



Comptroller of the Currency
Administrator of National Banks

Liquidity

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Overview

Liquidity risk is the risk to a bank's earnings and capital arising from its inability to timely meet obligations when they come due without incurring unacceptable losses. Bank management must ensure that sufficient funds are available at a reasonable cost to meet potential demands from both funds providers and borrowers. Although liquidity risk dynamics vary according to a bank's funding market, balance sheet, and intercorporate structure, the most common signs of possible liquidity problems include rising funding costs, requests for collateral, a rating downgrade, decreases in credit lines, or reductions in the availability of long-term funding.

This booklet provides guidance to banks and examiners on liquidity risk management. The sophistication of a bank's liquidity management process will depend on its business activities and overall level of risk. However, the principles of liquidity management are straightforward: a well-managed bank, regardless of size and complexity, must be able to identify, measure, monitor, and control liquidity risk in a timely and comprehensive manner.

Importance of Liquidity Management

Liquidity risk is a greater concern and management challenge for banks today than in the past. Increased competition for consumer deposits, a wider array of wholesale and capital market funding products, and technological advancements have resulted in structural changes in how banks are funded and how they manage their risk. Moreover, the Federal Deposit Insurance Corporation Improvement Act of 1991 limited the amount of liquidity support available at the Federal Reserve discount window to problem banks.

In particular, two recent trends in funding make it more important for banks to actively manage their liquidity risk: 1) the increased use of credit-sensitive wholesale funds providers and 2) the growth of off-balance-sheet activity.

Traditionally, banks have relied upon retail transaction and savings accounts as a primary funding source. These deposits generally represent a stable and low-cost source of funds. However, the repeal of deposit rate ceilings in the 1980s (Regulation Q), coupled with the proliferation of alternative investment

and savings vehicles now available to consumers, have made the retention of core deposits more difficult. For the past several years, core deposits as a percentage of assets have steadily declined. More recently, the absolute growth of core deposits has been flat and may well decline in the future as retail consumers continue to evaluate the variety of competing savings vehicles and their relative returns. The growth in, and consumers' acceptance of, Internet banking and other electronic technologies may accelerate this trend by making it easier for consumers to compare rates and to transfer funds between competing institutions easily and rapidly.

Banks are successfully adjusting to this secular shift by using market sources, including the Federal Home Loan Banks (FHLBs), to meet loan demand and investment needs. By using market sources, banks are able to diversify their funding bases among funds providers and across maturities. Unlike core deposits, whose maturities are generally determined by the preferences of depositors, funds in the professional markets can be accessed at a variety of tenors. The many choices among market funding alternatives have provided banks with greater flexibility in managing their cash flows and liquidity needs.

Increased reliance on market funding sources, however, has left banks more exposed to the price and credit sensitivities of major funds providers. As a general rule, institutional funds providers (including FHLBs) are more credit sensitive and will be less willing than retail customers to provide funds to a bank facing real or perceived financial difficulties. A bank's ability to access the capital markets may also be adversely affected by events not directly related to them. For example, the Asian crisis of 1997 and the collapse of the Russian ruble in 1998 increased volatility and reduced liquidity for various capital markets products.

Along with the shift from relatively credit-neutral to credit-sensitive funds providers, banks have turned increasingly to asset securitization and other off-balance-sheet strategies to meet their funding requirements. As these off-balance-sheet activities have grown, they have become increasingly important in the management and analysis of liquidity. These activities can either supply liquidity or increase liquidity risk, depending on the specific transaction and the level of interest rates at the time.

Technological advancements also intensify challenges for liquidity managers. Large sums of money can now move electronically from one account to

another in the blink of an eye. Evolving technology is also changing how the world obtains and spends cash. Electronic money, smart cards, PC banking, Internet banking, and wireless banking are just a few of the products and services that bankers should consider when assessing and managing liquidity.

Relationship of Liquidity Risk to Other Banking Risks

Bankers and examiners must understand and assess how a bank's exposure to other risks may affect its liquidity. The OCC defines and assesses nine categories of risk: credit, interest rate, liquidity, price, foreign currency translation, transaction, compliance, strategic, and reputation. These categories are not mutually exclusive — any product or service may expose the bank to multiple risks and a real or perceived problem in any area can prevent a bank from raising funds at reasonable prices and thereby increase liquidity risk.

The primary risks that may affect liquidity are reputation, strategic, credit, interest rate, price, and transaction. If these risks are not properly managed and controlled, they will eventually undermine a bank's liquidity position. A brief description of how these risks may affect liquidity is provided below. A detailed discussion of the OCC's risk definitions and risk assessment process can be found in the "Bank Supervision Process" booklet of the *Comptroller's Handbook*.

Reputation Risk

Reputation risk is the current and prospective impact on earnings and capital arising from negative public opinion. A bank's reputation for meeting its obligations and operating in a safe and sound manner is essential to attracting funds at a reasonable cost and retaining funds during troubled times. Negative public opinion, whatever the cause, may prompt depositors, other funds providers, and investors to seek greater compensation, such as higher rates or additional credit support, for maintaining deposit balances with a bank or conducting any other business with it. If negative public opinion continues, withdrawals of funding could become debilitating.

To minimize reputation risk and its potential impact on liquidity, bank management should assess the bank's reliance on credit-sensitive funding. A bank that is exposed to significant reputation risk should seek to mitigate

liquidity risk by diversifying the sources and tenors of market funding and increasing asset liquidity, as appropriate.

Strategic Risk

Strategic risk is the current and prospective impact on earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. No strategic goal or objective should be planned without considering its impact on a bank's funding abilities. The bank must be able to raise money required to meet its obligations at an affordable cost. The ability to attract and maintain sufficient liquidity is often an issue at banks experiencing rapid asset growth. If management misjudges the impact on liquidity of entering a new business activity, the bank's strategic risk increases. Management should carefully consider whether the funding planned to support a strategic risk initiative will increase liquidity risk to an unacceptable level.

Credit Risk

Credit risk is the current and prospective risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise to perform as agreed. A bank that assumes more credit risk, through asset concentrations or adoption of new underwriting standards in conjunction with untested business lines, may be increasing its liquidity risk. Credit-sensitive funds providers may worry that the bank's increased credit exposure could lead to credit problems and insufficient profits. The bank's ability to meet its obligations may eventually be compromised. Wholesale funds providers and rating agencies consider the level of past-due loans, nonperforming loans, provisions to the allowance for loan and lease losses, and loan charge-offs as indications of trends in credit quality and potential liquidity problems. If credit risk is elevated, the bank may have to pay a premium to access funds or attract depositors. If credit risk has undermined the bank's financial viability, funding may not be available at any price. Most large bank failures have involved the combined effects of severe credit and liquidity deterioration.

Interest Rate Risk

Interest rate risk is the current and prospective risk to earnings or capital arising from movements in interest rates. Changes in interest rates affect income earned from assets and the cost of funding those assets. If a bank experiences a reduction in earnings from a change in market interest rates, funds providers may question the financial stability of the bank and demand a premium. They may even refuse to provide funding.

A change in interest rates also affects the economic value of the balance sheet. For example, the present value of most investment securities decreases in a rising rate environment. To maintain the total value of assets serving as collateral in repurchase agreements or pledged against deposits, the bank may have to pledge or encumber additional securities, increasing its cost of funds. The cost of alternative funding sources also may increase as depositors and other lenders demand market interest rates in a rising rate environment.

Off-balance-sheet instruments that a bank uses to manage its interest rate risk may also pose liquidity risk. The cash flows of those instruments often are very sensitive to changes in rates, and, if not properly managed, can result in unexpected funding requirements or other cash outflows during periods of volatile interest rates.

Price Risk

Price risk (or market risk) is the risk to earnings or capital arising from changes in the value of traded portfolios of financial instruments. Price risk may result in volatile earnings. This risk is most prevalent in large banks that actively trade financial instruments. Price risk is closely monitored by funds providers when assessing a bank's financial position and creditworthiness. If price risk and its perceived impact on earnings or capital is too great, funds providers may require the bank to pay increased rates for funds, may not be willing to invest in longer term maturities, or may not be willing to provide funding on any terms.

Transaction Risk

Transaction risk is the current and prospective risk to earnings and capital arising from fraud, error, and the inability to deliver products or services,

maintain a competitive position and manage information. Systems that directly affect liquidity include wire transfer systems for check and securities clearing, electronic banking, and operations governing credit, debit, and smart card usage. If product lines change, management must adjust the systems to ensure that all transactions can be handled. Significant problems can develop very quickly if the systems that process transactions fail or delay execution. If customers have difficulty accessing their accounts, they may close them, which will diminish liquidity. Transaction risk should be considered in the bank's contingency planning process.

Early Warning Indicators of Liquidity Risk

Management should monitor various internal as well as market indicators of potential liquidity problems at the bank. These indicators, while not necessarily requiring drastic corrective action, may prompt management and the board to do additional monitoring or analysis.

An incipient liquidity problem may first show up in the bank's financial monitoring system as a downward trend with potential long-term consequences for earnings or capital. Examples of such internal indicators are:

- A negative trend or significantly increased risk in any area or product line.
- Concentrations in either assets or liabilities.
- A decline in indicators of asset quality.
- A decline in earnings performance or projections.
- Rapid asset growth funded by volatile wholesale liabilities or brokered deposits.

Professional analysts and other market participants may express concerns about the bank's credit capacity. Examples of these third-party evaluations include:

- Bank is named in market rumors as a "troubled" bank.
- Downgrades of credit rating by rating agencies.
- Customers are contacting relationship managers, fixed income sales representatives, and branch employees requesting information.

Bearish secondary market activity in the bank's securities may signal declining value. Examples of these market events include:

- Drop in stock price.
- Wider secondary spreads on the bank's senior and subordinated debt, and increasing trading of the bank's debt.
- Brokers/dealers are reluctant to show the bank's name in the market, forcing bank management to arrange "friendly" broker/dealer support.

Finally, the bank's funding market may begin to contract or demand credit support, better credit terms, or shorter duration lending, any of which may increase liquidity costs. Examples of funding deterioration are:

- Overall funding costs increase.
- Counterparties begin to request collateral for accepting credit exposure to the bank.
- Correspondent banks eliminate or decrease credit line availability, causing the bank to make larger purchases in the brokered funds market.
- Volume of turndowns in the brokered markets is unusually large, forcing bank to deal directly with fewer willing counterparties.
- Rating-sensitive providers, such as trust managers, money managers, and public entities, abandon the bank.

- Counterparties and brokers are unwilling to deal in unsecured or longer dated transactions.
- Transaction sizes are decreasing, and some counterparties are unwilling to enter into even short-dated transactions.
- Bank receives requests from depositors for early withdrawal of their funds, or the bank has to repurchase its paper in the market.

When evaluating a bank's potential liquidity risk, OCC examiners will consider not only the factors considered by bank management but also a bank's current position and trends in the following ratios:

- Loans to deposits.
- Short-term liabilities to total assets.
- On-hand liquidity.
- Dependence or reliance on wholesale funding.

Managing liquidity involves estimating liquidity needs and providing for them in the most cost-effective way possible. Banks can obtain liquidity from both sides of the balance sheet as well as from off-balance-sheet activities. A manager who attempts to control liquidity solely by adjustments on the asset side is sometimes ignoring less costly sources of liquidity. Conversely, focusing solely on the liability side or depending too heavily on purchased wholesale funds can leave the bank vulnerable to market conditions and influences beyond its control. Effective liquidity managers consider the array of available sources when establishing and implementing their liquidity plan.

Bank management should understand the characteristics of their funds providers, the funding instruments they use, and any market or regulatory constraints on funding. In order to accomplish this, management must understand the volume, mix, pricing, cash flows, and risks of their bank's assets and liabilities, as well as other available sources of funds and potential uses for excess cash flow. They must also be alert to the risks arising from funding concentrations.

Asset Liquidity

Banks typically hold some liquid assets to supplement liquidity from deposits and other liabilities. These assets can be quickly and easily converted to cash at a reasonable cost, or are timed to mature when the managers anticipate a need for additional liquidity. Liquid assets include those that can be pledged or used in a repurchase agreement. Although management expects to earn some interest income on their liquid assets, their main purpose is to provide liquidity.

Money Market Assets

Money market assets (MMAs) are usually the most liquid of a bank's assets. MMAs include:

- Fed funds sold with an overnight maturity or term maturity within 30 days.

- Short-term Eurodollar deposits placed.
- CDs purchased, provided they are negotiable in the secondary market.
- Negotiable banker's acceptances purchased from banks with good credit standing. A banker's acceptance is a time draft drawn on and accepted by a bank. It is often used to facilitate trade transactions, is usually collateralized by merchandise, and is guaranteed by a bank.

Large banks generally hold a range of MMA instruments and may diversify their shorter term assets to improve yield or maintain market presence. Because large banks have access to wholesale funding sources, they often do not rely on MMAs for liquidity to the same extent as community banks. Large banks try to invest their excess liquidity in assets with longer terms or more credit risk to enhance earnings. For most community banks, MMAs are primarily Fed funds sold to their correspondents.

The Investment Portfolio

A bank's investment portfolio can provide liquidity in three ways: (1) the maturity of a security, (2) the sale of securities for cash, or (3) the use of "free" securities as collateral in a repurchase agreement or other borrowing. For an investment security to be saleable, it must not be encumbered, i.e., the security cannot be sold under repurchase agreement or pledged or used as collateral, and it must be marketable. A "free" security is an instrument that can be used as collateral in a transaction. A security that is severely depreciated, a small face amount, already pledged or encumbered, or of poor credit quality is not a good candidate for collateral and should not be considered "free."

Because of these judgmental factors, the amount of free securities owned by a bank cannot easily be determined from the general ledger, and levels are generally estimated. Periodically, management should analyze in detail the investment portfolio to validate the bank's estimates of free securities.

