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Business Loans and Banks: Is This Cycle Unusual?

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In every previous economic expansion business loans at commercial banks have increased immediately after the trough in business activity. However, in the first year of the current expansion, business loans at all commercial banks declined $7.6 billion. The decline in 1975 was not generally predicted; in fact, most financial economists were predicting increases in business borrowing. Not only did business loans decline in 1975, but there has been subsequent weakness in their recovery behavior. Business borrowing declined at the large banks in every quarter for almost two years past the trough. Many bankers and financial analysts have attributed the weakness in business loans to "soft" loan demand.[1]

Because of the relatively unexpected weakness in business loans and consequent expectations of an imminent rebound, it is possible that bankers may have maintained more liquid portfolios than if they had correctly anticipated business loan behavior. In this article a model of business loan behavior is presented that tracks quite well the path of bank loans to businesses in the current expansion. To the extent that it continues to perform well, the model should aid bankers in formulating expectations about future business loan behavior.

Earlier studies of business loans indicate that demand factors—such as weakening business investment in inventories and in structures and equipment, as well as increasing corporate cash flows—have played a dominant role in the explanation of the recent weakness in business loans.[2] Contrary to these studies, the model of business loan behavior presented here indicates that supply factors, particularly the size of bank portfolios, have been as important as demand factors in explaining weak business loan growth at commercial banks. Moreover, because the basic demand and supply factors affecting business loans have a differential impact in the business loan markets of large banks and small banks, predictions of total business loans are improved when calculated on the basis of the separate large-bank and small-bank markets.

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1. Tom Herman, "New York Banks' Loan Demand Still Soft As Many Concerns Turn to Other Sources," *Wall Street Journal*, February 10, 1978, p. 18.

2. Among many articles on the subject, see R. Alton Gilbert, "Bank Financing of the Recovery," *Review*, Federal Reserve Bank of St. Louis, July 1976, pp. 2-9, and see Maury N. Harris, "The Weakness of Business Loans in the Current Recovery," *Monthly Review*, Federal Reserve Bank of New York, August 1976, pp. 208-14, and "An Econometric Examination of Business Loan Behavior," Federal Reserve Bank of New York, Research Paper no. 7615 (New York, 1976). Details regarding previous models and their forecasts can be found in Harris' research paper and are summarized in Appendix A.

Business loan behavior in the current cycle

In this section the major reasons for the apparently unusual weakness in business loans in the current business cycle are summarized. Details of the explanation and of the model on which it is based are provided in subsequent sections of the article. The level of business borrowing from banks depends on both the demand for funds by businesses and the supply of funds at banks. In prior business cycle expansions, demand and supply have interacted in such a way that the amount of bank loans to business always increased after a business cycle trough. However, in the most recent expansion business loans declined from their March 1975 trough level and did not regain that level until almost two years later.

This apparent anomaly in the behavior of business borrowing can be traced to the large weekly reporting banks (Chart 1). Following the business cycle trough in March 1975, business loans at other banks—"small" banks—never declined; moreover, these loans followed a pattern similar to those in previous expansions (Chart 2). Compared with the situation in the previous recovery and contrary to widely held belief, inventory investment (a factor affecting business loan demand) did not have a substantially different effect on business loans at the large banks in the latest business cycle recovery. However, cash flows at nonfinancial businesses were relatively large and, therefore, did contribute to a weakening in business loans. A final factor contributing to business loan weakness on the demand side was relatively low commercial paper rates, which caused a shifting of some business financing to the commercial paper market.

In addition to these demand factors, a major source of weakness in business loans was on the supply side. At the large banks there was a marked weakness in the total amount of funds available for loans and investments. While any one bank may vary the size of its earning asset portfolio by liability management, for all banks the size of the aggregate portfolio is limited by the volume of reserves supplied to the banking system by the Federal Reserve. In the latest economic expansion, reserves were supplied less freely than in the previous expansion, most likely because of the Federal Reserve System's concern about inflation.

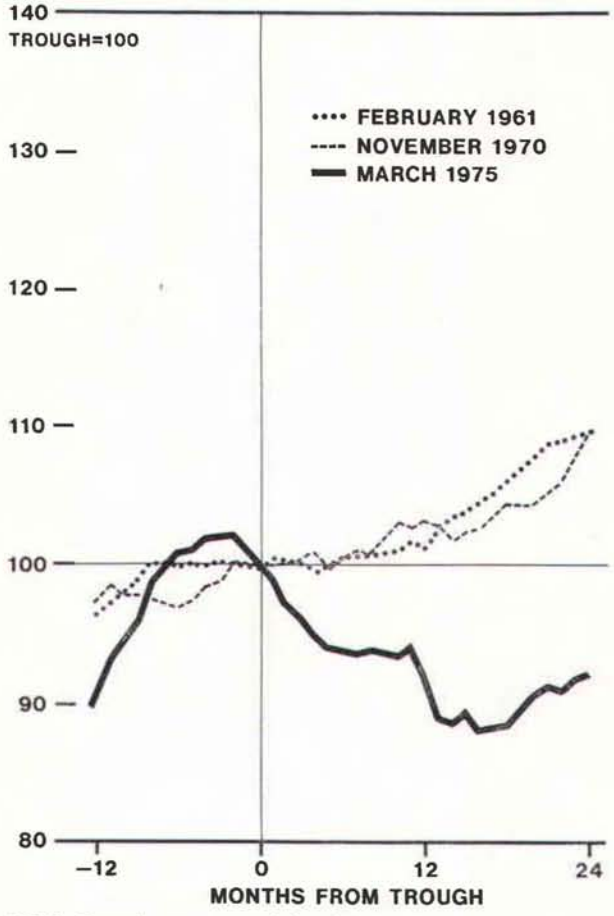
There also has been an unusual cyclical pattern in the proportion of business loans to total earning assets. As a peak in business activity approaches, business loans as a proportion of earning assets usually rise; as a trough approaches, the proportion falls. In the early stages of the ensuing expansion, the proportion of business loans to total earning assets usually sinks further, and for over two years it may not regain the level at the trough of the business cycle. An exception to the general pattern occurred in the last recession, when business loan ratios at the large banks increased from the peak of the business cycle to two months before the trough—rather than following the usual pattern of decreasing as the trough approaches (Chart 3). Total earning assets at the large banks increased more in 1974 than in the previous recession. This increase stimulated business loans but not enough to prevent the usual decline in the ratio. According to the model, a major factor causing the large-bank business loan ratio to rise in the last recession was unusually large increases in business inventories.

Contrary to prior studies, the model of business loan behavior presented here indicates that supply factors, particularly the size of bank portfolios, have been as important as demand factors in explaining weak business loan growth at commercial banks.

In contrast to the large banks, the behavior of the business loan-total earning asset ratio at small banks preceding the business cycle trough was similar to prior experience (Chart 4). It has been the recovery period that has been unusual for the small banks. Even though the *level* of business loans never declined at the small banks in this recovery, the proportion of business loans relative to total earning assets at these banks declined more than usual and remained lower than usual. Unlike prior experience, 24 months after the business cycle trough the ratio of business loans to total earning assets was still less than the ratio at the trough. The factors other than total earning assets operating to increase small-bank business loans in late 1976 and early 1977 relative to the previous cycle just about offset the factors operating to decrease them. But since total earning assets increased more than in the earlier cycles, the ratio of business loans to total earning assets fell in the latest recovery relative to the previous recovery.

Unusual business loan weakness in the latest expansion attributable to large-bank market . . .

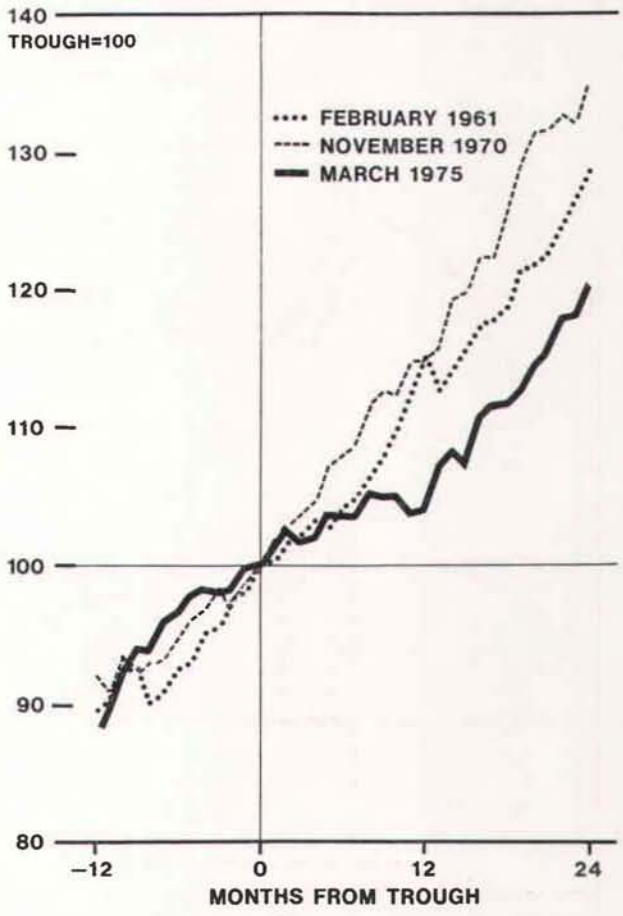
CHART 1. Large-Bank Business Loans Relative to Levels at Business Cycle Troughs



NOTE: Based on commercial and industrial loans of weekly reporting U.S. banks.
SOURCE: Federal Reserve Bank of St. Louis.

