New Opportunities in Liquidity Management

Donald C. Miller

The assigned purpose of this paper is to explore new opportunities in liquidity management. The term is understood to mean a profitable mix of asset and liability management in the demanding new economic environment that is developing. My own preference is for the term "balance-sheet management" as a more accurate and concise way to describe the process.

To establish a kind of controlling context for this discussion, I first will review some of the circumstances surrounding the passage of the Depository Institutions Deregulation and Monetary Control Act, its meaning for financial institutions, and especially its effects on liability management. The latter two portions of the paper will deal first with broader funds management techniques of large banks and then with funds-management challenges and opportunities for smaller agricultural and community banks.

During the past three decades, funds management at large commercial banks has been characterized by three basic approaches. In the 1950s the focus was on the asset side of the balance sheet. It shifted to the liability side in the 1960s and early 1970s, and in the second half of the 1970s the two methods were integrated.

Although some of the important methods and techniques that may be employed by large banks will not work for banks whose resources are more limited, there obviously are useful parallels that apply here. This suggests at the outset that one of the strongest assets a smaller bank can develop to guide it through the coming years is a flexible management attitude. The scene can be set quickly with a brief summary of three key aspects of the current banking environment.

First, the banking industry is losing its strong position as a financial intermediary. There are several powerful factors behind this development, all related to inflation.

Inflation and the consequent volatility of interest rates that we will continue to experience are hurting the ability of banks to achieve what have been traditional funding profits. The staple policy of lending long and borrowing short has been made obsolete by the negatively sloped yield curve. Traditional approaches to asset and liability management must be changed, as I shall discuss later. Also, it is difficult to remedy this problem by switching customers over to floating-rate loans when the borrower evaluates the effects of inflation in much the same terms as the lender, so many problems of how to handle the demand for long-term, fixed-rate loans remain unresolved.

Second, banks of all sizes are losing their quasi-monopoly positions in the financial services industry — positions they had held because of geographical location. Merrill Lynch is moving strongly into the competitive picture with its diverse array of financial services. Major banks are issuing credit cards nationwide, and most large banks are opening Edge Act offices and loan production offices all over the country. Foreign banks are entering major cities like Chicago and New York and those in California en masse. Sears soon will be issuing its own notes to your customers.

Third, the long-standing web of regulation is coming unraveled, leading to the blurring of traditional distinctions not only among types of deposits but among financial institutions themselves. The major groundbreaking development in this respect has been the Depository Institutions Deregulation and Monetary Control Act of 1980, which mandates the orderly phaseout of Regulation Q and makes other changes in the regulatory structure that will affect the balance-sheet management policies of banks.

All of these developments have their root causes in the onset and continuing pressure of inflation, which has begun to change policies and institutions. As the psychology of inflation becomes more fixed, the changes catalogued here will become more rapid.

The Advent of Deregulation and Its Effects

Escalating inflation in recent years, with the resulting rise in interest rates and the growing uncertainty about the course of economic activity, had increased pressure on Congress to pass the Deregulation Act. The gap between Regulation Q rates and market interest rates widened rapidly as market rates rose to record levels in

1979 and continued to trend upward through the first quarter of 1980. During this time, stop-gap measures in the form of newly authorized liability instruments were introduced. The six-month money market certificate created in 1978 with a $10,000 minimum deposit was designed to prevent financial institution deposits from moving directly into the money market, and the 2%-year certificate was added in January 1980 for the same purpose.

These measures failed to help small savers, who could not meet minimum deposit requirements, and they failed to prevent nonregulated institutions from attracting these and other deposits from banks and thrifts. In 1979, money market mutual funds almost doubled in size to approximately $60 billion, and currently they have around $80 billion in outstandings. These funds offer money market rates of interest while providing more liquidity than recently authorized instruments designed to compete with these funds.

Rising interest rates and accelerating inflation also increased the flight of commercial banks from the Federal Reserve System. Noninterest-bearing reserves held at the Fed became increasingly costly as market rates pushed higher and higher. As more banks left the Federal Reserve System, it had fewer and fewer reserves under its direct control, and it argued that as a result monetary policy was becoming more difficult to implement effectively. Also hindering monetary policy was the growing volume of NOW accounts and other transactions accounts at nonbank institutions. These events added to other pressures on the Federal regulators and on Congress to bring the rules into better conformity with current market forces.

This increasingly volatile and uncertain climate was generating new methods for survival in the commercial banking sector. Major examples include the rapid expansion of variable or floating-rate loans and widening use of the futures market to hedge interest rate risk. But liability management, particularly for non-money center banks, continued to be a major problem because of Regulation Q ceilings.,Even where small banks were able to maintain their deposit base, Regulation Q severely restricted their ability to coordinate the structure of assets and liabilities by adjusting rates and maturities of instruments to make them marketable.

These distortions in the financial system had a major influence on the omnibus Deregulation Act that became law in March of this year. The rules that it changed or eliminated have both direct and indirect implications for liability management. The phaseout of Regulation Q

has major significance, while imposition of uniform reserve requirements, authorization of nationwide NOW accounts, and pricing of Federal Reserve services have an important, but less direct impact.

Title II of the Act extends the authority to impose rate ceilings for six years, while establishing specific standards for adjusting these ceilings to market rates of interest. During the six-year transition period, an interagency committee will oversee the elimination of Regulation Q. This Depository Institutions Deregulation Committee is composed of the Secretary of the Treasury, the chairman of the Board of Governors of the Federal Reserve, the chairman of the Federal Deposit Insurance Corporation, the chairman of the Federal Home Loan Bank Board, and the chairman of the National Credit Union Administration Board, all as voting members, and the Comptroller of the Currency as a nonvoting member.

The Act directs the committee to provide for the orderly phaseout and ultimate elimination of Regulation Q as rapidly as economic conditions allow. But as of March 31, 1986, all deposit interest-rate ceilings will end, and the DIDC will be abolished. In the interim the committee has considerable latitude in determining how rapidly the phaseout will occur, but it cannot establish rate ceilings that exceed market rates. Specific increases are not established in the Act, but the committee must meet periodically to vote on whether to establish specified minimum increases of Regulation Q limits.

