Cash Flow and Liquidity Management

Liquidity management is the ability to meet financial obligations at a reasonable cost in a timely manner. The essence of liquidity is having cash when you need it. Each association must maintain sufficient liquidity to ensure safe and sound operations.

Liquidity can be thought of as a reservoir of funds that management can readily access to meet funding requirements and business opportunities. Primary sources of liquidity include:

- Liquidity assets (surplus cash and assets that can be quickly converted into cash).
- Liquidity liabilities and unused borrowing capacity (an association's capacity to access the markets for deposits and other wholesale funds).

Liquidity risk is the risk of not having sufficient funds to meet deposit withdrawals and other financial commitments when due. As associations have become more dependent on wholesale funding to meet liquidity needs, liquidity risk has become largely synonymous with funding risk, that is, the risk of being unable to maintain or acquire funds at a reasonable price when needed.

LINKS
Program

Association-specific problems or systemic disturbances can trigger liquidity problems. Association-specific liquidity problems are usually the result of other problems within an association:

- Poor asset quality.
- Excessive interest rate risk.
- Inadequate capital.
- Operational problems.
- Inadequate cash flow planning.

Systemic liquidity problems may result from a major financial debacle, a crisis, or other catastrophic event.

Liquidity management involves balancing the trade-off between profitability and the risk of illiquidity. Although a high degree of liquidity may be a positive sign since it indicates a capacity to meet obligations and take advantage of business opportunities, too much liquidity in the form of cash and low-earning assets or expensive borrowings can reduce profitability. The key is to find the right balance

between liquidity and profitability. That balance will change over time as economic and business conditions change.

Finding the right balance depends in part on management's ability to estimate and manage future cash flows. To manage liquidity, effective managers typically employ the following analytical techniques:

- Maturity gap analysis.
- Cash flow forecasting.
- Scenario planning.

Effective liquidity management, however, starts with the development of written policies and procedures, and the establishment of minimum acceptable levels of liquidity. These policies should clearly define an association's strategy for managing liquidity, delineate areas of management responsibility, and establish a process for measuring, monitoring, and managing liquidity. Each association should also have contingency plans for dealing with unanticipated cash flow disruptions or cash flow needs.

This Section provides an overview of the liquidity management process. It includes a brief description of the various sources of liquidity, a basic explanation of the various techniques for measuring liquidity and estimating future cash flow needs, and a guide for assessing the quality of risk management practices. The Section concludes with a list of early warning signals of potential liquidity problems.

SOURCES OF LIQUIDITY

Liquidity Assets

Savings associations often meet liquidity needs through the sale of liquid assets and the planned runoff of loans and investments. While in theory any asset can serve as a source of liquidity, associations must consider the length of time it takes to dispose of an asset and the price at which it can be sold. Unencumbered assets that an association can sell or borrow against with relative ease without appreciable loss are ideal sources of liquidity.

Liquid assets would generally include deposits with other financial institutions, money market instruments, and short-term, investment-grade securities. In addition, associations may consider as liquid assets other securities and loans that can easily be sold or are about to mature. Because of the time dimension of liquidity, an asset may be a source of liquidity if it matures or can be sold within the time horizon of the need for funds. But as a general rule, assets with shorter maturities or those with a higher quality are more liquid.

Cash and Deposits with Other Institutions

While cash is the essence of liquidity, the cash balances reported on an association's balance sheet are not necessarily available to meet a liquidity shortfall. While a minimum level of operating cash balances

is needed for day-to-day transactions (for tellers and ATMs), other cash balances may be in the form of checks or drafts in the process of collection, and are unavailable. Typically only excess cash balances – balances over and above those needed for daily operations and scheduled payments – are considered to be a source of liquidity. However, generally associations do not hold large excess cash balances that are nonearning assets.

Money Market Instruments and Securities

As a practical matter, most associations view their portfolios of money market instruments and investment securities as a primary source of liquidity. Statement of Financial Accounting Standards (SFAS) No. 115, Accounting for Certain Debt and Equity Securities, requires institutions to designate investment securities as either available-for-sale, trading, or held-to-maturity. Securities designated as available-for-sale or trading must be carried on the balance sheet at fair value. Securities designated as held-to-maturity are carried at amortized cost. Examination Handbook Section 540 discusses accounting for securities.

In general, associations may not sell securities in the held-to-maturity portfolio before maturity without "tainting" the entire portfolio – an event that would cause the entire portfolio of held-to-maturity securities to be reported at fair value. Management should be familiar with SFAS No. 115 and understand the circumstances when they may sell held-to-maturity securities without penalty of tainting. Moreover, management should carefully consider its liquidity needs before designating securities as either available-for-sale, trading, or held-to-maturity.

While the designation of a security as available-for-sale, trading, or held-to-maturity has certain consequences for accounting purposes, it has no bearing on whether the security is liquid in an economic sense. Whether an investment is liquid depends on how easily the holder can sell it in the market. Securities with tight bid-ask spreads are more liquid than those with wide bid-ask spreads.