. . . whereas business loans at smaller banks increase as in previous expansions

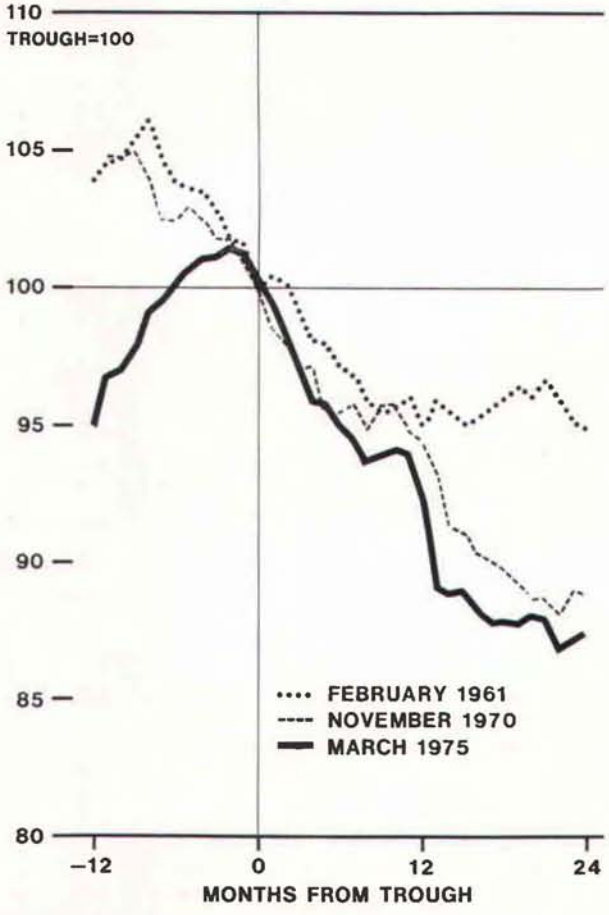
CHART 2. Small-Bank Business Loans Relative to Levels at Business Cycle Troughs



NOTE: Based on commercial and industrial loans of all U.S. commercial banks less those of the weekly reporting banks.
SOURCES: Federal Reserve Bank of St. Louis. Federal Reserve Bank of Dallas.

Behavior of large-bank portfolios unusual in the most recent recession . . .

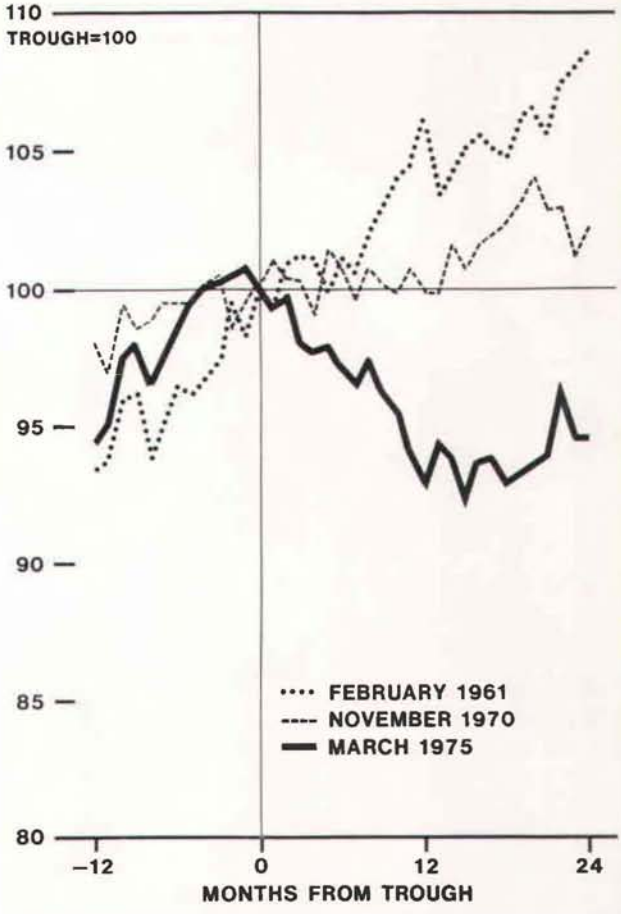
CHART 3. Ratio of Large-Bank Business Loans to Total Loans and Investments Relative to Ratios at Trough of Business Cycles



NOTE: Based on data for weekly reporting U.S. banks.
SOURCES: Board of Governors, Federal Reserve System.
Federal Reserve Bank of St. Louis.
Federal Reserve Bank of San Francisco.

. . . whereas small-bank portfolios resemble behavior in previous recessions

CHART 4. Ratio of Small-Bank Business Loans to Total Loans and Investments Relative to Ratios at Trough of Business Cycles



NOTE: Based on data for all U.S. commercial banks less data for the weekly reporting banks.
SOURCES: Board of Governors, Federal Reserve System.
Federal Reserve Bank of St. Louis.
Federal Reserve Bank of San Francisco.
Federal Reserve Bank of Dallas.

Small banks usually experience an upturn in their portfolio allocation to business loans sooner than the large banks. This expansion is no different; the ratio of business loans to total earning assets for small banks turned up after March 1977 and reached the level of the previous business cycle trough in July 1977. However, three years into the current expansion, the large-bank ratio of business loans to total earning assets has still not moved up. For the large banks the business loan ratio has remained depressed late in the recovery, essentially because commercial paper rates have been lower than bank interest rates and corporate cash flows have improved.

In summary, business loan behavior in the current business cycle has been unusual only in the sense that the basic factors underlying the demand for and supply of business loans have behaved differently. Business loans in the recent recession would not have increased so rapidly had it not been for rapid inventory accumulation. Business loans in this recovery have been relatively weak mainly because of strong corporate cash flows, modest short-term nonbank rates relative to the prime rate, and relatively weak total earning assets. Moreover, one important factor operating in this recovery to constrain the banking system's total earning assets was the relatively sparse provision of bank reserves by the Federal Reserve System.

The business loan market

Using a very simple balance sheet for nonfinancial businesses, these firms can be characterized as financing positions in cash, inventories, or fixed capital by means of loans from commercial banks, other liabilities, and net worth. Given inventories (INV) and fixed capital (CAP), the level of bank loans demanded by business firms (BL^d) depends on the interest rate charged by banks (the prime rate, r_p), the interest rate charged for other types of liabilities firms can issue (the commercial paper rate, r_{cp}, and the long-term bond rate, r_{Aaa}), and net worth (NW).[3] It is possible that business firms do not adjust their bank loans completely to equilibrium values within one period. This partial adjustment may be the result of incomplete information and transactions costs. As a result, some portion of the volume of loans desired but not undertaken in the current period will be undertaken in the next period. Consequently, the past level of loans (BL_{t-1}) affects the demand function for loans in the current period.[4]

The quantity of business loans demanded from banks varies inversely with the prime rate. However, the demand for business loans varies positively with interest rates on other types of liabilities, the level of business inventories, the level of fixed capital, and the level of lagged business loans. It varies negatively with net worth. In equation form, the demand for business loans at commercial banks is:

$$(1)\quad BL^d = d_0 + d_1 r_p + d_2 r_{cp} + d_3 r_{Aaa} + d_4 INV + d_5 CAP + d_6 NW + d_7 BL_{t-1}.^5$$

Turning to the banking sector, banks can be characterized as financing positions in cash, loans, and securities by means of deposit liabilities and net worth. The banks are assumed to allocate their deposit liabilities and net worth less cash (hereinafter called the portfolio constraint variable) among securities and loans. An increase in the size of this portfolio constraint will increase holdings of both loans and securities.[6] Consequently, the amount of business loans banks desire to supply to the business community depends positively on the volume of the portfolio constraint. The portfolio constraint can be measured either as the sum of deposit liabilities plus net worth less cash or as total loans and securities. The second approach is followed here, and thus the abbreviation for the portfolio constraint variable is TLI.

3. The level of cash holdings is determined once we know all the other magnitudes on the balance sheet. Because the business firms borrowing from the smaller banks are presumably small and may not have access to the corporate Aaa bond market, the Baa interest rate is used to measure the long-term bond rate in the demand function facing small banks.

4. Another reason for including this variable is the bank-customer relationship. Business firms may borrow more today, other factors being equal, in order to assure themselves of future loan availability. Consequently, current loan demand depends on expected future loan levels. If future loan levels are a function of the past loan level, then BL_{t-1} is an explanatory variable in the demand equation. The bank-customer relationship was introduced to the literature by Donald R. Hodgman, "The Deposit Relationship and Commercial Bank Investment Behavior," *Review of Economics and Statistics* 43 (August 1961): 257-68. It was extensively discussed and tested by J. H. Wood, *Commercial Bank Loan and Investment Behaviour*, Wiley Monographs in Applied Econometrics (London and New York: John Wiley & Sons, 1975).

5. Coefficients d_2, d_3, d_4, d_5, and d_7 have positive values, while d_1 and d_6 are negative; d_0 may have either sign.

To the extent that a bank responds to an increase in business loan demand by selling more liabilities, a portion of the portfolio constraint variable (deposit liabilities plus net worth less cash) becomes endogenous. If this were true for all banks, we could not be sure whether an increase in the aggregate portfolio constraint variable led to an increase in business loans or vice versa. However, deposit liabilities and, thus, total earning assets for the whole banking system are importantly constrained by the total amount of reserve money supplied by the Federal Reserve System. That the assumption of an exogenous portfolio constraint variable (TLI) is a reasonable assumption is confirmed by the two-stage least-squares estimates reported in Appendix B. These two-stage estimates attribute at least as much importance to the supply effects of total earning assets as do ordinary least-squares estimates.[7]

Given the portfolio constraint variable, the amount of funds allocated by commercial banks to business loans is also determined by what the banks can charge on the loans (the prime rate, r_p) and what the banks could earn on alternative investments (represented by the Treasury bill interest rate, r_T). When the prime rate increases and other factors remain the same, banks will increase the quantity of business loans supplied. When the Treasury bill rate increases, banks will decrease the supply of business loans because of the more attractive return on alternative investments.

