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ECONOMIC

PERSPECTIVES

Bank funds management comes of age
Monetary aggregates redefined
Problems facing agricultural banks



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ECONOMIC PERSPECTIVES

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Bank funds management comes of age

Elijah Brewer

Commercial banks are again reevaluating their policies and strategies for generating and deploying loanable funds. The reappraisals reflect the concern of banks and bank regulators over the increased volatility of interest costs and returns on liability and asset structures when credit is tight.

Bank regulators are concerned that the increased volatility of interest rates could threaten the profitability of some banks and, therefore, their capital positions. Banks are concerned that the greater variability in costs of money market sources of funds—greater certainly than the cost of traditional deposit sources—could affect not only their profitability but also their growth and liquidity.

Bank policies have traditionally concentrated on ways of matching specific funds sources with selected uses. Traditional “asset-funds allocation” methods gave way in the 1950s to concentration on more sophisticated “asset management” and investment concepts. Deposit funds were taken for granted in the 1950s as unique to banking and attention shifted more to assets. By the late 1960s, emphasis had shifted toward “liability management,” which stressed broad money market sources as a means of supplementing a bank’s customer deposit base.

Now, with the further increase in uncertainty, banks are trying to see how to manage an entire balance sheet for the highest, most consistent growth in earnings possible over the long haul. To help focus on the entire balance sheet while holding to prudent banking practices, banks have established asset-liability management committees made up of senior officials in loans, investments, finance, and other functions. Several considerations guide committees in their efforts to develop overall funding strategies:

- The need to satisfy capital and liquidity constraints

- The composition of financial liabilities
- The need to hedge exposed asset and liability positions
- The relative cost of funds purchased from various sources

Capital requirements affect growth

A bank’s capital position is closely checked by both bank regulatory authorities and the bank’s funds management. As capital provides a cushion to protect depositors from a decline in bank assets—and is, therefore, important to the public confidence a bank must have to grow and prosper—changes in the capital position of a bank are often used as a quantifiable measure of a bank’s soundness overall.

A sound capital base is necessary to attract large CDs. Large depositors (those with deposits more than \$40,000) tend to view a bank’s capital as a kind of coinsurance with FDIC protection. So that the creditworthiness of a bank is never questioned, it is important for it to maintain adequate capital to meet any unforeseen contingency. Otherwise, its ability to acquire funds from money market sources will be impaired.

The matter of what constitutes adequate capital has concerned bank regulators for some time. The ratio of capital to total assets is often taken as a measure of a bank’s exposure to risk. Future expansion of banking assets and purchased funds can be severely constrained if growth in assets and purchased funds growth is allowed to exceed the growth in capital from retained earnings.

The past decade saw a substantial decline in the ratio of capital to total assets. Although the significance of the decline in capital ratios is not easy to assess (because of changes in bank portfolios, access to borrowed funds, and external conditions) there is reason to

think it reflects an increase in the total exposure of banks to risk.

With banks more willing to accommodate a rising market for bank loans by purchasing funds in the money market, banks' earnings have become increasingly susceptible to fluctuations in financial markets. Their capital positions have become more sensitive to economic conditions that, in turn, have made bank stocks a riskier investment.

Changes in the price-earnings ratio of a bank's stock provide implications of whether it is easier or harder for most banks to expand discretionary liabilities relative to capital stock and surplus. Based on forecasts of balance sheet growth, earnings, and dividend payout, a bank funds committee determines whether expected earnings will be enough to support growth. As the implementation of discretionary funds management unfolds, the committee develops strategies for providing for additional capital if discretionary liabilities are expected to expand enough relative to capital for investors to penalize the price-earnings ratio of the bank's stock. If capital requirements cannot be met, the committee is discouraged from extended use of purchased funds. As the committee pulls back, there is constraint on the growth of total assets.

Generally, then, management considers the amount of capital needed to convince bank creditors that protection is adequate to cushion the impact of a growth in purchased funds on the price-earnings ratio and to satisfy the bank's own need for a dependable source of funds to support asset expansion.

Need to satisfy liquidity constraints

Asset decisions of most banks are also affected by the need to maintain adequate liquidity. Liquidity—the ability to meet claims presented for immediate payment—reflects the distribution of assets between loans and securities. Because claims on a bank's cash can often exceed expected inflows of money, prudent management must keep a cushion of cash, securities that can be readily converted into cash, or adequate borrowing capacity.

There has to be enough cushion to cover not only expected withdrawals and adverse clearings but also unpredicted deposit drains. It is also important for the bank, as a going concern, to keep a cushion that will cover withdrawals and clearings arising from deposits to be put on the books later, especially deposits created by new loans that are not accompanied by increases in cash inflows. This includes provisions for takedowns that result from both the implementation of current loan commitments and the servicing of any additional loan demand the bank decides to meet.

Balance sheet relationships have been used to measure individual bank liquidity, but most are inadequate. Ratios of loans to deposits and governments to deposits have been considered standard measures of bank liquidity.

The ratio of loans to deposits indicates the extent to which banks have already used up their available resources to accommodate the credit demand of their customers, the presumption being that the higher ratio the less able the bank is to make more loans. This ratio, however, shows nothing of a bank's other assets that might be converted into funds to meet either deposit withdrawals or loan demand.

The ratio of Treasury and U.S. government agency securities to deposits is a better indicator of the funds still readily available. But one of the drawbacks of this ratio is that it does not show the proportion of securities pledged to back government deposits and, therefore, is not available to provide liquidity. Moreover, much of a bank's portfolios of government securities may be pledged on repurchase agreements.

A bank's actual liquidity depends on several factors, including the structure of deposits and their relative volatility, the composition and maturity of liabilities other than deposits, seasonality in loan demands and deposit flows, the composition and maturity distribution of its security portfolio, the composition of its loan portfolio, secondary markets for various types of assets, and access to money market funds.

In assessing liquidity, equal consideration is given to the current position as well as the future outlook. Banks chart future flows of funds. They anticipate outflows by managing to obtain funds when they are needed. They try to reduce the likelihood of unforeseen shortfalls by using stable sources of funds, such as customer deposits and funds with long maturities.

The change in the composition of deposits in recent years has had an important bearing on the need for liquidity. Despite secular swings, time deposits had traditionally been more stable over the short run than demand deposits. As a result, with the growth in time and savings deposits, some banks may feel comfortable with fairly low levels of liquidity.

Whether total deposits are actually more stable, given the volume of time and savings deposits and the importance of fixed maturity certificates as a component of deposits, is not clear. With the growing sensitivity to differences in interest rates, some CDs, especially the large negotiable ones, can be highly volatile.

The shift in the composition of deposits has made some banks more watchful of fluctuations in financial markets. It has also made their liquidity dependent on the composition of their deposits, and especially the maturity distribution of time deposits.

In providing for liquidity to meet expected changes in the balance sheet, such as seasonal changes, banks identify their needs. This is done by analyzing historical data taken from their own books and by relating their experience in various phases of the business cycle. They also identify the sources available for meeting their liquidity needs. From such analyses, liquidity criteria are defined.

In planning for liquidity needs, banks tend to rely on liquid assets, especially government securities. By holding adequate liquid assets—an approach that may cause some loss of current income in the early stages of a business cycle—most banks avoid possibly greater losses from the sale of depreciated bonds later in the business cycle.

Though securities pledged to secure cer-

tain types of bank funds are not available to meet liquidity needs, a government securities portfolio is important as a source of liquidity. With the broad market for both Treasury securities and obligations of U.S. agencies, all these government issues can be turned quickly into cash.

The willingness of a bank to liquidate government securities to meet loan demands depends on the proportion of short-term securities in its investment portfolio. As their holdings of short-term government securities increase relative to long-term securities, banks are more liquid. Because of the usually smaller price variations associated with short-term securities, the locking-in effects (capital loss constraints on bank liquidations to meet loan demand) are reduced as the proportion of short-term securities in bank portfolios increases.

One byproduct of the concentration of liquidity in particular asset items is that bank liquidity appears readily measurable. Reserves were first used as a percentage of total assets. Then government securities were used as a percentage of total assets. These handy yardsticks for gauging bank liquidity disappeared when banks turned to liability sources of liquidity.