Securitizations

With adequate planning and certain efficiencies, securitizations can create a more liquid balance sheet as well as leverage origination capacity. However, peculiarities related to certain transactions as well as excessive reliance on securitizations as a single funding vehicle may increase liquidity risk. For example, a concentration or over-reliance on securitizations as a funding source may increase liquidity risk if there are disruptions in the market.

Management should consider securitization's implications on its day-to-day liquidity management and on its contingency planning. Management should analyze the potential effect of securitizations on liquidity from an individual transaction perspective and on an aggregate basis. Associations should make the following determinations when contemplating a securitization transaction:

- The volume of securities scheduled to amortize during any particular period.
- The plans for meeting future funding requirements (including when such requirements may arise).

- The existence of early amortization or increased collateralization triggers.
- The alternatives available for obtaining substantial amounts of liquidity quickly.
- Operational concerns associated with re-issuing securities.

In particular, associations that use securitizations to fund credit cards and other revolving credit receivables should prepare for the possible return of receivable balances to the balance sheet because of scheduled or early amortization. Such events may result in large asset pools that require balance sheet funding at unexpected or inopportune times. Management should also factor the maturity and potential funding needs of the receivables into short-term and long-term liquidity planning.

Exposure may also increase if an association minimizes securitization costs by structuring transactions at maturities offering the lowest cost, without regard to maturity concentrations or potential long-term funding requirements. Correlating maturities of incidental securitized transactions with overall planned balance sheet growth may somewhat mitigate this risk.

Associations that originate assets for securitizations may depend heavily on securitization markets to absorb its asset-backed security issues. If the association allocates only enough capital to support a "flow" of assets to the securitization market, it may experience funding difficulties if circumstances in the markets or at a specific institution were to force the association to hold assets on its books.

Associations should have adequate monitoring systems in place so that management is aware well in advance of a potential problem.

Mortgage Loans

As noted above, many savings associations view mortgage loans and other receivables that can easily be sold or are about to mature as liquid assets. In addition, associations with active loan securitization programs generally treat loans that they are about to sell as liquid assets. Because of the time dimension of liquidity, associations may consider an asset that matures or can be easily sold at a fair price within the time horizon of the need for funds as a liquid asset.

Pledged Assets

In assessing liquidity, it is important to know which assets have been pledged to secure borrowings or for other purposes. Pledged assets are not liquid. In addition, it is important to determine which assets are currently unpledged, eligible, and available as collateral to secure borrowings.

Liquidity Liabilities

As an alternative to liquid assets to satisfy liquidity needs, these needs may be met through liability sources such as wholesale borrowings and deposits. A savings association's ability to borrow or attract deposits in the markets is generally a function of its size, reputation, creditworthiness, and capital levels. Access to money markets also depends on prevailing market conditions.

Many financial institutions are increasing their use of wholesale funding, replacing lost retail deposits with funds provided by professional money managers. These funds, however, are generally more sensitive to credit risk and interest rates than retail funds, causing them to pose a greater liquidity risk to the association.

Retail Deposits

Deposits play a critical role in an association's ongoing successful operations. Management must protect deposit growth and should have an effective deposit management program. The program should regularly monitor the make-up of accounts to determine the amounts that are stable, fluctuating or seasonal, or volatile. Management should remain knowledgeable of the characteristics of the deposit structure using periodic internal reports. Lack of such knowledge could lead to the unwise use of funds and subsequent related problems.

Retail funding is supplied by the deposits a bank receives from the general public, individuals, and small businesses. Deposits are generally an association's primary (or core) funding source, and are typically a stable source of funds. These accounts usually maintain balances of $100,000 or less, to be fully insured by the FDIC. These accounts include demand deposit accounts (DDAs), negotiable order of withdrawal accounts (NOWs), money market demand accounts (MMDAs), savings accounts, and time certificates of deposit (CDs).

Historically, these accounts have not been very sensitive to an institution's credit quality or interest rates. Sensitivity may occur depending on the level of a customer's financial expertise, previous experiences, geographic location, and investment alternatives. Generally, retail and wholesale depositors behave differently under stress and changing economic conditions. A liquidity manager should distinguish between the two and track trends separately. In addition, a liquidity manager should track accounts that have balances in excess of FDIC insurance limits since those account owners will be more credit-sensitive than those with fully insured accounts.

Wholesale Funding

Borrowing sources that an association can access immediately, at a reasonable cost, and with a high degree of certainty are ideal sources of liquidity. Wholesale borrowings frequently have attractive features, and can, if properly assessed and prudently managed, facilitate the management of interest rate and liquidity risks. The initial cost of the borrowing is often low when compared to other liabilities with similar maturities. If the instrument contains embedded options, however, borrowing costs may increase under certain circumstances, and must be properly evaluated and managed.

Management should take the following actions if engaging in wholesale borrowings:

- Review borrowing concentrations. Determine whether an amount of borrowings from a single source poses an undue risk.

- Review borrowing contracts.

— Determine if there are any embedded options or other features that may affect the interest rate or pose liquidity risk.