Therefore, on the basis of the guidelines set out in the Act, we should expect at minimum a ¼ per cent increase in Regulation Q limits in September 1981 and minimum ½ per cent increases at the end of March of 1983, 1984, 1985, and 1986 on all categories of deposits. But the committee could make these rate changes larger or smaller according to economic conditions.

It also should be kept in mind, while factoring these interest-rate changes into liability management planning, that the committee has additional powers that allow it to completely eliminate restrictions that apply to a particular category of accounts and to create new categories of accounts not subject to limitations or with current market rates as limits. For example, the committee could remove the 180-day maturity restriction from the money market certificates of deposit but maintain the $10,000 minimum deposit. Or it could remove completely interest-rate restrictions on the 2½-year certificates. Therefore, we should expect that the actions of the committee will result in more flexibility for liability management as the phaseout progresses.

The committee already has used its authority to alter the ceiling rates payable on both six-month and 2%-year floating rate deposits whose ceiling rates have been tied to interest rates on Treasury securities with comparable maturities. These actions set higher ceilings for these deposits by changing their relationship to the yields on Treasury securities and established minimum ceilings for each. The committee also has decided to eliminate finder's fees and raise the maximum, value of premiums banks can offer for deposits, while restricting the methods banks can use to compute premium costs.

Other changes legislated in the Deregulation Act will have an effect on liability management but will not be under the supervision of the committee. For commercial banks and other depository institutions, the cost of deposits will change because the Federal Reserve System will phase in universal reserve requirements over an eight-year period. The Act requires that the System also open up its services to all depository institutions and explicitly price each service. In addition, all regulated financial institutions will have the authority to offer NOW accounts beginning in 1981.

Both reserve-requirement coverage and percentages will change under the Act. A 3 per cent reserve against transaction accounts totaling $25 million or less and 12 per cent for all transaction accounts over $25 million are the initial requirements. Nonpersonal time deposits will require an initial 3 per cent reserve. Personal time deposits no longer will require reserves.

For nonmembers of the Federal Reserve System, these requirements are new, but vault cash, which is sufficient to cover required reserves in most small institutions, can be counted as reserves. Thus, except for the very large institutions, the expansion of reserve-requirement coverage will have a minimal effect. Moreover, for member banks, these required reserve ratios are less than the ones in existence prior to the Act. Most institutions, therefore, will not be affected, but member banks that are affected will find that they have more resources to acquire earning assets.

In 1981 the Federal Reserve will begin pricing its services and making them available to all depository institutions. The additional cost of these services probably will add only a minimal amount to total noninterest expenses. But direct access to Federal Reserve services could prove beneficial at times for portfolio management, depending on the banking organization.

The nationwide extension of authority to offer NOW accounts for

all depository institutions will affect both the cost and competitive structure of the industry. These demand accounts can be offered with an interest rate of up to 5¼ per cent, which eliminates the prohibition against interest payments on demand deposits. As a result, institutions will be able to price deposit services more effectively and adjust the price as competitive conditions change. At the same time, many more competitors will be offering these services — savings and loan associations, mutual savings banks, and credit unions — so competitive pricing will become more important for maintaining a stable and growing deposit base. Developing a new service in a market with new competitors undoubtedly will create transition shifts of deposits from institution to institution until a stable pricing system or systems evolve in the competitive market.

These reforms, will be more equitable for financial institutions offering similar services. But they also will alter the cost structure for banks and thereby have an effect on liability management decisions. Moreover, the Deregulation Act requirement that the Federal Reserve begin explicitly pricing its services is likely to alter the cost structure of a bank's overall operations and so have an effect on efficient liability management.

The changes in the regulatory environment have their main focus on the liability side of the balance sheet. Phasing out interest rate limits on deposits will allow banks more freedom over managing the size of interest-rate-sensitive asset and liability gaps, giving them — particularly smaller banks — better control over liabilities. At the same time, other changes incorporated into the Act will broaden the competition for deposits, which will tend to decrease interest rate margins between assets and liabilities. Still, on balance these regulatory changes should increase flexibility for more efficient balance-sheet management.

Small banks especially will feel the effects of the Regulation Q phaseout and NOW account authorization, because their asset flexibility has been much more constrained than that of larger banks. Other than the maximum interest rates payable on NOW accounts, banks will be able to offer competitive rates for deposits. They can produce deposit services that provide liquidity and yield tailored to customers' needs, perhaps allowing people to design their own accounts, given some specified limitations. Phasing out Regulation Q also will mean that restrictions on premiums will be eliminated, so interest can be paid at any time either as explicit interest or as a

premium. These changes will make banks much more competitive with money market mutual funds and should help reverse the flow of deposits from the small banks into these funds.

The effects of the changes in the law will be most pronounced on smaller banks, but large banks also will be adjusting to the altered environment. It is appropriate, therefore, to examine some of the principal approaches that large banks are using and their possible applicability to community banks.

General Techniques of Funds Management at Large Banks

As the economic, regulatory, and financial environment has changed, large banks have responded with innovative techniques of funds management appropriate for the changing times. Before the emergence of liability management, the traditional asset allocation or asset management system was practiced by most banks regardless of size. This approach required bankers to adjust the composition and quantity of assets to changes in the amount and mix of deposit liabilities. The liability structure of the institution was passively accepted as being determined by the local marketplace. Available funds were employed according to strict priorities. First legal reserves had to be met, and then liquidity needs were fulfilled by the maintenance of secondary reserves consisting of very liquid, short-term assets. After legal and liquidity requirements were satisfied, existing credit demands were met by making loans, and any remaining funds were allocated to fixed-income investments. In short, the quantity and type of deposits determined the level and nature of assets held by a bank.

