

Bank funds management comes of age

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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.

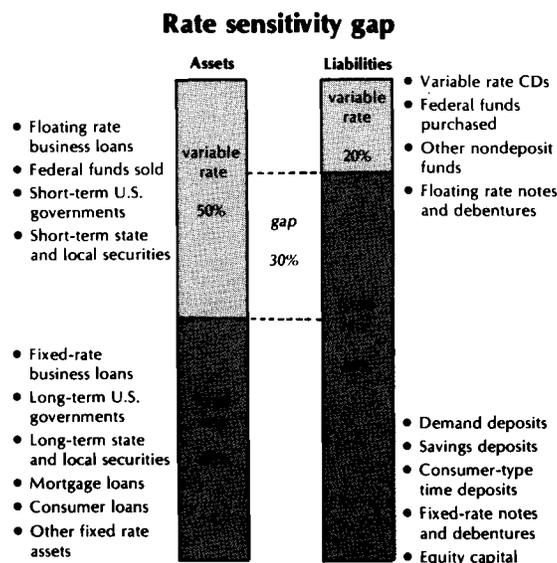
Maturity determines sensitivity to rates

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*.

Hedges 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

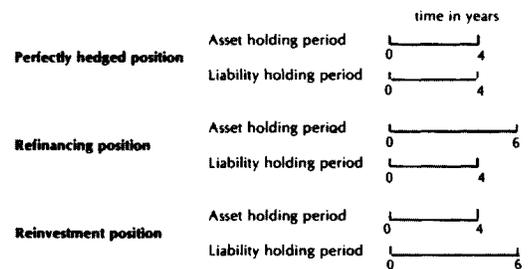
hedger would have been worse off than if he had no hedge at all.

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.