Short-term arbitrage placements have been used recently to generate countercyclical income while allowing banks to develop more extensive sources of liquidity. Arbitrage results from a price difference in two markets that allows a profit to be made on a purchase in one market and a simultaneous sale in the other. The profit characteristics of arbitrage transactions are margin stability at all phases of the interest rate cycle. The spreads are constant by definition and the maturities are coterminous.

Six-month funds, for example, after adjustment for reserve requirements and deposit insurance, are available at 10.5 percent in the domestic CD market but will earn 10.75 percent in the London Eurdollar market. For every \$1 million placed in the Eurodollar market from funds raised in the domestic CD market, the bank earns \$1,250. By bidding for funds in one market and offering them in the

other, the bank helps narrow the arbitrage differentials between the rates in the two markets. Arbitrage assets, moreover, are a source of liquidity for the bank.

Arbitrage assets, which include some investments, represent a residual use of funds at large banks. When loan demands are weak but expected to strengthen in the near-term, bank marketing departments develop funding sources immediately while simultaneously making deposit placements with other banks or foreign affiliates. When loan demands strengthen, those placements can be allowed to run off, providing the funds needed for liquidity. A bank can, for example, terminate some of its deposit placements with foreign branches (gross balances from foreign branches) as a source of liquidity.

Some banks have also come to rely on their capacity to borrow in money markets, both to meet deposit withdrawals and to satisfy loan demands. The implications of liabilities used as sources of liquidity are complex. The liabilities banks manage allow them to make loans and investments without selling other assets or, depending on deposit inflows, to provide the funds needed for liquidity purposes.

Uncertainty over the liquidity potential of the liabilities, however, presents banks with a problem. Federal funds, CDs, and Eurodollars on a bank's books do not show how well the bank can make payments at an acceptable cost and without relying on the Federal Reserve discount window. It depends too much on financial market conditions and the bank's exposure to the risk of a decline in the availability of discretionary sources of funds.

Diversification of financial liabilities

A bank's discretionary liabilities are determined in part by its perception of the liquidity risk of available discretionary items. Because large banks depend heavily on money markets for liquidity, it is important for them to diversify their purchases of liabilities so they will not exhaust their capacity to borrow, reserving their access to credit for

times of urgent need.

Diversification reduces a bank's exposure to liquidity risk of available discretionary liabilities. Risks of declining availability can be offset by diversification.

The important policy considerations for bank funds management are to limit the use of individual types of money market funds, to make sure a portfolio of borrowings is diversified enough that it does not depend too much on any one source. Diversification implies the issuing of an assortment of liabilities rather than a few debt instruments.

A bank can diversify its portfolio of financial liabilities by issuing claims with different maturities. It can also issue different securities. Diversification of money market sources assures the bank statistically that as long as the risks on various sources of funds are independent, the average loss from the declining availability of one source of funds will not be more than expected. Diversification is especially important when other sources of funds become less accessible, as for example, when banks approach a constraint on the available security collateral held against RPs or when weak deposit inflows to thrift institutions reduce the availability of federal funds from sources other than banks.

Diversification of bank liabilities is important in an overall program designed to meet liquidity needs. There are, however, limitations when credit is tight. As banks are likely to compete actively for existing reserve funds when they are scarce, costs can be very high for funds from all sources, even for banks that have kept positions in each market.

By spreading its sources of funds over a number of liabilities, a bank, nevertheless, can avoid excessive concentration in any one market. A result of concentration in one market is a potential increase in yields on the bank's instruments.

Banks can also maintain an adequate borrowing capacity by staying within what they consider their share of each segment of the market. One yardstick is the current share of the CD or Eurodollar or federal funds market represented by the bank's liabilities compared with some past percentage that

seemed “normal.” If the bank is below its normal share, it can issue additional liabilities without having to increase the rate offered. If it has reached its upper limit, it would have to increase its offering rate to get additional funds. The more a bank uses a particular source of funds, the more it must search through its correspondents and lending customers for funds. As the share of a bank’s liabilities increase relative to other banks, the subjective risk it bears also increases. And higher risks are associated with higher yields.

While this measuring rod for liability liquidity is helpful as a rule of thumb in guiding bank management, it does not address the fundamental question of how these “normal” percentages are determined. Determination of what is normal is important for banks that have not actively purchased discretionary liabilities.

The appropriate level of discretionary liabilities is best determined by an analysis of industry and bank market norms. Norms affecting the policies and practices governing the use of discretionary liabilities are transmitted through the industry by several channels.

Banks review data on other banks. They also discuss general funds management policies with banks of similar size and with larger correspondents, especially policies regarding the generation of discretionary liabilities. Based on an analysis of the general behavior of similar banks, “normal” percentages can be defined. Actual percentages, however, depend on a bank’s attitudes and perceptions of the risk and needs for funds.

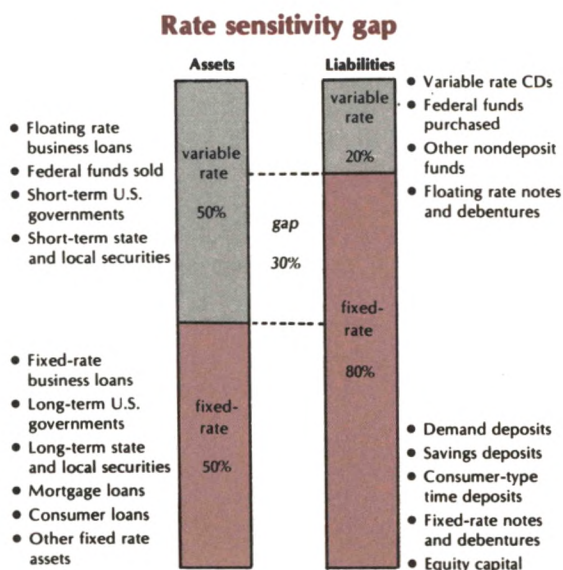
Maturity determines sensitivity to rates

While the need for funds determines the level of discretionary liabilities at any time, interest rate outlook and maturity requirements determine the maturity distribution of bank portfolios of financial liabilities. As future interest rates are always uncertain, they must be forecasted. But because such estimates are always subject to error, banks often vary their emphasis on longer maturity funds in accordance with their projections of interest rates.

Unexpected changes in market interest rates can result in gains or losses in a bank’s portfolio. Losses result if the bank finances its fixed-rate long-term loans with relatively short-term funds and market rates rise or if relatively fixed-rate long-term funds are used and lending rates fall. Gains can be made if interest rates move in the other direction.

Although much of this risk can be mitigated in practice by a bank’s tying the lending rate to the cost of funds, by correctly anticipating changes in interest rates, a bank can usually profit from the difference inherent in borrowing short and lending long. For this reason, banks try to some extent to harmonize the maturity structure of their portfolios with likely developments in interest rates. If rates are expected to fall, fixed-rate loans and short-term borrowings are preferred. If rates are expected to rise, floating rate loans and long-term borrowings are preferred.

The following illustrates a bank’s sensitivity to changes in interest rates. An asset or liability with an interest rate subject to change within a year is considered variable. One that cannot change for more than a year is considered fixed. The imbalance between fixed-rate liabilities and fixed-rate assets is a gap that can be expressed either as dollars or a percentage of total earning assets.



Controlling the size of the gap is an important function of bank funds management. To keep from relying too much on short-term funds, management sets a ratio between variable-rate assets and variable-rate liabilities. Thus, while federal funds are a constant source of funds for some banks, their use to finance fixed-rate long-term assets—with their potential for exposing banks to maturity risk—is limited to a permissible range for the ratio of variable-rate assets to variable-rate liabilities.

The size of the gap has a major influence on the volatility of earnings. If, for example, all the variable interest rates changed 1 percent, a 30 percent gap would have a \$6 million effect on pretax earnings of a bank with \$2 billion in assets. The size of the gap, then, varies with a bank's commitment to stable earnings.

The tendency, of course, is for banks expecting higher interest rates to accept large gaps, with the plan being to close the gap before interest rates turn down. Because de-

Financial futures reduce bank exposure

Financial futures markets give banks a chance to hedge exposed asset and liability positions. The primary function of futures markets is the transfer of risks of changes in commodity prices to speculators that, believing they can foresee price changes, are willing to take the risks.

Hedging involves taking a position in the futures market opposite from that in the cash market—the aim being that, regardless of the movement in prices, losses in one market will be offset by gains in the other. A successful hedge requires that cash market prices and futures market prices move in the same direction. The difference between the prices in the two markets is called the *basis*.