One development exerting major impact on the structure of large-bank balance sheets and the techniques used to manage them was the secular increase in inflation since the 1960s. This resulted in tremendous credit demands that presented banks with numkrous opportunities to expand their loan portfolios. Since the slow growth in demand deposits caused by Regulation Q and increasing efficiencies in cash management coincided with expanding credit demands during the 1960s, banks turned to purchased funds, or liability management, to satisfy lending requirements. Other trends during recent years have pressured larger banks into greater reliance on money market funding. One such factor is the statutory deregulation of financial intermediaries.

In recent years, the tremendous volatility in interest rates has necessitated the evolution to funds management techniques that can deal with the consequent volatility in bank earnings. These highly volatile rate patterns are a result of the Federal Reserve's monetary policy response to persistent, high inflation rates. The Fed's strategy during the last year has emphasized control of the growth path of the monetary aggregates as opposed to the stabilization of interest rates. This approach, producing a quite restrictive monetary policy, has precluded banks from consistently relying on a positively sloped yield curve to generate short-funding profits. With the rates on assets and liabilities fluctuating wildly, banks are striving to control the spread on the sources and uses of their funds. Accordingly, the central focus now is asset and liability management. The techniques of the two approaches — liability management and asset and liability management — will be described below.

Liability management for many banks is the practice of acquiring funds through the issuance of short-term bank liabilities in the money markets. It involves banks competing generally for funds on a price basis. By purchasing or borrowing money in the open market, banks can obtain funds to meet reserve requirements, liquidity needs, loan demand, and investment opportunities. With liability management, funds requirements and asset growth can be met by adjusting the quantity and composition of liabilities. This contrasts with the historical approach of asset management, under which bankers passively accepted their deposit liabilities as provided by the public and allocated them to meet needs of varying priorities.

Liability management, then, is the management of purchased or discretionary funds. This theory of commercial bank liquidity can be labeled as discretionary funds management, because it involves the control of interest-sensitive funds that can be increased or decreased at a bank's initiative or discretion. It excludes non-discretionary funds, that is, assets and liabilities over which the bank has little immediate control. Some of the liabilities that are considered to be discretionary in the short run include Federal funds, repurchase agreements, certificates of deposit, Eurodollar deposits, and commercial paper. These instruments of liability management developed sporadically as various sources of funds were made unavailable through regulation.

The basic objectives of liability management involve insuring the availability of purchased money as it is needed, minimizing the cost

of these funds, and planning strategically to meet long-term funding requirements that permit a desired rate of asset expansion. The thrust of liability .management is to acquire all the money one can employ and to structure the maturity of the liabilities in synchronization with the interest rate cycle. Initially the most critical endeavor of discretionary funds management is the problem of liquidity management or maintenance, the availability of adequate financing for a bank's activities through all interest rate environments.

Liquidity is the ability to raise cash on short notice to offset cash drains over time with a minimum of profit disruption. Banks have quite special liquidity requirements because it is the nature of their business to make commitments to receive and pay out funds upon demand. A customer may choose to draw down a line of credit or a deposit, roll over a loan, or make payment against an outstanding loan. The liquidity problem for banks is always to have the ability to honor these commitments. Liquidity is essential to banking because the inability to meet cash demands could mean failure or at least an impairment of confidence in an institution.

Liability management has changed the methods employed by banks to meet liquidity needs. Prior to 1960, banks measured liquidity in terms of the amount of readily marketable assets that were held. These assets were termed secondary reserves and consisted of U.S. Treasury bills and notes, plus broker and dealer loans. The concept was the storing of liquidity in readily marketable assets to meet loan demand or deposit withdrawals. Liability liquidity, on the other hand, is the technique of raising cash by purchasing funds. It is specifically the ability to issue additional liabilities over and above the ones already outstanding. The greater the amount of outstanding liabilities, the less liquidity there is available. The use of untapped borrowing potential for liquidity purposes is the essence of this approach.

It is very difficult to quantify liability liquidity: Some institutions have attempted to measure it by calculating their current market share in a certain liability instrument like certificates of deposit and comparing that statistic with the average percentage taken by the bank in the past.

If a bank is below its average share, it can expect to issue additional liabilities without much difficulty. Unfortunately this is a simplistic analysis that leaves a great deal unanswered about liability liquidity. Uncertainty over untapped borrowing potential is a genuine limita-

tion of liability management. For this reason, the first priority in implementation of the liability management approach is maintaining the availability of funds.

Insuring the availability of adequate funding initially requires that senior management develop a set of explicit guidelines that specify sound operating procedures and constraints on behavior in regard to funding activities. The approach applied in funding describes the philosophy of the bank's management in this endeavor. Whatever philosophy is adopted will, of course, determine the manner in which a particular bank guarantees the availability of money. To augment the availability of funds, management should give consideration to the following factors:

Source diversification. Since large banks depend heavily on the money markets for their liquidity, it is prudent that financing be sought from a variety of sources and instruments. Diversification of liabilities applies just as it does in investments with diversification of assets. Institutions like to maintain a presence or visibility in various markets to enhance diversification. Thus, even if a particular market is not the most economical, a bank may borrow in it just to maintain it's access to those funds. Furthermore, banks like to maintain diversification within each category of discretionary funds in order to avoid taking excessive amounts of money from any one supplier. A profile of financing obtained from various instruments and customers should be analyzed to avoid concentration of funding.

Source development. Expansion and better utilization of a bank's natural customer base are probably the most efficient way to improve the availability of funds. To accomplish this, it is necessary to inform calling officers about financing activities and requirements and encourage them to solicit customer funds. Assistance should be provided in identifying and contracting potential funding sources. To increase the direct placement of liabilities with customers, it is necessary to meet the needs of the customer. A bank must be willing to take money in the instrument and maturity where it is offered. There must be an accommodation of a variety of customer preferences.

Funding capacity and market exposure. To insure liquidity maintenance, it is crucial that an institution employing liability management not exceed its capacity to borrow. This can be accomplished by subjectively appraising the capability for acquiring funds in each particular liability vehicle. It requires good judgment, prudence, and

estimation. Actual use of a particular market can provide insights as to the extent that the market will absorb a bank's paper. The acquisition of funds beyond the perceived, appropriate share of a market can reflect negatively on a bank's condition.