— Review collateral agreements for fees, maintenance requirements, and triggers for increases in collateral.

- Review stress tests.

  — Determine how to identify and monitor the risks of the various terms of each contract, including penalties and option features.

  — Perform tests before entering into any agreement and periodically thereafter.

  — Ensure that the stress test results depict the potential impact of contractual triggers and external events (such as interest rate changes that may result in the exercise of embedded options or the termination of the contract) on the association, as well as on its overall earnings and liquidity position.

- Review the use of complex borrowings on the association's interest rate exposure.

- Ensure that there are management processes in place to control liquidity and interest rate risks, and that they also have in place contingent funding plans.

- Fully inform the board of directors, or the asset/liability management committee about the risks of wholesale borrowing agreements prior to engaging in the transactions, as well as on an ongoing basis.

- Ensure that the instruments are consistent with the association's portfolio objectives and level of sophistication of its risk management practices. Only associations with technical knowledge and risk management systems sufficient to adequately identify, monitor, and control the risks of complex wholesale borrowings should use this type of funding.

Wholesale fund providers are professionals who manage most wholesale funds, and operate under established investment criteria. They may be associated with large commercial and industrial corporations, other financial institutions, governmental units, or wealthy individuals. Because their responsibility is to preserve their clients' principal, they are sensitive to changes in the credit quality of the institutions where they invest, as well as to changes in interest rates.

An association can use a variety of instruments to tap the wholesale funding markets. A brief description of some of these instruments is provided below. Depending on the side of a transaction that an association takes, some of these instruments may be either a source of asset liquidity or a source of liability liquidity.

Securities Sold Under Repurchase Agreements

Securities sold under repurchase agreements are a means of financing inventories of securities. Under repurchase agreements, securities are temporarily "loaned out," for periods ranging from overnight to one year in return for borrowed funds. The vast majority mature in three months or less. A standard repurchase agreement involves the acquisition of funds through the sale of securities with a simultaneous commitment to repurchase the securities on a specified date at a specified price. The collateral most often used by savings associations is U.S. government and agency mortgage-backed securities (MBS). The repurchase agreement rate is the interest rate that the borrower pays the lender (investor) for the use of funds.

Dollar Rolls

Dollar Rolls (also called dollar repurchase agreements) provide another alternative source of liquidity. Dollar rolls are agreements to sell and repurchase "substantially similar" but not identical securities. To qualify as a financing, these agreements to return "substantially similar" securities cannot exceed 12 months from the initiation of the transaction. Primarily, the dollar roll market consists of agreements that involve mortgage-backed securities.

Federal Home Loan Bank (FHLB) Advances

FHLB advances are an important source of funds for savings associations. Advance is simply another word for a loan. FHLBs offer a wide range of advance products with maturities ranging up to 10 years or longer. These products are primarily two types: collateralized advances and un-collateralized investments.

In general, a FHLB establishes a line of credit for each of its members. A FHLB may, however, limit or deny a member's request for an advance if the member is:

- Engaging in any unsafe or unsound practice.
- Inadequately capitalized.
- Sustaining operating losses.
- Deficient with respect to financial or managerial resources.
- Otherwise deficient.

FHLB advances are generally secured by collateral. Thus, the unused borrowing capacity of an association is a function of both its eligible, unpledged collateral and its unused line of credit with its FHLB.

Some FHLB advances contain embedded options or other features that may increase funding risk. For example, some types of advances, such as putable and convertible advances, provide the FHLB with

the option to increase the interest rate on the advance under specified conditions. See TB 13a-2, Structured Advances, for more on the risks associated with certain FHLB advances.

A FHLB can often react quickly, sometimes before market information is available to other funds providers, to reduce its exposure to a troubled institution by not rolling over unsecured lines of credit. Depending on the severity of a troubled institution's condition, a FHLB may discontinue or withdraw (at maturity) its collateralized funding program because of concerns about the quality or reliability of the collateral or other credit-related concerns. This may create significant liquidity problems for an institution, especially if it has large amounts of short-term FHLB funding. Associations should aggregate FHLB funds by type of program to monitor and appropriately limit short-term liability concentrations, just as with any other credit-sensitive funds provider.

For FHLB borrowings, as with all borrowings to meet liquidity needs, an association should evaluate the level of its borrowings from any one source as well as the quality of the source. Management should perform adequate due diligence in selecting funding sources, and periodically review their quality and stability. An association should have contingency plans in place should a need arise for an alternative funding source.

Lines of Credit

An unused portion of a line of credit with another financial association can be an important source of liquidity, particularly if it represents a binding legal commitment to borrow without major restrictions on its use and the borrowing rate is reasonable.

Federal Reserve Primary and Secondary Credit

The Federal Reserve Board recently revised Regulation A to provide for primary and secondary credit programs at the discount window. Reserve Banks will extend primary credit at a rate above the target Fed Funds rate on a short-term basis (typically, overnight) to eligible depository institutions. Eligibility for primary credit is based largely on an institution's examination rating and capital status. In general, institutions with composite CAMELS ratings of 1,2, or 3 that are at least adequately capitalized are eligible for primary credit unless supplementary information indicates their condition is not generally sound. Other conditions exist to determine eligibility for 4 and 5 rated institutions.