For accounting purposes, investment portfolios are separated into two categories, available-for-sale (AFS) and held-to-maturity (HTM). These designations may affect how a bank uses its securities for liquidity purposes.¹

Securities in the HTM portion of the investment portfolio are carried at historic cost. To categorize a security as HTM, a bank must have both the intent and ability to hold the security to maturity. If the bank holds open the possibility of selling it prior to maturity for liquidity purposes, the security is not eligible for classification as HTM. If an HTM security is sold for liquidity, there may be certain business and accounting ramifications:

- The sale could potentially "taint" the remaining HTM portfolio. When a bank taints its portfolio, it calls into question its ability to hold other HTM securities to maturity. Accordingly, the remaining HTM securities would have to be categorized as AFS or trading. In addition, future purchases of securities could not be categorized as HTM until the taint is removed (which usually takes two years.)
- Because the market value gain or loss is deferred, the sale of HTM securities could generate a significant one-time loss or gain in income.

HTM securities, however, can be pledged or used as collateral in a repurchase agreement and, in this manner, provide a bank with a source of liquidity.

Banks typically classify securities that will be used for liquidity as AFS because such securities have fewer accounting restrictions. Specifically, AFS securities are not subject to the "intent and ability" restrictions of HTM securities. Because AFS securities are marked to market regularly, any fair value gains or losses are recognized as they occur. Therefore, if the bank needs to sell, pledge, or use an AFS security as collateral for liquidity, the impact on GAAP capital is mitigated because the bank has recognized the change in value of the security as it occurred. (Note for regulatory capital purposes, the unrealized gain or loss on AFS securities is excluded from stockholders' equity and therefore is not included in Tier 1 capital.)

¹ Some banks may also have a trading account, but securities held in a trading account overnight are almost always used in repo transactions and therefore do not usually provide any further liquidity.

Financial Accounting Standard 115, "Accounting for Certain Investments in Debt and Equity Securities," provides guidance on accounting for AFS and HTM securities.

Cash Operating Accounts

Operating accounts such as vault cash, cash items in process of collection, correspondent accounts, and the Federal Reserve account usually are **not** liquid assets in an ongoing institution. These accounts are needed to accommodate daily business transactions; if these funds are used, they must be replenished before further business activities are conducted. Most well-managed banks maintain the minimum balance needed to accommodate transactions in these accounts, since the balances do not generally earn interest.

Sometimes community banks may maintain surplus funds at a correspondent as a compensating balance in order to avoid account fees. Although these surplus funds could be used elsewhere and are liquid, the amount is rarely substantial.

Reverse Repurchase Transactions

In a **securities purchased under resale agreement**, also known as a "reverse repurchase agreement," a bank lends money to a counterparty by purchasing a security and agreeing to resell the security to the counterparty at a future date. This is an exchange of the most liquid asset (surplus cash) for a less liquid asset (a security). A reverse repo provides earnings to the lending bank with limited credit risk because the loan is collateralized.

Unlike a repurchase agreement — which adds temporary liquidity by converting a security into cash — a reverse repo absorbs balance sheet liquidity. This is because the securities underlying reverse repos usually have other strategic purposes and consequently are not available as a separate source of liquidity.

The typical reason a bank enters into a reverse repo is that it needs to obtain securities to use as collateral in other transactions. For example, a bank may need securities to cover short positions or to pledge against public funds (described later in this section) to obtain a low-cost source of funding. In

such cases the security obtained in a reverse repo transaction is immediately encumbered and therefore is not a liquid asset.

Occasionally, a security obtained in a reverse repo is not encumbered in any way and therefore may be a liquid asset. For example, if a lending bank has concerns about the credit quality of its counterparty, it may require the collateral protection of a reverse repo and simply maintain the security as "free" or unencumbered.

Liability Liquidity

Large regional and money center banks, and increasingly more community banks, rely heavily on liability liquidity. Larger banks generally have ready access to money markets and usually find that borrowing is the most economical way for them to meet short-term or unanticipated loan demand or deposit withdrawals. While community banks generally do not have the same broad access to money markets, their reliance on liability liquidity is increasing as the availability of core deposits continues to decline. A bank's ability to tap these sources as well as their pricing and associated cash flows will vary from bank to bank and customer to customer.

By managing liabilities instead of assets, banks can tailor liabilities to fit their cash flow needs instead of apportioning asset types and amounts to a given liability base. Locking in term funding can also reduce liquidity risk, especially if a bank can extend the duration of its liability structure. By accessing wholesale funding sources, they also can obtain funds quickly and in large amounts instead of slowly accumulating demand or savings deposits.

Liability management, however, is not riskless. Changes in market conditions can make it difficult for the bank to secure funds and to manage its funding maturity structure. If rates increase quickly or unexpectedly, the earnings of banks that fund long-term assets with short-term liabilities will be squeezed. Conversely, if rates decline, the earnings of banks funding short-term assets with long-term liabilities will be squeezed. Managing liquidity through adjustments to liabilities requires managers to plan strategies more fully and execute them more carefully than if the bank managed liquidity based only on assets.

Liability funding sources are typically characterized as retail or wholesale. Banks distinguish between retail and wholesale funding because the two sources of funding have different sensitivities to credit risk and interest rates and will react differently to changes in economic conditions and the financial condition of the bank. The wholesale money markets are often grouped in terms of credit sensitivity. Tiering is typically most apparent in medium-term and long-term wholesale liability markets, and pricing of funding can change very quickly in response to either real or perceived credit risk.

Retail Funding

Retail funding is supplied by the deposits a bank receives from the general public, primarily consumers and small businesses. These deposits are most banks' primary funding source and for many banks continue to be a relatively stable source of funds. Retail funds providers usually maintain balances of \$100,000 or less, to be fully insured by the FDIC. Retail accounts include:

- Transaction accounts such as demand deposit accounts (DDAs), negotiable order of withdrawal accounts (NOWs), or money market demand accounts (MMDAs); and
- Savings accounts and time certificates of deposit (CDs).

Retail deposits usually originate in a bank's market area and may result from a personal relationship the marketing officer establishes with the customer. Since retail deposits are almost always federally insured and the customers value the personal relationship with the bank, these deposits historically have not been very sensitive to the bank's credit quality or interest rates. However, as a result of significant changes in the financial marketplace in recent years, bank management can no longer assume that all of its retail customers are insensitive to credit risk and interest rates.

The degree of credit and interest rate sensitivity of a bank's retail depositors depends on a customer's financial expertise, previous experiences, the fiduciary obligations of managers of pension funds, the bank's geographic location, and investment alternatives. Concerns about a bank's viability raised in the media could shake depositors' confidence in the safety of their deposits and trigger large withdrawals from the bank.

The returns from investment alternatives also affect the amount of funds provided by consumers. For example, if higher returns are available from alternative investments such as mutual funds, a bank's retail funding may decline. On the other hand, a sudden downturn in the stock market could result in significant cash inflows if investors perceive banks as safe havens for their money during times of market turmoil.

Determination of the credit and interest rate sensitivity of the bank's retail funding base is not always simple. Wholesale funds providers may also use "retail" instruments such as DDAs and CDs. Since retail and wholesale depositors behave differently under stress and changing economic conditions, the liquidity manager needs to distinguish between retail and wholesale funds providers for these accounts and track the balances and trends separately. Additionally, liquidity managers should identify any retail accounts that have balances in excess of FDIC insurance limits since those account owners will typically be more credit-sensitive than those with fully insured accounts. Similarly, although retail CDs generally have fixed and often long maturities, some CD holders may be willing to incur early withdrawal penalties if they become seriously concerned about a bank's ability to repay at maturity or if they observe higher paying investment alternatives in the market. Deposits obtained from out of area, such as those obtained through Internet advertising, may be more sensitive to interest rates or credit risk than locally generated deposits and require closer monitoring. All of these factors should be considered when assessing the credit and interest rate sensitivity of the bank's retail deposit funding base.

The "Interest Rate Risk" booklet of the *Comptroller's Handbook* describes in more detail the influences on depositors.

Wholesale Funding

Many banks are increasing their use of wholesale funding, replacing lost retail deposits with funds provided by professional money managers. Wholesale funds providers are typically large commercial and industrial corporations, other financial institutions, governmental units, or wealthy individuals. Wholesale funds transactions are typically not insured or are in amounts that exceed the FDIC insurance limit. As a result, these funds are generally very sensitive to credit risk and interest rates, and pose greater liquidity risk to a bank.

Wholesale Funds Providers

Professionals operating under established investment criteria manage most wholesale funds. Because their responsibility is to preserve their clients' principal, they are sensitive to changes in the credit quality of the institutions in which they invest, as well as to changes in interest rates to maximize return while minimizing risk. These professionals carefully monitor banks to which they have provided funds, watching publicly reported data such as quarterly call reports and keeping abreast of other events such as management changes or stock price volatility. They review the bank's rating (if the bank is rated by an independent rating service), because professional guidelines often require that all investments be in "investment grade" companies. They will likely refuse to roll over existing funds at institutions whose creditworthiness is (or appears to be) deteriorating.

By monitoring the prices at which a bank's liabilities trade in the secondary market, wholesale funds providers can price that bank's risk and gauge its credit quality. Over-the-counter secondary markets may exist for a bank's wholesale CDs, foreign deposits, and bank notes. A deepening discount in any of these markets signals negative perceptions of a bank's credit worthiness, which may make it difficult for the bank to issue additional liabilities. For example, even though a bank can "lock in" a wholesale CD portfolio as a funding source, if credit risk concerns arise about the bank, investors can reduce their exposure to it by selling the bank's CDs into the secondary market at discounted rates. As a result, the bank may find it more difficult to roll over any of its maturing short-term liabilities, especially any unsecured and uninsured borrowings such as Federal funds sold or CDs. Some banks limit the volume of domestic and Euro-dollar negotiable CDs issued to control the liquidity risks associated with the secondary markets in these instruments.

The list below ranks wholesale funds providers by their assumed sensitivity to credit risk, from lowest risk tolerance (or highest credit sensitivity) to highest risk tolerance. The list is based on OCC experience at banks with liquidity problems and general knowledge of funds providers' practices. However, the order of sensitivity may vary by circumstance. For example, certain funds providers may be less than normally credit sensitive to a long-term customer or to a customer using more than one of the bank's products. Also, large domestic banks are listed near the bottom even though they are typically very

credit-sensitive. This is because a large bank may maintain significant balances with a troubled bank to preserve the franchise value for a potential acquisition of that bank. The actions of specific funds providers may vary and their position on the list may change over time.

- Money market funds.
- Trust funds.
- Pension funds.
- Money market broker/dealers' own account.
- Multinational corporations.
- Government agencies and corporations.
- Insurance companies.
- Regional banks.
- Foreign banks.
- Medium to small corporations.
- Community banks.
- Large domestic banks.
- Individuals.

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

Unsecured Wholesale Funds

Because of legal restrictions on a borrowing bank's ability to collateralize its liabilities, much of the wholesale funding available to a bank is unsecured. Unsecured wholesale funds are very sensitive to perceived changes in a borrowing bank's credit capacity.

Wholesale certificates of deposit (CDs) are negotiable instruments, saleable to a secondary investor. While retail CDs generally permit early redemption with a penalty, wholesale CDs generally do not.

The **Federal funds** (Fed funds) market is the day-to-day unsecured lending of excess reserve funds between banks. Such lending is referred to as "Fed funds sold" by the lending bank and "Fed funds purchased" by the borrowing bank. If a bank has excess reserves, it can sell the reserves and record the sale as an asset. If a bank needs funds to meet either its reserve requirements or other obligations, it can purchase the excess reserves of another bank. The primary Fed funds market is overnight, but maturities may extend a few days or weeks.

Because Fed funds are not deposits, they do not receive FDIC insurance. Credit risk exists for the seller, since Fed funds are unsecured obligations. Because exposures are short-term and counterparties are generally well-regarded banks, Fed funds transactions are usually considered very low credit risk. However, if a bank experiences financial difficulties, it may find its ability to borrow in the Fed funds market hampered or eliminated.

Typically, smaller banks sell their excess reserves to a larger correspondent bank as their principal means of managing asset liquidity. Because of their short maturity, Fed funds sold are often a bank's most liquid asset. Large banks may have a net Fed funds purchased position as a result of either their daily funds management or their purchase of Fed funds from downstream banks to which they provide other banking services.

The **Federal Home Loan Bank System (FHLBS)**, a government-sponsored entity, provides attractively priced funding in large amounts to banks. Twelve Federal Home Loan Banks (FHLBs) in the system provide primarily two types of funding to commercial banks: collateralized "advances" and uncollateralized "investments."

Several provisions of the FHLB Act and its implementing regulations may restrict the availability of FHLB funds in certain circumstances. Limits on access to advances, found in 12 CFR 935.5, require each FHLB to have credit policies and to monitor advances, security, and other requirements of funding. The regulation allows FHLBs to restrict applications for new or renewed lines. It also establishes the criteria with which FHLBs analyze the creditworthiness, capitalization, operating losses, or other deficiencies of borrowing institutions, and it prohibits FHLB advances to institutions lacking positive equity capitalization.

In addition to general financial condition data and bank rating agency information, the FHLBs have access to nonpublic regulatory information and supervisory actions taken against banks in assessing the risk posed by prospective borrowing banks. The FHLBs often react quickly, sometimes before market information is available to other funds providers, to reduce exposure to a troubled bank by not rolling over unsecured lines. Depending on the severity of a troubled bank's condition, even the collateralized funding program may be discontinued or withdrawn at maturity because of concerns about the quality or reliability of the collateral or other credit-related concerns. This can create significant liquidity problems, especially in banks that have large amounts of short-term FHLB funding. Banks 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.

Foreign deposits are deposits held in branch offices of domestic banks outside the United States or its overseas territories. They are usually Eurodollar deposits that are taken (liabilities) or placed (assets) and traded in a wholesale, professional market similar to the Fed funds market. These funds are denominated in U.S. dollars rather than the currency of the foreign country, and are not insured by the FDIC. Eurodollar deposits are structured as interest-bearing time instruments, ranging in maturity from overnight to any period up to about six months. Like Fed funds sold, Eurodollars placed are very liquid but often have longer terms to maturity. These maturities should be considered in liquidity analyses. Institutions participating in the Eurodollar market are usually large banks or corporations that are seeking a better investment yield on short-term instruments.