Abuse of access to the marketplace can be interpreted by market participants as an indication that an institution is experiencing some internal difficulties. There must be a reluctance to surpass borrowing capacity for fear of damaging one's reputation or the value of one's name, incurring the risk that all segments of the market would be closed or only accessible at above market rates.

Period run-off limits. Since maturing liabilities represent a 'liquidity drain, their runoff must be regulated. Limits must be established for the maximum dollar amount that can mature in a particular week or month to avoid excessive liquidity drains.

Maximum *country/currency* limits. Today global perspective is necessary in funds management because capital controls no longer limit the movement of funds between domestic and foreign markets. Many lenders of funds are foreign nationals and governments, so limits must be set for funds taken per country to supervise exposure to political risk. Since the movement of currencies is likewise not constrained in the international markets, these funds are available for borrowing. To manage the risk of fluctuating currencies against the dollar, limits must be established describing the extent to whrch such exposure will be accepted. Often foreign-exchange risk can be eliminated or modified by hedging currency positions.

Balance sheet structure. Financing activities should be undertaken with an intention of maintaining a stable balance sheet in terms of the percentage composition of liabilities. A financial structure that differs markedly from the industry or peer-group norm draws undue attention to funding activities and risks complicating the task of funding. A shift in balance-sheet structure could impose unanticipated changes in the perceived riskiness of bank's securities.

Organization. Funding, more so than many activities, is done in response to 'market opportunities. Under these circumstances, for large banks the funds-gathering unit must be structured to provide an organization with enough flexibility to take advantage of opportunities in various domestic and international markets. The need for a unified, coordinated approach toward raising money in the worldwide markets provides much of the initiative for global funds management. Proper coordination among the reserve position man-

ager, the term liability manager, the Eurodollar position manager, and the foreign exchange traders will lead to more economic and diversified funding.

The preceding seven items are essential considerations for maintaining access to the money markets. Funds cannot be borrowed unless the market has confidence in the buyer. This confidence is determined by the conduct of the institution in the market, which is a function of management's philosophy or operating approach.

Minimizing Interest Expense

After the availability of funds is assured, the second major objective of liability management is to minimize the cost of purchased money over the interest-rate cycle. To achieve this end, the proper mix of liabilities must be determined, and the appropriate average maturity must be 'built into the deposit structure. Aside from availability aspects, the various instruments of liability management have two other variables that must be examined in constructing the optimum portfolio of liabilities.

These elements are the all-in cost after reserves and the maturity of a particular funding vehicle. Instruments that are considered borrowings, such as repurchase agreements and Federal funds, are free of reserve requirements and tend to have the lowest nominal and all-in interest rates. Yet the maturity of these instruments is quite short-term, typically one day. Deposit liabilities such as Eurodollars and certificates of deposit usually have greater nominal and all-in costs than borrowings, are subject to reserves, and are available in maturities of up to, generally, 12 months. Reserves increase the all-in cost of money because a portion of the funds raised must be placed on deposit at the Federal Reserve. Obviously, when rates are expected to rise, greater reliance is placed on term-deposit sources of funds to lock in money at existing rates. Borrowings may, at the moment, be less expensive, but they provide no protection against higher rates. In this situation, the average maturity of deposits should be extended to provide an additional hedge against rising rates. History indicates that expanding the volume of term liabilities outstanding and lengthening the average maturity of deposits early in a business expansion have been an economical strategy to follow. Of course, when lower rates are anticipated, a shift to a greater mix of borrowings and a shorter average maturity in the deposit book is desirable.

The proper composition and maturity of liabilities are determined

by the trade-off of cost against maturity. To provide proper perspective, it must be noted that this exercise would be merely a rather simple, mechanical procedure if one possessed a reasonably accurate interest rate forecast. Again, the persistence of inflation and the difficulty of judging its psychological implications have made this a strenuous and often frustrating exercise.

Written Directives

For implementation purposes, the tactical strategies of liability management should be documented through written directives. Liability managers typically meet formally with senior management to draft such a document, which details the money-management approach and guidelines to be followed in the short run. A review of each potential source of funds is conducted with regard to relative costs and percentage utilization in each market. Explicit upper and lower parameters on the level of activity in any single market are determined. The act of formulating directives promotes a sense of involvement on the part of the line officers, and it provides a convenient forum for briefing senior management on recent developments in the market. Finally, global money-gathering activities are executed in a more coordinated and purposeful manner at all levels of the organization. The directive is an effective communication device by which strategies are relayed to those responsible for implementation.

Strategic Planning for Long-Term Funding Requirements

The provision of adequate liquidity is not a static problem. Long-run planning must provide for dynamic growth of adquate liquidity over time so as not to hinder the basic growth of a bank's assets. Initially in the planning process, asset managers throughout the bank must be surveyed to ascertain the volume of assets that is expected to be carried over the planning horizon. Next,. projections of the capital account must be undertaken to determine whether projected asset volumes can be comfortably carried. The capital adequacy question is a subjective and complex one. The proper amount of capital hinges on what bank management perceives as prudent, what capital-asset ratio or leverage a bank's peer group maintains, what supervisory authorities view as acceptable, and ultimately the judgment of the marketplace. The leverage desired by a particular institution will determine the need to raise additional capital in order to meet planned growth. If capital cannot be raised at an acceptable cost, growth in

assets may have to be limited in the long run by the requirement to remain within the range of proper capital coverage.

Finally, the growth of basic funding liabilities or uncontrollable liabilities such as demand and savings deposits must be projected. Combining planned asset expansion and non-purchased liability growth with due consideration of leverage constraints defines a funding gap that must be met. The risk being tracked by the strategic planning process is the inability to meet the financial deficit at any point in the plan. Management of this risk involves the projection of sources of liquidity, including asset liquidation and runoff and incremental funding sources, and the structuring of a mix of takings from these sources to assure that funds availability is held at a level consistent with management's desires. The point here is that planning will allow this risk to be controlled.