An institution eligible for primary credit need not exhaust other sources of funds before coming to the discount window. Institutions may use primary credit to finance the sale of fed funds. However, because of the above-market price of primary credit, the Board expects institutions to mainly use the discount window as a backup source of liquidity, rather than as a routine source.

Generally, Reserve Banks extend primary credit on an overnight basis with minimal administrative requirements to eligible institutions. Reserve Banks may also extend primary credit to eligible institutions for periods of up to several weeks if funding is not available from other sources. These longer extensions of credit are subject to greater administrative oversight.

The Reserve Banks also offer secondary credit to institutions that do not qualify for primary credit. Secondary credit is typically another short-term backup source of liquidity. Long-term secondary credit

would be available for the orderly resolution of a troubled institution. In such a case, there are certain limitations and a higher level of Reserve Bank administration and oversight.

Federal Funds Purchased

Federal Funds Purchased are excess reserves held at Federal Reserve Banks that depository institutions may lend to one another. The most common type of federal funds transaction is an overnight, unsecured loan. Transactions that are for a period longer than one day are called term fed funds. In some instances, lenders may require that term fed funds transactions be made on a secured basis. If the borrower's creditworthiness is questionable, lenders may require excess collateral or may choose not to lend. Federal funds that are loaned (sold) are assets. Federal funds that are borrowed (purchased) are liabilities.

Treasury Tax and Loan Funds (TT&L)

TT&L account balances typically are not significant and therefore, do not present a material factor in assessing liquidity.

Brokered Deposits and Other Rate Sensitive Deposits

Brokered deposits and other rate sensitive deposits represent a convenient source of funds for depository associations that are in good financial condition. These deposits (including Internet, certificate of deposit listing services, and other automated services) may increase the volatility of the deposit portfolio if they are rate sensitive. Section 29 of the Federal Deposit Insurance Act (FDIA) generally prohibits any association that is not well capitalized from accessing the market for brokered or high rate deposits. Adequately capitalized institutions that wish to accept renew, or rollover brokered deposits or high rate deposits must first obtain approval from the FDIC. Undercapitalized associations cannot accept brokered deposits or high rate deposits at all. See the discussion in this section under "Troubled Institutions." See also Handbook Section 560, Deposits and Borrowings.

Eurodollar Time Deposits

Eurodollar Time Deposits are certificates of deposit issued by banks in Europe, with interest and principal paid in dollars. Interest rates are usually tied to LIBOR. These certificates of deposit usually have minimum denominations of $100,000 and have a short-term maturity of less than two years. An association should limit the volume of Euro-dollar CDs to control the liquidity risks associated with the secondary markets in these instruments.

MEASURING LIQUIDITY

The purpose of liquidity analysis is to measure an association's current liquidity position and its ability to meet future funding needs. An analysis of an association's *current liquidity position* generally involves a review of key balance sheet ratios, while the analysis of an association's ability to meet *future funding needs* involves an analysis of projected cash inflows and outflows.

Financial Ratio Analysis

The measurement of liquidity is an inexact and highly subjective process. This is largely due to the high degree of cash flow uncertainly associated with assets, liabilities, and off-balance-sheet contracts. In practice, analysts use a variety of financial ratios to measure the current liquidity position of an institution. Some ratios that measure liquidity include the following:

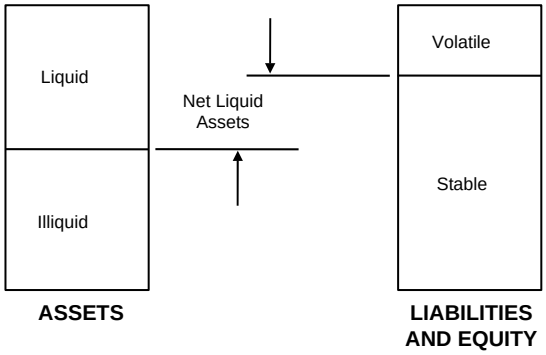
- Loans to deposits.
- Liquid assets to total assets.
- Volatile liabilities to total assets.
- Liquid assets to volatile liabilities.
- Net liquid assets to total assets.
- Unpledged eligible collateral to total assets.
- Net unused FHLB borrowing capacity to total assets.
- Unpledged collateral to net unused FHLB borrowing capacity.
- FHLB advances to FHLB Stock.
- Uninsured deposits to total deposits.

A key issue is defining liquid assets and volatile liabilities. Definitions vary depending on the objective or purpose of the analysis and data limitations. The time horizon of the analysis is particularly important in defining what is and what is not liquid. As a rule, liquid asset definitions include shorter-term assets that are readily saleable and assets that mature over the near-term. Some analysts define liquid assets to include the sum of cash, deposits with other associations, investment securities, and mortgage pool securities.