Some foreign deposits at a foreign branch of a U.S. bank may be denominated in the host country's currency. These deposits, which are not insured by the FDIC, could be retail or wholesale funds. Foreign depositors' behavior may differ from that of domestic depositors because of differences in their credit sensitivities and their perceptions of a bank's financial stability. Liquidity managers should evaluate the cash flows of foreign deposit accounts separately from domestic accounts. The analysis should also distinguish between retail and wholesale foreign deposits.

Bank notes are bank liabilities issued to acquire large blocks of term funding. Bank notes are not FDIC-insured and pay higher rates than CDs. Bank note purchasers are generally very credit-sensitive.

Brokered deposits include any deposit that is obtained, directly or indirectly, from a deposit broker. When a bank is less than well-capitalized according to the "prompt corrective action" (PCA) provisions of 12 CFR 6, the term "brokered deposits" may apply to any deposits it solicits by offering rates of interest that are significantly higher than the rates offered by other insured depository institutions in its normal market area. Under 12 USC 1831f and 12 CFR 337.6, the use of brokered deposits is limited to well-capitalized insured depository institutions and, with a waiver from the FDIC, to adequately capitalized institutions. Undercapitalized institutions are not permitted to accept brokered deposits.

Certain deposits are attracted over the Internet, through CD listing services, or through special advertising programs offering premium rates to customers with little or no other banking relationship. Although these deposits may not fall within the technical definition of "brokered," they are similar to brokered deposits. That is, they are high-yielding products attractive to rate sensitive customers who do not have any other significant relationship with the bank. Extensive use of insured or uninsured funding products of this type, especially those obtained from outside a bank's geographic market area, can weaken a bank's funding position. Because they may be as volatile and risky as brokered deposits, they require just as much management attention.

Collateralized Wholesale Funds

Banks may pledge collateral for certain wholesale funds from public entities. To the extent of the collateral value pledged, these funds display less credit sensitivity than the unsecured wholesale funds discussed above.

Public funds are bank deposits of state and local municipalities. Although the funds are usually a low-cost, relatively stable source of funding for the bank, availability depends on the particular government's fiscal policies and cash flow needs. Public funds normally require that the bank pledge investment grade securities to the accounts to ensure repayment. Because of this collateral, public funds providers are usually not very credit-sensitive.

Federal Reserve advances, commonly referred to as "discount window borrowings" are secured borrowings from Federal Reserve Banks. These borrowings, which are governed by the Federal Reserve's Regulation A (12 CFR 201), are generally available to any depository institution that maintains reservable transaction accounts or nonpersonal time deposits. Such borrowings provide short-term funds to help eligible institutions meet temporary funding requirements or to cushion a more persistent outflow of funds while the bank makes an orderly adjustment of its balance sheet. All borrowings must be secured to the satisfaction of the local Reserve Bank. Satisfactory collateral generally includes U.S. government securities, federal agency securities, and, if they are of acceptable quality, mortgage notes on one- to four-family residences, state and local government securities, and the notes of businesses, consumers, and other customers. As discussed later in this booklet's section "Other Restrictions on Less than Well-Capitalized Banks," Regulation A (12 CFR 201.4) limits a bank's ability to use the discount window once its capital level falls below "adequately capitalized."

Treasury tax and loan accounts are accounts maintained by the U.S. Treasury to facilitate payment of federal withholding taxes. There are two types, a "demand option" account and a "note option" account. The demand option account is usually remitted to the Treasury every day and rarely develops a large balance. The note option account builds over periods of time and balances can become quite large. Portions of note option accounts are "called" periodically depending on Treasury cash flow needs. The accounts are generally not credit-sensitive because they are collateralized much like Federal Reserve discount window borrowings. However, because of the call

feature, the balances are very volatile and require close monitoring by the bank.

Other Debt Securities

Many large banks also use other debt securities to provide longer-term sources of funds. Under the provisions of the Gramm-Leach-Bliley Act (GLBA), if a bank is one of the 100 largest insured banks and owns a financial subsidiary, it must have outstanding "eligible debt" that is rated in one of the three highest investment grade rating categories by a nationally recognized statistical rating organization.² For purposes of 12 CFR part 5, eligible debt is unsecured debt that:

- Is not supported by any form of credit enhancement, including a guaranty or standby letter of credit, and
- Is not held in whole or in any significant part by any affiliate, officer, director, principal shareholder, or employee of the bank or any other person acting on behalf of or with funds from the bank or an affiliate of the bank.

Funding Concentrations

When selecting the appropriate mix of funding, management must carefully consider potential funding concentrations. A "funding concentration" exists when a single decision or a single factor could cause a significant and sudden withdrawal of funds. There are no designated amounts or sizes that constitute a liability "concentration"; a concentration depends on the bank and its balance sheet structure. The dollar amount of a "funding concentration" is an amount that, if withdrawn alone or at the same time as a few other large accounts, would cause the bank to significantly change its day-to-day funding strategy. Concentrations are almost always very credit-sensitive, although collateralization may mitigate the sensitivity depending on the quality and reliability of the collateral.

² The requirement is implemented under 12 CFR 5.39. If a national bank is one of the second 50 largest insured banks, it may either satisfy this requirement or satisfy alternative criteria the Secretary of Treasury and the Board of Governors establish jointly by regulation. The "eligible debt" requirement does not apply if the financial subsidiary is engaged solely in activities in an agency capacity.

To monitor concentrations, management should review reports on large funds providers. The reports should consolidate all funding that the bank and any affiliates obtain from a single provider or closely related group of providers. Specific types of limits and ratios that a bank may use to monitor and control funding concentrations are discussed more fully in the "Liquidity Risk Management Process" section of this booklet.

Asset Securitization

Given adequate planning and an efficient process, securitization can create a more liquid balance sheet as well as leverage origination capacity. Securitization has significantly broadened the base of funds providers available to banks and increased their presence in the capital markets. Peculiarities related to certain transaction structures as well as excessive reliance on a single funding vehicle, however, increase liquidity risk.

Banks that use securitizations to fund credit cards and other revolving-credit receivables must prepare for the possible return of receivable balances to the balance sheet as a result of either scheduled or early amortization. Such events may result in large asset pools that require balance sheet funding at unexpected or inopportune times. The exposure is heightened at banks that seek to minimize securitization costs by structuring each transaction at the maturity offering the lowest cost, without regard to maturity concentrations or potential long-term funding requirements. To mitigate this risk, banks should correlate maturities of individual securitized transactions with overall planned balance sheet growth. They also should have adequate monitoring systems in place so that management is alerted well in advance of an approaching trigger and can consider preventive actions. Thus forewarned, management should also factor the maturity and potential funding needs of the receivables into shorter-term liquidity planning.

Banks originating assets specifically for securitization can depend too much on securitization markets to absorb new asset-backed security issues. Such banks may allocate only enough capital to support a "flow" of assets to the securitization market. This strategy could cause funding difficulties if circumstances in the markets or at a specific bank were to force the institution to hold assets on its books.

The implications of securitization for liquidity should be considered in a bank's day-to-day liquidity management and its contingency planning for liquidity. Each contemplated securitization should be analyzed for its impact on liquidity both as an individual transaction and as it affects the aggregate funds position.

Banks should consider:

- The volume of securities scheduled to amortize during any particular period;
- The plans for meeting future funding requirements (including when such requirements are expected);
- The existence of early amortization triggers;
- An analysis of alternatives for obtaining substantial amounts of liquidity quickly; and
- Operational concerns associated with reissuing securities.

Other Off-Balance-Sheet Activities

In addition to asset securitization, other types of off-balance-sheet activities have expanded in recent years. These activities, which have become increasingly important in the management and analysis of liquidity, can either supply or use liquidity, depending on the transaction as well as the level of interest rates at the time. Suppose a bank enters into an interest rate swap agreement in which it pays a floating rate and receives a fixed rate. If the fixed rate is higher than the floating rate when the agreement commences, the bank receives a payment for the difference between the two rates. If the floating rate subsequently becomes higher than the fixed rate, the bank will be required to pay the difference between the two rates, and what was originally a cash inflow will become a cash outflow.

Loan commitments, such as fee-paid letters of credit used as backup lines, are traditional uses of funds that are off-balance-sheet. Management should be able to estimate the amount of unfunded commitments that will require funding over various time horizons. Investment security commitments where

the bank commits to purchase a security "when-issued" are another example of off-balance-sheet uses of funds. Liquidity managers should assess how these and other off-balance-sheet activities will affect the bank's cash flows and liquidity risk. The *Comptroller's Handbook* booklet "Risk Management of Financial Derivatives" provides specific guidance on the benefits and risks of these off-balance-sheet activities.

Limits on Interbank Liabilities

Interbank liabilities are created when a bank extends credit to another bank through an uninsured deposit or in exchange for providing services, typically correspondent services that help banks meet their ongoing operational and customer needs. Traditional correspondent services include liquidity support to meet temporary funds deficiencies and longer term loan demands, check collection, payment services, purchases and sales of Fed funds or repurchase agreements, data processing, and fund transfers. By providing these correspondent banking services, a bank is exposed to credit risk from the correspondent institution with respect to the amount payable. Some correspondents pay for these services by maintaining an uninsured compensating balance at the servicing bank. Any payables from a correspondent bank, including uninsured deposits, are considered assets of the servicing bank and are subject to prudential restrictions on interbank credit risk.

Regulation F (12 CFR 206) requires banks to adopt written internal policies and procedures to prevent excessive exposure to the deteriorating financial condition of any individual correspondent. It also requires that a bank limit its overnight credit exposure to any individual correspondent insured depository institution to no more than 25 percent of the exposed bank's total capital, unless the bank can demonstrate that its correspondent is at least adequately capitalized, as defined for PCA under 12 CFR 6. Because of these limitations, a bank whose financial condition is deteriorating may find its ability to access and use correspondent services limited or curtailed.

Under Regulation F, credit exposure to a correspondent includes any assets and off-balance-sheet items against which the exposed bank must carry capital under the risk-based capital adequacy guidelines (12 CFR 3). Credit exposure also includes any types of banking transactions, including securities clearing or cash collection, that create a risk of nonpayment or delayed

payment between financial institutions. Certain transactions that carry a low risk of loss, such as transactions that are fully secured by government securities or other readily marketable collateral, are excluded from calculation of a bank's credit exposure. Netting of obligations under legally valid and enforceable netting contracts is permitted in calculating credit exposure.

Regulation F does not apply to commonly owned affiliates in a multibank holding company.

Other Restrictions on Less Than Well-Capitalized Banks

A bank whose capital is declining is also significantly limited in its ability to use brokered deposits and the Federal Reserve discount window to manage liquidity risk.

Under 12 CFR 337.6, the use of brokered deposits is limited to well-capitalized banks. Adequately capitalized banks must obtain a waiver from the FDIC to solicit, renew, or roll over such funds. Such banks, however, face restrictions on the yield they can pay on those funds. Banks whose capital levels fall below adequately capitalized are prohibited from using brokered deposits.

When an institution becomes undercapitalized under PCA (12 CFR 6), limits can be placed on its asset growth and its ability to acquire an interest in another insured bank. In addition, a bank's access to the discount window will be limited, because advances from the Federal Reserve Bank may not be outstanding for more than 60 days in any 120 day period. When a bank becomes significantly undercapitalized or when an undercapitalized bank fails to carry out its approved capital restoration plan, PCA allows the bank's regulator to limit the bank's activities further. For example, the OCC may put a ceiling on the interest rates the bank can pay on new deposits and may prohibit its further acceptance of deposits from correspondent banks. Five days after a bank is declared critically undercapitalized the Federal Reserve can restrict the bank's access to loans through the discount window.

Banks that fall below adequately capitalized require heightened supervisory attention. Examiners should refer to 12 CFR 6 and the OCC's policies and guidance on problem banks for additional guidance.

Board and Senior Management Oversight

Effective liquidity risk management requires an informed board, capable management, and appropriate staffing. The board and senior management are responsible for understanding the nature and level of liquidity risk assumed by the bank and the tools used to manage that risk. The board and senior management also should ensure that the bank's funding strategy and its implementation are consistent with their expressed risk tolerance.

The board of directors:

- Establishes and guides the bank's strategic direction and tolerance for liquidity risk.
- Selects senior managers who will have the authority and responsibility to manage liquidity risk.
- Monitors the bank's performance and overall liquidity risk profile.
- Ensures that liquidity risk is identified, measured, monitored, and controlled.

Senior management oversees the daily and long-term management of liquidity risk. Senior managers should:

- Develop and implement procedures and practices that translate the board's goals, objectives, and risk tolerances into operating standards that are well understood by bank personnel and consistent with the board's intent.
- Adhere to the lines of authority and responsibility that the board has established for managing liquidity risk.
- Oversee the implementation and maintenance of management information and other systems that identify, measure, monitor, and control the bank's liquidity risk.

- Establish effective internal controls over the liquidity risk management process.

Asset/Liability Management Committee

A bank's board will usually delegate responsibility for establishing specific liquidity risk policies and practices to a committee of senior managers. This senior management committee is often referred to as the Finance Committee or, more commonly, the Asset/Liability Committee (ALCO). ALCO is responsible for ensuring that measurement systems adequately identify and quantify the bank's liquidity exposure and that reporting systems communicate accurate and relevant information about the level and sources of that exposure.

An effective ALCO must have members from each area of the bank that significantly influences liquidity risk. The committee members should include senior managers who have clear authority over the units responsible for executing liquidity-related transactions so that ALCO directives reach these line units unimpeded. To ensure that ALCO can control the liquidity risk arising from new products and future business activities, the committee members should interact regularly with the bank's risk managers and strategic planners.