The hedge would be perfect if the basis did not change—that is, if the futures and cash prices moved in the same direction by the same amount. In actuality, the basis rarely remains constant. Hedgers watch for changes in the relationship between futures and cash prices that could expose them to a loss or gain. This is called a change in the *basis risk*.

Hedgers are especially watchful when taking a *cross-hedge*—a position in a futures market for one commodity opposite to that in the cash market for another. For cross-hedging to be effective, the cash prices of the two commodities have to move together. Unless the correlation is perfect, the cross-hedger exposes himself to a potentially higher basis risk. This is because market conditions determining the price of one commodity could change significantly relative to the other. If they did, the

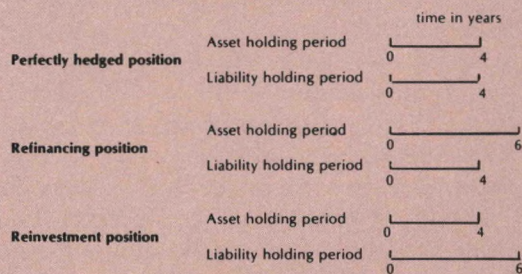
hedger would have been worse off than if he had no hedge at all.

It would seem attractive for a bank to lock in funds costs when rates are rising and to lock in yields when rates are falling. Few banks, however, use the futures markets to hedge their investments or potential liabilities.

In managing its positions in the futures market, a bank is limited by federal guidelines to transactions related to the bank's business needs and its capacity to meet its obligations. By taking a position in the futures market, a bank should reduce its exposure to loss through interest rate changes affecting its investment portfolio. Other rules require that a bank formulate its futures position in light of its entire mix of assets and liabilities. In addition, federal regulators allow banks the option to show futures contracts on their books at either market prices or lower-of-cost-or-market prices.

Because trading account assets are also "marked to market," futures contracts would

Refinancing and reinvestment positions can be hedged in the financial futures market



mand for business loans is heaviest when interest rates are highest, most banks cannot close large gaps when they want to. If they could manage their credit commitments so that funds were available for longer-term investment when interest rates are high, they could close the gap at the best time.

Hedging by matching maturities

Some banks hedge rate exposure by offsetting liabilities with assets of equal

maturity. To hedge against uncertain fluctuations in the prices and yields of financial instruments, banks can manage their loans and investments so that the maturity composition of their portfolios matches the maturity composition of the liabilities. Because of the nature of deposit liabilities and the traditional emphasis on liquidity, they sometimes prefer short-term to medium-term assets.

If a bank accepts a liability, say, in the form of a deposit that is apt to be short-term, it

be an effective means for dealers in the trading account side of the bank to reduce the risk of some positions or hedge trading in short-term securities. A few large banks deal in futures through their trading accounts. Others have found the interest rate futures markets an effective means of hedging exposed asset and liability positions.

A banker that accepts a liability—say, CDs—for a shorter time than the assets in which he places the funds faces a refinancing decision when the liability matures. In practice, of course, the bank needs to concern itself only with the net position after aggregating the maturities and amounts for all assets and liabilities.

The banker could protect his bank against unexpected increases in borrowing costs by selling Treasury bill futures contracts. If short-term rates rose by the time the CDs were issued and cash market and future market prices had moved together (as they usually do), the banker would have a gain in the futures market. This is because he can purchase his Treasury bill futures contracts at a lower price than he paid for them. As a result, the bank's effective cost of funds will be lower than the rate paid on its CDs.

If rates declined, however, the banker could have issued CDs at the prevailing rate. The bank would have sustained a loss in the futures market, raising its effective cost of funds.

By selling Treasury bill futures contracts to hedge his CD position, the banker shifts the risk of an unexpected change in interest rates to the purchaser of the futures contracts—usually a

speculator. He has limited the potential rise in his costs, but he has also agreed implicitly to limit the potential of his lower costs. He is content with the usual profits from lending.

The speculator, feeling that he has expertise in forecasting interest rate movements, agrees to take the risk of fluctuations in interest rates. He is willing to take on this risk because of the large profits he could make if his forecasts were right.

Banks that expect to have funds available later (reinvestment position) because their assets are shorter-term than their liabilities can use the futures market to lock in the current rate of return on investments. This can be done, for example, by buying futures contracts on Treasury notes.

If yields decline by the time the bank is ready to buy the notes, profits made on the sale of the futures contracts at a higher price than was paid for them compensate for the lower yield in the cash market, raising the effective rate of return to the bank. If rates rise, the higher rate in the cash market compensates for losses in the futures market, lowering the effective rate of return to the bank.

In neither case is it necessary for the hedging bank to have an opinion about the probable course of interest rates. In pure hedging, the decision to hedge requires no expectations regarding the probable course of prices and yields. In practice, however, hedgers usually consider their expectations of change, hedging when they expect the risk of loss to be great and not hedging when they figure the risk is small or maybe even in their favor.

can offset that liability by short-term lending for the same length of time. In theory, as the asset matures, it is used to pay off the debt coming due at the same time. The bank is, presumably, content to make its profit on the spread between the interest rate paid on the liability and the rate charged on the loan.

To the extent, however, that banks try to match the maturity of an asset with the maturity of a liability, they might give up opportunities for profits because they do not fit into the maturity structure of the existing portfolios. There might also be market resistance to purchase of long-dated liabilities at rates that made it worthwhile for banks to offer extended maturities to match the maturity of an asset.

For greater flexibility and possibly greater profitability, most banks probably keep only an approximate hedged position. Lack of an overall hedged position for the aggregate of assets and liabilities a bank holds, however, increases its exposure to liquidity pressures. These pressures depend, of course, on the relative costs and availability of the bank's sources of liquidity.

Costs influence daily strategies

With basic criteria in place relating to capital needs, liquidity constraints, and portfolio diversification of financial liabilities, bank funds management is guided from day to day by efforts to hold down costs or increase the return on funds, with emphasis on maturity requirements and the outlook for interest rates.

One of the more important maturity issues is the timing of "going long"—when to raise new funds with maturities much longer than existing liabilities. Based on their forecasts of interest rates, some banks prefer to go long before all rates rise above the rates just negotiated. Other banks, again based on their interest rate expectations, prefer to go long when rates are at their cyclical low.

Because such estimates are subject to error, banks hedge their positions. Unwilling to revamp their entire liability structure, they

often vary their emphasis on longer maturity liabilities with their uncertainty over future changes in interest rates. Interest rate expectations, then, affect the maturities the bank wants to attach to its new liabilities. They also affect the offering scale quote to potential buyers. If the bank wants to sell longer-term maturities, for example, it may offer customers a slightly higher rate than the current market rate for six-month funds and a slightly lower-than-market rate for 60-day funds.

The decision of what to buy and where to sell is made partly by cost considerations. The decision-making is dominated by traders at the desk managing the bank's funds position. After adjusting for different reserve requirements, traders compare the rate on 60-day CDs with term federal funds and 60-day Eurodollars, picking the one that costs the least.

The federal funds trader compares the overnight rate with the RP trader, with one-day Eurodollar funds and with the rate and yield on dealer loans, and adjusting for reserve requirements, decides where one-day funds should be raised.

This raises an increasingly important aspect of funds management—provision of the lowest cost funds. Costs are always important. But removal of Regulation Q ceilings on large CDs has made it possible for banks to pay more attention to cost factors in assuring themselves of liquidity. It has also reduced the emphasis on the continuing availability of funds from particular sources.

More attention to cost factors, however, does not guarantee that bank funds management guidelines and constraints will be satisfied automatically. To satisfy the various liquidity constraints and borrowing limits, there is a periodic suspension of the discretionary character of one or more funding sources. In this way, individual items can be brought up to the level management considers best or held below borrowing limits to avoid an increase in yields on the bank's liabilities.

Monetary aggregates redefined

Anne Marie L. Goczy

The Board of Governors has adopted four new money stock measures, plus a broad measure of liquid assets.¹ The following are now being used in the conduct of monetary policy.

- M-1A—Currency plus demand deposits at commercial banks, exclusive of demand deposits held by other domestic banks, foreign banks and official institutions, and the U.S. government.

- M-1B—New M-1A plus other checkable deposits, including NOW and ATS accounts at commercial banks and thrift institutions, credit union share draft accounts, and demand deposits at mutual savings banks.