Volatile liabilities generally include wholesale and rate sensitive deposits and short-term liabilities that are likely to be withdrawn at the first hint of trouble. These forms of "hot money" include brokered deposits, uninsured deposits, federal funds purchased, securities sold under agreements to repurchase, and other borrowings with remaining maturities of less than one year.

The basic model for measuring current liquidity is shown in Figure 1. That model relates liquid assets to volatile liabilities. The difference between liquid assets and volatile liabilities represents the net liquidity position. (Liquid assets less volatile liabilities equals net liquidity position).

Figure 1. Static Balance Sheet Model



An association can improve its liquidity position in a number of different ways. For example, it can take the following actions:

- Increase holdings of high-quality liquid assets.
- Shorten the maturities of assets.
- Lengthen the maturities of liabilities.
- Diversify funding sources by maturity, geographic region, and by lender/depositor.
- Expand core deposits and other stable funding sources.
- Make loans that it can easily sell or securitize.

Successful liquidity management requires accurate measurement and control of the daily inflow and outflow of funds. Advance knowledge of liquidity shortfalls makes it possible to explore alternative ways to deal with them. Two useful techniques for monitoring cash flows are liquidity gap analysis and liquidity forecasting.

Liquidity Gap Analysis

A liquidity gap schedule provides an analytical framework for measuring future funding needs by comparing the amount of assets and liabilities maturing over specific time intervals. Table 1 below presents a sample liquidity gap schedule.

Table 1. Liquidity Gap Schedule

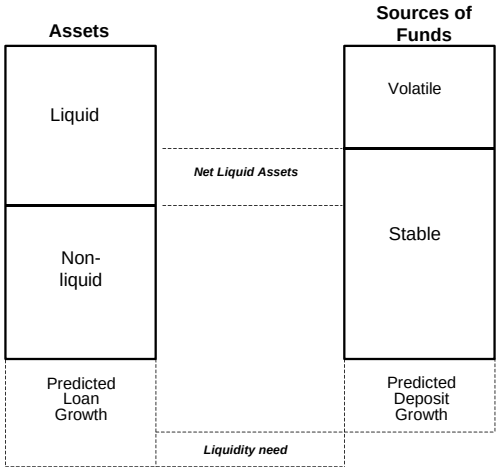
	Less than 10 days	Over 10 days but less than 3 months	Over 3 months but less 6 months	Over 6 months but less than one year	1 to 5 years	Over 5 years and capital	Total
Assets	10	10	10	5	65	0	100
Liabilities & Equity	50	30	15	0	0	5	100
Net outflow (assets minus liabilities)	(40)	(20)	(5)	5	65	(5)	0
Cumulative net outflow	(40)	(60)	(65)	(60)	5	0	0

In the liquidity gap schedule, assets and liabilities are slotted into different time intervals according to their remaining time to maturity. As a rule, the assets and liabilities are slotted according to their *effective* maturities rather than their *contractual* maturities. Nonmaturity deposits, for example, are generally treated as long-term liabilities (based on estimated run-off rates) rather than as short-term liabilities. In this example, more liabilities than assets mature in the earlier time intervals, indicating that the association is borrowing short and lending long, which is typical of most savings associations.

Negative gapping at the shorter end of the schedule (that is, borrowing short and lending long) increases the risk that the association will not be able to rollover maturing liabilities as they come due. While such a position is not favorable to liquidity, it tends to enhance profitability over the long-term – provided the association keeps the gaps within manageable bounds and the shape of the yield curve is not inverted.

One shortcoming of the liquidity gap schedule is that it does not capture projected balance sheet changes such as future loan and deposit growth. While it is important to understand the liquidity of an association's existing balance sheet, it is also important to forecast the growth of key balance sheet components, such as deposits and loans, over time. (See Figure 2.)

Figure 2. Projected Balance Sheet Model



Liquidity/Cash Flow Forecasting

Cash flow forecasting is a critical element in managing liquidity. The objective of cash flow forecasting is to project cash inflows and outflows over future periods. A common practice is to project net funds deficits for short-term (next 5-10 days) and long-term planning intervals (3-6 months, 6-12 months). By projecting cash flows for short- and long-term planning periods, management can significantly reduce the risk that sizable net funds deficits go unnoticed and unattended.

A sample forecast is presented in Table 2.

LIQUIDITY MANAGEMENT

Each association should have a written strategy for the day-to-day management of liquidity. The liquidity strategy should define the association's general approach to managing liquidity, including various quantitative and qualitative targets. The liquidity strategy should cover specific policies on the composition of assets and liabilities, the use of wholesale funding, and strategies for addressing temporary and longer-term liquidity disruptions.

The sophistication of an association's policies, procedures, and information systems for managing liquidity should be related to the following items:

- Size and complexity of the association.
- Strength and stability of the association's core deposit base.
- The association's dependence on wholesale funding.