ALCO usually delegates day-to-day operating responsibilities to the bank's treasury department. In community banks, the bank's investment officer may handle such responsibilities. ALCO should establish specific practices and limits governing treasury operations before it makes such delegations. Typically, treasury personnel are responsible for managing the bank's discretionary portfolios, including securities, Eurocurrency, time deposits, domestic wholesale liabilities, and end-user off-balance-sheet transactions.

Centralized Liquidity Management

The organization of the liquidity risk management function depends on the size, scope, and complexity of the bank's activities. At many large banks, liquidity risk management may be tiered at lower levels in the organization and then coordinated at the lead bank, the parent company, and the bank

operating subsidiary, as applicable. In other banks, a simple unit bank approach may suffice.

The OCC encourages banks to take advantage of the efficiencies and comprehensive perspective that centralized liquidity management can provide. However, managing liquidity on a consolidated basis does not absolve the directors of each affiliate bank of their responsibility to ensure the safety and soundness of their institution and compliance with capital requirements.

To ensure that liquidity management and planning is in compliance with all legal restrictions on funding, management should analyze liquidity for each member of the bank's corporate group, which can include a parent company, bank and nonbank affiliates, and subsidiaries. Effective liquidity analysis requires understanding the funding position of any member of a bank's corporate group that might provide or absorb the bank's liquid resources. Unlike determinations of whether a bank satisfies its entity-specific regulatory capital requirements, liquidity analysis requires an integrated review of all relevant cash flows, including any inflows and outflows occurring outside the bank. Comprehensive liquidity management should analyze:

- Entity and consolidated liquidity positions of any significant bank affiliates in a multibank holding company. Since cash flows move easily between bank affiliates, a consolidated determination must be made.
- Entity liquidity of the parent company and nonbank subsidiaries. Even though centralized funding is prudent and advantageous for affiliated banks in a multibank holding company, parent companies must manage their liquidity separately from that of the banks they own.
- The liquidity position of any individual bank's subsidiaries, especially those subject to legal restrictions on funding provided by the bank.

If senior management adopts decentralized liquidity risk management, examiners should determine whether the liquidity risk profiles of significant affiliates raise or lower the organization's consolidated profile.

Liquidity Support between Bank Affiliates

If a commonly owned bank within a multibank holding company has liquidity problems, the bank will be able to rely on liquidity support from other bank affiliates within the company. A commonly owned bank will rarely fail to meet its obligations as long as there are funds available at its affiliates. The 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. For foreign affiliates, however, legal uncertainties regarding the enforceability of international obligations can affect the risk profile and pricing of foreign branch and agency liability products, and may require special consideration. Institutions usually manage this risk by ensuring that there is no undue cross-border reliance. For more information about transactions with foreign affiliates, examiners should refer to the *Comptroller's Handbook* booklet "Federal Branches and Agencies."

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. Unlike a depository institution, the holding company cannot accept deposits, offer FDIC insurance to its funds providers, or rely on discount window liquidity support. As a result, the parent company tends to rely on credit-sensitive, professionally managed wholesale funds, including short-term commercial paper if the parent company has investment grade credit standing. Even a small decline in credit quality can significantly increase liquidity risk, especially if the parent relies on the highly credit-sensitive commercial paper market.

For example, a parent often uses commercial paper proceeds to fund its mortgage warehouse, or pipeline, that holds mortgages awaiting sale to a permanent lender. Although individual loans held in the pipeline are short-term, the pipeline itself is a long-term asset. If the parent loses the ability to fund the pipeline with commercial paper, the parent may need to reduce or discontinue its mortgage business, something that would ordinarily be considered only as a last resort.

Generally, the parent in a liquidity crisis may not look to bank funding for relief. Upstreaming of value by a subsidiary bank to its parent is highly regulated by federal statutes (12 USC 371c, *Banking Affiliates*; 12 USC 56,

Prohibition on withdrawal of capital; unearned dividends; and 12 USC 60, Dividends) and implementing regulation. Fees and dividends from the bank to the parent may provide cash flows to meet parent company expenses, but a bank cannot pay a dividend to its parent if the payment would leave the bank undercapitalized for regulatory purposes. Even if a dividend would not impair capital, a bank may have to obtain prior OCC approval for a dividend. These rules also require that credit extensions from the bank to the parent be fully collateralized, limit the terms and circumstances under which banks can buy the parent's securities or other assets, and prohibit a bank from repaying a parent's obligations. However, some liquidity does flow from the parent to the bank. The majority of the parent company's assets, other than investments in and loans to its banks and subsidiaries, are usually loans purchased from its banks or loans by its banks in which the parent participates. Typically, the parent places any of its excess cash in its banks.

The bank is not insulated from the parent's liquidity risks, particularly in similarly named institutions. A parent company's bankruptcy often triggers liquidity problems at the bank level because depositors do not usually understand the legal distinctions between the holding company and the subsidiary banks. (In the past when a holding company has failed or declared bankruptcy, the bank depositors have often launched a "run" on the subsidiary bank and quickly pushed it into liquidity insolvency.) However, at some community banks the holding company is an unknown entity for depositors. Such banks may survive the bankruptcy of their holding company.

Transactions with Bank Subsidiaries

Certain provisions of 12 USC 23A & B may apply to bank subsidiaries authorized under 12 CFR 5. Specifically, for purpose of 23A & B, bank financial subsidiaries are treated as affiliates of the banks. Examiners should contact the law department for more information on permissible activities and transactions with bank operating subsidiaries as well as financial subsidiaries.

Liquidity Risk Management Process

Regardless of organizational structure, a bank's risk management process should include systems to identify, measure, monitor, and control its liquidity exposures. Management should be able to accurately identify and quantify

the primary sources of a bank's liquidity risk in a timely manner. To properly identify the sources, management should understand both existing risk and the risks associated with new business or legal initiatives. Management should always be alert for new sources of liquidity risk at both the transaction and portfolio levels.

A bank's risk measurement system should be able to capture the main sources of liquidity risk, as well as to communicate the complexity and interconnection of risks. In selecting the systems that are appropriate for the bank, management should understand the nature and mix of the bank's products and activities. Banks significantly reliant on wholesale funding should have sophisticated measurement systems.

Management should periodically validate the integrity of its risk management processes. For example, the funds flow analysis report (see sample format in appendix A) or a similar management report should be reviewed periodically to ensure that it captures and reflects all significant on- and off-balance-sheet items. Measuring and reporting systems should be adjusted as products or risks change.

Key elements of an effective risk management process include management information systems, risk limits, internal controls, management reports, and a contingency funding plan.

Management Information Systems

An effective management information system (MIS) is essential for sound liquidity management decisions. Information should be readily available for day-to-day liquidity management and risk control, as well as during times of stress. Data should be appropriately consolidated, comprehensive yet succinct, focused, and available in a timely manner. Ideally, the regular reports a bank generates will enable it to monitor liquidity during a crisis; managers would simply have to prepare the reports more frequently. Managers should keep crisis monitoring in mind when developing liquidity MIS.

There is usually a trade-off between accuracy and timeliness. Liquidity problems can arise very quickly, and effective liquidity management may require daily internal reporting. The OCC may also require that the bank

submit daily liquidity reports during a period of financial difficulty. Since bank liquidity is primarily affected by large, aggregate principal cash flows, detailed information on every transaction may not improve analysis. Management should develop systems that can capture *significant* information.

The content and format of reports depend on a bank's liquidity management practices, risks, and other characteristics. However, certain information can be effectively presented in a standard format (see examples in appendix A, "Funds Flow Analysis," and appendix B, "Contingency Funding Plan Summary"). These reports should be tailored to the bank's needs.

Other routine reports should include a list of large funds providers, a cash flow or funding gap report, a funding maturity schedule, and a limit monitoring and exception report. Day-to-day management may require more detailed information, depending on the complexity of the bank and the risks it undertakes. Management should regularly consider how best to summarize complex or detailed issues for senior management or the board.

Other types of information important for managing day-to-day activities and for understanding the bank's inherent liquidity risk profile are:

- Asset quality and trends.
- Earnings projections.
- The bank's general reputation in the market and the condition of the market itself.
- Management changes.
- The type and composition of the overall balance sheet structure.
- The type of new money being obtained, as well as its source, maturity, and price.

Risk Limits

The board and senior management should establish limits on the nature and amount of liquidity risk they are willing to assume. The limits should be periodically reviewed and adjusted when conditions or risk tolerances change. When limiting risk exposure, senior management should consider the nature of the bank's strategies and activities, its past performance, the level of earnings and capital available to absorb potential losses, and the board's tolerance for risk.

Balance sheet complexity will determine how much and what types of limits a bank should establish over daily and longer term horizons. Well-run community banks with ample on-hand liquidity and stable core funding sources would not be expected to impose numerous risk limits. Other banks (and their parent holding companies) may find it necessary to adhere to strict policy guidelines to control a credit-sensitive funding position. While limits will not prevent a liquidity crisis, limit exceptions can be early indicators of excessive risk or inadequate liquidity risk management.

Internal Controls

Senior management and the board should have the means to review compliance with established limits and operating procedures independently. Even the best-performing banks can face a funding problem if adequate controls are not in place. Reviews should be performed regularly by persons independent of the funding areas. The bigger and more complex the bank, the more thorough should be the review. Reviewers should verify the level of liquidity risk and management's compliance with limits and operating procedures; policy or limit exceptions should be reported to the board.

Prudent oversight and internal controls should include validating systems periodically, using models, when necessary, to measure liquidity risk, and verifying that duties are properly segregated.

Monitoring and Reporting Risk Exposures

Senior management and the board, or a committee thereof, should receive reports on the level and trend of the bank's liquidity risk at least quarterly. If

the exposure is high or if it is moderate and increasing, the reports should be more frequent. From these reports, senior management and the board should learn how much liquidity risk the bank is assuming, whether management is complying with risk limits, and whether management's strategies are consistent with the board's expressed risk tolerance.

The sophistication or detail of the reports should be commensurate with the complexity of the bank. For example, large wholesale-funded banks may have elaborate daily reports on trading activity, transaction size, weighted average days to maturity of each type instrument, rollover rates, and cash flow projections. Community banks may opt for simple maturity gap or cash flow reports that depict rollover risk or quarterly monitoring of certain liquidity ratios. All banks should generate a funds provider report that captures funding concentrations.

Contingency Funding Plans

As part of a comprehensive liquidity risk management program, all banks should develop and maintain a contingency funding plan (CFP). A CFP is a cash flow projection and comprehensive funding plan that forecasts funding needs and funding sources under market scenarios including aggressive asset growth or rapid liability erosion. The CFP should represent management's best estimate of balance sheet changes that may result from a liquidity or credit event. The CFP can help control day-to-day liquidity risk by showing that the bank, even if it is in financial trouble, could find sources of funds to cover its uses of funds.

Management should review its funding position if the CFP predicts more uses of funds than sources in a near-term scenario. To reduce funding and liquidity risks most banks either (1) replace credit-sensitive liabilities with more stable, credit-insensitive funding such as long-term borrowing or retail deposits or (2) reduce assets that require term funding, such as loans. A CFP helps ensure that a bank or consolidated company can prudently and efficiently manage routine and extraordinary fluctuations in liquidity. The scope of the CFP is discussed in more detail below. A sample CFP that can be tailored to a bank's circumstances and projected scenarios is in appendix B of this booklet.

Use of CFP for Routine Liquidity Management

The CFP can be valuable for day-to-day liquidity risk management. Integrating liquidity scenario analysis into the day-to-day liquidity management process will ensure that the bank is best prepared to respond to an unexpected problem. In this sense, a CFP is an extension of ongoing liquidity management and formalizes the objectives of liquidity management by ensuring:

- Maintenance of an appropriate amount of liquid assets.
- Measurement and projection of funding requirements during various scenarios.
- Management of access to funding sources.

Use of CFP During Periods of Extraordinary Asset Growth

Pursuant to 12 CFR 30, a national bank experiencing extraordinary asset growth may be required to file a safety and soundness plan with the OCC describing the sources and uses of liquid resources. Failure to submit an acceptable plan may expose the bank to enforcement action by the OCC. A CFP that projects effective liquidity risk management under market scenarios of continuing asset growth or liability erosion may substantively satisfy the liquidity requirements of a safety and soundness plan.

Use of CFP for Emergency and Distress Environments

A liquidity crisis can occur without warning. Despite little time for planning after the crisis begins, a bank in crisis must seem organized, candid, and efficient to the public. Management must make rapid decisions using factual data. Therefore, well before the crisis occurs, management should carefully plan how to handle administrative matters in a crisis. Management credibility, which is essential to maintaining the public's confidence and access to funding, can be gained or lost depending on how well or poorly some administrative matters are handled. A CFP can help ensure that bank management and key staff are ready to respond to such situations.

Bank liquidity is very sensitive to negative trends in credit, capital, or reputation. Deterioration in the company's financial condition (reflected in items such as asset quality indicators, earnings, or capital), management composition, or other relevant issues may result in reduced access to funding. A bank or multibank company's liquidity will be negatively affected by any issue that casts doubt on its credit quality or reputation, particularly if the company's rating declines to "non-investment grade" (generally at a CAMELS composite "3" or "4" rating).

Scope of CFP

The intricacy and sophistication of a CFP should be commensurate with the bank's complexity and risk exposure, activities, products, and organizational structure. To begin, the CFP should anticipate all of the bank's funding and liquidity needs by:

- Analyzing and making quantitative projections of all significant on- and off-balance-sheet funds flows and their related effects.
- Matching potential cash flow sources and uses of funds.
- Establishing indicators that alert management to a predetermined level of potential risks.