The banks' allocation of total earning assets between business loans and other investments also depends on bank liquidity, which is affected to some extent by reserve requirements. For example, a bank facing a 5-percent reserve requirement would hold 5 cents in required reserves against $1 of deposits; if the $1 deposit was withdrawn, the bank would have to liquidate 95 cents of earning assets. A bank with a 15-percent reserve requirement would hold 15 cents in required reserves and would need to liquidate only 85 cents of such assets. Thus, when reserve requirements are low, it behooves the banker to be invested more heavily in securities than loans because of the relative liquidity of securities. The higher the reserve requirement, the less need there is for liquidity and the greater loans should be relative to securities.

A variable used previously in studies of the money supply process to measure the effects on reserves of changes in required reserves is the reserve adjustment magnitude, or RAM.[8] The reserve adjustment magnitude translates changes in reserve requirements relative to a base period into dollars of reserves freed up or absorbed. An increase in reserve requirements reduces RAM and, thus, should lead to an increase in business loans relative to securities because the total earning asset portfolio can be less liquid.[9]

Finally, the lagged level of business loan (BL_{t-1}) may affect the current level of business loans supplied by banks. Banks may not instantaneously

6. Assuming excess reserves to be zero, cash is subtracted from total liabilities because it is required as backing for the deposits. For a similar approach, see William C. Brainard and James Tobin, "Pitfalls in Financial Model Building," *American Economic Review* 58, no. 2 (May 1968): 99-122. Brainard and Tobin make allowances for possible differences in the effect of time deposits and demand deposits on loan supply. This complication is ignored here.

7. The problem of simultaneous-equation bias in the ordinary least-squares estimation used here would remain if the Federal Reserve tended to supply or withdraw reserves automatically in response to variations in bank loan demand. Since the Trading Desk of the Federal Reserve follows an interest rate target between the monthly meetings of the Federal Open Market Committee, this could be a problem for data covering relatively short periods. But over the quarterly intervals used in this study there is often substantial movement in short-term interest rates, so total earning assets of banks can still be considered exogenous.

8. RAM is discussed in detail in the following articles: Leonall C. Andersen and Jerry L. Jordan, "The Monetary Base—Explanation and Analytical Use," *Review*, Federal Reserve Bank of St. Louis, August 1968, pp. 7-11, and Albert E. Burger and Robert H. Rasche, "Revision of the Monetary Base," *Review*, Federal Reserve Bank of St. Louis, July 1977, pp. 13-28. RAM was originally calculated so that a comprehensive variable could be constructed to measure the total impact of Federal Reserve policy on the monetary aggregates. The monetary base, which includes RAM, would then reflect the extent of open market operations, borrowing at the discount window, and reserve requirement changes.

9. In a simplified model, $RAM_t = (r_o - r_t)D_{t-2}$, where r_o is the required reserve ratio in the base period, r_t is the required reserve ratio in the current period, and D_{t-2} is the level of deposits two periods ago. Because the model for business loans is estimated in first-difference form, the first difference of RAM is used in the estimated model. The change in RAM captures the dollar amount of reserves freed or absorbed by concurrent changes in reserve requirements.

adjust to desired levels the business loans they supply. This may be the case if, for example, information is incomplete and there are transactions costs in adjusting. The presumption is made that some portion of any desired increase in the supply of business loans not accomplished today will be undertaken in the next period. Consequently, the relation between last period's loan levels and today's loan levels is positive. The resulting equation for the amount of business loans supplied by commercial banks is:

$$(2) \qquad BL^s = s_0 + s_1 r_p + s_2 r_T + s_3 RAM + s_4 TLI + s_5 BL_{t-1}.$$ [10]

The quantity of business loans at any point in time is such that the amount supplied equals the amount demanded. This quantity is obtained from the simultaneous solution of equations (1) and (2) (see the solution box). The resulting equation for business loans is:

$$(3) \qquad BL = z_0 + z_1 r_{cp} + z_2 r_{Aaa} + z_3 r_T + z_4 RAM + z_5 TLI + z_6 INV + z_7 CAP + z_8 NW + z_9 BL_{t-1},$$

where the z's reflect combinations of the demand and supply coefficients.

Equations (3) cannot be estimated as it is because there are no accurate measures of the fixed capital stock (CAP) or the net worth (NW) of nonfinancial businesses. However, business fixed investment (BFI) measures the addition to capital stock each period, and an indication of the addition to net worth each period is undistributed corporate profits (CF).[11] As a result, the equation was estimated in first-difference form as:

$$(4) \qquad \Delta BL = z_0 + z_1 \Delta r_{cp} + z_2 \Delta r_{Aaa} + z_3 \Delta RAM + z_4 \Delta TLI + z_5 \Delta INV + z_6 BFI + z_7 CF + z_8 \Delta BL_{t-1}.$$

The unusual loan behavior explained in detail

The business loan equation in (4) was estimated for large and small banks for the third quarter of 1960 through the fourth quarter of 1974. The period begins with the earliest quarter for which all the data are available; the end point is the last quarter before the beginning of the most recent business cycle expansion. The fit of the equations to the data within the sample period is quite good. Detailed statistical results are provided in Appendix B.

The model also provides a good explanation of the weakness in business loans occurring outside the sample period. This is shown in Chart 5, which contains in-sample and out-of-sample predictions for the change in business loans at large banks, small banks, and all banks. The all-bank predictions were generated by adding individual forecasts for the large and small banks.[12] Though the severity of the decline at all banks in 1975 was underpredicted, the error is considerably smaller than the errors of previous models.[13] It is significant that this model did forcast the decline.

By decomposing the annual changes in business loans according to their causal sources, the model allows us to see what was behind the unusual behavior of business loans in this cycle. The contribution of each source is calculated by multiplying the estimated coefficient for each explanatory variable by the actual value of that variable. The annual contributions that, according to the model, most dramatically affect the change in business loans over the cycle are identified for the large banks and small banks in Charts 6 and 7, respectively.[14]

The recession of 1974 versus 1970. In the recession year of 1970, business loans increased $1.90 billion at the large banks and $2.55 billion at the small banks. In the recession year of 1974, they increased $20.92 billion at the large banks and $7.76 billion at the small banks. All the important sources of variation in large-bank business loan

10. Coefficients s_1, s_4, and s_5 are positive, while s_2 and s_3 are negative. The sign of s_0 is not definite.

11. The CF variable is undistributed corporate profits plus the inventory valuation adjustment and depreciation. There exists the possibility of measurement error in the business loan series due to judgments regarding loan classification. Consequently, a constant should be and was added for econometric reasons. For a discussion of these problems, see Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts* (New York: McGraw-Hill Book Co., 1976), pp. 128-29.

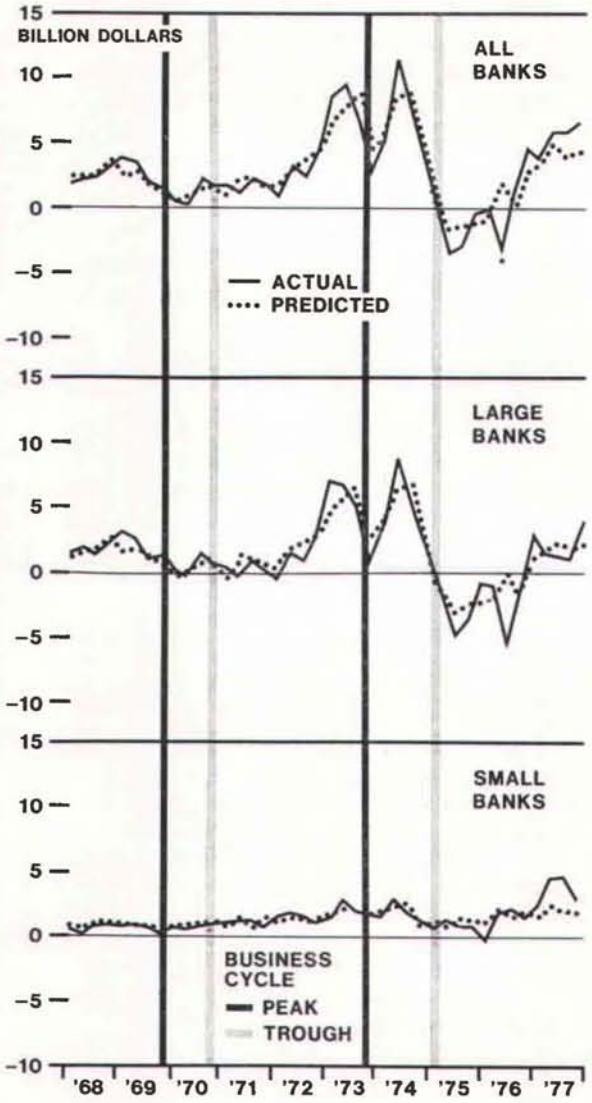
12. The predictions were calculated using the coefficients of the model estimated for 1960-Q3 through 1974-Q4. Outside the sample period the actual values of the explanatory variables were used to calculate the predictions. Essentially, the predictions were updated quarterly in the sense that the actual lagged ΔBL variable was used rather than the predicted change.

13. The 1975 root-mean-square errors for the Harris, Goldfeld, Hendershott, and FMP models are 1.64, 6.56, 2.41, 2.35, respectively. The root-mean-square error of the model presented here is 1.27. See Appendixes A and B.

14. In Appendix B the complete decomposition is documented in Tables 3 and 4.

The model explains the recent weakness in business loans

CHART 5. Actual Versus Predicted Changes in Business Loans



*Reclassification of loans as of March 31, 1976, lowered the change in business loans by $1.2 billion in 1976-Q2.
NOTE: Predictions generated from model estimates for 1960-Q3 through 1974-Q4.
SOURCES: Federal Reserve Bank of St. Louis. Federal Reserve Bank of Dallas.

changes contributed to the increase in 1974 relative to 1970 with the exception of the cash flow variable. Changes in nonbank short-term interest rates (as proxied by the Treasury bill rate) were small and negative and, thus, did not depress large-bank business loans in 1974 as much as in 1970. The change in total loans and investments, inventory change, and lagged change in business loans stimulated business loans by $5.98 billion, $8.69 billion, and $3.97 billion, respectively, more than in 1970. Corporate cash flows were higher in 1974 versus 1970 but only dampened loan growth by $1.27 billion more than in 1970.