Table 2. Cash Flow Forecast

	Forecast 0-30 days	Forecast 31 –60 days	Forecast 61-90 days	Forecast 91-365 days
Cash Inflows:				
Deposits	$1,000	$1,200	$1,500	$20,000
Maturing loans and investments	600	1,200	1,800	9,000
Loan sales	0	0	0	0
Other	200	100	200	1,500
Total Inflows	$1,800	$2,500	$3,500	$30,500
Cash Outflows:				
Maturing deposits	800	900	1,000	3,500
Maturing debt	0	0	0	1,000
New Loans	900	1,500	1,600	15,000
Other	200	0	0	1,000
Total Outflows	$1,900	$2,400	$2,600	$20,500
Net Surplus (deficit)	($100)	$100	$900	$10,000
Cumulative net surplus (deficit)	($100)	0	$900	$10,900

- Variability of the association's cash flows.
- Financial condition of the association.

Associations with deteriorating financial condition and/or declining exam ratings should increase attention to liquidity management and contingency planning.

Board and Senior Management Oversight

Effective oversight is an integral part of an effective liquidity management program. The board and senior management should understand their oversight responsibilities.

Board of Directors

The board of directors should establish the association's tolerance for liquidity risk, set liquid requirements, and approve significant policies related to liquidity management. The board should also ensure senior management takes the necessary steps to monitor and control liquidity risk. The board should understand the nature and level of the association's liquidity risk, and management should inform the board regularly of the liquidity position of the association.

Senior Management

Senior management should establish policies, procedures, and guidelines for managing and monitoring liquidity to ensure adequate liquidity at all times. Policies should include internal controls.

In addition, senior management should review the association's liquidity position on a regular basis and monitor internal and external factors and events that could have a bearing on the association's liquidity. Senior management should also prepare contingency funding plans.

Senior management should review periodically the association's liquidity strategies, policies, and procedures.

Policies and Procedures

A savings association should have clearly defined policies and procedures for managing liquidity. The board of directors has ultimate responsibility for the adequacy of policies and procedures; senior management has responsibility for their design and implementation. Polices and procedures should include the following:

- ***Delineated lines of responsibility***. Identification of individuals or committees responsible for managing and monitoring liquidity risk.

- ***An overall liquidity strategy***. The liquidity strategy should define the general approach the savings association will follow in managing liquidity, including various quantitative and qualitative targets. The liquidity strategy should cover specific policies on the composition of assets and liabilities, including policies on investment in illiquid securities and the use of wholesale funding. There should also be a written strategy for addressing temporary and long-term liquidity disruptions.

- ***A process for measuring and monitoring liquidity***. Although associations can use a number of procedures for measuring and monitoring liquidity, the most effective procedures involve pro-forma cash flow projections. These range from simple calculations to complex models for projecting cash inflows and outflows over different planning periods (time bands) to identify cash shortfalls and surpluses in future periods. While liquidity measures based on balance sheet ratios are useful in measuring an association's current liquidity position and in monitoring trends in liquidity, management should focus its attention on forward looking, pro-forma measures of liquidity.

- ***Quantitative guidelines and limits to ensure adequate liquidity***. Guidelines and limits will vary depending on the nature of an association's operations and circumstances. Associations could set guidelines, for example, on the size of cash flow mismatches over specified time horizons. Because of the subjective nature of the numbers in pro-forma cash flow projections, associations may find it impractical to establish precise risk limits or precise rules for addressing cash flow mismatches projected to occur in future periods. Nevertheless, an association should make an effort to define its tolerance for cash flow mismatches and should establish strategies for addressing them. Associations can also tie limits to balance sheet ratios. Examples include the following ratios:

  — Maximum projected cash flow shortfall tolerated for specified time (for example, one week ahead, one month ahead, one quarter ahead) as a percentage of liquid assets and unused borrowing facilities.

  — Minimum ratio of liquid assets to total assets.

  — Maximum overnight borrowings to total assets.

  — Maximum ratio of FHLB advances to total assets.

  — Maximum ratio of brokered deposits to total assets.

  — Maximum ratio of total wholesale borrowings to total assets.

  — Maximum ratio of pledged assets to total assets.

  — Maximum ratio of loans to deposits.

  — Maximum ratio of managed assets to total assets if the association securitizes assets.

- ***Internal control procedures*** to ensure adherence to policies and procedures that address the integrity of the liquidity risk management process. An effective system of internal control should promote effective operations, reliable financial and regulatory reporting, and compliance with relevant laws and institutional policies. Internal control systems should provide appropriate approval processes, limits, and ensure regular and independent evaluation and review of the liquidity risk management process. Such reviews should address any significant changes in the nature of the instruments acquired, limits, and controls since the last review. Internal control should include the following activities:

  — Procedures for approvals of exceptions to policies, limits, and authorizations. Positions that exceed established limits should receive the prompt attention of appropriate management and should be resolved according to the process described in approved policies.

  — A schedule for the periodic review of the liquidity policies and procedures. Periodic reviews of the liquidity management process and related procedures should address any significant

changes in liquidity risk limits, liquidity strategy, information systems, and internal controls since the last review.

— Contingency Planning. Management should assess its responses to liquidity events in the context of their implications for an association's short-term, intermediate-term, and long-term liquidity profile. Contingency Plans are further discussed in this handbook section.