To evaluate a bank's funding needs and strategies under changing market circumstances, the CFP should project the bank's funding position during both temporary and long-term liquidity changes, including those caused by liability erosion (primarily due to funds providers' sensitivity to credit risk). The liquidity scenarios should include:

- A *temporary* disruption in liquidity when funding is required only for a short time because the problem is self-correcting and circumstances are expected to return to normal quickly. Examples would be a significant operational breakdown, wire transfer outage, or physical emergency.
- Longer term distressed environments, such as those used in bank rating agency definitions, which are often the risk standards used by wholesale funds providers. For example, the definitions of individual ratings used by Fitch, Inc. can be obtained at < <http://www.fitchratings.com> > . Any

other processes to define scenarios can be used, depending on management's preference and the institution's characteristics.

- At least one scenario in which the bank is no longer considered to be investment grade. It would be very unusual for a troubled bank in this situation to significantly increase its liability structure by raising deposits or borrowing funds. In seriously troubled scenarios in which the bank is characterized "below investment grade," the more viable options are generally to minimize growth and to identify, prioritize, and sell assets to reduce funding needs.

The CFP should clearly identify, quantify, and rank all sources of funding by preference, including:

- Reducing assets.
- Modifying the liability structure or increasing liabilities.
- Using off-balance-sheet sources, such as securitizations.
- Using other alternatives for controlling balance sheet changes.

The CFP should also consider asset side strategies for responding to a liquidity crisis, including:

- Whether to liquidate surplus money market assets.
- When (if at all) HTM securities might be liquidated.
- Whether to sell liquid securities in the repo markets.
- When to sell longer term assets, fixed assets, or certain lines of business.

The CFP should map out liability funding strategies. These may include:

- Coordinating lead bank funding with that of the company's other banks and nonbank affiliates.

- Establishing an overall pricing policy for funding. The policy can set a maximum premium, or it can disallow any premium at all (to avoid all appearance of increased risk).
- Identifying dealers who will assist in maintaining orderly markets in the bank's negotiable instruments.
- Identifying particular funding markets to avoid, such as high-visibility accounts (in favor of individual private contracts).
- Developing strategies on how to interact with nontraditional funding sources (e.g., whom to contact, what type of information and how much detail should be provided, who will be available for further questions, and how to ensure that communications are consistent).
- Setting forth a policy for early redemption requests by retail customers. The practice should be consistent with retail account disclosures and applied consistently to avoid the appearance of favoritism or discrimination. A policy should also cover wholesale customers who request early payout of their contracts. Usually, wholesale customers would not receive early payout during crises.
- Estimating the bank's potential Federal Reserve Bank discount window borrowings, if any, stipulating timing, duration, and source of repayment. The CFP developer should recognize that the Federal Reserve's Regulation A (12 CFR 201) strictly limits discount window borrowing.

The CFP should address the following administrative policies and procedures that should be used during a liquidity crisis:

- The responsibilities of senior management during a funding crisis.
- Names, addresses, and telephone numbers of members of the crisis team.
- Where, geographically, team members will be assigned.

- Who will be assigned responsibility to initiate external contacts with regulators, analysts, investors, external auditors, press, significant customers, and others.
- How internal communications will flow between management, ALCO, investment portfolio managers, traders, employees, and others.
- How to ensure that the ALCO receives management reports that are pertinent and timely enough to allow members to understand the severity of the bank's circumstances and to implement appropriate responses.

This outline of the scope of a good CFP is by no means exhaustive. Banks should devote significant time and consideration to scenarios that are most likely given their activities. For example, banks with significant foreign exposure may need policies and procedures appropriate to their geography or foreign currency requirements.

A separate CFP should be developed for the parent company, the consolidated banks in a multibank holding company, separate subsidiaries (when appropriate), and each significant foreign currency and global political entity as necessary. These separate CFPs are necessary because of legal requirements and restrictions or the lack thereof as discussed in the "Centralized Liquidity Management" section of this booklet. Because liquidity is so important, management should brief the board periodically on the company's liquidity risk exposure and its CFP. It may even be necessary, depending on circumstances, for the board to be personally involved with the development and implementation of the plan. Therefore, it is essential for the board to have a thorough knowledge and understanding of the issues.

Other Liquidity Risk Management Tools

Banks use a variety of other tools to measure and control liquidity risk. Some of the most common tools are cash flow projections, ratio analyses, and limits. The specific analyses and tools management uses to assess liquidity will depend on the complexity of the bank.

Cash Flow Projections

To quantify liquidity needs, bank management must project cash flows. Once bank management understands the bank's cash flows, it can estimate the level of liquidity that is prudent. The contingency funding plan discussed previously is one example of a cash flow projection. Many banks use *behavioral cash flow reports* or *behavioral gap reports* to measure and analyze their cash flow projections. Not to be confused with the repricing gap report that measures interest rate risk, a behavioral gap report shows future time frames when funds may be needed to pay for deposit withdrawals, other decreases in liabilities, or increases in assets. The funding gap is a shortfall of funds that is caused at certain points in time by a funding mismatch.

The number and width of time frames used to prepare the gap report will vary. Most banks use a short (perhaps daily) time frame to measure their near-term exposures, and longer time frames thereafter. For example, a bank might project daily cash flows for the first two weeks of its analysis, monthly projections for the next six months to 12 months, followed by quarterly projections. If projections are needed out several years, annual time frames may be appropriate.

When projecting expected cash flows, management should estimate customer behavior (using rollover projections) rather than rely expressly on contractual maturities. Many cash flows associated with bank products are uncertain because they are influenced by interest rates and customer behavior. In addition, some cash flows may be seasonal or cyclical. For example, a bank located in an agricultural area might experience high loan demand in the spring and enjoy a high level of deposits in the fall.

Management also should consider increases or decreases in liquidity that typically occur during various phases of an economic cycle, even though they are more difficult to predict than seasonal variations. Business cycles affect both loan demand and deposit levels. The demand for commercial loans generally increases as business conditions improve and decreases as conditions deteriorate. Some banks may find it difficult to obtain funds to meet the heavy demand for loans during periods of expansion unless they have ready access to wholesale funding.

A bank should always have liquid funds to cover probable fluctuations in loans and deposits; in addition, it should maintain a margin of excess liquidity for safety. To ensure that this level of liquidity is maintained, management should estimate liquidity needs in a variety of scenarios that project changes in economic conditions, the competitive environment, and business strategy.

Liquidity Ratios and Limits

Many ratios can help quantify liquidity; they can also be used to create limits that preserve it. But unless ratios are used regularly and interpreted in light of qualitative factors, ratios will not by themselves reveal material liquidity trends. Ratios should always be used in conjunction with more qualitative information about borrowing capacity, such as the likelihood of increased requests for early withdrawals, decreases in credit lines, decreases in transaction size, or shortening of term funds available to the bank. For example, a well-capitalized bank may have a loan to deposit ratio of 90 percent and not have any liquidity problems, while another bank with the same ratio may be sapped of liquidity and nearly insolvent because it relied heavily on a concentration of short-term credit-sensitive deposits for day-to-day funding and on the Federal Reserve discount window for emergency funding.

To the extent that any asset-liability management decisions are based on financial ratios, a bank's asset-liability managers should understand how a ratio is constructed, the range of alternative information that can be placed in the numerator or denominator, and the scope of conclusions that can be drawn from ratios.

Because ratio components as calculated by banks are sometimes inconsistent, ratio-based comparisons of institutions or even comparisons of periods at a single institution can be misleading. Some banks have modified ratio composition to obscure deteriorating trends.

Cash Flow Ratios and Limits

One of the most serious sources of liquidity risk comes from a bank's failure to "roll over" a maturing liability. Cash flow ratios and limits attempt to

measure and control the volume of liabilities maturing during a specified period of time.

Absolute maturity gap limits. These limits govern cumulative outflows in a defined time frame. They often control rollover risk and funding mismatches.

Total and net overnight funding volume divided by total assets. This ratio shows what proportion of funding is purchased in the overnight funding markets.

Liquid assets minus short-dated liabilities. This calculation of basic surplus measures the cushion that liquid assets provide over required funding needs.

Liquid and liquefiable assets minus projected liability erosion in a distressed scenario. This calculation shows whether liquid or liquefiable assets are sufficient to cover projected needs in a crisis. Normally, it would be prudent for the bank to maintain or have very ready access to funds that provide at least a one-to-one ratio of liquid assets to the bank's needs during the next negative scenario projected in the contingency funding plan.

New money required divided by total funding. To ensure laddered replacement of funds, banks often limit the percentage of certain categories of wholesale funding that may mature in a specific time period. For example, a bank might limit the amount of Eurodollar deposits maturing in one week to 30 percent of total Eurodollar deposits held. This would help limit the volume of Eurodollars that would have to be raised by the bank in one week.

Liability Concentration Ratios and Limits

Liability concentration ratios and limits help to prevent a bank from relying on too few providers or funding sources. Limits are usually expressed as either a percentage of liquid assets or an equivalent dollar amount. Sometimes they are more indirectly expressed as a percentage of deposits, purchased funds, or total liabilities.

Customer liability concentration limits. These limits control the maximum amount of funds that may be sourced from any individual customer or group of customers.

Market liability concentration limits. These limits are imposed by segment (e.g., foreign banks, broker/dealers, money market funds), instrument (e.g., Fed funds, Eurodollars), and geographic distribution (domestically or by foreign country).

Other Balance Sheet Ratios

Total loans/total deposits, total loans/total equity capital, purchased funds/total assets, and total fee paid commitments/total equity capital are examples of common ratios used by depository institutions to monitor current and potential funding levels. The denominators of the calculations can be altered if the bank's circumstances dictate; for example, a bank that has issued considerable subordinated debt might make the denominator total deposits plus borrowings. In the numerator, any investment securities or time deposits that are considered illiquid could be combined with loans or measured separately.

General Procedures

To carry out some of the following examination procedures, examiners must share information with examiners in other areas. Sometimes, examiners from different areas will review the information together. Discussing your review with other examiners can reduce burden on the bank and avoid duplication of effort. Sharing examination data also can be an effective cross-check of compliance with internal control processes and help examiners assess the integrity of management information systems.

Information from other areas should be cross-referenced in the working papers. Information that cannot be obtained from other examiners should be requested directly from the bank. The final decision on the examination's scope and how best to obtain needed information rests with the examiner-in-charge.

Objective: To determine the scope of the examination of liquidity.

1. Review the following documents to identify any previous problems that require follow-up:
 - Supervisory strategy in the OCC database.
 - EIC's scope memorandum.
 - Previous report of examination and overall summary comments.
 - Previous examination working papers.
 - Audit reports and, if necessary, working papers.
2. Review the Canary System, UBPR, and other applicable reports to identify any material changes since the prior examination.
3. Request a list of all reports used by management to monitor liquidity risk. Review all relevant reports, including the following:
 - Sources and uses of funds reports/projections.
 - Contingency funding plan.

- Interbank asset and liability reports.
 - Liability concentration reports or large deposit reports.
 - Asset/liability maturity reports.
 - Assets available for sale or securitization.
 - Assets purchased, sold, or repurchased since last examination.
4. Determine the following, during discussions with management early in the examination:
- How management supervises liquidity risk.
 - The bank's PCA capital position and trend. If less than well capitalized, is the bank accepting brokered deposits with or without a waiver from the FDIC?
 - Any significant changes in policies, practices, personnel, or controls.
 - Any internal or external factors that could affect liquidity.
 - The degree of reliance on credit sensitive wholesale funds providers.
5. Using what you learned from performing the preceding steps and discussions with the bank EIC, determine the scope and set the objectives for this examination.

Select steps necessary to meet examination objectives from among the following examination procedures. The conclusion procedures section of this booklet provides guidance for completing your review and the liquidity rating and risk assessment. Seldom are all steps required in an examination. Procedures preceded by an asterisk (*) are verification procedures.

Quantity of Risk

Conclusion: The quantity of risk is (low, moderate, high).³

Objective: To determine the volatility, sensitivity to credit risk, and the character of the bank's deposit structure.

1. Analyze Canary System, UBPR data, and management reports on deposits to determine:
 - Trends.
 - Growth patterns.
 - Shifts between deposit categories.
 - Fee income and interest expense.
 - Variations from data on peers.
2. Determine the financial impact on the bank of the deposit mix by discussing with management the cost and stability of interest-bearing deposits and the investment opportunities they afford.
3. Review a list of deposits greater than \$100,000 (i.e., uninsured deposits) and appropriate trial balances for all other deposits. Discuss with management:
 - The aggregate dollar volume of accounts of depositors outside the bank's normal service area.
 - Whether the bank is paying competitive rates.
 - The aggregate dollar volume of money market deposits or CDs with interest rates that are higher than current publicly quoted ones within the industry.

³ See "Large Bank Supervision" and "Community Bank Supervision" booklets for applicable definitions.

- The dollar amount of wholesale brokered deposits (increments of \$100,000 or more).
 - Any concentration of deposits.
 - The ability to retain and replace those funds.
 - The potential renewal of large deposits that mature within the next 12 months.
 - The success of marketing efforts.
 - Whether providers of wholesale funds (generally deposits of more than \$100,000 and professionally managed) have policies that may require them to reduce funds on deposit if the bank's credit rating declines.
 - Any competitive pressures, economic conditions, or other factors that may affect deposit retention.
4. Review public funds and the bank's method of acquiring such funds to determine whether competitive bidding is used in determining the interest rate paid. Consider:
- Potential for purchasing public debt.
 - Interest rate the bank will pay.
 - Pledging requirements.
 - Pricing policies.
 - Any interest-sensitive deposit products (those with variable rates, floors, or ceilings on interest paid, for example).
- *5. Cross-reference overdraft and uncollected funds reports to credit line slips of the various loan departments. Work credit files on significant overdrafts and depositors who frequently draw significant amounts against uncollected funds that were not included in the sample

reviewed by the loan portfolio management examiner. Ask management to charge uncollectible overdrafts to the reserve for possible loan losses. Submit a list of overdrafts considered "loss" and the total amounts overdrawn 30 days or more to the examiner assigned loan portfolio management.

- *6. Determine whether formal overdraft agreements exist. Obtain the trial balance or list of agreements and reconcile it to credit line slips of various loan departments. When not included in the loan portfolio management examiner's sample, review credit files on significant formal agreements.