Though the severity of the decline at all banks in 1975 was underpredicted, the error is considerably smaller than the errors of previous models. It is significant that this model did forecast the decline.

The comparison of small-bank business loans in the recessions of 1970 and 1974, contained in Chart 7, shows essentially the same story as for large-bank loans with two exceptions. First, the lagged change in business loans did not play a significant role in the variation of small-bank business loans. Second, business fixed investment was an important source of variation and contributed $3.19 billion more in 1974 than in 1970 to small-bank business loan strength.

The recovery of 1975 versus 1971. In the recovery year of 1971, business loans at large banks increased $2.52 billion, while business loans at small banks increased $4.27 billion. In the recovery year of 1975, large-bank business loans *declined* $10.28 billion, while small-bank business loans increased $3.58 billion. Obviously, the major cause of the decline in total business loans at all commercial banks in 1975 was the sizable decline in business loans at the large banks. Inventory investment increased only modestly in 1975, and its impact on large-bank business borrowing was similar to that in the first year of the last recovery, 1971. Compared with 1971, the major sources of the weakness in large-bank business loans were sizable declines in total loans and investments, in interest rates outside the banks, and in lagged business loans and an increase in corporate cash flows.

Solving for the Business Loan Equation

If we let "D" stand for the variables that only affect the demand for loans, "S" stand for those that only affect the supply of loans, and "B" stand for the variables (other than the prime interest rate, r_p) that enter both the demand and supply functions, then the demand and supply functions may be written as:

(1) $BL^d = d_0 + d_1 r_p + d_2 D + d_3 B,$

or

(1a) $r_p = \frac{1}{d_1}[BL^d - (d_0 + d_2 D + d_3 B)],$

and

(2) $BL^s = s_0 + s_1 r_p + s_2 S + s_3 B,$

or

(2a) $r_p = \frac{1}{s_1}[BL^s - (s_0 + s_2 S + s_3 B)].$

Since the quantity demanded must equal the quantity supplied,

(3) $BL^d = BL^s = BL.$

Substituting for BL^d and BL^s and substituting (1a) into (2a), we get

(4) $\frac{1}{d_1}[BL - (d_0 + d_2 D + d_3 B)] = \frac{1}{s_1}[BL - (s_0 + s_2 S + s_3 B)],$

and solving for BL gives the following equation for business loans:

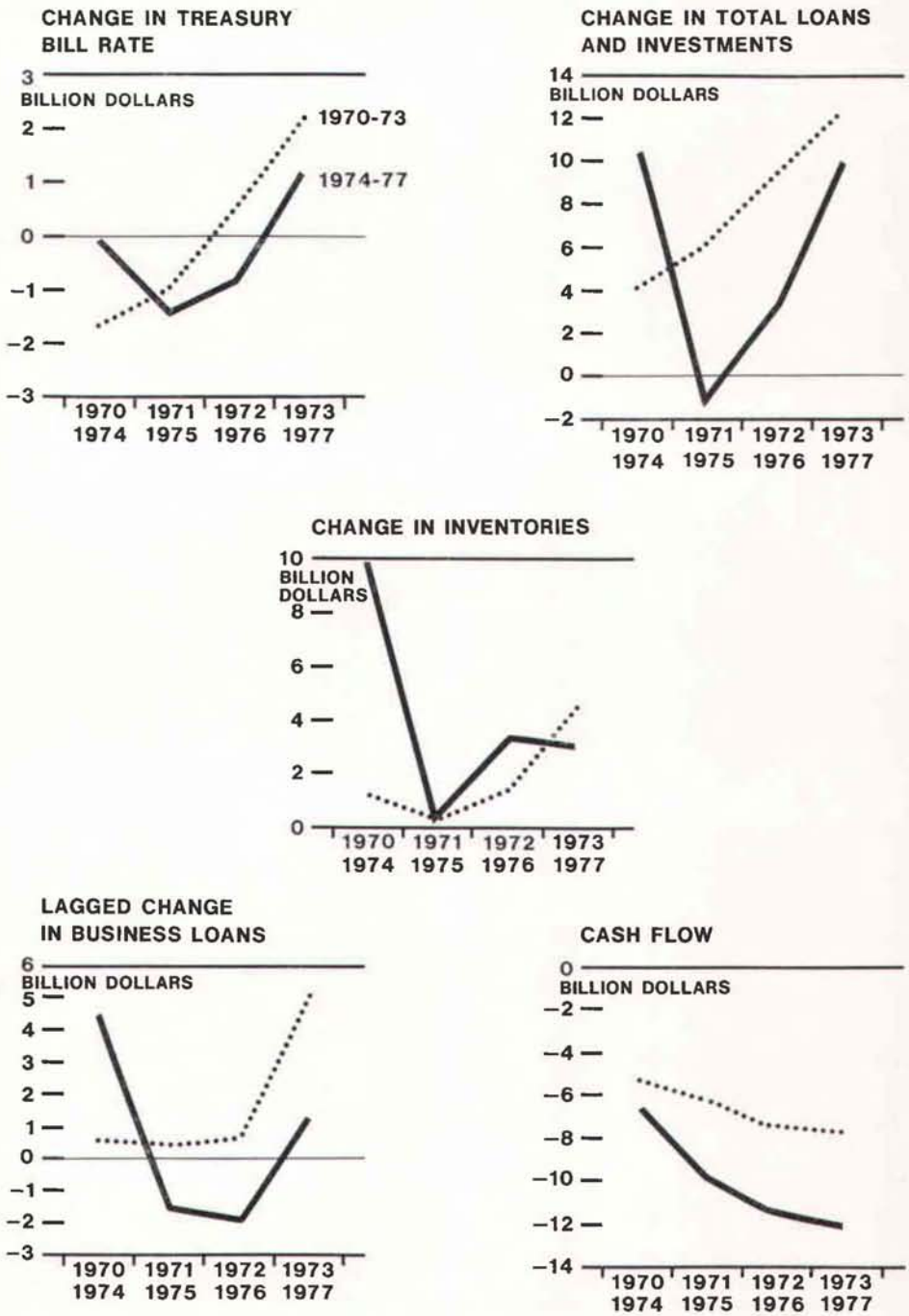
(5) $$BL = \frac{1}{\left(\frac{1}{d_1} - \frac{1}{s_1}\right)}\left[\left(\frac{d_0}{d_1} - \frac{s_0}{s_1}\right) + \left(\frac{d_2}{d_1}\right)D - \left(\frac{s_2}{s_1}\right)S + \left(\frac{d_3}{d_1} - \frac{s_3}{s_1}\right)B\right]$$

Of the sources of weakness in 1975, the largest was the decline in total loans and investments at large banks. While any one bank may be able to maintain the size of its earning asset portfolio by liability management, for all banks the size of the aggregate portfolio is determined mainly by the volume of reserves supplied to the banking system by the Federal Reserve System.[15] From $36.9 billion in December 1974, total reserves fell to $35.0 billion in December 1975 and were only $35.1 billion in December 1976. Thus, throughout 1975 and 1976 the Federal Reserve operated to depress the growth of total loans and investments. Of course, a major reason for allowing reserves to fall during this period was the Federal Reserve System's concern about inflation.

As stated earlier, business loans at the small banks did not decline in 1975, and the increase was only slightly lower than the 1971 increase. In 1975 the effect of increases in total loans and invest-

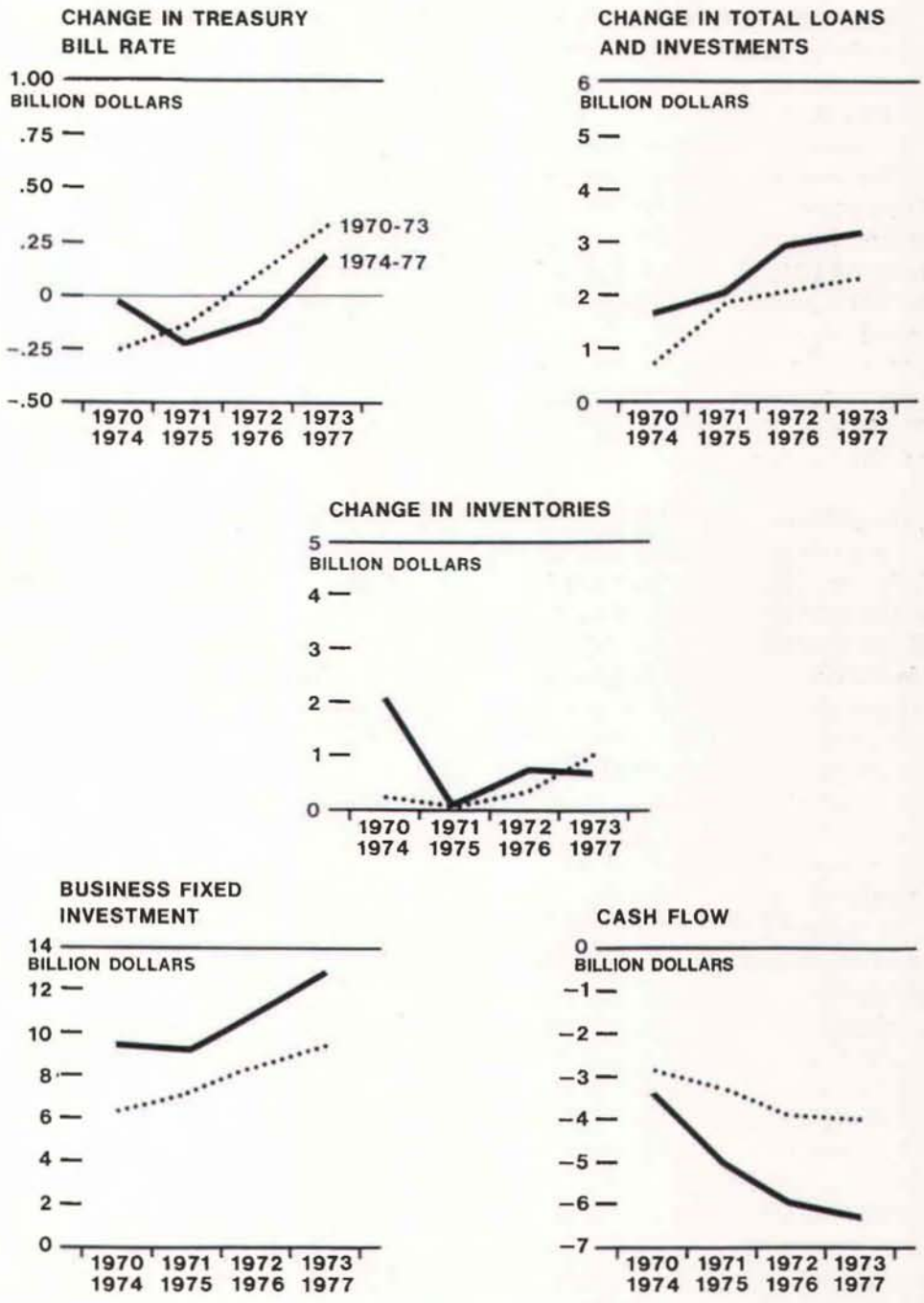
15. The role of reserves in determining total loans and investments was substantiated by using instrumental estimation and two-stage estimation for ΔTLI. The model's evidence about the sources of loan weakness remained robust. The two-stage estimates are presented in Appendix B, Table 1.