- M-2—New M-1B plus savings and small-denomination time deposits at all depository institutions, overnight repurchase agreements (RPs) at commercial banks, overnight Eurodollars held by U.S. residents other than banks at Caribbean branches of member banks, and money market mutual fund shares.

- M-3—New M-2 plus large-denomination time deposits at all depository institutions and term RPs at commercial banks and savings and loan associations. Large time deposits are those in denominations of \$100,000 or more.

- L—New M-3 plus other liquid assets, including term Eurodollars held by U.S. residents other than banks, bankers' acceptances, commercial paper, Treasury bills and other liquid Treasury obligations, and U.S. savings bonds.

These measures replace five old measures that were losing their significance:

- M-1—Currency plus demand deposits at commercial banks other than deposits of other domestic banks and the U.S. Treasury,

but including demand deposits held by foreign banks and official institutions.

- M-2—Old M-1 plus savings and time deposits at commercial banks other than large negotiable CDs of weekly reporting banks.

- M-3—Old M-2 plus savings and time deposits at mutual savings banks, savings and loan associations, and credit unions.

- M-4—Old M-2 plus large negotiable CDs of weekly reporting banks.

- M-5—Old M-3 plus large negotiable CDs of weekly reporting banks.

Comparison of the aggregates—old and new

The new M-1A and M-1B are both narrow transactions measures of money. The new M-1A is essentially the same as the old M-1, the difference being that M-1A excludes demand deposits held by foreign banks and official institutions at commercial banks. The new M-1B is a broader measure than either M-1A or the old M-1. It includes M-1A plus other checkable deposits at all depository institutions—commercial banks and thrift institutions.

New M-2 is closer to old M-3 than old M-2. It differs from both by including money market mutual fund shares, overnight RPs, and certain overnight Eurodollars, none of which was in any of the old monetary aggregates. It also differs from old M-2 by excluding all commercial bank large time deposits. And it differs from old M-3 by excluding all large time deposits at both commercial banks and thrift institutions.

By including all large-denomination time deposits at both commercial banks and thrift institutions, the new M-3 is more like old M-5 than old M-4, which included only commercial bank deposits. Because new M-3 also

¹A more detailed description of the redefinition appears in "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, Vol. 66 (February 1980), pp. 97-114.

Monetary aggregate growth—old versus new measures

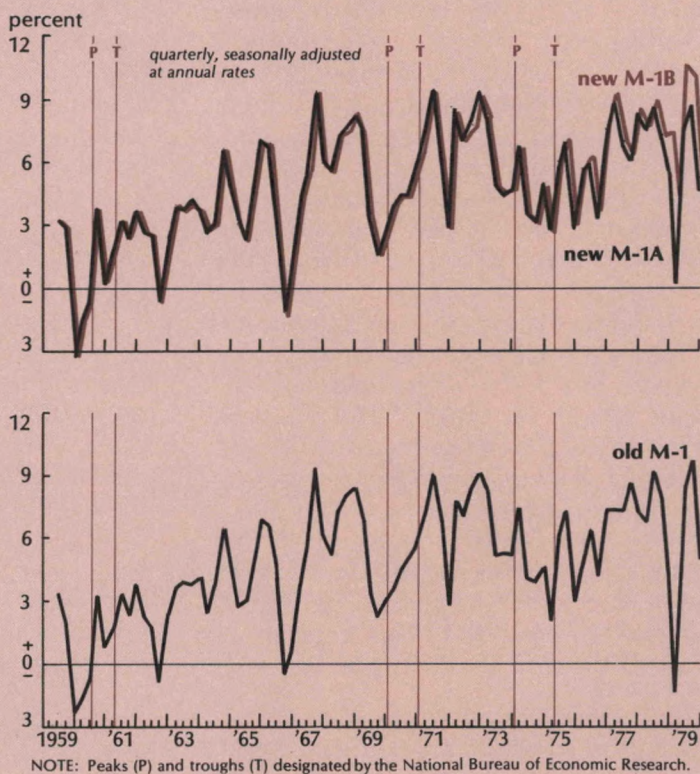
Growth rates in the transactions aggregates, whether old M-1 or new M-1A or M-1B, have been similar over the past 20 years. Growth in M-1A and M-1B was almost the same until 1976. More recently, with the increase in NOW and ATS accounts, M-1B has risen faster than either M-1A or old M-1. If NOW accounts were authorized nationwide, deviation in M-1A and M-1B growth would be likely for some time.

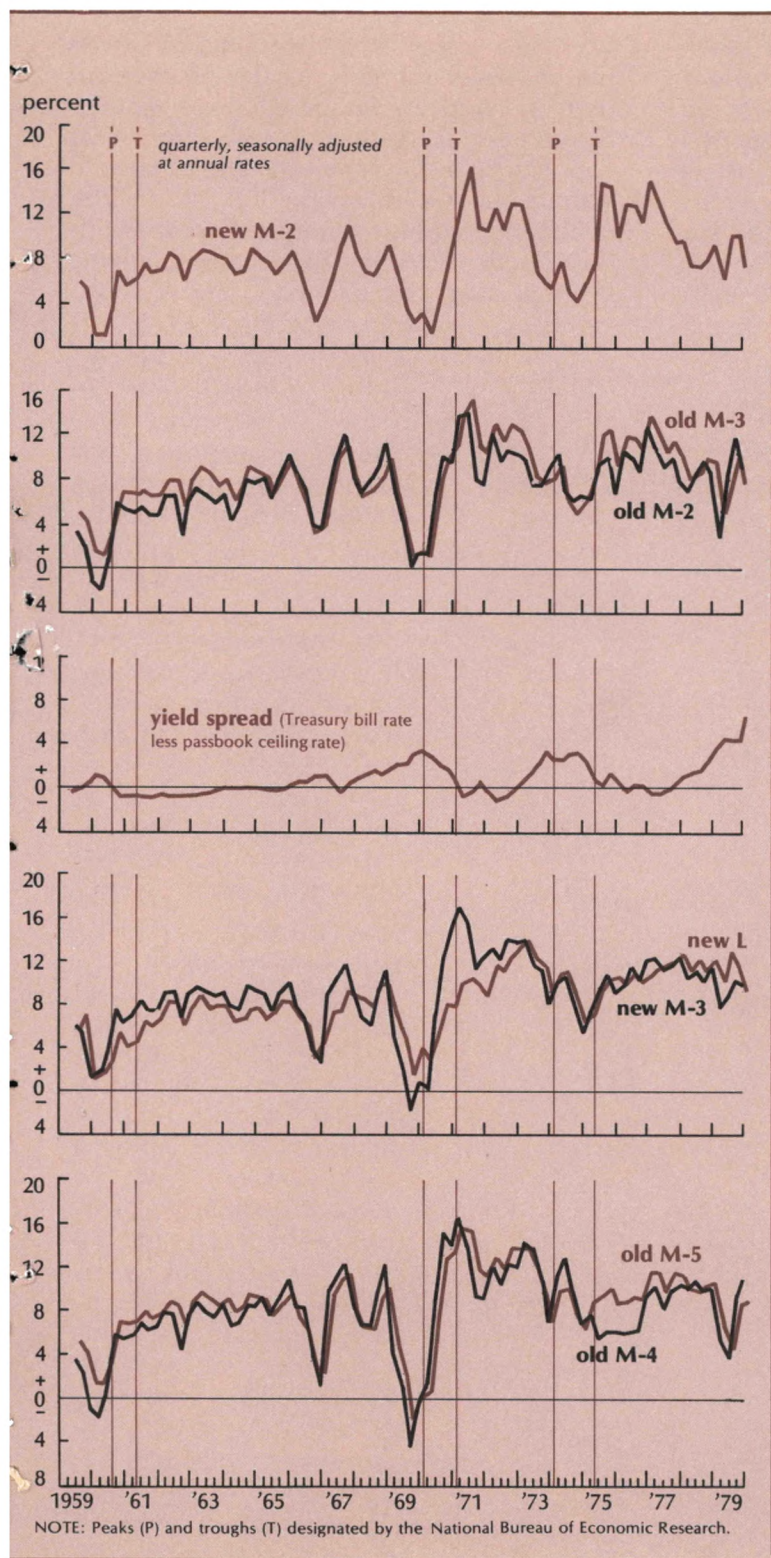
Growth in new M-2 has tended to vary with old M-3 and to some extent with old M-2. Growth in all three measures has been sensitive to the spread between the Treasury bill rate and the passbook savings ceiling rate, tending to slow as market rates rose above deposit ceiling rates. The interest sensitivity of new M-2 can be expected to moderate, however, if the proportion

of this aggregate accounted for by components with yields that vary with money market conditions continues to rise.