Objective: To evaluate the level of risk in wholesale or "nondeposit" funding activities.

1. Determine and document the types and levels of wholesale funding or other borrowings by the bank.
2. Through a discussion with management and an analysis of relevant bank data, determine:
 - The purpose of the bank's wholesale funding activities and the strategy for the current and/or future use of these funds. (Are they temporary or ongoing, for example?)
 - What activities are being funded.
 - The profitability spread between sources and uses compared with management's objectives. This step should be coordinated with the examiner(s) evaluating bank earnings.
 - The dollar amount of wholesale brokered deposits (original increments of more than \$100,000).
 - What types of maturity mismatches exist.
 - Whether liquidity risks associated with wholesale funding activities are considered during the bank's risk assessment of its asset/liability management activities.

- Whether there has been any deterioration in the bank's ability to raise needed funds by reviewing such items as:
 - The bank's credit rating.
 - The sensitivity to credit risk of the bank's liability structure.
 - Requests for collateral on previously unsecured lines.
 - The bank's funding cost compared with market rates.
 - Concentrations in funding sources.
 - The role of securitization, if any, in funding activities and plans.
3. Review the bank's policy on early prepayment of wholesale products.
- *4. If the bank engages in any form of wholesale funding that requires written agreement(s),
- Determine whether the bank is in compliance with those terms.
 - Review terms of past and present borrowing agreements for indications of a deteriorating credit position by noting:
 - Recent substantive changes in borrowing agreements.
 - Increases in collateral to support borrowing transactions.
 - A general shortening of maturities.
 - Interest rates exceeding prevailing market rates.
 - Frequent changes in lenders.
 - Large fees paid to money brokers.
 - Review securitization agreements to determine contingencies, early amortization, or repurchase risk.
5. Consider the bank's net short-term borrowed position and trends (money market or other short-term borrowed liabilities, less money market or other short-term assets.) Evaluate:
- Amount.

- Number of days net borrowed.
 - Consistency with business cycle and strategy.
- *6. Determine, from consultation with the examiners assigned loan portfolio management, that the following schedules were reviewed in the lending departments and that there was no endorsement, guarantee, or repurchase agreement that would constitute a borrowing:
- Participations sold.
 - Loans sold in full since the preceding examination.
7. Review factors that influence credit-sensitive funds providers at the bank level:
- Current asset quality and potential deterioration.
 - Poor earnings performance.
 - Negative media attention.
 - Rating agency "watch" or downgrade announcements.
 - Legal restrictions, such as those on brokered deposits, interbank liabilities, pass-through deposit insurance, Fed discount window borrowing, and prompt corrective action by regulators.
 - If a waiver from the FDIC for accepting brokered deposits is required, ensure that it has been obtained and that other legal requirements are met.
 - Securitization performance.

Objective: To determine whether available liquidity sources are adequate to meet current and potential needs.

1. Identify the volume and trends of liquidity needs by reviewing:

- Contingency funding plan.
 - Behavioral cash flow reports or behavioral gap reports or similar reports used by management to identify expected liquidity requirements over short-, medium-, and long-term horizons.
 - Asset growth projections that will require funding.
 - Projected liability reductions, including:
 - Managed balance sheet restructuring.
 - Potential erosion due to credit-sensitive funds providers.
 - Securitization trigger reports to determine risk of funding early amortization or termination.
2. Evaluate the volume and trends of sources of liquidity available to meet liquidity needs.

From assets:

- Compare money market assets with short-term liquidity needs.
- Compare other currently available asset liquidity sources with overall liquidity needs, e.g., "free" (unencumbered) securities.
- Review other potential sources of asset liquidity (securitization, loan sales, cash flow from loans, investments, and off-balance-sheet contracts, etc.).

From liabilities:

- Compare estimated capacity to borrow under established Fed funds lines to short-term liquidity needs.
- Consider the bank's capacity to increase deposits through pricing and direct-marketing campaigns to meet medium- and long-term liquidity needs.

- Consider the bank's capacity to borrow under the FHLB collateralized note program or other similar collateralized borrowing facilities.
 - Consider the capacity to issue longer term liabilities and capital to meet medium- and long-term liquidity needs. Options may include:
 - Deposit-note programs.
 - Medium-term note programs.
 - Subordinated debt.
 - Consider the capacity to borrow from the Federal Reserve's discount window.
3. Evaluate the ability of the bank to meet unexpected liquidity needs. Consider:
- The condition of the parent company.
 - Characteristics of the bank's customers, such as oriented to wholesale or retail, term of banking relationships, proportion using more than one product, customer funds flow cycle, and demographics.
 - Other economic circumstances in the bank's market or trade area.
4. If applicable, review the parent company's financial condition. The bank's liquidity needs may be affected by:
- Short-term liquidity gaps that the parent may have difficulty funding, the lack thereof, or the parent company's strong cash positions.
 - Legal restrictions, such as loans to affiliates (371c), dividend restrictions (12 USC 56 and 60), etc.

- Capital needs of affiliate banks that may draw on the resources of the parent, or conversely affiliate banks with very high capital levels.
5. If bank belongs to a multibank holding company, the primary review of liquidity and funding should be on a consolidated basis consistent with the “Centralized Liquidity Management” section of this booklet. If serious problems are evident and there is a risk of the company severing affiliate relationships, other relevant factors may include:
- Any trends in the consolidated liquidity management of cash flows between banks or other affiliates.
 - Short-term liquidity gaps or other funding or capital needs at an affiliate.
 - Any surplus liquidity at affiliates.
6. Review the following indicators of possible adverse market perception:
- Paying premiums over market (peer) rates on liabilities and capital.
 - Reduced volume of traditional liability sources.
 - Reductions in available liability maturities.
 - Significant liability restructuring — for example, a shift from domestic to foreign funding that is not consistent with strategic plans or objectives.
7. Consider the potential effects of destabilization in the market or trade area caused by:
- Competitor/peer bank failure.
 - General market trends (e.g., net emigration from the bank's market area).

- Disintermediation (i.e., loss of deposits).
- Changes in investor preference (e.g., to mutual funds).
- Stock or real estate market declines resulting in reduced customer wealth.
- Systemic technology failure.

Objective: To determine whether the liquidity and contingency funding planning process is adequate given the size and complexity of bank operations.

1. Review the minutes of the asset/liability management committee or the board of directors. Determine whether management is properly planning for liquidity and funding needs and that objectives are attainable. Consider:
 - Short-term projections (financial performance, liquidity needs.)
 - Market issues (economic discussions, bank's trade area.)
 - Credit/reputation (credit quality of bank.)
 - Budget and longer-term growth projections.
2. Determine whether management's analysis of the liquidity position reflects both trends and projections pertaining to liquidity.
 - Trends
 - Sources and uses of funds. (See sample funds flow analysis, including sample format for sources and uses of funds, in appendix A.)
 - Liquid asset levels.
 - Changes in the liability mix (funds providers.)
 - Projections
 - Short-term liquidity needs.

- Potential liability erosion. (See the sample format of a contingency funding plan summary in appendix B.)
 - Loan growth.
 - Large liability maturities.
 - Potential off-balance-sheet requirements.
 - Medium- and long-term balance sheet structure.
 - Market environment.
 - Credit ratings.
 - Funding sources.
3. Determine whether management takes appropriate action based on the results of their analysis. Determine whether:
- Planned actions are within the bank's capability and capacity.
 - "Anxiety for income" hampers prudent liquidity actions.
 - Political divisiveness (within the bank or holding company) impedes prudent liquidity practices.
4. Determine whether management's contingency funding planning process is adequate. All banks should have a contingency funding plan. In a multibank holding company, the plan or plans should be prepared on a consolidated basis consistent with the "Centralized Liquidity Management" section of this booklet. The plan's sophistication and detail should depend on the type, complexity, and quantity of the bank's risk exposure. In general it should:
- Quantify whether potential funding needs will exceed the amount that can be obtained from sources under progressively declining scenarios. (See the sample format of a contingency funding plan summary in appendix B.) A plan should include:
 - Estimates of potential liability erosion or uncontrolled asset growth through multiple scenarios. At least one of these scenarios should assume the bank's credit or bond rating falls below investment grade to ensure that the planned "solution" is not merely to raise deposits or increase borrowings.

- The timing and availability of liquidity sources.
- Pro forma balance sheets reflecting the results of funding strategies.
- Prioritize actions to respond most efficiently to specific needs by composing:
 - A list of probable funding strategies in vulnerable markets.
 - Guidelines for pricing and early payment of term liabilities.
- Outline the responsibilities of management and staff in a funding crisis, including such administrative responsibilities as:
 - Controlling the consistency of communications.
 - Contacting the media and analysts.
 - Contacting customers.
 - Communicating with employees.

Objective: To determine compliance with applicable laws and regulations regarding deposit accounts. (If there is a concurrent consumer compliance examination, coordinate with the examiner assigned compliance with deposit regulations when carrying out procedures.)

- *1. 12 USC 90, Depositories of Public Moneys and Financial Agents of Government. Select several public deposit accounts along with pledging records and determine compliance.
- *2. 12 USC 501 and 18 USC 1004, Certification of Checks. Select several certified checks and compare the date and amount of certification to similarly dated uncollected funds and overdraft reports to determine whether checks were certified against collected funds.
- *3. 12 CFR 7.4002, Charges by Banks. Determine whether the bank's service charges and fees are reasonable.
- *4. 12 CFR 7.4002, Service Charges on Dormant Accounts. Determine whether any complaints relating to the bank's dormant account

practices have been filed, whether the complaints reflect a pattern of practices inconsistent with the bank's deposit contracts, whether service charges on several additional dormant accounts selected are consistent with deposit contracts, and whether the board has reviewed the bank's service charges on dormant accounts and has confirmed for the record that the charges are reasonable.

- *5. 12 CFR 21.11, Known or Suspected Theft, Embezzlement, Check-Kiting Operation, Defalcation. Review appropriate records and reports, and discuss with department personnel to determine whether the bank is in compliance with the reporting requirements of the regulation.
- *6. 12 CFR 31 (Appendix A, section 2), Deposits between Affiliated Banks. Determine whether an affiliate bank supplied the bank with deposits because the latter was unable to provide required collateral (bearing in mind that transfers of deposits can take place in the ordinary course of correspondent business or as provided in 12 USC 371c(d)(1)).
- *7. 12 CFR 337.6, Brokered Deposits. If the bank is below the "well-capitalized" capital category, review the bank's policies and practices to ensure compliance.
- *8. Review the bank for compliance with the regulation on treasury tax and loan (TT&L) accounts (31 CFR 203.9 and 203.10).
 - Do transfers from the remittance option account to the Federal Reserve bank occur the next business day after deposit?
 - Is the remittance option included in the computation of reserve requirements?
 - When the note option is used, do transfers from the TT&L demand deposit account occur the next business day after deposit?
- *9. 31 CFR 210, Federal Recurring Payments through Financial Institutions. Determine that for federal recurring payments other than by check, affected employees are familiar with the regulation's

requirements. Determine that the bank executes the "standard authorization form" for customer accounts that will receive recurring payments (deposits) from the federal government. Determine that deposits are credited to the designated account and that funds are made available for withdrawal not later than the opening of business on the deposit date. Verify that deposits that cannot be posted are returned promptly to the government.

- *10. Uniform Commercial Code (UCC) 4-107, 211, 212, 301, and 302, Banking Hours and Processing of Demand Items. Determine the bank's established cutoff hour for processing items on the next "banking day."⁴ If the established cutoff is before 2 p.m., determine whether items received after the cutoff but before 2 p.m. are processed as having been received on the same banking day, as required by UCC 4-107. Failure to process items received before 2 p.m. **may** result in civil liability for items subsequently dishonored. If the bank is open for business on Saturday, determine the established cutoff hour for processing items on the next banking day. If the established cutoff is before 2 p.m., determine whether items received after the cutoff but before 2 p.m. are processed as having been received on Saturday, as required by UCC 4-107. Failure to process them as of Saturday **may** expose the bank to civil liability under UCC 4-211, 212, 301, and 302 for demand items that are subsequently dishonored.

- *11. Local Escheat Laws. Determine that the bank adheres to the local escheat laws on any form of dormant deposits.

Objective: To determine the levels of risk exposures to correspondents as defined by Regulation F (12 CFR 206, Limitations on Interbank Liabilities).⁵

⁴ A "banking day" is defined as a day during which a bank is open to the public for carrying on substantially all of its banking functions. A day on which the bank did no more than receive deposits and cash checks is not a banking day. To be a banking day, the bookkeeping and loan departments must be operating, as well as a teller's window.

⁵ The purpose of this regulation is to limit the risks that the failure of a depository institution (foreign or domestic) would pose to insured depository institutions. "Exposure" includes all types of banking transactions that create a risk of nonpayment or delayed payment between institutions. "Correspondent" excludes commonly controlled institutions.

1. Review OCC and internal bank reports to identify any undue concentration of risk created by interbank credit exposure. Consider:
 - Exposures greater than 25 percent of capital.
 - Exposures as a percentage of total assets.
 - Interbank assets placed with correspondents whose financial condition is deteriorating.

2. Request bank files relating to exposures to correspondents, as defined in the "Prudential Standards" section of Regulation F (Section 206.3), and evaluate:
 - Documentation demonstrating that the bank has periodically reviewed the financial condition of all correspondents to which it has significant exposure. The documentation should address the levels of the correspondent's capital, nonaccrual and past-due loans and leases, earnings, and other matters pertinent to its financial condition.
 - Information from the bank indicating the levels of exposures to correspondents as measured by its internal control systems. (For smaller banks this information may include correspondent statements and a list of securities held in safekeeping for the bank by the correspondent.)

3. Review the information obtained in the preceding step for reasonableness based on discussions with examiners of other banking activities and review of their findings. Consider:
 - Asset management.
 - Computer services.
 - Payment systems and funds transfer activities.
 - Private placements.