CHART 6. Contributions of Key Variables to Large-Bank Business Loan Changes over Two Business Cycles



NOTE: For this decomposition, the coefficients used were obtained from the large-bank business loan equation estimated for 1960-Q3 through 1976-Q4. See Appendix B.

CHART 7. Contributions of Key Variables to Small-Bank Business Loan Changes over Two Business Cycles



NOTE: For this decomposition, the coefficients used were obtained from the small-bank business loan equation estimated for 1960-Q3 through 1974-Q4. See Appendix B.

ments at small banks and the level of business fixed investment caused the change in small-bank business loans to be higher than in 1971; however, the effect of increased corporate cash flows and declines in rates outside banks operated to dampen the change relative to 1971. The only factor that remained similar in the two periods was inventory investment.

The recovery of 1976-77 versus 1972-73. Throughout 1976 and 1977, large-bank business loans were weaker than in 1972 and 1973. Large-bank business loans declined $4.14 billion in 1976 and increased $7.87 billion in 1977. In 1972 and 1973 these loans increased $5.34 billion and $19.65 billion, respectively. The sustained weakness relative to the earlier recovery can be traced to all the factors in Chart 6 except the change in inventories. The change in inventories operated to increase business loans in 1976 relative to 1972, but it operated to reduce those loans in 1977 relative to 1973.

Small-bank business loans increased in 1972 and 1976 by similar amounts, $5.78 billion and $5.30 billion, respectively. In Chart 7 we can see how this came about. The factors operating to increase small-bank business loans relative to 1972 just about offset the factors operating to decrease them. In 1973, the third year of the post-1970 recovery, small-bank business loans increased $7.60 billion, whereas in 1977 they increased $14.45 billion. The 1977 change in business loans at small banks is larger than any other in the history of the data. This model can explain only 56 percent of that increase and attributes the growth relative to 1973 mostly to increases in total loans and investments at small banks and in business fixed investment.

Some regional bankers contend that there has been a structural change that favors growth of the small, regional bank market. According to these bankers, small banks can now offer most if not all of the services of the large banks; moreover, they can do so speedily. Representatives of many large banks contend that no permanent change has taken place.[16] The structural stability tests conducted on this model suggest that both sets of views contain some truth. The large-bank equation now appears to be stable, with coefficients similar to the past. However, the small-bank equation is exhibiting unstable properties (see Appendix B).

16. A recent survey of these views is covered in "The Fancy Dans at the Regional Banks," *Business Week*, April 17, 1978, pp. 66-72.

Conclusion

Many students of business loan behavior found the 1975 decline and subsequent weakness in business loans difficult to understand; this was due in no small part to the inability of business loan models to predict the decline and subsequent weakness. In the context of the basic model presented here, the weakness in this recovery is not an anomaly.

As the decompositions showed, this period is different from previous cycles in the sense that the patterns of interest rates, inventories, total loans and investments, cash flows, business fixed investment, and lagged changes in business loans are different. For large-bank business loans, all the important sources of variation except one differed in size and direction in the recent cycle compared with the previous cycle; the corporate cash flow source differed only in size. For small-bank business loans the variations caused by changes in the Treasury bill rate, changes in inventories, and the level of business fixed investment differed in size and direction, while the variations caused by cash flow and total loans and investments differed only in size.

Contrary to previous explanations of this recovery's loan weakness, supply variables are just as important as demand variables in explaining the variation of business loans. Moreover, recognizing the differences between the business loan markets of large banks and small banks increases our ability to understand and predict the total market for business loans.

Appendix A

Previous Studies of Business Loans

Previous studies of the level of business borrowing at banks generally fall into one of two categories: demand studies or demand and supply studies. Four recent studies (two of each type) will be reviewed here; implications from those studies about the most recent cycle will be highlighted.

Demand studies

In 1976, Maury Harris estimated an equation that represented business loan demand.[1] He suggested that the change in business loans was a function of the change in business inventories (book value), the change in business fixed investment, the change in the differential between the prime rate and the commercial paper rate, and the change in corporate cash flows. Harris mentioned that the differential between the long-term corporate rate and the expected long-term rate might affect the change in the demand for business loans; this variable never appeared in the final estimated equation because it was insignificant. Harris' major conclusions about the current recovery was that there was a lack of strength in inventory spending and that an exceptional recovery in cash flows operated to depress business borrowing. Harris' equation for the year 1975 actually overpredicted the decline in loans by $0.5 billion.[2] Most previous studies (which will be discussed below) dramatically underpredicted the decline in business borrowing by $7 billion to $24 billion.

The second demand study reviewed was one undertaken by Stephen Goldfeld in 1969.[3] Goldfeld estimated a stock adjustment model for business loans. Among other formulations, he explained the current change in business loans by the levels of business borrowing (lagged one period), a private security interest rate, the three-month Treasury bill rate, manufacturing and trade sales, corporate dividends, and business time deposits. Harris reestimated Goldfeld's model of changes in business loan demand and found that the equation grossly underpredicted the decline in 1975 by $24 billion, with a root-mean-square error of $6.56 billion.

Demand and supply studies

Patric Hendershott was among the early students of business loan behavior whose work was clearly imbedded in a financial model that included some assumptions about the supply of business loans by banks.[4] Hendershott's hypothesis about the determination of the supply of commercial loans was that banks set their loan rate as a function of other interest rates banks take as given (such as the corporate bond rate and the commercial paper rate), the ratio of commercial loans to deposits, and the lagged commercial loan rate. In estimating the banks' commercial loan rate-setting behavior, he found that the only variables significant in the rate-setting equation were the corporate bond rate, the commercial paper rate, and the lagged commercial loan rate. His preferred equation for explaining the changes in business borrowing included these explanatory demand variables: the change in nonfarm inventories, the change in the commercial loan rate, and the change in business borrowing lagged one period.[5] When Hendershott predicted with his business loan equation, he did not utilize his supply formulation in a two-stage process; he used only his demand equation.

The second example of an equation used to forecast business loans that incorporates

1. See M. Harris, "An Econometric Examination of Business Loan Behavior," Federal Reserve Bank of New York, Research Paper no. 7615 (New York, 1976).
2. See "An Econometric Examination of Business Loan Behavior," pp. 9-10. Using the same data sources as in his study, the Harris model was reestimated. The model generated an overprediction of $3.4 billion, instead of $0.5 billion, for the decline. The root-mean-square error for 1975 was $1.64 billion.
3. Stephen M. Goldfeld, "An Extension of the Monetary Sector," in *The Brookings Model: Some Further Results*, ed. James S. Duesenberry et al. (Chicago: Rand McNally & Co., 1969; Amsterdam: North-Holland Publishing Co., 1969), pp. 317-59.
4. Patric H. Hendershott, "Recent Development of the Financial Sector of Econometric Models," *Journal of Finance* 23 (March 1968): 41-66.
5. Among other variables whose significance was tested were the current and lagged values of producers' durables, the lagged change in nonfarm inventories, the change in the commercial paper rate, and the change in the corporate bond rate.

supply assumptions is in the FMP (Federal Reserve-MIT-PENN) model. The change in business loans is determined by several demand factors: the level of nonfarm inventories; the inventory adjustment factor (to account for the effect of inflation on inventory valuation); expenditures on producers' durable goods; the current and lagged change in real gross national product less total investment; the difference between the Treasury bill rate and the commercial loan rate, weighted by the change in the total business product; the difference between the corporate Aaa interest rate and commercial loan rate, weighted by the change in total business product; and the lagged level of investment (adjusted for inventory valuation problems) less the lagged change in commercial loans.[6] The model is simulated with an endogenous commercial loan interest rate. That rate is determined by the following variables: the ratio of business loans to demand and time deposits, the corporate bond rate, two measures of the change in the Federal Reserve System's discount rate, and the current and lagged values of the commercial paper rate. Contrary to Hendershott's study, the ratio of commercial loans to deposits is significant.

In 1976, Harris reestimated Hendershott's model. Recognizing that Hendershott's demand and supply specifications for business loans were imbedded in a ten-equation model of the financial sector, Harris used two-stage estimation to estimate the equation for the change in business borrowing and to generate forecasts for the change in business loans during 1975.[7] Hendershott's model, despite recognition of the supply function, overpredicted the change in business loans in 1975 by nearly $7 billion, with a root-mean-square error of $2.35 billion.