Balance-Sheet Management at Money Center Banks

In the last five years, with an environment often characterized by extremely volatile interest rates, greater dependence on purchased funds, and a negatively sloped yield curve, large banks have consciously attempted to build in a profit spread or interest margin between their money market borrowings and the assets supported by these liabilities. The goal is to limit exposure to interest rate risk and manage earnings more precisely by making asset yields sensitive to movement in money market rates. The linking of asset and liability yields to manage the components of the balance sheet as a unit has become widely known as asset and liability management.

This is a coordinating exercise by management to structure both sides of the statement of condition in a manner appropriate to meet income goals without taking unacceptable exposure to interest rate risk. It is likely that asset and liability management, or balance-sheet management, will continue to be the dynamic discipline of banking in the 1980s.

Early attempts at asset and liability management took the form of manipulating the sensitivity ratio, which is merely the quotient obtained by dividing the interest-sensitive assets by the interest-sensitive liabilities. This system centered on controlling the volume of interest-sensitive liabilities against such assets, so that the associated costs and revenues moved together, optimizing the profit spread between the sources and uses of money. An obvious required

step in this practice is defining assets and liabilities that are interest-sensitive, i.e., that possess rates that change in step with open-market rates. Unfortunately, the definition of interest-sensitive is quite arbitrary, which later led to the development of gap analysis, the difference between assets and liabilities at certain maturities. Some institutions assumed that assets and liabilities of **90** days or less in maturity were rate-sensitive, while others selected one year as the boundary. Regardless of definitional problems, the principle is to control the sensitivity ratio in relation to the outlook for interest rates.

For example, if a bank were very certain rates were on an upward trend, it would set a target ratio of, say, **1.3** or so. In this case, the interest-sensitive assets would exceed the volume of the interest-sensitive liabilities of **30** per cent, permitting income from assets to rise more rapidly than expenses associated with liabilities. If the outlook were uncertain, a conservative stance would be to balance the interest-rate-sensitive volume of assets and liabilities by setting a target ratio of one. This strategy assumes that a bank has a reasonable degree of control over interest-sensitive assets and liabilities.

A more advanced and precise means of tracking and managing interest-rate exposure of the balance sheet is interest-rate-sensitivity analysis. The sensitivity of an asset or liability is defined by the time period — the tenor — that elapses until the next potential repricing of that item. The period may be shorter than the final maturity, as is the case with a floating-rate loan or variable-rate certificate of deposit. The degree of sensitivity is measured by the gap, or dollar difference, between assets and liabilities at various repricing periods — for example, overnight, 2 to **30** days, **30** to **90** days, **3** to 6 months, 6 to 12 months, 1 to 2 years, 2 to **3** years, and over **3** years. The greater the gaps, positive or negative, the greater the sensitivity. By studying the volumes of assets and liabilities falling within each category, insights can be gained into a bank's earning dynamics in various rate environments.

In order to manage these gaps, controllable balance-sheet items must be employed. These items are assets and liabilities that can be controlled — that is, items over which a bank has the discretion in terms of price of term — or both — to buy, hold, or sell. Examples are Federal funds, investment securities with fixed maturity, certificates of deposits, and Eurodollar time deposits. Uncontrollable or non-discretionary items are assets and liabilities that are beyond the short-run, immediate control of the banker. Examples are fixed-rate

loans, retail savings deposits, and demand deposits.

The actual management of rate sensitivity involves controlling the size of the asset and liability gaps or degree of mismatching for each period, depending on the outlook for interest rates. The gaps are managed by use of controllable assets or liabilities mismatched against the uncontrollables in each pricing category.

Depending on the interest-rate forecast, several choices exist for structuring assets and liabilities to reach the desired level of overall interest-rate sensitivity. With expectations of higher rates, the sensitivity of the assets would be increased in relation to the liabilities by adding controllable assets in the short periods and controllable liabilities in the longer categories. After this adjustment, the assets in the shorter maturities would exceed the liabilities, and the liabilities would be greater than the assets in the longer maturities. In a falling rate environment, on the other hand, it would be advantageous to be more liability-sensitive. To accomplish this, more controllable liabilities would be added in the shorter maturities and fixed assets of longer terms so that these gaps would be biased to the liability side. They then would be liability-sensitive. The objective is to manage interest-rate sensitivity over the interest-rate cycle by the use of controllable assets and liabilities.

It should be noted that the practical management of interest sensitivity more often than not involves a shifting in the tenor of controllable assets and liabilities. Only in more extreme cases, when interest rates are expected to peak or trough imminently, would new assets, primarily long term in tenor, be added to the balance sheet to allow for quick adjustment.

Further, interest-rate sensitivity can be adjusted just as effectively, without affecting the leverage of the firm, by a program of asset sales. Traditionally, the portfolio has been called upon to bear this burden. Increasingly, however, other types of hitherto uncontrollable assets have been produced and booked in such a form that they can be sold to alter sensitivity. Upstream loan participations, mortgage pass-throughs, and acceptance sales all provide opportunities to alter sensitivity.

Premeditated Asset Sales Programs

Over the past decade, constant inflationary pressures and the chronic undervaluation of bank equity have conspired to cause an industry-wide deterioration of capital ratios. Recently, the Comp-

troller of the Currency, among others, has expressed concern about this trend, putting renewed emphasis on the maintenance of a given level of capital adequacy. Primarily for this reason, commercial banks are actively seeking ways to deliver their risk-taking, value-added services in ways that do not require on-balance-sheet intermediation. Various pass-through and quasi-investment banking activities allow banks to generate assets, package them, and sell them to ultimate investors. This intermediation format will play an increasing role in the business development efforts of commercial banks in the future.

Interest-Rate Futures

A new and potentially powerful instrument for the control and adjustment of bank interest-rate sensitivity has arisen in the markets for financial futures. Particularly within the last year, the financial futures markets in three-month Treasury bills, GNMA's, and long bonds have become quite diversified in their participation and sufficiently robust to offer good hedging possibilities for those institutions that have determined that a particular interest-rate position is counter to their risk preferences. The futures markets allow an adjustment in rate sensitivity when cash markets for marginal assets or purchased liabilities, for one reason or another, are not available. For this reason, the interest-rate futures markets offer significant opportunities to institutions that, because of their size, do not have ready access to purchased liability markets in all maturities at market rates.