- International department activities.
 - Off-balance-sheet products (including derivatives).
- *4. Request a list of all correspondents to which the bank regularly has credit exposure, as defined in the "Credit Exposure" section of Regulation F (Section 206.4), equal to more than 25 percent of capital for a specified length of time. Review the bank's files to determine whether:
- The capital levels of correspondents are monitored quarterly.
 - Those institutions are adequately capitalized as defined by Regulation F.
 - Credit exposure to correspondents at risk of dropping below the adequately capitalized level could be reduced to an amount equal to 25 percent of capital or less in a timely manner.
5. Determine whether the bank maintains accounts at foreign institutions or whether foreign institutions maintain accounts at the bank. If so, determine whether the compliance examination tested for compliance with 12 CFR 21.21 (Bank Secrecy Act), 31 CFR 103 (Financial Record Keeping and Reporting of Currency and Foreign Transactions), and policies that address the collection of customer background information.
6. Determine whether the bank has significant exposure to a correspondent because of transaction risks, such as extensive reliance on a correspondent for data processing. If so, determine whether the bank has addressed those risks (may be elsewhere in its operational procedures).

Quality of Risk Management

Conclusion: The quality of risk management is (strong, satisfactory, weak).

Policy

Conclusion: The board (has/has not) established effective policies governing liquidity risk management.

Objective: To determine whether the board has clearly expressed its level of tolerance for liquidity risk.

1. Ensure that the board has outlined management's responsibilities for the liquidity management functions. Consider:
 - Structural balance sheet management.
 - Pricing.
 - Marketing.
 - Contingency funding planning.
 - Management reporting.
2. Ensure that the bank has reasonable guidelines for management of the liquidity position. Guidelines should be based on the structure of the asset and funding base. Depending on how much the bank relies on volatile liability markets, guidelines should call for the use of:
 - Balance sheet ratios:
 - Total loans/total deposits.
 - Total loans/total equity capital.
 - Purchased funds/total assets.
 - Total fee-paid commitments/total equity capital.
 - The maintenance of minimum levels of liquid assets.

- Cash flow ratios:
 - Maximum overnight and short-maturity liquidity gaps.
 - Overnight funding/total assets.
 - Liquid assets/short-term liabilities.

- Liability customer controls that set limits on concentrations of funding sources by:
 - Markets.
 - Instruments.
 - Customers (or types).
 - Whether brokered funds will be employed and, if so, to what extent.

- 3. Ensure that guidelines in policies and procedures are consistent with strategic objectives (growth, profitability, etc.) and that planning, budgeting, and new product development incorporate funding considerations in the decision-making process.

- 4. Determine whether the bank's expressed risk tolerance is consistent with any high growth in assets:
 - Identify whether the bank's asset growth triggers the 12 CFR 30 requirement to provide a safety and soundness plan.
 - Review whether any safety and soundness plan effectively addresses liquidity risks from extraordinary growth.

- 5. Determine whether clear lines of authority and responsibility for liquidity decisions have been established.

Objective: To determine whether management's deposit development and retention program is adequate and whether this program is consistent with the overall strategic plan and budget.

1. Determine whether the bank's deposit marketing strategy is reasonable. Consider:

- Whether indications are that the bank is meeting customer needs with deposit products.
- Current market share and goals for maintaining or increasing market share.
- How the bank will attain its marketing goals and who is responsible.
- Anticipated deposit structure and interest costs of such a structure.
- A periodic comparison of performance with projections, including periodic formal or informal reports to management on results and the accuracy of cost projections.
- Consistency with the bank's overall strategic plan and budget.

Objective: To determine whether policies on wholesale funding are adequate.

1. Review formal and informal wholesale funding policies and determine whether they:
 - Designate lines of authority and responsibility for decisions.
 - Outline the objectives of bank wholesale funding activities.
 - Describe the bank's wholesale funding philosophy relative to risk considerations, e.g., leverage/growth, liquidity/income.
 - Provide for diversifying risk by staggering maturities (or whether funding decisions are based largely on cost).
 - Limit wholesale funds by amount outstanding, specific type, individual source, market source, or total interest expense.
 - Limit the ratio of owned to securitized assets to ensure a pool of available assets to supplement securitization.

- Provide a system of reporting requirements to monitor wholesale funding activity.
- Require transactions to be approved by a senior manager after they have been executed.
- Provide for review and revision of established policy at least annually.

Objective: To determine whether the bank effectively manages liquidity risks from its securitization activities.

1. Identify the extent to which the bank relies on securitization as a source of funding, particularly the securitization of receivables subject to early amortization.
2. Determine whether the bank compares actual cash flows from securitized receivables with anticipated cash flows.
3. Review any securitization summaries or management reports about securitization that discuss liquidity risk.

Objective: To determine whether any bank that owns or intends to acquire a financial subsidiary has complied with any statutory requirements to maintain an investment grade rating on outstanding debt.

1. Identify the current investment rating of the bank's outstanding debt.
2. Review any documentation from the debt rating process that relates to bank liquidity.
3. Determine whether the bank's contingency funding plan considers how a downgrade in outstanding debt will affect liquidity.

Objective: To determine the adequacy of policies on exposures to correspondents, including required policies under Regulation F.

1. Review bank policies/procedures on exposures to correspondents and determine whether they:

- Are reviewed and approved annually.
- Adequately address the bank's potential risks arising from the types of its interbank exposures.
- Require a periodic review of a correspondent's financial condition whenever the size and maturity of exposure is considered significant relative to its financial condition.
- Conscientiously seek to protect the bank from a correspondent's financial deterioration and call for:
 - The periodic review of the correspondent's financial condition.
 - Appropriate limits on exposure.
 - Structuring transactions with the correspondent so that the exposure remains within internal limits.
 - Monitoring the exposure to the correspondent.
- Establish appropriate guidelines to address any breaches of the internal limits caused by unusually late incoming wires, large cash letters, large market moves, large increases in activity, or operational problems.
- Effectively limit overnight credit exposure to an amount equal to 25 percent or less of the bank's capital, if a correspondent is less than adequately capitalized.
- Address intraday exposures.
- Establish criteria for selecting and terminating correspondent relationships.

Processes

Conclusion: Management and the board (have/have not) established effective processes for managing liquidity risk.

Objective: To determine the adequacy of procedures regarding deposit accounts.

1. Review procedures regarding overdrafts. Determine whether:
 - Overdrafts require the approval of an authorized officer.
 - A record of overdrafts is included in the monthly report to the board or its committee.
2. Evaluate the adequacy of procedures and reporting methods regarding drawings against uncollected funds. Determine whether:
 - The uncollected funds report shows balances to be uncollected until they are actually received, the report is prepared daily, and an authorized officer reviews the report.
 - Procedures are in effect to preclude certification of checks drawn against uncollected funds.
3. Review the internal control procedures in place for reconcilements.
 - Are outstanding items cleared in a timely manner?
 - Are reconciling items investigated by persons independent of the teller line and transaction posting?
4. For both transaction and time deposit accounts, review the internal control procedures for opening new accounts.
 - Is the opening of new accounts handled by someone other than a teller?
 - Are new account signature cards for transaction accounts reviewed by an officer?
5. For both transaction and time deposit accounts, review the internal control procedures for closing accounts.
 - Is the closed account list circulated among officers?

- Is verification of closed accounts, in the form of statements of "goodwill" letters, required, and are they mailed under the control of someone other than a teller?
6. For both transaction and time deposit accounts, review the internal control procedures for maintaining account records.
- For signature cards, are procedures in effect to guard against the substitution of false signatures?
 - Are account trial balances prepared periodically and reconciled by persons who do not disburse funds?
 - Does the bank segregate deposit account files of employees, officers, directors, and their business interests?
7. In addition to any applicable steps above, review internal control procedures.
- When a new certificate of deposit (CD) is issued,
 - Do inventory records at banks having branch operations show the inclusive numbers of blocks assigned to each office?
 - Are individuals issuing or approving CDs required to sign them?
 - When CDs are redeemed,
 - Are they stamped paid?
 - Is disposition of proceeds documented to provide a permanent record as well as a clear audit trail?
(Preferably, the disposition should be documented on the face of the paid receipt.)
 - Are notices of interest credited to savings accounts sent directly to the depositor, and do those notices show account balances?

8. Evaluate the bank's internal control procedures for *dormant accounts*.
 - If the appropriate time has elapsed and the account has not been placed in dormant status, has the reason been documented?
 - Does transfer from dormant to active status require approval of an officer who cannot approve transactions on dormant accounts?
9. Evaluate the bank's internal control procedures for official checks.
 - Is check preparation and issuance separate from record keeping?
 - Are outstanding checks listed and reconciled regularly to the general ledger, and reviewed regularly by an authorized officer?
10. Review internal control procedures for areas not included above.
 - If not included in the internal/external audit program, are employees' and officers' accounts, accounts of their business interests, and accounts controlled by them periodically reviewed for abnormal activity?
 - Are customers immediately notified, in writing, of deposit errors?
 - For mailing or delivery of statements,
 - Are statements mailed or delivered to all customers with transaction accounts at least monthly?
 - Are statements periodically mailed on dormant accounts?
 - Do procedures exist to prohibit the delivery of statements to officers and employees for special attention?
 - Must a change of address request be in writing and signed by the depositor?
 - For telephone transfer accounts,

- Do depositors receive an individual identification code for making transfers?
- Are transfers made by employees who do not also handle cash, issue official checks singly, or post subsidiary records?

Objective: To determine the adequacy of procedures regarding wholesale funding activities.

1. Determine whether the bank maintains subsidiary records for each type of borrowing, including proper identification of the obligee.
2. Determine whether corporate borrowing resolutions are properly prepared as required by creditors, and whether copies are on file for reviewing personnel.
3. Determine whether internal controls are proper. Identify any area that has inadequate supervision or poses risk.
 - Are subsidiary records reconciled with the general ledger accounts at an interval consistent with borrowing activity, and are reconciling items investigated by persons who do not also:
 - Handle cash?
 - Prepare or post to the subsidiary records?
 - Are individual interest computations checked by persons who do not have access to cash?
 - Is an overall test of the total interest paid made by persons who do not have access to cash?
 - Are payees on the checks matched to related records of debt, note, or debenture owners?

Objective: To determine whether processes for managing exposures to correspondents and processes for complying with Regulation F are adequate.

1. Confirm that the bank's process for monitoring significant exposure (especially for correspondents that are less than adequately capitalized or financially deteriorating) is appropriate. Consider:
 - Type and volatility of exposure.
 - The extent to which the exposure approaches the bank's internal limits.
 - Condition of the correspondent. Consider:
 - Capital.
 - Nonaccrual and past-due loans and leases.
 - Earnings.
 - Other relevant factors.
2. For credit exposure to correspondents that are adequately capitalized, review the bank's monitoring process to determine whether:
 - Management obtains quarterly information to determine its correspondent's capital levels.
 - Management monitors overnight credit exposure.
 - The monitoring frequency is adequate.
3. Determine how often the bank reviews the financial condition of institutions to which it has very large or long-term exposure, and how often it reviews institutions whose financial condition is deteriorating. Determine whether the frequency of these reviews is adequate for the level of exposure and financial condition of the correspondent. Determine whether the bank:
 - Relies on another party (such as its holding company, a bank rating agency, or another correspondent) to provide financial analysis of a correspondent. If so, verify that the bank's board of directors reviewed and approved the assessment criteria used by that party.

- Relies on another party to select or monitor its correspondents. If so, verify that the bank's board of directors reviewed and approved the selection criteria used.
- Relies on a correspondent to choose other correspondents to whom the bank lends federal funds. If so, verify that the bank's board of directors reviewed and approved the selection criteria used.
- Evaluates the creditworthiness of each correspondent and the appropriate level of exposure to a correspondent whose financial condition is deteriorating.

Personnel

Conclusion: The board, management, and affected personnel (do/do not) display a fundamental understanding of liquidity and liquidity risk management.

Objective: To determine how well the board, or members of its designated committee, understand liquidity and how well management manages liquidity.

1. Review the minutes of the board or its designated committee in which liquidity management oversight is the topic. If conditions warrant, discuss the board's oversight of liquidity management with members of the board or designated committee.
2. Given the size and complexity of the bank, assess management's knowledge of liquidity and its skill in liquidity management using conclusions reached by performing these procedures.
3. Determine whether bank management/personnel display acceptable knowledge and technical skills in managing and performing duties related to deposits, wholesale funding, and exposures to correspondents.

Controls

Conclusion: Management (has/has not) established effective control systems for liquidity risk management.

Objective: To determine whether control systems are appropriate and effective.

1. Determine whether the board and senior management have established clear lines of authority and responsibility for monitoring adherence to policies, procedures, and limits.
 - Has a measurement system that captures and quantifies risk been established?
 - Are limits defined and communicated to management?
 - Are limits reasonable?
 - Do the planning, budgeting, and new product areas consider liquidity when making decisions?
2. Determine whether internal controls and information systems are adequately tested and reviewed.
 - Are risk measurement tools accurate, independent, and reliable?
 - Is the frequency of testing adequate given the level of risk and sophistication of risk management decisions?
 - Are reports prepared that provide key information?
 - Do periodic reports identify and comment on major changes in risk profiles?
3. Determine whether the liquidity management function is audited internally or whether it is evaluated by the risk management function. Determine whether the audit and/or evaluation is independent and of sufficient scope.

4. Determine whether audit findings and management responses to those findings are fully documented and tracked for adequate follow-up. Determine whether line management is held accountable for unsatisfactory or ineffective follow-up.
5. Determine whether risk managers give identified material weaknesses appropriate and timely attention.
6. Assess whether actions taken by management to deal with material weaknesses have been verified and reviewed for objectivity and adequacy by senior management or the board.
7. Determine that the board and senior management have established adequate procedures for ensuring compliance with applicable laws and regulations.

Objective: To determine whether management information systems provide concise, timely, and relevant information for assessing liquidity risk exposure.