The new M-3, although similar to old M-5, has tended to expand somewhat faster than either old M-4 or M-5. This difference widened in the late 1970s with the growth in RPs, money market mutual fund shares, and overnight Eurodollars.

Growth in the broad liquid assets measure, L, has followed about the same pattern as new M-3, but has been somewhat less volatile. Moreover, there has been a tendency in recent years for L to grow faster than new M-3 and other broad measures. This reflects the increasing proportion of liquid assets generated by issuers other than depository institutions.





includes RPs, certain overnight Eurodollar deposits, and money market mutual fund shares, however, it is more inclusive than old M-5.

The new liquid asset measure, L, is even more inclusive. To the new M-3 are added asset holdings that represent short-term liabilities of all depository institutions, non-financial corporations, and the government. In addition to providing a broad measure of the liquidity of holders, the L measure might be viewed as the aggregate that most closely approximates the volume of credit extended, both directly and through financial intermediaries.

To avoid double counting the amounts in these aggregative measures, consolidation adjustments have been made to eliminate holdings by financial intermediaries of the obligations of other intermediaries. For example, the RPs, CDs, and commercial paper held by the money market mutual funds are eliminated in the measures that include both these obligations and the funds' shares.

Reasons for new definitions

Regulatory changes and financial innovations over the past decade have changed the character of the public's monetary assets. With the introduction of NOW and ATS accounts, credit union share drafts, and demand deposits at thrift institutions, the number of financial instruments that can be used in transactions increased, making the old M-1 a less com-

prehensive measure of transactions balances.

Moreover, savings accounts have become more liquid. Among the innovations making it easier for savings accounts to be used in transactions are preauthorized payments from savings accounts and transfers of funds from savings to checking accounts by telephone. Point-of-sale terminals allow S&L customers to withdraw funds from savings accounts and make deposits through terminals at retailers. Businesses and governmental

units can hold savings accounts at banks.

The number of investment alternatives has increased through the development of money market mutual funds, security repurchase agreements, and Eurodollar deposits. Changes in the ceiling rates that can be paid on time and savings deposits and the minimum deposit required for time accounts have opened a variety of alternatives, ranging from floating-rate six-month and 2½-year certificates to fixed rate certificates.

All this—especially with the rise in interest rates—has encouraged the public to reduce its holdings of noninterest-earning demand deposits. And with competition between banks and thrift institutions narrowing (if not eliminating) differences in the deposit services offered, concepts of money that, like old M-1 and M-2, include only commercial bank deposits, were no longer adequate representations of the public's monetary assets.

Criteria for choosing aggregates

The FOMC considers many factors in determining the thrust of monetary policy. Only a few, however, can be focused on in implementing policy. Focus for the past decade has been increasingly on the monetary aggregates, with primary attention given to the old M-1 and M-2 measures. Now, with the aggregates redefined, it is necessary to decide which of the new measures should be given primary

New measures of money and liquid assets

Aggregate	Components	November 1979 (not seasonally adjusted) (billion dollars)
M-1A		372.2
	Currency	106.6
	Demand deposits ¹	265.6
M-1B		387.9
	M-1A	372.2
	Other checkable deposits ²	15.7
M-2		1,510.0
	M-1B	387.9
	Overnight RPs issued by commercial banks	20.3
	Overnight Eurodollar deposits held by U.S. nonbank residents at Caribbean branches of member banks	3.2
	Money market mutual fund shares	40.4
	Savings deposits at all depository institutions	420.0
	Small time deposits at all depository institutions ³	640.8
M-2 consolidation component ⁴	-2.7	
M-3		1,759.1
	M-2	1,510.0
	Large time deposits at all depository institutions ⁵	219.5
	Term RPs issued by commercial banks	21.5
L	Term RPs issued by savings and loan associations	8.2
		2,123.8
L	M-3	1,759.1
	Other Eurodollar deposits of U.S. nonbank residents	34.5
	Bankers' acceptances	27.6
	Commercial paper	97.1
	Savings bonds	80.0
	Liquid Treasury obligations ⁶	125.4

NOTE: Components of M-2, M-3, and L measures generally exclude amounts held by domestic depository institutions, foreign commercial banks and official institutions, the U.S. government (including the Federal Reserve), and money market mutual funds. Exceptions are bankers' acceptances and commercial paper for which data sources permit the removal only of amounts held by money market mutual funds and, in the case of bankers' acceptances, amounts held by accepting banks, the Federal Reserve, and the Federal Home Loan Bank System.

¹Net of demand deposits due to foreign commercial banks and official institutions, domestic banks, and the U.S. government.

²Includes NOW, ATS, and credit union share draft balances and demand deposits at thrift institutions.

³Time deposits issued in denominations of less than \$100,000.

⁴In order to avoid double counting of some deposits in M-2, those demand deposits owned by thrift institutions (a component of M-1B) which are estimated to be used for servicing their savings and small time deposit liabilities in M-2 are removed.

⁵Time deposits issued in denominations of \$100,000 or more.

⁶Marketable Treasury obligations with less than 18 months remaining to maturity.

emphasis. This decision has to be based on a combination of criteria—which aggregate is conceptually desirable, closely related to other economic variables the FOMC wants to influence, highly controllable, and measurable on a current basis.

Money is usually defined by the functions it serves—a medium of exchange, a standard of value, a store of value or purchasing power. For policy purposes, money's role as the medium of exchange generally receives the greatest emphasis. But what counts as a medium of exchange is different from when old M-1 was introduced in 1960. Then, M-1 represented nearly all the funds that could be used for transactions. Now, however, assets that serve as money in transactions include not only currency and demand deposits at banks but also

NOW and ATS accounts, credit union share drafts, and travelers checks. All these, except travelers checks issued by nonbanks, are included in the new M-1B measure.² Thus, it is a better measure of transactions balances than new M-1A or old M-1.

Other assets come close to serving the transactions function of money. Savings accounts other than NOW and ATS accounts, for example, can be easily converted into transactions balances, often with no more than a phone call. Many money market mutual funds offer check-writing privileges

²Travelers checks of nonbank issuers will be included once data from major nonbank issuers become available on a regular basis. Travelers checks issued by banks are included in all the new and old monetary measures.

Relationship between new and old monetary aggregates

<u>Aggregate and component</u>	<u>November 1979</u> <u>(not seasonally adjusted)</u> <i>(billion dollars)</i>
Old M-1	382.6
Less demand deposits of foreign commercial banks and official institutions	10.4
Equals: New M-1A¹	372.2
Plus other checkable deposits	15.7
Equals: New M-1B	387.9
Old M-2	945.3
Plus savings and time deposits at thrift institutions	664.2
Equals: Old M-3	1,609.5
Plus overnight RPs and Eurodollars	23.4
Plus money market mutual fund shares	40.4
Plus demand deposits at mutual savings banks ²	1.0
Less large time deposits at all depository institutions in old M-3	151.2
Less demand deposits of foreign commercial banks and official institutions	10.4
Less consolidation component ³	2.7
Equals: New M-2	1,510.0
Plus large time deposits at all depository institutions	219.5
Plus term RPs at commercial banks and savings and loan associations	29.8
Equals: New M-3	1,759.1
Memo:	
Old M-2	945.3
Plus negotiable CDs at large commercial banks	95.9
Equals: Old M-4	1,041.2
Old M-3	1,609.5
Plus negotiable CDs at large commercial banks	95.9
Equals: Old M-5	1,705.4

¹Also includes a very small amount of M-1-type balances at certain U.S. banking offices of foreign banks outside New York City which were not in the old M-1 measure.

²Demand deposits at mutual savings banks were not included in any of the old monetary aggregates.

³Consists of an estimate of demand deposits included in M-1B that are held by thrift institutions for use in servicing their savings and small time deposit liabilities included in new M-2.

although the checks usually have to be fairly large, generally \$500 or more. Commercial bank RPs with customers often represent the investment of demand deposits that are only temporarily idle. This is especially true of overnight and continuing contracts.