In addition to the ready availability and immediacy of the financial futures markets, their use as a sensitivity-adjusting mechanism is enhanced by the fact that they allow effective hedging without the use of the balance sheet, hence without introducing additional leverage. This can be an important advantage when large dollar volumes of risk assets or liabilities require hedging. A severe negative, however, is the presently mandated accounting treatment for hedged future transactions. Present accounting conventions, in many cases, do not allow the financial statement to symmetrically and/or contemporaneously represent the income effects of a hedged asset or liability and the hedging futures contract. This fact, in a cosmetic sense, might severely limit the use of these markets, even though the economic benefits of the hedge may be overwhelming.

Balance-Sheet Management at the Community Bank

With the preceding background discussion of the changing regulatory structure and its implications and then a review of modern funds-management techniques used by large banks, it is appropriate now to relate these factors to the problems and opportunities of smaller community banks.

To a large extent, large banks and smaller banks have many of these problems in common, although of course they differ in degree. However, in recent years even these differences in magnitude have lessened somewhat as smaller banks have achieved greater flexibility in adjusting for interest sensitivity. It appears that there will especially be increasing flexibility on the liability side. Certainly the risk inherent in the current interest-rate environment is experienced by banks of all sizes.

Liability management at the community bank is quite recent in origin, since it received its major impetus from the introduction of the six-month money market certificate in June 1978. Since then these certificates have grown to the point where they currently amount to almost $150 billion and represent approximately 32 per cent of total small-denomination time and savings deposits at commercial banks nationally. This certificate, together with high inflation and rising rates, gave the community banker his first experience of what banking will be like when interest-rate ceilings imposed by Regulation Q are removed. The six-month certificate gave the banker a much-needed means of competing for funds in the rising interest-rate environment, which before would have spelled massive disintermediation.

However, it also had an adverse effect upon banks' interest expense, as depositors shifted funds from interest-rate-insensitive demand and savings accounts to the rate-sensitive certificates. The higher interest expense translated in almost all cases to a reduction in net interest margins. This resulted from the fact that instruments that make up the asset side of the community banks' balance sheet did not increase in rate sensitivity as quickly as the instruments that made up the liability side.

As interest rates continued to rise throughout 1979 and the first part of this year, many bankers attempted to shorten up the maturities of assets and increase the percentage of floating-rate loans in their portfolios. In other words, bankers tried to increase the rate sensitivity of the asset side of their balance sheets. Unfortunately, some

bankers were, to an extent, too successful, because as rates moved sharply lower during the spring of 1980 they found that their liability costs were not as sensitive as the rates received on their floating-rate assets and resulted in pressure on net interest margins in a generally falling rate environment.

In sum, the community banker was exposed to the vagaries of liability management but found that the mix of floating-rate liabilities and assets available to him were not adequate to protect his net-interest margins. Interestingly, despite the wild gyrations in interest rates and the attendant pressure on net margins, remarkably few commercial banks were fatally affected. Indeed, the adaptability of the community bank to this unexpected disarray in financial markets during the last year demonstrates the fundamental health of the nation's banking system and suggests a high survival rate for community banks in the future. To continue to be among the survivors, however, bankers must learn how to adapt to volatile and unpredictable financial markets. They must begin to manage their assets and liabilities in an environment of heightened interest-rate risk.

The Inherent Interest-Rate Sensitivity. Every community bank balance sheet contains within it an inherent interest-rate sensitivity that is fundamentally determined by factors outside the bank's immediate control. Unlike those of its money center counterpart, the community bank's assets and liabilities are heavily influenced by the demand for and supply of funds in its immediate market area. Consequently it does not enjoy the flexibility of adjusting the sensitivity of its liabilities or its assets as easily or as rapidly as the money center bank.

For example, maturities of money market certificates are set by regulation, while maturities of other certificates of deposit are largely determined by the depositors' needs or preferences. In most cases, the largest group of customers taking advantage of large CD's or RP's are ,corporations or municipalities looking for a vehicle in which to invest working capital temporarily. They have very specific parameters as to desired maturity, and they come to the community banker wanting to know what he is willing to pay for that specific maturity.

Rates paid on liabilities also are largely beyond the determination of the community bank. Here, too, regulations play an important role in that they specify the rates paid on 6-month money market certificates as well as the rate payable on the 2%-year small saver certificates. As a result the liability manager at the community bank is more

a funds taker than a funds manager. His market, as well as regulations, continue to influence the term structure of the liability side of the balance sheet. He simply cannot always adjust the term of his liabilities rapidly enough to optimize his net interest margins under either a rising or falling rate environment.

Alternatively, the asset side of the balance sheet of the community bank reflects the customer's desire for relatively long-term, fixed-rate credit facilities, such as home mortgage loans and consumer installment loans. As long as the yield curve is upward sloping, banks can generally fund and profit by extending such credit, but with a downward sloping curve such loans begin to exert downward pressure on net interest margins. The increasing appearance of this negatively shaped curve spells difficulty for all banks.

Another consideration that influences the asset side of the community bank is the need to maintain a liquidity reserve to meet seasonal and cyclical net cash outflows. The money center bank can purchase funds for such purposes, but the community bank must set aside short-term marketable assets that can be readily liquidated to meet these outflows. Consequently the bank must always keep some percentage of its assets in a rate-sensitive posture, even though it may not optimize the net interest margin.

The effects of the local market will affect each community bank differently. The local demand for and supply of funds may bias the gap of interest-rate sensitivity positively for a bank in one community and negatively for a bank in another. These biases, or influences, must be determined before the banker attempts to adjust his gap to maximize his net interest margin. In a residential, suburban-type community, the bank's balance sheet most likely will be dominated by long-term, fixed-rate mortgages and six-month money market certificates. This will give it a negative gap and an inherent exposure to escalating interest rates. In an industrial area or a large farming community, the opposite may be true because the loan portfolio's maturity structure is much shorter.