Management Information Systems

Each savings association should have adequate information systems for measuring, monitoring, and controlling liquidity risk:

- A management information system should provide timely information on the association's current and prospective liquidity position.
- Management should be able to project its liquidity position and liquidity requirements over various time horizons and scenarios.
- Management should clearly define assumptions used in projections so it can evaluate the appropriateness and validity of the projections.
- The information system should provide the data needed by management to determine compliance with the association's liquidity policies, procedures, and limits.

Measuring and Monitoring Liquidity

Each association should have a process for measuring and monitoring its existing liquidity position as well as its net funding requirements. Liquidity measurement involves forecasting cash inflows and outflows over various time horizons to identify potential cash imbalances. A cash flow forecast is a useful device to compare cash inflows and outflows on a daily basis and over future periods. Management should take steps to address projected net funding deficits in a timely manner.

Management and other staff responsible for managing overall liquidity should be aware of any information, such as a pending decline in earnings, an impending legal action, or a downgrade by a rating agency that could have an adverse impact on perceptions about the financial condition of the association.

Management should also consider conducting scenario analysis in estimating liquidity requirements. In conducting an analysis of liquidity, management should consider the following scenarios:

- Range of possible future scenarios, such as optimistic, pessimistic, and most likely. In estimating normal funding needs, some associations use historical data and account for seasonal and other effects believed to determine loan demand and deposit flows. Alternatively, some associations rely on judgmental business projections, or undertake a customer-by-customer assessment for larger customers and apply historical relationships to the remainder.

- Stressful events such as a loss of wholesale funding, a significant run-off of deposits, a sharp increase in funding costs, or a sharp increase in loan demand.

- Cash flow timing differences and the related assumptions among scenarios. For example, in a general market crisis, the capacity to sell assets may deteriorate significantly.

- The potential for unanticipated cash outflows and reduced cash inflows associated with embedded options in various assets, liabilities, and off-balance-sheet contacts. Potential cash outflows include loan commitments; calls on loans sold with recourse and financial guarantees; payments on swap contracts and other financial derivatives; margin calls; early termination agreements; and so forth.

Contingency Planning

Each association should have a contingency plan for handling unanticipated stressful scenarios that could result in a significant erosion of association-specific or general-market liquidity. Management should update the plan on a regular basis. A contingency plan should accomplish the following:

- Consistently planned use of liquidity sources with the association's stated purposes and objectives of its liquidity program.

- Identify and assess the adequacy of financial resources (source of funds) for contingent needs. The plan should identify all back-up facilities (equity lines of credit), the conditions related to their use, and the circumstances where the association might use them. Periodically, management should test all sources of its contingency funding with the goal of ensuring that there are no unexpected impediments or complications in case the association needs to use its contingency lines. Management should understand the various conditions, such as notice periods, that could affect access to back-up funding sources.

- Define responsibilities and decision-making authority so that all personnel understand their role during a problem situation.

- Identify the sequence that the association will mobilize and commit key sources of funds for contingent needs. The degree of uncertainty as to the magnitude and timing of availability of resources may call for different priorities in different situations.

- Address implementation issues such as procedures by which resources are committed for emergency use or released from one use and transferred to another.

- Identify other actions necessary in the event of an unexpected contingency.

- Assess the potential for funding erosion (magnitude and rate of outflow) by source of funds under different scenarios.

- Assess the potential liquidity risk posed by other activities such as asset sales and securitization programs.

A fundamental principle in designing contingency plans for liquidity purposes is to ensure adequate diversification in the potential sources of funds. Such diversification should not only focus on the number of potential funds providers but on the underlying stability, availability, and flexibility of funds sources in the context of the type of potential liquidity event.

Managing Access to Funding Sources

Savings associations should carefully manage their access to available sources of funding and understand their funding options:

- An association should build and maintain relationships with a broad range of depositors and other funding sources. An association should understand how much funding might be available from various sources under normal and adverse circumstances.

- Senior management should be aware of the composition, characteristics, and diversification of its funding sources.

- Management should consider developing or expanding markets for asset sales or exploring arrangements for borrowing against assets.

Liquidity Support Between Affiliates

An association within a holding company structure should be able to rely on liquidity support from other affiliates within the company. Transfers can usually be made quickly and easily, and typically include buying or selling Fed Funds, granting or repaying debt, or selling or participating in loans or other assets. Limitations on transactions with affiliates is an additional consideration.

Liquidity Risk of the Holding Company

The funding structure of a holding company may expose it to more liquidity risk than its subsidiary insured institution. A holding company cannot accept deposits, offer FDIC insurance to its funds providers, or rely on discount window liquidity support. Typically, it has no independent source of revenue, no liquid assets, and a leveraged balance sheet.

In some instances, liquidity may flow from the parent holding company to the subsidiary. Examples include a parent holding company placing excess cash in its subsidiaries or participating in certain loans.

A holding company in a liquidity crisis may not look to its subsidiaries for relief, and any upstreaming of value by a subsidiary to its parent holding company is highly regulated by federal statues and implementing regulations.