Harris also simulated the FMP model. Again, despite the recognition of supply factors, the FMP model overpredicted business loans in 1975 by nearly $8 billion, with a root-mean-square error of $2.41 billion. The overpredictions of both the FMP and Hendershott models were substantially less than the overpredictions of Goldfeld's demand equation. Of course, Harris' predictions were superior to those of all the other models, which he attributed mainly to inclusion of the cash flow variable in his demand specification.

6. The demand equation is directly estimated using ordinary least-squares techniques.
7. See "An Econometric Examination of Business Loan Behavior," p. 9.

Appendix B

Econometric Evidence of Business Loan Behavior

Some of the explanatory variables in the estimated business loan equation—equation (4) in the article—have a tendency to move together.[1] For example, when one interest rate moves, all the rates tend to move because the same factors affect them. To the extent that this simultaneous movement exists, estimates of the coefficients on each of the variables will be less precise. A second characteristic of equations with this problem is that when the sample period is extended, estimates of the coefficients may change dramatically. If the coefficients change, then one has much less confidence in interpreting what the model says about the period. In order to gain confidence in the individual coefficients, one or more of the variables moving together (for example, interest rates and RAM) could be omitted from the equation. However, if this procedure is followed, the estimated equation is misspecified and most likely will not provide accurate predictions outside the sample period.

1. For a good discussion of the nature and effects of such multicollinearity, see J. Johnston, *Econometric Methods*, 2d ed. (New York: McGraw-Hill Book Co., 1972), pp. 159-68. The *t* statistic measures the significance of each coefficient; when multicollinearity is severe, *t* statistics will be low.

Table 1

BUSINESS LOAN EQUATIONS—ESTIMATES PRODUCING BEST PREDICTIONS OF BUSINESS LOAN CHANGES IN 1975

Explanatory variable	One-stage estimates		Two-stage estimates	
	Large banks	Small banks	Large banks	Small banks
Constant (C)	.462	−.248	.922	−.191
	(.81)	(−1.46)	(1.47)	(−.99)
Change in:				
Long-term corporate Aaa bond rate (Δr_{Aaa})	−.195	—	−.934	—
	(−.25)		(−1.19)	
Long-term corporate Baa bond rate (Δr_{Baa})	—	−.203	—	−.400
		(−.98)		(−1.86)
Reserve adjustment magnitude (ΔRAM)	—	−.179	—	−.172
		(−2.40)		(−2.10)
Treasury bill interest rate (Δr_T)	1.061	.127	1.046	.142
	(3.80)	(1.62)	(3.57)	(1.62)
Total loans and investments at large banks (ΔTLIL)	.216	—	.446[1]	—
	(5.08)		(4.50)	
Total loans and investments at small banks (ΔTLIS)	—	.065	—	.080[1]
		(4.11)		(2.49)
Inventories (ΔINV)	.265	.064	.264	.029
	(2.33)	(2.07)	(2.23)	(.86)
Business fixed investment (BFI)	.002	.012	−.018	.013
	(.25)	(3.41)	(−1.62)	(3.31)
Corporate cash flow (CF)[2]	−.019	−.012	−.004	−.016
	(−.83)	(−1.68)	(−.17)	(−2.08)
Lagged change in:				
Business loans at large banks (ΔBLL_{t-1})	.287	—	.374	—
	(2.82)		(3.42)	
Business loans at small banks (ΔBLS_{t-1})	—	−.114	—	−.051
		(−.91)		(−.37)
$\bar{R}^2$ (measure of adequacy of fit)	.781	.832	.764	.799
D-W (Durbin-Watson autocorrelation test statistic)	1.781	1.911	1.732	2.043
SE (standard error of the regression)	.861	.250	.894	.273

1. Raw data for the sample period are from predictions of the first-stage regressions.
2. Undistributed corporate profits plus the inventory valuation adjustment and depreciation.
NOTE: Equations estimated for 1960-Q3 through 1974-Q4.
Figures in parentheses are *t* statistics of the regression coefficients.

To warrant confidence in the coefficient estimates and the predictions based on them, any specification of equation (4) that omits variables should predict outside the sample period at least as well as the whole model. Otherwise, the specification error introduced would be too costly for the gain in coefficient stability. In fact, some of the specifications of equation (4) that omitted some interest rate and/or RAM variables did predict 1975 better than the whole model estimated through 1974-Q4.[2] The equation estimates that best predicted large-bank business loans and small-bank business loans in 1975 are presented in Table 1. The in-sample and out-of-sample predictions made from the equations in Table 1 are displayed in Chart 5 in the article.

No matter what specification was chosen, a superior total forecast for 1975 was always made by forecasting the components and then adding them together. Based on the predictions generated by the equations in Table 1, the root-mean-square error for 1975 for the large-bank prediction is $1.33 billion; for the small-bank prediction it is $0.17 billion; and for all commercial banks it is $1.27 billion. Moreover, the root-mean-square error became still lower (and equaled $1.27 billion) by allowing different specifications of the general model for the large-bank and small-bank markets. The sum of the errors over all of 1975 was a negative $1.86 billion, which is considerably smaller than the errors of previous models.[3]

In order to test the model for its sensitivity to the assumption of an exogenous portfolio constraint variable (ΔTLI), a two-stage procedure was undertaken. In the first stage of the two-stage process, the following equation was estimated for large and small banks:

$\Delta TLI = a_0 + a_1\Delta r_{cp} + a_2\Delta r_T + a_3\Delta MBASE,$

where r_{cp} is the four- to six-month commercial paper rate, r_T is the three-month Treasury bill rate, and MBASE is the monetary base. This specification is one of many possible specifications; however, alternative specifications did not alter the second-stage results significantly. As can be seen by comparing the one-stage and two-stage coefficient estimates, the coefficients on total loans and investments for both large and small banks remain at least as large and are signifiicant.

From Table 1 a few interesting differences between the large-bank and small-bank estimates can be noted. First, changes in short-term rates (Δr_T) have a larger impact on large-bank business loans. This result is intuitively plausible, given the significant differences between the customer mix of large-bank and small-bank markets. Second, changes in TLI and INV have significant positive effects on both markets, but the effects are larger for the large-bank market.[4] Third, business fixed investment has a significant positive effect (though not large) on small-bank business loans. Rather surprisingly, the coefficient on BFI in the large-bank equation not only is small but also is not significantly different from zero. Fourth, though cash flows exert a negative influence on business loans, the effect is not statistically significant. This result is surprising, given Harris' work; no doubt the simultaneous movement of cash flow with the other variables is reducing its measured significance (the *t* value is low).

Lastly, note the lack of significance of ΔBL_{t-1} in the small-bank equation while it is positive and significant in the large-bank equation. What the small-bank estimate is telling us is that last period's change in loans gives us no significant information about today's change in business loans at the small banks, other factors being equal. However, this is not necessarily evidence of insignificant lagged effects in the small-bank market demand and supply equations because the lagged effects in the demand and supply equation could be canceling out each other (see the derivation of the business loan equation given earlier).

2. The root-mean-square-error criterion was used to judge the superiority of the forecasts and is defined as follows:

$$\text{rmse} = \sqrt{\left[\left(\sum_{i=1}^{4} e_i^2\right) \Big/ 4\right]}$$

where e_i is the error, or actual less predicted, in each period.

3. See Appendix A.

4. Surprisingly, in the two-stage estimates of the small-bank equation, the inventory coefficient is reduced and is not significant.

Table 2

BUSINESS LOAN EQUATIONS—STRUCTURAL STABILITY AT 99-PERCENT LEVEL

Sample period	Next period	Large banks	Small banks
1960-Q3 through 1970-Q4	1971-Q1 through 1971-Q4	Consistent	Consistent
1960-Q3 through 1971-Q4	1972-Q1 through 1972-Q4	Dissimilar	Consistent
1960-Q3 through 1972-Q4	1973-Q1 through 1973-Q4	Dissimilar	Dissimilar
1960-Q3 through 1973-Q4	1974-Q1 through 1974-Q4	Consistent	Consistent
1960-Q3 through 1974-Q4	1975-Q1 through 1975-Q4	Consistent	Consistent
1960-Q3 through 1975-Q4	1976-Q1 through 1976-Q4	Dissimilar	Dissimilar
1960-Q3 through 1976-Q4	1977-Q1 through 1977-Q4	Consistent	Dissimilar

Table 3

EXPLANATORY VARIABLES—ANNUAL CONTRIBUTION TO CHANGE IN LARGE-BANK BUSINESS LOANS

Year	Predicted change (Actual change)	Explanatory variables							
		C	Δr_{Aaa}	Δr_{T}	ΔTLIL	ΔINV	BFI	CF	ΔBLL_{t-1}
1968 . . .	6.91 (6.98)	2.57	–.07	.69	5.77	1.81	.47	–5.65	1.32
1969 . . .	3.75 (7.85)	2.57	–.37	1.46	.77	2.32	.52	–5.59	2.07
1970 . . .	1.97 (1.90)	2.57	–.13	–1.65	4.23	1.24	.52	–5.35	.55
1971 . . .	3.02 (2.52)	2.57	.19	–.93	5.99	.31	.58	–6.23	.54
1972 . . .	7.95 (5.34)	2.57	.05	.52	9.27	1.55	.68	–7.37	.68
1973 . . .	19.59 (19.65)	2.57	–.16	2.18	12.13	4.44	.77	–7.49	5.15
1974 . . .	20.85 (20.92)	2.57	–.42	–.12	10.21	9.93	.78	–6.62	4.52
1975 . . .	–10.24 (–10.28)	2.57	.06	–1.43	–1.13	.30	.76	–9.78	–1.58
1976 . . .	–3.78 (–4.14)	2.57	.19	–.79	3.28	3.30	.87	–11.36	–1.84
1977 . . .	7.30 (7.87)	2.57	.02	1.19	9.74	3.14	1.05	–12.06	1.64

NOTE: The coefficients used were obtained from the large-bank business loan equation that was estimated for 1960-Q3 through 1976-Q4.
Details may not add to totals because of rounding.