These assets are added to M-1B, along with certain overnight Eurodollar deposits and small time deposits at banks and thrift institutions, to arrive at new M-2. But because the added components must usually be converted before they can be used in transactions, new M-2 is not as good a transactions measure of money as M-1B. The same is true for new M-3 and L, both even broader measures than new M-2.

Theoretical choice needs to be validated by empirical evidence. The more stable and

predictable the historical relationship between a monetary aggregate and a goal economic variable such as GNP, the more likely it is that changes in the supply of that aggregate will affect the economy in a predictable way in the future. Moreover, regardless of causation, if changes in a measure of money are similar to changes in GNP, current readings of that measure can provide insight as to what is happening to GNP long before actual GNP data become available. In this regard, several tests conducted at the Federal Reserve Board and Federal Reserve banks suggest a stronger relationship to GNP, on balance, for the new aggregates than for the old measures, especially in recent years. No one of the new measures, however, is better than other new measures in all tests. Such testing is an integral part of ongoing monetary

policy research work, and new evidence produced will have an important influence on the focus of policy implementation in the future.

The various money measures are not equally controllable by the Federal Reserve. The degree of control depends to some extent on operating procedures. If the Federal Reserve uses an interest rate, such as the federal funds rate, as an operating target, control over a particular aggregate depends primarily on the sensitivity of demand for that aggregate to changes in interest rates. If it uses a reserves operating target, such as total or nonborrowed reserves, control over the aggregate tends to be greater if the components of the aggregate are subject to reserve requirements. Under the operating procedure adopted last October, which uses

Annual growth rates—old and new money stock measures
(percent)

Year ¹	Old measures					New measures				
	M-1	M-2	M-3	M-4	M-5	M-1A	M-1B	M-2	M-3	L
1960	0.4	2.6	4.8	2.6	4.8	0.6	0.6	4.6	4.8	3.6
1961	2.8	5.4	7.1	6.5	7.9	2.8	2.8	7.1	7.7	6.2
1962	1.4	5.9	7.7	7.1	8.5	1.8	1.8	8.0	8.8	8.0
1963	4.0	7.0	8.7	8.3	9.6	4.0	4.0	8.6	9.5	8.4
1964	4.5	6.7	8.3	7.8	9.0	4.3	4.4	7.9	8.9	7.3
1965	4.3	8.6	8.6	9.5	9.1	4.4	4.4	8.0	9.2	8.0
1966	2.9	6.0	5.4	5.5	5.0	2.7	2.7	4.9	5.2	5.5
1967	6.4	9.9	9.7	10.7	10.3	6.4	6.3	9.3	10.4	8.5
1968	7.6	9.0	8.1	9.3	8.3	7.4	7.4	8.0	8.7	9.5
1969	3.9	3.2	3.6	0.1	1.5	3.8	3.8	4.2	1.5	4.4
1970	4.8	7.2	7.2	10.2	9.2	4.8	4.8	5.8	8.9	6.5
1971	6.6	11.3	13.5	12.8	14.3	6.6	6.6	13.5	14.8	10.4
1972	8.4	11.2	13.3	12.3	13.9	8.5	8.5	12.9	14.0	12.9
1973	6.2	8.8	9.0	12.0	11.0	5.7	5.8	7.3	11.7	12.3
1974	5.1	7.7	7.1	10.7	9.0	4.7	4.7	6.0	8.7	9.6
1975	4.6	8.4	11.1	6.6	9.7	4.7	4.9	12.3	9.4	9.8
1976	5.8	10.9	12.7	7.1	10.2	5.5	6.0	13.7	11.4	11.0
1977	7.9	9.8	11.7	10.1	11.7	7.7	8.1	11.5	12.6	12.6
1978	7.2	8.7	9.5	10.6	10.6	7.4	8.2	8.4	11.3	12.3
1979	5.5	8.3	8.1	7.5	7.6	5.5	8.0	8.8	9.5	11.5

¹Fourth-quarter average over fourth-quarter average growth rate, based on seasonally adjusted data.

reserves as the operating target, the efficacy of control of the new monetary measures depends on the degree to which the components are reservable under Federal Reserve regulations. Reserve requirements apply to a larger portion of M-1A than any of the other aggregates. This proportion diminishes as liabilities of nonmember institutions are added, but the coverage is only slightly more than for M-1B—perhaps on the order of one percentage point.

No matter how good in theory a particular aggregate may be, if it cannot be measured accurately and if knowledge of changes in it is not timely, it is not very useful for policy purposes. Data for all components of the new measures are available, and negotiations are under way to obtain data on travelers checks of nonbank issuers that will be included in M-1A when available. The quality and timeliness of the data vary, however. A major concern has been the delay in availability of data on transactions balances at thrift institutions.

Efforts have been made over the past year to improve data flows. The Federal Reserve, for example, has begun collecting data from credit unions, and more timely data are being collected on RPs and on deposits of nonmember banks, mutual savings banks, and S&Ls.

Estimates of weekly data are being published for the M-1A and M-1B aggregates and their components. Weekly estimates of some components of other measures are also being published. These include overnight and term RPs issued by commercial banks, certain overnight Eurodollar deposits, and commercial bank savings and time deposits. Monthly estimates for the new M-2 and M-3 measures will be published by the middle of the following month. Monthly data for L will be published with a six to eight-week lag.

Because some of the checkable deposits at institutions other than member banks have to be estimated, data may be less reliable for M-1B than for M-1A initially. But as data collection programs are refined, both the accuracy and timeliness of both M-1B and the broader aggregates are expected to improve.

Related issues

The debate over the proper definition of money has entailed much discussion of the role of money market mutual funds, security RPs, and credit cards.

Assets of money market mutual funds rose very rapidly last year, from \$10 billion at the end of 1978 to \$44 billion at the end of 1979. Although many of the funds offer check-writing privileges, the minimum amount for which a check can be written is high, limiting the transactions use of these shares to big ticket purchases. The funds are attractive primarily as liquid investments. Estimates of the turnover in these funds suggest that balances are used much like savings accounts and not primarily as transactions accounts. It is for this reason that money market mutual fund shares are included in new M-2 and not in either of the narrow transactions measures.

Banks have made more use of RP arrangements with their customers in recent years. In an RP, a bank sells a security to a customer and agrees to buy it back at a specific time at a specific price. Funds obtained through RPs in U.S. Treasury or agency securities are exempt from basic reserve requirements of member banks. Thus the RP resembles a loan from the customer to the bank, collateralized by government securities. In the case of an overnight RP, the funds in most instances come out of a demand balance one day and are restored to these balances and are available to spend the next day. Term RPs tie up the funds for a longer period, providing the customer with an interest-earning alternative to demand balances that are not needed for immediate transactions.

There is considerable disagreement on whether RPs are mostly liquid investments or transactions-type balances—close substitutes for demand deposits. Some analysts attribute the errors in predicting demand for old M-1 type balances in the late 1970s to the growing use of RPs as a cash management tool. Others regard RPs as an alternative to other investments such as short-term Treasuries, commercial paper, bankers' acceptances, or

CDs. The decision not to include RPs in M-1A or M-1B rested mainly on this difference in view as to whether RPs are basically transactions or investment instruments.

Although credit cards are sometimes called "plastic money," they are not included in any measure of money. Every component of the whole array of monetary aggregates represents the public's holdings of financial assets. A credit card is not a financial asset, meaning something that is *owned*. On the contrary, debt—something *owed*—is incurred by its use. Money balances must be used to liquidate this debt. The credit merely postpones the transfer of ownership of financial assets.

Nevertheless, the increase in the use of credit cards, does have implications for monetary policy. There are two elements in the relationship between money and GNP. One is the amount of money available for spending. This is the focus of concern in defining the monetary aggregates. The other is the rate at which money, however defined, is spent—its velocity. Spreading use of credit cards affects the velocity of money by allowing a smaller amount of transactions balances to support a given level of spending.

Why two M-1 measures?

As NOW accounts combine the features of transactions and savings accounts, it is expected that if these accounts were offered nationwide, funds would be shifted into them initially from household demand deposits, savings accounts, and other liquid assets. As it is difficult to estimate the extent of shifting that would be made, the Board of Governors expects the availability of both M-1A and M-1B to help in interpreting narrow money stock growth during a transition to NOWs.