An association may not be insulated from its parent holding company's liquidity risks, particularly when both have similar names. If a parent holding company goes bankrupt, it will reflect on the association because depositors probably do not understand the legal distinctions between the two. See also Sections 300 and 600 of the Holding Company Handbook.

SUPERVISORY CONCERNS

OTS requires savings associations to maintain sufficient liquidity to ensure safe and sound operations (12 CFR § 563.161).

Early Warning Signals

Liquidity problems are often symptomatic of other more fundamental problems at an association such as excessive credit risk, excessive interest rate risk, inadequate capital, operational problems, and so forth. Factors that could indicate or precipitate liquidity problems include:

- Over-reliance on wholesale funding.
- A significant increase in the level of wholesale funding.
- Excessive borrowing concentrations.
- A sharp rise in funding costs.
- A ratings downgrade by credit rating agency.
- A sharp drop in earnings.
- An increase in nonperforming assets.
- A decline in capital adequacy category.
- Management problems.
- Adverse publicity.

Mortgage Banking and Loan Sale Activities

Associations engaged in mortgage banking activities and loan origination and sale activities must ensure that adequate lines of credit are available to meet warehousing needs and that there are adequate forward commitments to sell the loans in the pipeline. The association's liquidity planning should consider the effect of recourse and other credit enhancements from loans sold. You should review loan sale and servicing agreements to determine how credit enhancements and recourse obligations affect liquidity.

Federal Home Loan Bank Membership and Liquidity

Federal savings associations are no longer required to maintain membership in a FHLB pursuant to Section 5(f) of the Home Owners Loan Act (12 USC § 1464(f)). An association that voluntarily withdraws from FHLB membership is, however, subject to a prohibition on re-entry into membership for five years.

When examining a savings association that is not a FHLB member, you should determine if the association's existing liquidity position and its ability to borrow funds adequately address any liquidity concerns. As part of this determination you should review written plans, analyze the association's access to sources of funds, and assess management's evaluation of near-term and longer-term anticipated funding needs.

If the savings association is a member of a FHLB you should determine the size of its line of credit with the FHLB and how much unused credit is available under that line. See also discussion of FHLB advances in this handbook section.

Troubled Associations

There are restrictions on funding sources for troubled and undercapitalized insured institutions. These restrictions serve to reduce the ability of troubled or undercapitalized associations to obtain credit. Two of the restrictions include limited access to brokered deposits (12 CFR § 337.6) and restrictions on the amount of permissible credit exposure to a correspondent association (12 USC § 1831o(f)(2)(G). In addition, there are certain restrictions on borrowing programs available at the Federal Reserve discount window (12 CFR § 201.4).

Brokered Deposits

Section 29 of the FDIA significantly reduced the availability of brokered deposits as a source of liquidity by mandating restrictions on such deposits. The FDIC's implementing regulations, at 12 CFR § 337.6, set forth the following provisions:

- Well-capitalized institutions may accept brokered deposits without restriction.
- Adequately capitalized institutions must receive prior FDIC approval.
- Undercapitalized institutions may not accept brokered deposits.

See Handbook Section 560, Deposits/Borrowed Funds, for a detailed discussion of brokered deposit restrictions.

Limitations on Interbank Liabilities

Under FRB regulation 12 CFR Part 206, Limitations on Interbank Liabilities (Regulation F), insured institutions must establish and maintain written policies and procedures to prevent excessive exposure to any individual correspondent. The prevention of excessive risk exposure relates to the condition of

the correspondent. Specifically, the regulation requires institutions to establish policies and procedures that take into account credit and liquidity risks, including operational risks, in selecting correspondents and terminating those relationships.

REFERENCES

Statutes

12 USC 1831f	Federal Deposit Insurance Act
12 USC 1831o	Prompt Corrective Action
12 USC 1467a	Regulation of Holding Companies
12 USC 371c	Banking Affiliates

Code of Federal Regulations (12 CFR)

Part 201	Extensions of Credit by Federal Reserve Banks
Part 206	Limitations on Interbank Liabilities
§ 337.6	Brokered Deposits
§ 561.31	Nonwithdrawable Account
§ 563.80	Borrowing Limitations
§563.140	Capital Distributions
§ 563.161	Management and Financial Policies
§ 563.172	Financial Derivatives
§ 563.176	Interest Rate Risk Management Procedures
§ 563b.520	Post Conversion Dividends
§ 563c.102	Financial Statement Presentation
§ 563d.1	Requirements Under Certain Sections of the Securities Exchange Act of 1934
Part 563g	Securities Offerings

Office of Thrift Supervision Bulletins

RB 34	Examiner Guidance on Wholesale Borrowings
TB 13a	Management of Interest Rate Risk, Investment Securities, and Derivative Activities
TB 13a-2	Structured Advances

Interagency Guidance

CEO Letter No. 141 (July 13, 2001) – Joint Agency Advisory on Brokered and Rate-Sensitive Deposits (May 10, 2001)

Statement of Financial Accounting Standards

SFAS No. 115	Accounting for Certain Debt & Equity Securities