1. Evaluate the effectiveness of internal management reports concerning liquidity needs and funding sources. Consider:
 - Management's need to receive reports that:
 - Determine compliance with limits and controls.
 - Evaluate the results of past strategies.
 - Assess the potential risks and returns of proposed strategies.
 - Identify the major changes in a bank's liquidity risk profile.
 - Consolidate holding company and bank subsidiary information.
 - The importance in holding companies of producing appropriate reports containing information on:
 - The parent company consolidated with other significant nonbank legal vehicles.

- The company's banks, with all significant banks consolidated.
- Individual bank's operating subsidiaries when significant.
- The need for the reporting system to be flexible enough to:
 - Quickly collect and edit data, summarize results, and adapt to changing circumstances or issues.
 - Increase the frequency of preparation as conditions deteriorate.
- The need for reports to properly focus on monitoring liquidity and supporting decision-making. Such reports often help bank management to monitor:
 - Sources and uses of funds, facilitating the evaluation of trends and structural balance sheet changes.
 - Contingency funding plans.
 - Projected cash flow or maturity gaps, identifying potential future liquidity needs. Reports should show projections using both contractual maturities (original maturity dates) and behavioral maturities (maturities attributable to the expected behaviors of customers).
 - Consolidated large funds providers, identifying customer concentrations. Reports should identify and aggregate major liability instruments used by large customers across all banks in the holding company.
 - The cost of funds from all significant funding sources, enabling management to do a quick cost comparison.

Conclusion Procedures

Objective: To prepare written conclusions and supporting comments and to communicate findings to management. Review findings with the EIC before discussing them with management.

1. Determine the CAMELS component rating for liquidity. Consider:
 - Whether management is able to properly measure, monitor, and control the institution's liquidity position, including whether funds management strategies, liquidity policies, management information systems, and contingency funding plans are effective.
 - The adequacy of liquidity sources in light of present and future needs and the ability of the institution to remain liquid without compromising its operations or condition. Capital adequacy, asset quality, earnings stability, and management stability are primary considerations.
 - Whether sufficient assets are readily convertible to cash without undue loss.
 - Access to money markets and other sources of funding.
 - The level of diversification of funding sources, both on- and off-balance-sheet.
 - How much the bank relies on short-term, credit-sensitive sources of funds, including borrowings and brokered deposits, to fund longer- term assets.
 - The trend and stability of deposits.
 - The ability to securitize and sell certain pools of assets.
2. Determine whether performing the foregoing procedures has changed assessments of any associated risks. Consider quantity of risk, quality of management, the direction of risk, and the amount of supervisory

concern (aggregate risk). Examiners should consult the OCC's guidance on assessing risks — either the guidance for large banks or that for community banks, as appropriate. Consider the risk categories of compliance, credit, foreign currency translation, interest rate, liquidity, price, reputation, strategic, and transaction.

For a bank with a liquidity component rating of 1 or 2:

1. Provide the EIC with a brief conclusion supporting the following:
 - CAMELS component rating.
 - Risk assessment system ratings.

For a bank whose liquidity component is rated 3 or worse:

1. Provide a detailed conclusion comment to the EIC that:
 - Addresses deficiencies.
 - Identifies the root causes of deficiencies noted.
 - Discusses the reasons for the less-than-satisfactory performance.
 - Addresses management's ability to correct the deficiencies noted.
 - Addresses risk assessment system ratings.
2. Develop, in consultation with the EIC, a supervisory strategy to address the bank's weaknesses and discuss the strategy with the appropriate supervisory office or manager.

For all banks, regardless of rating:

1. Determine, in consultation with the EIC, whether any issues identified are significant enough to merit bringing them to the board's attention in the report of examination. If so, prepare items for inclusion in "Matters Requiring Attention":

- MRAs should cover practices that:
 - Deviate from sound fundamental principles and are likely to result in financial deterioration if not addressed, or
 - Result in substantive noncompliance with laws.
 - MRAs should discuss:
 - Causes of the problem.
 - Consequences of inaction.
 - Management's commitment to corrective action.
 - The time frame and person(s) responsible for corrective action.
2. Discuss findings with management including conclusions regarding applicable risks. Consider:
- The adequacy of liquidity sources in light of present and future needs.
 - The ability of the institution to meet liquidity needs without adversely affecting its operations or condition.
 - Compliance with policy.
 - The degree of reliance on credit-sensitive funding sources.
 - The ability of management to identify, measure, monitor, and control the institution's liquidity position.
3. Prepare a liquidity comment for inclusion in the report of examination.
4. Prepare a memorandum or update the work program with any information that will facilitate future examinations.

5. Update the OCC database and any applicable report of examination schedules or tables.
6. Organize and reference work papers in accordance with OCC policy.

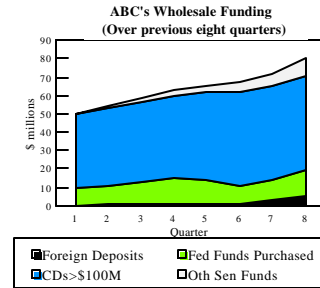
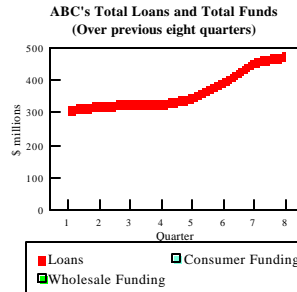
Appendix A

**FUNDS FLOW ANALYSIS
OF THE ABC BANK (CONSOLIDATED COMPANY)
FOR SELECTED ASSETS AND CREDIT SENSITIVE LIABILITIES
\$ Thousands**

Sample format, tailor as appropriate.

Quarter	BANK ASSETS				BANK LIABILITIES							PARENT NONBANK ASSETS	NONBANK LIABILITIES
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(9)	(11)	(12)	
	Federal Reserve Balance	Total Loans & Leases	Free Securities	Money Market Assets	DDA Net of Float	Consumer Deposits	Fed Funds Purchased	CDs > \$100M	Foreign Deposits	Other Sensitive Funds/Dep	Short-Term Assets	Short-Term Liabs	
1	\$5,000	\$310,000	\$70,000	\$7,500	\$98,000	\$389,000	\$10,000	\$40,350	\$0	\$0	\$10,000	\$8,500	
2	\$5,000	\$320,000	\$68,000	\$7,500	\$94,000	\$384,000	\$10,000	\$42,000	\$1,000	\$1,000	\$10,000	\$8,500	
3	\$5,200	\$325,000	\$66,500	\$6,800	\$94,000	\$383,000	\$12,000	\$43,000	\$1,000	\$2,200	\$10,000	\$8,500	
4	\$5,100	\$330,000	\$67,500	\$5,500	\$92,400	\$384,000	\$14,500	\$44,000	\$1,000	\$3,800	\$10,000	\$8,500	
5	\$5,000	\$345,000	\$68,000	\$5,000	\$90,400	\$383,900	\$13,000	\$47,400	\$1,000	\$4,000	\$10,000	\$8,500	
6	\$4,800	\$396,000	\$23,200	\$5,000	\$74,000	\$377,000	\$10,000	\$50,500	\$1,000	\$5,500	\$10,000	\$8,500	
7	\$5,100	\$455,500	\$19,000	\$4,000	\$75,300	\$370,000	\$11,000	\$51,000	\$2,700	\$7,500	\$6,000	\$4,500	
8	\$3,900	\$473,000	\$12,500	\$2,000	\$80,000	\$365,000	\$14,000	\$51,100	\$5,000	\$10,400	\$4,500	\$3,000	
Change from previous period	(\$1,200)	\$17,500	(\$6,500)	(\$2,000)	\$4,700	(\$5,000)	\$3,000	\$100	\$2,300	\$2,900	(\$1,500)	(\$1,500)	

Sources and Uses - Quarter 7 to Quarter 8			
Sources		Uses	
FRB BALANCE	\$1,200	LOANS & LEASES	\$17,500
FREE SECURITIES	\$6,500	CONSUMER DEP	\$5,000
MMA	\$2,000		
DDA	\$4,700		\$22,500
FFP	\$3,000		
CDs	\$100		
FOREIGN DEP	\$2,300		
OTHER LIABS	\$2,900		
	\$22,700		



NOTE: Sources and uses do not balance on this schedule since it purposely includes only balance sheet line items likely to affect liquidity. Longer term assets/liabilities, such as fixed assets or other liabilities, which usually have little impact on liquidity, are excluded in order to focus on meaningful cash flows. The out of balance condition can be monitored and controlled, and if significant should be researched. This process allows for a more timely availability and presentation of data.

Appendix B

CONTINGENCY FUNDING PLAN SUMMARY
(Example format, tailor as appropriate)

POTENTIAL FUNDING EROSION

	Scenarios:					
	CURRENT	1	2	3	4	5
<u>LARGE FUND PROVIDERS (from list)</u>	BALANCE	B/C*	C*	C/D*	D*	D/E*
FED FUNDS	_____	_____	_____	_____	_____	_____
CDs	_____	_____	_____	_____	_____	_____
EUROTAKINGS / FOREIGN DEPOSITS	_____	_____	_____	_____	_____	_____
COMMERCIAL PAPER	_____	_____	_____	_____	_____	_____
SUBTOTAL	_____	_____	_____	_____	_____	_____
<u>OTHER UNINSURED FUND PROVIDERS</u>						
FED FUNDS	_____	_____	_____	_____	_____	_____
CDs	_____	_____	_____	_____	_____	_____
EUROTAKINGS / FOREIGN DEPOSITS	_____	_____	_____	_____	_____	_____
COMMERCIAL PAPER	_____	_____	_____	_____	_____	_____
DDAs	_____	_____	_____	_____	_____	_____
"CONSUMER" MMDA, SAVINGS, ETC.	_____	_____	_____	_____	_____	_____
TOTAL UNINSURED FUNDS	_____	_____	_____	_____	_____	_____
INSURED FUNDS	_____	_____	_____	_____	_____	_____
TOTAL FUNDING BASE	_____	_____	_____	_____	_____	_____
<u>OFF-BALANCE-SHEET FUNDING REQUIREMENTS</u>						
L/Cs	_____	_____	_____	_____	_____	_____
LOAN COMMITMENTS	_____	_____	_____	_____	_____	_____
SECURITIZATIONS (AMORTIZING)	_____	_____	_____	_____	_____	_____
DERIVATIVES	_____	_____	_____	_____	_____	_____
TOTAL OFF-BALANCE-SHEET ITEMS	_____	_____	_____	_____	_____	_____
TOTAL POTENTIAL FUNDING EROSION	_____	_____	_____	_____	_____	_____

SOURCES OF FUNDS TO MEET DEMANDS
(WHICH MAY OR MAY NOT BE UTILIZED, DEPENDING ON NEED)
(ASSUMING NEEDED ASAP)

	IMMEDIATE	30 DAYS	60 DAYS	90 DAYS	180+ DAYS
SURPLUS MONEY MARKET ASSETS	_____	_____	_____	_____	_____
FREE SECURITIES	_____	_____	_____	_____	_____
ASSET SALES / SECURITIZATION	_____	_____	_____	_____	_____
CREDIT CARDS,	_____	_____	_____	_____	_____
AUTOS,	_____	_____	_____	_____	_____
CMOs,	_____	_____	_____	_____	_____
ETC.	_____	_____	_____	_____	_____
LOAN ATTRITION	_____	_____	_____	_____	_____
TOTAL INTERNAL SOURCES	_____	_____	_____	_____	_____
ESTIMATED LINE CAPACITY TO BORROW IN MARKET	_____	_____	_____	_____	_____
BROKERED FUNDS CAPACITY	_____	_____	_____	_____	_____
DISCOUNT WINDOW COLLATERAL "BORROWING VALUE"	_____	_____	_____	_____	_____

* Fitch ratings (for example - can be used for rating scenario definitions)

Laws

- 12 USC 60, Dividends
- 12 USC 90, Depositories of Public Moneys and Financial Agents of Government
- 12 USC 371c(d)(1), Restrictions on Transactions With Affiliates
- 12 USC 501 and 18 USC 1004, Certification of Checks
- 12 USC 1821, Insurance Funds
- 12 USC 1831f, Brokered Deposits
- 12 USC 1831f-1, Deposit Broker Notification and Record Keeping
- 12 USC 1831o, Prompt Corrective Action
- 15 USC 77c(a)(3), Commercial Paper Definition
- Escheat Laws (Local)
- Uniform Commercial Code (UCC) 4-107, 211, 212, 301, and 302, Banking Hours and Processing of Demand Items

Regulations

- 12 CFR 5, Rules, Policies, and Procedures for Corporate Activities
- 12 CFR 6, Prompt Corrective Action
- 12 CFR 7.4002 (a), Charges by Banks
- 12 CFR 7.4002 (b), Service Charges on Dormant Accounts
- 12 CFR 21.11, Known or Suspected Theft, Embezzlement, Check-Kiting Operation, Defalcation
- 12 CFR 31 (Appendix A, Section 2), Deposits between Affiliated Banks
- 12 CFR 32.3(c)(1), Loans Not Subject to Lending Limit
- 12 CFR 201, Extensions of Credit by Federal Reserve Banks (Regulation A)
- 12 CFR 204, Regulation D, Reserve Requirements of Depository Institutions
- 12 CFR 206, Regulation F, Limitations on Interbank Liabilities
- 12 CFR 337.6, Brokered Deposits
- 12 CFR 935, Federal Housing Finance Board, Advances
- 31 CFR 203.9 and 203.10, Treasury Tax and Loan
- 31 CFR 210, Federal Recurring Payments through Financial Institutions

Issuances

Comptroller's Handbook, "Asset Securitization"

Comptroller's Handbook, "Community Bank Supervision"

Comptroller's Handbook, "Federal Branches and Agencies"

Comptroller's Handbook, "Interest Rate Risk"

Comptroller's Handbook, "Large Bank Supervision"

Comptroller's Handbook, "Risk Management of Financial Derivatives"

Consolidated Reports of Condition and Income (Call Reports)
in Debt and Equity Securities"