It is the job of the asset-liability manager at the community bank to determine these biases caused by the uncontrollable items on his balance sheet and neutralize them with items that are controllable. The key to this is the ability to adjust the frequency with which assets and liabilities are repriced in order to achieve a desired gap. While this would seem a difficult task, new tools not previously feasible and proposed regulatory changes should make the job of asset-liability

management at the community bank much more effective.

Instruments and Constraints. Along with the introduction of the six-month money market certificate came an increased level of awareness by depositors of interest-rate levels. As a result, community banks found themselves competing more vigorously than ever for funds, as rate-sensitive depositors shopped for the highest return available. Under pressure to maintain interest-rate margins in this increasingly competitive climate, community bankers have turned to liability instruments formerly used almost exclusively by money center banks and the larger regional banks.

Such instruments include large denomination certificates of deposit, repurchase agreements, Fed funds purchased, and the Treasury Tax and Loan Note (TT&L). The first two have probably been the most effective in maintaining and attracting deposits while affording the bank some alternative as to maturity. Large denomination CD's ($100,000 and over) allow the community banker the opportunity to offer its larger depositors a rate that is attractive and also fit the maturity parameters of both depositors and banker. RP's, while having this same attractiveness due to flexible maturities, add the extra security desired by some investors and at the same time allow Fed members to forego the added expense of reserve requirements on CD's.

Both of these instruments, in conjunction with the TT&L note option, have come into increased use by community bankers as they sought to diversify their liability structure in order to decrease their exposure to interest rate fluctuations while competing for funds. For example, in a declining rate environment, the community bank will want to increase the rate sensitivity of its cost, or increase its negative gap, by shortening the maturity structure of its liabilities. This will be effective only to the extent that the bank can bring depositors into shorter maturities by making the rates on these maturities the most attractive.

As previously noted, however, the greatest barrier to this type of liability management in the community bank is the fact that this bank tends to be a funds taker, having to accept the predetermined maturity demands of its larger depositors due to heavy competition in a very limited funds market. In addition to this constraint, the extensive use of RP's in this role depends on the existence of a sizeable unpledged portfolio of eligible collateral. Finally, the TT&L note as a source of funds is limited by the uncontrollability of its maturity structure.

Although it does supply another source of funds at a reasonably cheap level, its timing and duration are quite unpredictable.

One source of funds not always considered in the framework of liability management, and which should be mentioned, is the issuance of capital or capital-type instruments. In an environment like the one that has dominated the last couple of years, issuance of such obligations, especially long-term, fixed-rate debt, would be an ideal hedge against continually rising rates. However, issuance of equity has some major drawbacks besides the obvious constraint of dilution of ownership. By far the largest barrier to capital as a source of funds is the lack of willing investors. Not only does the community bank face a limited market for its stock, the thought of a seven-year investment at a fixed rate in a small community bank also does not appeal to multitudes of investors in today's volatile rate environment. In addition, the cost of issuing through private placement, as well as the potential cost involved in bad timing, may be prohibitive.

In view of all these limitations, one may ask whether it is at all feasible for the community bank to practice effective liability management.

It is feasible but unfortunately, for now, only on a limited basis. A naive form of liability management would be simply to refuse to pay the allowable rate on six-month money market certificates. While this could have some serious ramifications in respect to growth, it could be the difference between a positive and negative interest-rate margin. A more positive and psychologically acceptable means of liability management would be to use Fed funds purchased and large RP's with dealers in order to make a more significant impact on the liability structure. This would be done in an environment of steadily dropping rates, where the bank will want to shorten its liability structure as much as possible. To the extent the bank is confident that rates will continue to drop, it should reduce its exposure in longer-term liabilities and increase its Fed funds position. Where rates appear to be rising for any extended period, Fed funds of up to six months in maturity can be used to extend the term structure and further reduce rate sensitivity. Any use of Fed funds purchased in a community bank must, of course, be done within the limitations of the bank's liquidity and capital structure.

If a bank has a large government investment portfolio with very little customer demand for RP's, it can use its available collateral to secure additional funds from security dealers with maturities as long

as six months. Unlike most RP's done with customers, here the bank usually will have more latitude as to maturity. This method of liability management, however, does have some limitations, as it requires ample collateral and usually requires a minimum denomination of $1 million.

Unfortunately, Fed funds purchased and RP's are most effective in the community bank as a liability management tool in a declining rate environment. When rates are rising and the banker wants to extend his liability term structure significantly, he really has few instruments that will lock his cost in longer than six months. The one instrument that held some promise in this area, the 2%-year small saver certificate, has met with limited customer acceptance, and its cost has proved to be extremely hard to cover on a profitable basis. This fact underscores the need for a flexible-rate, variable-maturity instrument by which the community bank can reduce its rate exposure in a long-run rising-rate environment.

Implications for the Asset Structure. Although the preceding scenario does suggest some tools available for liability management at the community bank, the fact remains that for the time being the community banker is extremely limited in the extent to which he can effectively alter the rate sensitivity of his liability structure. Thus, he has had to turn to the asset side of his balance sheet to try to neutralize his growing interest-rate exposure.

In the mortgage portfolio several different methods are being used to increase the frequency at which the portfolio is repriced. Three- to five-year balloon mortgages have become very commonplace in reducing the average life of the mortgage portfolio. In many cases these carry a guaranteed renewal clause, which makes this an attractive instrument for the second- or third-time owner who has built up substantial equity. For first-time buyers the variable-rate mortgage has met with some limited use. A third method that surpasses both of these instruments in its immediate and dramatic effect on the bank's asset structure is the sale of mortgages to Federal agencies or mortgage bankers. Although the required standardization of processing such a loan adds to its cost, it allows the bank to convert a completely rate-insensitive asset into cash. Just as important, it lets the bank continue to offer conventional mortgages to its customers, which should help maintain the bank's vital deposit base.