Table 4

EXPLANATORY VARIABLES—ANNUAL CONTRIBUTION TO CHANGE IN SMALL-BANK BUSINESS LOANS

Year	Predicted change (Actual change)	Explanatory variables								
		C	Δr_{Baa}	Δr_T	ΔRAM	ΔTLIS	ΔINV	BFI	CF	ΔBLS_{t-1}
1968 ...	3.28 (2.37)	−.99	−.06	.11	.17	1.05	.38	5.76	−2.93	−.21
1969 ...	3.41 (2.68)	−.99	−.27	.22	.12	.75	.49	6.36	−2.89	−.37
1970 ...	2.88 (2.55)	−.99	−.18	−.25	−.08	.77	.26	6.37	−2.77	−.25
1971 ...	4.45 (4.27)	−.99	.18	−.14	.07	1.83	.06	7.14	−3.23	−.47
1972 ...	5.23 (5.78)	−.99	.09	.08	−.25	2.11	.33	8.31	−3.81	−.63
1973 ...	7.32 (7.60)	−.99	−.09	.33	.12	2.31	.93	9.40	−3.88	−.81
1974 ...	7.63 (7.76)	−.99	−.43	−.02	.02	1.73	2.08	9.56	−3.43	−.90
1975 ...	4.03 (3.58)	−.99	.00	−.22	−.67	2.07	.06	9.32	−5.06	−.48
1976 ...	6.65 (5.30)	−.99	.28	−.12	−.39	2.87	.69	10.69	−5.88	−.50
1977 ...	8.03 (14.45)	−.99	.05	.18	−.20	3.21	.66	12.86	−6.24	−1.50

NOTE: The coefficients used were obtained from the small-bank business loan equation that was estimated for 1960-Q3 through 1974-Q4. Details may not add to totals because of rounding.

To test the structural stability of the Table 1 specifications for large-bank and small-bank business loans, both equations were estimated initially for 1960-Q3 through 1970-Q4. One year of data was added at a time, and the equations were reestimated until the end point of the sample reached 1977-Q4. Test statistics for structural stability were calculated.[5]

Table 2 contains the general results of these experiments. For example, the hypothesis that the period 1971-Q1 through 1971-Q4 is consistent with the period 1960-Q3 through 1970-Q4 cannot be rejected for either large or small banks; thus, the third and fourth columns show the word "Consistent" to convey the information that the hypothesis cannot be rejected statistically. What is readily apparent from this table is the instability of the structure over the 1970's. However, after the instability in 1972 and 1973 for the large banks and in 1973 for the small banks, the model exhibited stable properties and was able to forecast the decline in business borrowing remarkably well. Again after a brief period of instability in 1976, the large-bank equation was able to forecast the increase in busineses loans at the large banks in 1977 with a root-mean-square error of only $1.06 billion, while the small-bank equation displayed instability in both 1976 and 1977.

In order to understand the factors moving business loans over the whole period, the equations of Table 1 were updated to include as much recent data as possible, given the structural shift information. Because the structure of the large-bank market in 1977 was not inconsistent with the structure of the sample period ending in 1976, the equation for 1960-Q3 through 1976-Q4 was used in the decomposition of Table 3. For small banks the structural stability tests showed the years 1976 and 1977 to be dissimilar to the respective earlier periods, so the decomposition proceeded in Table 4 on the basis of the small-bank equation estimated for 1960-Q3 through 1974-Q4 (with which 1975 was structurally consistent).

5. *F* statistics were calculated according to Chow's formulation. See Gregory C. Chow, "Tests of Equality between Sets of Coefficients in Two Linear Regressions," *Econometrica* 28 (July 1960): 591-605.

Exception Items Processing to Be Improved

Exception items—checks that cannot be processed routinely on high-speed equipment—are costly to handle, and this cost is growing every year. According to the Bank Administration Institute, nearly 3 out of every 25 checks written become exception items, and the special handling they require increased the banking industry's total direct check processing cost by 25 percent, or $285 million, in 1973. The BAI has estimated that the cost of handling exception items will grow to $1.6 billion annually by 1980 unless steps are taken to reduce the problems and costs associated with such items.

A joint task force of representatives from the American Bankers Association, the Bank Administration Institute, and the Federal Reserve System has made several recommendations, following two years of study and testing, that—if adopted by banks—would reduce these costs. However, improvement will occur only if banks work cooperatively to solve the problems.

The task force recommended standardization of procedures and forms used for adjustments, publication of a quality control handbook, adoption of a standardized endorsement procedure, and publication of a monthly reject rate report.

The task force developed standardized procedures and forms to be used for adjustments and pilot-tested them in some 80 banks across the nation. The test indicated that all banks, regardless of size, would benefit from adoption of the standardized procedures and forms. Banks that processed fewer than 2,000 adjustments during the test gained the most benefit.

The new procedures significantly reduced the time needed to adjust exception items. Compared with the time involved for banks using current methods, the average number of days an item was outstanding was 1.6 days less between two banks using the standardized procedures and forms and was 0.7 day less between a bank using them and one not using them (a "control" bank).

The new adjustment procedures are not mandatory, but the more banks using them, the greater the potential for cost reduction. All the procedures and forms are illustrated in a training manual published by the Bank Administration Institute, *Industry Procedures for Adjustment Resolution*. To familiarize banks with the new methods, local BAI chapters are sponsoring half-day workshops during June.

The task force also recommended that a quality control handbook, focusing on MICR (magnetic ink character recognition) processing problems and how to avoid them, be published by an industry committee.

In addition, the task force drafted a standard endorsement specification that would make it easier to trace a canceled check back to the bank of first deposit. A clear band is proposed for the bank of first deposit, and endorsements of other processing banks would follow in sequential order.

Another recommendation, now being implemented, was that the Federal Reserve banks issue monthly reject reports to each bank containing information on the highest, lowest, and average reject rates experienced every month, as well as the individual bank's reject rate. Most Reserve banks, including the Federal Reserve Bank of Dallas, are providing such data already. The other Federal Reserve banks plan to begin publication by year-end.

It is anticipated that this report will act as an incentive to each bank to improve its performance. The report is also expected to impact positively on machine vendors because bankers will be able to compare the current reject rate on their present equipment with the reject rates of other vendors' equipment. This would tend to encourage manufacturers to maintain quality.

Another area of study by the task force concerned full-MICR-line reject repair, which involves fully reencoding the complete MICR line for items that are rejected during the first pass on automated reader/sorters. Although full reject repairs could reduce the cost of processing rejects, the task force has cautioned banks about the legal issues involved. It is not known who would be liable when an encoding error occurs during such a repair.

Processing of exception items has been a costly problem for the banking industry in the past and will continue to be a problem in the future. However, the recommendations made by the joint task force show strong promise of significantly improving the present system of handling exception items. The potential savings that could result from adoption of these recommendations are worth pursuing.

Uniform Rating System Adopted by Federal Regulators

A uniform system for rating the condition and soundness of commercial banks has been adopted by the Federal Reserve Board, the Federal Deposit Insurance Corporation, and the Comptroller of the Currency. The standard rating system will provide a basis for comparison of banks regulated by different agencies.

Federal bank examiners will assess a bank's operations and conditions in regard to five critical aspects: capital adequacy, asset quality, management ability, earnings quality and quantity, and liquidity level. Each of the factors will be rated on a scale of 1 through 5, with 1 denoting "strong performance" and 5 meaning "unsatisfactory." Then, all the basic factors will be combined into a composite rating. Each bank will be placed in one of five groups, with Group 1 being the strongest and Group 5 being the weakest.

The new system will be especially helpful in analysis of bank holding companies because each of the bank subsidiaries will be rated by identical criteria, regardless of which Federal agency examines it.

The Federal Reserve is already using the new rating system, which replaces one that the Fed has used since the early 1960's. The Federal Reserve does not release the actual ratings, either to the bank examined or to the public.

Board Extends Kinds of Bankers Acceptances Eligible for Discount

Bankers acceptances secured by field warehouse receipts covering readily marketable staples are now eligible for discount by Federal Reserve banks and, therefore, may be used as collateral for Federal Reserve loans to member banks. The Board of Governors announced the adoption of the regulatory interpretation on May 10, 1978.

The new interpretation reverses a 1933 Board position. Changes in commercial law and in commercial practices since 1933 made revision of the interpretation desirable.

Mobile Homes — Declining Share of Single-Family Homes

The mobile home industry continues to be plagued by the lingering aftereffects of a major slump in 1973-74. Some lenders have not reentered the market following their experience with high repossessions in that period, sales have been dampened by rapidly escalating mobile home prices, and the industry has been relatively unsuccessful in establishing real estate financing for permanently placed double-wide mobile homes.

Conventional housing suffered a cyclical decline at nearly the same time as the mobile home industry, but it was less severe than the decline for the mobile home industry. Conventional single-family housing starts in the United States declined by a third, falling from 1.3 million in 1972 to 888,100 in 1974. The decline was twice as large for the mobile home industry, as shipments fell from 575,940 in 1972 to 212,690 in 1975. Last year, shipments recovered to 265,641 but still remained well short of the 1972 peak. Conventional single-family housing starts, however, climbed to 1.5 million last year. As a result, the mobile home share of the single-family housing market in the United States has slipped from 33 percent in the early seventies to only 16 percent last year.

In Texas, shipments and market share have declined apace with the trend for the United States. The state is the major mobile home producer and user among the four Eleventh District states and is second only to California in the nation as a whole. Texas accounted for over 80 percent of the production in the four-state area in 1977, and dealers in Texas received over 50 percent of the shipments. After climbing to 44,308 in 1972, the state's shipments fell to 16,694 in 1975. Shipments recovered to 21,500 in 1977 but were less than half the 1972 peak. The mobile home share of the new single-family housing market in Texas, which fluctuated between 40 and 50 percent during the late sixties and early seventies, fell to 25 percent last year.

