSLs were reduced over the past year. Quarter-to-quarter changes in managed liabilities at commercial banks in billions beginning with the fourth quarter of 1979 were +\$8.6, +\$10.6, -\$3.2, and -\$12.0, respectively.

surveys of the lending terms of a representative sample of 340 commercial banks are completed during the first business week of February, May, August, and November of each year. Because interest rates have been particularly volatile since the third quarter of 1979, the terms of lending in the four quarterly surveys following August 1979 are compared with the average terms reported in the first three quarterly surveys conducted in 1979. Selected aspects of long-term lending practices are presented in table 1, both for all sample banks and for two size classes so that differential adjustments may be discerned.

All Sample Banks

The survey data for all banks generally indicate that the expected asset adjustments have been occurring over the past several quarters. The volume of long-term loans

was below the 1979 three-quarter average in two subsequent quarters. Further, the proportion of long-term loans fell below the 1979 reference point beginning in May 1980. The proportion of long-term loans at floating rates was considerably higher than the 1979 three-quarter average in all subsequent quarters.

The average maturity of all types of loans shortened as expected, and it was below the reference point average in all subsequent surveys. There are two possible explanations of why the maturity shortening was not greater. First, the sharp increase in floating-rate loans may have effectively shortened long-term loan maturities and thus served to protect margins.⁵ In comparing the average maturities of floating-rate and fixed-rate loans, it was found that the average maturity of floating-rate loans was higher than the reference point level in all subsequent quarters. The average maturity of fixed-rate loans, however, exhibited the expected sharp decrease. Second, a large and increasing proportion of loans were made under commitments in 1979 and 1980, and so loan term adjustments to changes in current economic conditions may have been somewhat constrained.

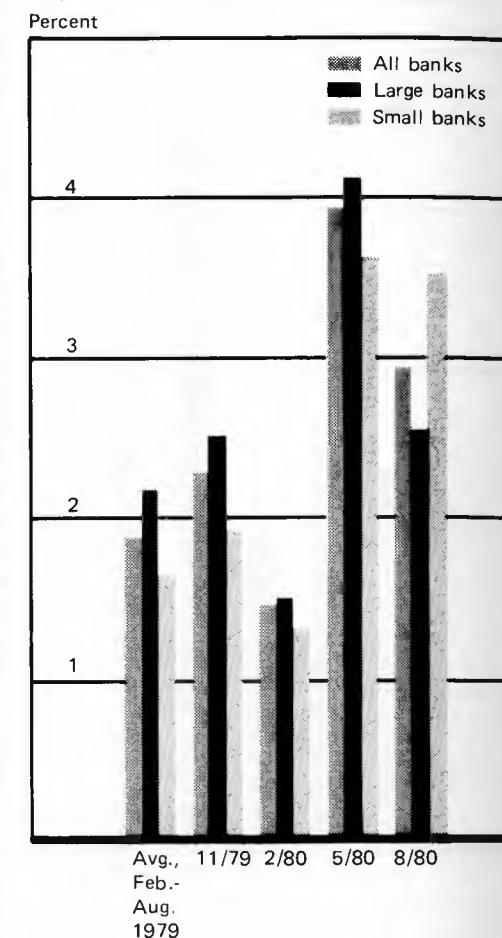
Large vs. Small Banks

The volume of long-term loans at large responding banks was above the reference point level in all subsequent quarters, while the opposite was true for smaller banks. Although the proportion of long-term loans did not sharply decrease at large banks after the third quarter of 1979, it was below the reference point level by May 1980. At smaller banks this proportion generally was below the reference level in the subsequent quarters.

These developments may reflect the relatively greater utilization of floating-rate loans at large banks. While the proportion of floating-rate loans changed

5. The effective maturity of a floating-rate loan is the interval between periodic loan rate adjustments.

Chart 1 Average Loan Rate Minus Expected Funds Cost



similarly and predictably at both classes of banks (increasing and remaining above the reference point level in all subsequent periods), the proportion at larger banks was substantially above that at smaller banks in all periods.

There are also obvious differences in changes in average maturities. Average maturities at large banks rose after August 1979 to levels above those at smaller banks. This was generally true for both floating-rate and, surprisingly, fixed-rate loans. At smaller banks, average maturities fell below reference point levels in November 1979 and remained below these levels in all subsequent periods. This was true for both rate classes of loans, although the adjustment was much sharper for fixed-rate loans, as expected.