This same strategy can be used just as effectively, and probably more frequently, in the commercial and industrial loan portfolio. If

the community banker has a good network of willing correspondents, he can sell or purchase participations or downstreams to minimize a given rate exposure. As his larger money center counterparts also look to manage their rate sensitivity., the community banker, too, will be looking for a market from which to buy or sell loans. On many occasions he will find that his needs and the money center bank's needs complement one another. In a high-rate environment, where loan demand is sluggish but the community banker anticipates lower rates, he will want to purchase blocks of fixed-rate, longer-term loans to reduce an exposure to dropping rates. In a low-rate environment, the opposite is true, and he will want to sell loans in order to come back to cash.

While the community bank's loan portfolio has become more flexible, it is still constrained to a large degree. Consumer installment loans continue to cause longer-term rate insensitivity and in fact have been under pressure for longer maturities, as in the four- and five-year auto loan. Like the liability structure, the loan portfolio will continue to reflect customer needs and preferences.

Therefore, to fine tune his rate sensitivity with better precision and compensate for the uncontrollable segments of his balance sheet, the community banker must turn to his investment portfolio. This remains the fastest and most useful means in his balance sheet for adjusting his gap. As with the other segments of his balance sheet, never before has the community banker had so many instruments at his disposal. With each new type of liability introduced by the money center banks has come an additional tool available on the asset side with which the community bank can manage its interest margins.

In a situation where he may be bidding for the funds of a large depositor, the community banker should survey current money market rates in order to guarantee an appropriate spread. Then, on the basis of his current gap, the maturity of the liability, and his outlook for the future of interest rates, he should invest in instruments that will reduce his rate exposure and maintain, if not increase, his interest rate margins. These normally would include domestic CD's, BA's, Euro CD's or TD's, RP's, commercial paper, T-Bills, or agency discount notes. In situations where he wants to increase the positive bias of his gap, he can invest in government, agency, municipal, or corporate notes, or bonds of longer maturities.

The use of the investment portfolio as a tool in rate sensitivity management has two constraints for the community banker. The first

is that in the case of the above-mentioned money market instruments, the minimum denomination often is $500,000 to $1,000,000. The second is that any attempt to adjust the portfolio's maturity structure that necessitates selling securities is constrained by any market depreciation in the portfolio. Although these constraints do detract from perfect controllability, the investment portfolio still offers the widest range of rates and maturities for asset management.

Financial Futures. Another management tool — and one that has received abundant publicity in recent years — is the financial futures market. It is being used in a number of capacities at the money center banks but has yet to see extensive use at community banks. When interest rate futures are used effectively, however, they offer the ideal hedge against interest-rate fluctuations that move in opposition to a bank's gap. Where it may be difficult for the community bank to change its exposure to a specific move in interest rates on a timely basis, financial futures can increase or decrease this exposure immediately.

The most crucial point for the community banker as he gets involved with financial futures is to make certain that he is in fact hedging and not inadvertently increasing his exposure. For this reason the most appropriate application of the futures market for a community bank is within the realm of rate sensitivity. In trying to apply futures to overall portfolio appreciation or depreciation, the result may be that cash transactions in the futures market are offset by paper transactions in the portfolio. In other words, gains and losses in the futures market are realized daily according to the futures position, whereas a portfolio does not realize a gain or loss until a sale is made.

An understanding of the impact of a futures position on a bank's earnings is crucial. Thus it is better to apply the futures market in a rate sensitivity format where hedged items are more identifiable and corresponding futures contracts can be bought or sold. The concern of the bank in using the futures market should be to eliminate risk and create performance that is in line with the bank's investment policy and overall objectives.

More specifically, the community banker would be quick to point to the six-month money market certificate as the largest contributor to his exposure to an increase in rates. This then would be the most logical and practical item to hedge. An appropriate hedge for a negative gap in a rising rate environment would be to sell short the 90-day Treasury bill future contract, because it tends to move in

tandem with the Treasury bill cash market that is used to price the money market certificates. So while the bank's costs are increasing due to higher rates on its CD's, it is realizing a gain on its futures position as its price is dropping. When the banker feels rates will go no higher, he will buy back the contract at some lower price, reversing his position and realizing a profit.

If the opposite had been true, the banker would have gone long in the futures market to hedge a positive gap and the risk of lower rates. It is readily apparent that the wrong combination of a long or short position can result in speculating instead of hedging. In addition, different futures instruments and maturities will be appropriate for hedging different balance-sheet items.

For these reasons every precaution should be taken when considering the futures market. The first step is the development of an investment policy statement that specifically addresses futures. Second, the bank should consult with the appropriate banking authorities to insure that it will conform to sound banking and management practices. This is especially important for the accounting elements of futures. Third, the selection of a broker or other source of professional advice is critical. The relationship between the broker and investor should be fully understood at the outset. It is important, for example, that a broker be aware that a client is not interested in trading in the futures market and that the broker be knowledgeable about the bank's overall situation and objectives.

Relatively few community banks are involved with futures at this point, but their number is increasing steadily. As conditions for banking become more competitive, the need to be defensive and minimize risk will become greater. Certainly there are money making opportunities for banks in interest-rate futures, but the most significant feature of the futures market is the hedging mechanism to provide stability in income, liquidity, and overall cash flow.

Conclusion

Over time, the continuing fundamental challenge of banking remains the profitable employment of the sources of funds at an acceptable level of risk. The methods devised to solve this problem have evolved in response to the changing economic and financial climate. Coordinated control of assets and liabilities that permits management of the entire balance sheet as a unit through the use of interest-rate

sensitivity is the latest innovation in funds management.

Besides the regulatory changes, banks will continue for some time to be operating in an economic environment that will cause large fluctuations in interest rates. Under these conditions, flexibility will be more important to the banker than ever.

An axiom worth keeping in mind is that banks of all sizes can profit by specializing in services that will accommodate their basic marketing areas. By doing this, and by remaining flexible and adaptable, bank managers can refute some of the gloomy predictions about the outlook for commercial banking in the years ahead.