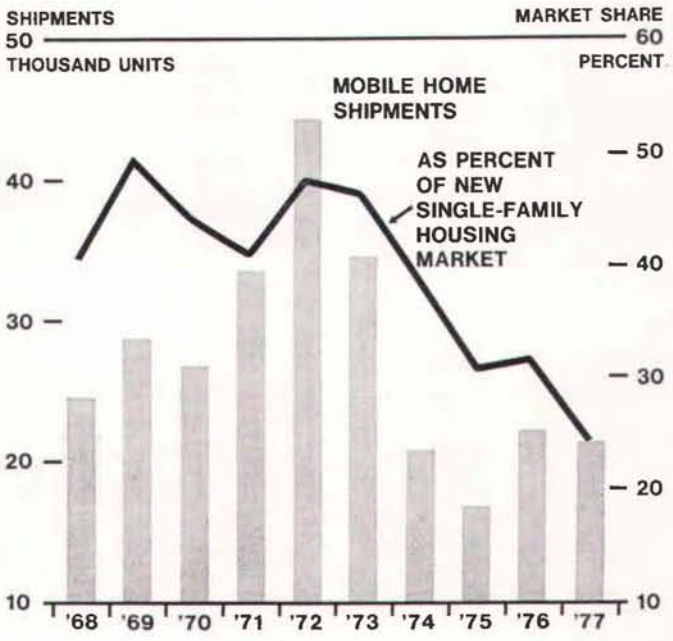
The ease of entry into mobile home manufacturing permitted the number of new firms and dealers to expand rapidly in the sixties and early seventies as the demand increased. The startup costs of mobile home plants were relatively low, the technology was simple, and semiskilled labor was easily mobilized. Plants tended to be small since high transportation costs confined distribution to small geographic areas. But economies of scale in the assembly-line type of production caused plants to strive for high-volume output.

Product quality apparently suffered during the boom period, leading to the need for frequent repairs and contributing to rapid depreciation of mobile homes in use. Some purchasers, finding repairs of defects unavailable from either the manufacturer or the dealer, discontinued payments in protest. And some buyers abandoned mobile homes rather than continue paying for a product in which they were accumulating little or no equity. Repossessions rose thoroughout the early seventies. The problem was further aggravated by the recession that began in late 1973. As unemployment rose, marginal buyers were unable to keep up monthly payments.

According to the American Bankers Association, repossessions in the nation rose from 2.6 per 1,000 installment loans in July-August 1970 to 7.2 per 1,000 in February 1974. In Texas, repossessions were even higher, reaching 20 per 1,000 loans in July-August 1973.

Repossessed units, of course, are available for resale, and they compete with new units. Inventories rose rapidly in 1973, and production was cut back. Shipments to dealers declined rapidly late in the first quarter of 1973, and plants began to close down. The number of manufacturers in Texas declined from 60, as reported in the 1972 Census of Manufactures, to 49 in January 1975, as reported by the Mobile Home Division of the Texas Department of Labor and Standards.

Mobile home shipments to dealers in Texas show only slow recovery from major downturn, with their share of new single-family housing continuing to decline



SOURCES: Bureau of Business Research, University of Texas.
Manufactured Housing Institute.

Marginal manufacturers and dealers disappeared, and the remaining firms were brought under tighter regulations in September 1975, when the Texas Mobile Home Standards Act became effective. The act established mobile home inspection procedures for stricter construction and safety standards; required surety bonding of manufacturing plants, dealerships, and salesmen; and required one-year warranties from manufacturers and dealers on new mobile homes. Moreover, in June 1976 the National Mobile Home Construction and Safety Standards Act established standards for the construction and safety of mobile homes comparable to those for conventional housing.

Even with tighter regulations and higher product standards, lenders have been cautious in reentering the mobile home market. Financing for dealers and purchasers has slowed recovery of the industry. Mobile home instalment credit outstanding in the United States, for example, has grown from $14.4 billion at the end of 1975 to only $15.0 billion in early 1978.

The typical financing on a mobile home is an instalment loan using add-on interest. In Texas the maximum annual rate authorized on new mobile home instalment credit is 7.5 percent on contracts originated by dealers and 8.0 percent on instalment loans from banks. These rates are applied to the full amount of loans over their entire term. Consequently, the longer the term, the lower the effective rate. For a 10-year loan the effective annual rate is 12.40 percent; the effective rate falls to 12.25 percent on 11-year loans. By contrast, the maximum mortgage rate on residential real estate in Texas is 10 percent.

Maturities of 10 to 12 years are the most common on mobile home instalment credit. Current rates on most loans are at the legal maximum, and

the supply of credit at these rates is limited. While it may be presumed that the higher product standards in effect since 1975 provide a basis for lengthening loan maturities, this has not occurred; and it is quite unlikely to occur when credit supplies are limited since this would lower the effective rate on funds loaned. If credit markets tighten, sales may be further slowed.

Credit stringency stems also from the fact that the loan limits and maturity terms of Federal Housing Administration and Veterans' Administration mobile home loan and guarantee programs have not been responsive to the rise of mobile home prices. Currently, the loan amount and maturity limits of the FHA and VA programs are $12,500 and 12 years for single-wide mobile homes. Double-wide units can be financed at $20,000 for 20 years under the VA program and for 15 years under the FHA program. Prices are expected to climb to $13,400 for the average single-wide mobile home by year-end and to $22,300 for the average double-wide. If mobile home prices continue to press the FHA and VA loan limits, the number of units sold under these programs probably will decline.

The mobile home industry, in addition to trying to convince lenders that more instalment credit should be made available, is also pressing for real estate financing of top-of-the-line double-wide mobile homes placed permanently on individually owned land. Success in this area is proving elusive, however, as real estate financing of mobile homes in Texas remains practically nonexistent. Currently, purchases of mobile homes and land are financed under separate loan agreements—the mobile home financed by instalment credit and the land financed through real estate credit.

Nevertheless, the industry still sees its greatest potential for sales growth in the marketing of mobile homes as tract houses. It is believed that real estate financing could be obtained for mobile homes placed in housing developments. If so, as mobile homes continue to be upgraded and have more resemblance to conventional housing, the two forms of housing will be competing more directly over a larger segment of the single-family housing market. The cost advantage of manufactured housing may then bring a larger share of the market to mobile homes. In the future, it is even possible that builders of lower-end conventional homes will adopt manufactured housing techniques, making those homes more like the mobile homes and helping to save their share of the market.

Charles N. Walush

New member bank

Carrollton First National Bank, Carrollton, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business June 1, 1978, as a member of the Federal Reserve System. The new member bank opened with capital of $600,000 and surplus of $900,000. The officers are: Robert H. Gossett, President; Philip C. Martin, Executive Vice President; and Albert A. Shirley, Cashier.

Fed Offers Consumer Advisory Visits

The first in the wave of consumer credit regulations and laws was the Fair Housing Act, enacted in 1968. Since then, consumer credit laws and regulations have increased in both number and complexity. To help banks understand and comply with the various consumer regulations, the Federal Reserve offers consumer advisory visits to member banks. The educational program began in October 1977, and as of June 15, 1978, over 160 banks in the Eleventh Federal Reserve District had been visited.

"Without a doubt, we have received favorable response from the banks," said Sammy Schulze, assistant vice president of the Dallas Reserve Bank. One large national bank called the program "the most help we have received from any source in our effort to comply with the various acts and regulations."

At the request of any member bank, a Federal Reserve attorney or examiner familiar with consumer regulations will make a consumer advisory visit to the bank. Prior to the visit, the consumer specialist examines the bank's reports, forms, and written policies. Problems are discussed during the on-site one-day visit, and questions are answered. When violations are found during the visit, advice is given on how to correct them. Following the visit, any additional forms are reviewed, and answers are found for questions that could not be resolved at the time of the visit.

Because of the limited experience with the program, its effectiveness cannot be accurately measured yet. However, some of the banks that have participated in the program, according to Schulze, "look much better than they would have looked otherwise" in subsequent consumer regulation examinations.

The effectiveness of the visit depends, in part, on the amount of time and effort the bank puts into the visit. When a bank has specific questions and problems to dicuss, the visit is more productive than when the bank is unprepared and simply has general questions.

To request a consumer advisory visit, write the Consumer Affairs Sections of the Federal Reserve Bank of Dallas.

The Federal Reserve also offers educational seminar programs on consumer regulations and responds to written and telephone requests for interpretations of the relevant laws and regulations. Several seminars have been held since 1969, including 11 seminars on Regulation B in 1977. Regulation Z will be discussed in seminars tentatively scheduled for later this year.

The following statutes and Federal Reserve regulations are included in these programs:

- Fair Credit Reporting Act
- Fair Housing Act
- Real Estate Settlement Procedures Act
- Federal Trade Commission's Holder in Due Course Rule
- Regulation B (Equal Credit Opportunity)
- Regulation C (Home Mortgage Disclosure)
- Regulation Z (Truth in Lending, Fair Credit Billing, Consumer Leasing)
- Regulation AA (Unfair or Deceptive Acts or Practices by Banks, Consumer Complaints)
- Regulation H (Provisions Related to National Flood Insurance Program)
- Regulation Q (Interest on Deposits)

Simplified Regulations Booklet Available

A new booklet describing Federal Reserve regulations in "layman's" language is available free of charge from the Federal Reserve Bank of Dallas. The booklet, entitled *A Guide to Federal Reserve Regulations,* is designed to give the reader a brief overview of the regulations issued by the Board of Governors. However, the new publication is not intended, and should not be used, to take the place of the technical regulations.

Copies of the booklet may be obtained from the Bank and Public Information Department, (214) 651-6267.