During this start-up period, shifts to NOWs out of demand deposits would have the effect of slowing M-1A growth even though no change occurred in actual transactions balances. Such shifts would not affect M-1B because both demand and NOW accounts are components of that aggregate. Thus, a focus on M-1A in policy implementation would tend to understate the real growth

in narrow money. M-1B, on the other hand, may overstate the underlying trend growth of money to the extent that shifts to NOWs reflect initial transfers from noncheckable savings and other nontransactions balances.

The extent of any shifting from either or both sources will be greatly influenced by the pricing of NOW accounts and how the terms offered compare with service charges and interest paid on alternative liquid assets. Once the initial shifts are completed, reliable data flow and statistical procedures are well-established, and experience has provided further evidence of relationships between the new aggregates and the behavior of the economy, it may be more feasible to focus down to a single measure of transactions balances for purposes of policy implementation. The broader measures will, of course, be monitored and will provide guidance in setting growth objectives for narrow money.

M-1B seems the more likely choice in the foreseeable future. It is closer to meeting the theoretical criteria for a money concept since NOW and ATS-type balances can be spent directly. Most of the reasons for discontinuing old M-1 still apply to M-1A. The evidence suggests that the relationship of M-1B to GNP has been better in recent years than that of old M-1 or M-1A, and it is more controllable than the broader measures. Also, it is expected that information on M-1B soon will be as reliable as M-1A data and more timely than data for broader measures.

Given that no financial asset is viewed exclusively for either transactions or investment purposes, any choice from among the possible aggregations of financial assets entails some element of arbitrariness, and the same measures are not appropriate to serve various analytical needs. For this reason, the components of the new money measures are to be published separately to facilitate recombinations desired by users.

Moreover, continual innovations in the payments system are a fact of life. It should be expected, therefore, that even this new set of money measures may be subject to change as required to keep policy variables consistent with economic reality.

Problems facing agricultural banks

Gary L. Benjamin

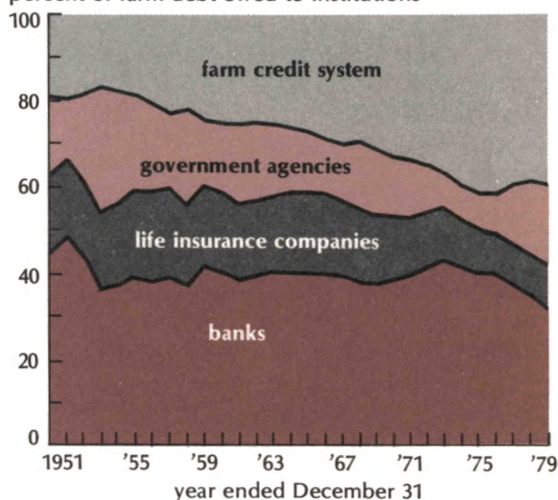
Growth in farm debt picked up sharply in the 1970s. During the past ten years, farm debt has risen at an annual rate of 11.7 percent, compared with 7.5 percent in the 1950s and 1960s. Outstanding farm debt now totals \$160 billion, three times the total of ten years ago.

Growth has been especially rapid for the last four years. But growth at banks has not kept pace, resulting in a substantial loss of market share. Farm debt owed to banks has risen at an annual rate of 10.5 percent since 1975, compared with 17 percent for all other institutional lenders. Because of the slower growth, the proportion of institutionally held farm debt owed to banks has declined to a third. Down from 40 percent in 1975, that is the smallest market share for banks in the post-World War II era.

Competitive imbalances that favor other lenders account for part of the loss in market share. Competition from the farm credit system and government agencies can be tough for banks and, in some respects, inequitable. The farm credit system—which includes federal land banks and production credit associations—has a competitive edge in its exemption from usury ceilings, and its tax advantage. Government agencies that lend to farmers (Commodity Credit Corporation, Farmers Home Administration, and the Small Business Administration) also have these advantages, plus recent mandates from Congress and the Administration to provide farmers special loans. Government agencies have been the fastest growing institutional lender serving farmers in recent years. Much of this growth reflects new and more liberally subsidized programs for farmers affected by natural disasters and economic distress. More borrowing under the commodity price support program (partly to rebuild grain reserves) and a liberalized program to expand on-farm storage facilities has also contributed to the rise in government lending to farmers.

Share of farm debt owed to banks has declined sharply

percent of farm debt owed to institutions



Also accounting for the loss in market share was the reemergence of problems peculiar to banks, especially rural banks. Most of the problems tie to liquidity pressures that began building at rural banks in the late 1970s. But some of them tie to the increased borrowing needs of agriculture—needs that press against the limits on credit banks can extend to single borrowers.

The liquidity problem entails issues regarding sources of funds. The problem of lending limits entails issues regarding the adequacy of capital at rural banks relative to the credit needs of farm-loan customers.

Liquidity problems

Liquidity is a general measure of the balance between funds flowing into a bank and those flowing out. It also bears on the bank's flexibility in converting fairly fixed assets into liquid assets. Evidence of liquidity

pressures at rural banks usually appears as a rise in loan-to-deposit ratios. Ratios at agricultural banks have risen sharply in recent years as banks tried to meet strong loan demand while deposit growth slowed. Loan-to-deposit ratios at agricultural banks in the Seventh Federal Reserve District averaged 67 percent last year. That compared with averages of 54 to 57 percent in the first half of the 1970s.

Further evidence of recent liquidity pressures shows in bankers' assessments of the availability of funds for lending. As tracked by quarterly surveys of agricultural banks in the Seventh District, the availability of funds has been very low since late 1977.

Swings in the liquidity of agricultural banks reflect the dependence of rural banks on local deposits as a source of funds. Swings can be triggered by sudden changes in local economic conditions, such as a drop in farm earnings. Or they can come from disintermediation. As market rates of interest rise, with the rates banks can pay on most deposits fixed by ceilings, funds that would ordinarily support deposit growth are attracted to other investments. Disintermediation then tends to slow deposit growth. For some banks, it creates a net outflow of deposits.

Rural banks do not have the size, reputation, market area, and other attributes that allow urban banks to use nonlocal sources of funds to offset swings in local deposits. Rural banks are nearly always precluded from efficiently bidding for such national money market funds as foreign deposits, large negotiable certificates of deposit, repurchase agreements, fed funds transactions, and commercial paper sales.

Disintermediation problems at rural banks have eased somewhat with the introduction of deposit instruments with floating interest rate ceilings tied to yields on new Treasury issues. Willingly or begrudgingly, rural banks have accounted for a large part of the six-month \$10,000 minimum balance money market certificates of deposit issued since they were first authorized in June 1978. Much of this, however, has represented more

a restructuring of local deposits than a net inflow of new deposits.

Cyclically rising market rates of interest can also affect the liquidity of rural banks by limiting their flexibility in adjusting security portfolios to meet loan demand. A rural bank's lending capacity is largely governed in the long run by its ability to attract deposits. But it can fund faster loan growth in the short run by liquidating securities. This was clearly the situation in the late 1970s when loan-to-deposit ratios at rural banks rose sharply.

Even so, rising rates of interest complicate the procedure two ways. On the one hand, market rates tend to rise faster than rates on farm loans, with the result that short-run profit incentives for banks shift from loans to such other investments as Treasury securities, municipals, and fed funds sales.¹ On the other hand, rising market rates cause prices of the fixed-rate instruments in a bank's investment portfolio to decline. Under these conditions, the bank is likely to lose on the security transaction if it liquidates an investment so it can fund loan requests.

Liquidity pressures clearly undercut the ability of bankers to meet the strong farm loan demand of the past few years. Despite rapidly rising loan-to-deposit ratios, farm debt owed to banks rose only 32 percent after 1976. The debt owed to individuals and others rose only 38 percent, but the increase was 56 percent for the farm credit system, 66 percent for life insurance companies, and 240 percent for government agencies.

Legal lending limit problems

Because most of the relative slowing in bank lending to farmers traces to liquidity problems, some of the market share lost to other lenders may be regained when market rates turn down again. Even so, developments of the past decade support the view that individual legal lending limits have increasingly

¹This results partly from the farm credit system's practice of pricing loans on the basis of an average cost of funds. Changes in rates on farm loans often lag changes in money market rates. The rates do not usually reach the cyclical peaks and troughs of other rates.

Variations in basic legal lending limits for banks in the Seventh District

Legal lending limits set the maximum credit a bank can extend to a single borrower. The limits are designed primarily to protect depositors by spreading loans among a large number of borrowers in different lines of business.

National banks are subject to limits imposed by the Comptroller of the Currency. State banks are subject to limits established by state agencies. The limits are calculated as a percentage of a bank's capital base. The applicable percentage and the accounts that can qualify as part of the capital base vary with the regulatory agency. Variations in basic lending limits between banks in Seventh District states are summarized below.

There are numerous additions and exemptions to the basic lending limits. At national banks, for instance, loans guaranteed by government agencies (such as Farmers Home Administration or Federal Housing Administration) are not subject to lending limits. With the proliferation of guaranteed lending programs of the Farmers Home Admin-

Variations in basic legal lending limits for banks in district states¹

	<u>Applicable percentage</u>	<u>Eligible capital accounts</u>
Nationally chartered banks	10	Common stock, preferred stock, surplus, subordinated notes and debentures, ² undivided profits, one-half of reserve for loan losses, reserve for contingencies
State chartered banks		
Illinois	15	Common stock, preferred stock, surplus
Indiana	15	Common stock, preferred stock, surplus, subordinate notes and debentures ²
Iowa	20	Common stock, preferred stock, surplus
Michigan	20 ³	Common stock, preferred stock, surplus subordinated notes and debentures ²
Wisconsin (the higher of)	15	Common stock, preferred stock, surplus, subordinated notes and debentures ²
	or	
	20	Common stock, surplus

¹The legal lending limit is equal to the applicable percentage times the sum of the dollar value of the eligible capital accounts.

²Subordinated in right of payment to the claims of depositors.

³With the approval of two-thirds of the bank's board of directors. Otherwise 10 percent.

istration in recent years, this exemption has been of increasing importance to rural banks. National banks can lend the equivalent of up to a fourth of their eligible capital base to a single borrower, provided the funds are used to buy feeder livestock and the livestock securing the loan is worth at least 15 percent more than the loan. Similar provisions are available for loans on commodities, such as grain, secured by warehouse receipts.

handicapped rural banks in their efforts to finance farmers.

In a recent survey, for instance, more than half the agricultural banks in the district reported they had more farm-loan customers with credit needs exceeding the bank's lending limit than five years ago. Only 4 percent reported they had fewer customers with

credit needs in excess of the bank's lending limit.

The continuing decline in farm numbers in the 1970s, along with the rapid growth in farm debt, has led to a much greater concentration of debt. Preliminary indications are that per-farm debt among units with annual sales of \$40,000 or more may be close to

\$200,000.² Roughly half that is probably nonreal estate farm debt.

These figures have to be interpreted cautiously when related to legal lending limit. Debt per farm, for example, sometimes involves two or more borrowing units, especially where there is a tenant and a landlord. The figures, nevertheless, provide a general impression of the concentration of debt.

An earlier analysis of growth in lending limits at agricultural banks in the Seventh District further supports the view that legal lending limits increasingly handicap bankers in financing farmers. That analysis shows that, despite considerable growth from 1972 through 1977, nearly 14 percent of the agricultural banks in the district in 1978 were confronted with basic lending limits of \$50,000 or less. A third operated at limits from \$51,000 to \$100,000. A fourth had limits from \$101,000 to \$150,000.

Largely because of differences in banking structure, agricultural banks in Illinois and Iowa tend to have the lowest lending limits. More than half the agricultural banks in Illinois and over three-fifths in Iowa had lending limits of \$100,000 or less at the end of 1977. That limit applied, by contrast, to only 30 percent of the agricultural banks in Indiana, 16 percent in Michigan, and 40 percent in Wisconsin.

A legal lending limit of \$100,000 would be restrictive compared with the borrowing re-

Distribution of agricultural banks in the Seventh District, by legal lending limits, December 1972 and December 1977

		Legal lending limit (thousand dollars)							
		25 or less	26 to 50	51 to 75	76 to 100	101 to 150	151 to 200	201 to 300	301 to more
Illinois									
	1972	9.6	42.1	25.7	10.0	7.9	1.8	2.1	0.7
	1977	1.4	17.5	22.9	10.0	28.2	9.3	6.1	4.6
Indiana									
	1972	4.6	27.8	28.7	9.3	17.6	4.6	5.6	1.9
	1977	0	6.5	10.2	13.9	29.6	13.0	15.7	11.1
Iowa									
	1972	5.2	40.3	25.0	16.9	9.1	2.3	1.0	0.3
	1977	1.9	13.0	21.4	25.0	17.5	12.0	6.8	2.3
Michigan									
	1972	0	8.9	16.5	19.0	27.8	10.1	10.1	7.6
	1977	0	0	2.5	13.9	24.1	20.3	19.0	20.3
Wisconsin									
	1972	4.6	27.2	21.9	21.2	16.6	7.3	1.3	0
	1977	1.3	12.6	12.6	13.9	25.8	15.2	13.9	4.6
District									
	1972	5.9	34.6	24.4	14.8	12.5	3.9	2.7	1.2
	1977	1.3	12.4	17.5	16.4	24.1	12.5	9.8	5.9

quirements of many farmers. USDA budgets for 1978 showed, for example, that grain farmers in the Midwest had variable per-acre costs (excluding labor and interest) of roughly \$36 for soybeans and \$82 for corn. For a 500 acre farm raising equal amounts of corn and soybeans, that would amount to roughly \$30,000 in operating costs that had to be financed either by equity or debt. If half the farm was cash rented at \$100 an acre, another \$25,000 would be added to current operating costs.

Purchase of a major item of machinery such as a tractor or combine, could add \$50,000 or more in borrowing needs. Purchase of another 40 acres of land would result in \$30,000 to \$85,000 in borrowing needs. Numerous other expenditures, such as family living or real estate improvements, could further boost the need for credit well beyond the legal lending limits of many agricultural banks.

Implications for the future

The performance of banks relative to other farm lenders in recent years may not point solely to the problems at banks. Some

²Farms of this size represent only 22 percent of all farms but account for 56 percent of the farm assets, 71 percent of the farm debt, and 81 percent of the cash receipts from farm marketing. Such farms are increasingly considered "commercial full-time" farms. Given recent averages of per-acre yields and prices, farms with a minimum of 200 acres would likely have annual sales of \$40,000 or more. The average farm in the district states is slightly over 200 acres.

elements of the increase in government lending have caused observers to think programs were too liberal and might be subject to abuse.

Although much less of an issue, growth of the farm credit system is not without some questions of appropriateness. Whether it is appropriate for the system to raise funds at very favorable rates in national money markets and distribute them almost exclusively in loans to farmers—while receiving tax concessions and exemptions from usury ceilings—may be debated more in the years ahead. The question is more relevant now that the farm credit system accounts for 40 percent of the institutionally held farm debt than a decade ago when it held 31 percent, two decades ago when it held 25 percent, and three decades ago when it held only 18 percent.

Aside from these issues, there are genuine concerns about the future roll of rural banks in agricultural lending. With the public, including the rural public, more aware not only of differences in interest rates but also some of the new investments that compete with deposits, rural banks may need to become more innovative in holding and expanding their local deposit base. Proposals to phase out ceilings on interest rates paid on deposits, if implemented, may help rural banks maintain their deposit base.

Judging the future deposit base at rural banks requires some assessment of the economic health of rural communities. Most analysts are optimistic about the outlook of agriculture, which bodes well for rural communities and rural banks. The uncertain outlook for energy, however, throws into question continuation of the urban-to-rural shift in population. Further increases in energy prices could slow, or even reverse, this trend.

Questions about the adequacy of legal lending limits at rural banks are somewhat easier to handle. There seems no reason to expect the decline in farm numbers to end, although it might abate. Operating farm debt, and maybe total farm debt, will very likely continue to be held by ever fewer farmers. To offset the resulting pressure on lending limits, rural banks will have to increase their capital base.

The dual concerns of liquidity and legal lending limits cannot be divorced from the overall question of bank structure. Studies of the impact on agricultural lending from branch banking and multibank holding companies show mixed results. It is not inconceivable, however, that with the greater access to sources of funds that such banking structures provide, as well as the expanded capital base inherent in these organizations, rural banks may eventually look with more favor on such arrangements.