

INTRODUCTION.....	2	INTERNAL CONTROLS .....	22
RISK MANAGEMENT PROGRAM .....	2	Independent Reviews.....	22
Board and Senior Management Oversight .....	2	EVALUATION OF LIQUIDITY .....	22
Liquidity Management Strategies .....	3	Liquidity Component Review.....	22
Collateral Position Management .....	3	Rating the Liquidity Factor.....	22
POLICIES, PROCEDURES, & REPORTING .....	3	UBPR Ratio Analysis .....	23
Liquidity Policies and Procedures.....	3		
Risk Tolerances.....	4		
Liquidity Reporting .....	5		
LIQUIDITY RISK MEASUREMENT .....	5		
Pro-Forma Cash Flow Projections .....	5		
FUNDING SOURCES - ASSETS .....	6		
Cash and Due from Accounts.....	7		
Loan Portfolio .....	7		
Asset Sales/Securitizations.....	7		
Investment Portfolio .....	8		
FUNDING SOURCES – LIABILITIES .....	8		
Core Deposits.....	8		
Deposit Management Programs .....	9		
Wholesale Funds .....	9		
Brokered and High-Rate Deposits.....	10		
Listing Services.....	10		
Brokered Sweep Accounts .....	10		
Network Deposits.....	10		
Brokered Deposit Restrictions.....	11		
High-Rate Deposit Restrictions.....	11		
Brokered Deposits Use.....	11		
Public Funds.....	12		
Secured and Preferred Deposits .....	12		
Large Depositors and Deposit Concentrations .....	12		
Negotiable Certificates of Deposit .....	13		
Assessing the Stability of Funding Sources .....	13		
Borrowings.....	13		
Federal Funds .....	14		
Federal Reserve Bank Facilities .....	14		
Repurchase Agreements.....	15		
Dollar Repurchase Agreements.....	16		
Bank Investment Contracts .....	16		
International Funding Sources.....	16		
Commercial Paper.....	16		
OFF-BALANCE SHEET ITEMS .....	17		
Loan Commitments .....	17		
Derivatives .....	17		
Other Contingent Liabilities.....	17		
LIQUIDITY RISK MITIGATION .....	17		
Diversified Funding Sources .....	17		
The Role of Equity .....	18		
Cushion of Highly Liquid Assets .....	18		
CONTINGENCY FUNDING .....	19		
Contingency Funding Plans .....	19		
Contingent Funding Events.....	19		
Stress Testing Liquidity Risk Exposure .....	19		
Potential Funding Sources.....	20		
Monitoring Framework for Stress Events .....	21		
Testing of Contingency Funding Plans .....	21		
Liquidity Event Management Processes .....	21		

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**INTRODUCTION**

Liquidity reflects a financial institution's ability to fund assets and meet financial obligations. Liquidity is essential in all banks to meet customer withdrawals, compensate for balance sheet fluctuations, and provide funds for growth. Funds management involves estimating liquidity requirements and meeting those needs in a cost-effective way. Effective funds management requires financial institutions to estimate and plan for liquidity demands over various periods and to consider how funding requirements may evolve under various scenarios, including adverse conditions. Banks must maintain sufficient levels of cash, liquid assets, and prospective borrowing lines to meet expected and contingent liquidity demands.

Liquidity risk reflects the possibility an institution will be unable to obtain funds, such as customer deposits or borrowed funds, at a reasonable price or within a necessary period to meet its financial obligations. Failure to adequately manage liquidity risk can quickly result in negative consequences for an institution despite strong capital and profitability levels. Management must maintain sound policies and procedures to effectively measure, monitor, and control liquidity risks.

A certain degree of liquidity risk is inherent in banking. An institution's challenge is to accurately measure and prudently manage liquidity demands and funding positions. To efficiently support daily operations and provide for contingent liquidity demands, banks must:

- Establish an appropriate liquidity risk management program,
- Ensure adequate resources are available to fund ongoing liquidity needs,
- Establish a funding structure commensurate with risks,
- Evaluate exposures to contingent liquidity events, and
- Ensure sufficient resources are available to meet contingent liquidity needs.

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**RISK MANAGEMENT PROGRAM**

An institution's liquidity risk management program establishes the liquidity management framework. The program should encompass all elements of a bank's liquidity, ranging from how the institution manages routine liquidity needs to managing liquidity during a severe stress event. Elements of a sound liquidity risk management program include:

- Effective management and board oversight;

- Appropriate liquidity management policies, procedures, strategies, and risk limits;
- Comprehensive liquidity risk measurement and monitoring systems;
- Adequate levels of marketable assets;
- Diverse mix of existing and potential funding sources;
- Comprehensive contingency funding plans;
- Appropriate plans for potential stress events; and
- Effective internal controls and independent audits.

The formality and sophistication of liquidity management programs should correspond to the type and complexity of an institution's activities, and all institutions should implement programs appropriate for their needs. Management should integrate liquidity risk management activities into the institution's overall risk management program and should consider incremental liquidity risks when evaluating new or existing business strategies.

Close oversight and sound risk management processes (particularly planning for potential stress events) are especially important when management pursues asset growth strategies that rely on new or volatile funding sources.

**Board and Senior Management Oversight**

Board oversight is critical to effective liquidity risk management. The board is responsible for establishing the institution's liquidity risk tolerance and clearly communicating it to all levels of management. Additionally, the board should review, approve, and periodically update liquidity management strategies, policies, procedures, and risk limits. To be effective, the board should ensure it:

- Understands and periodically reviews the institution's current liquidity position and contingency funding plans;
- Understands the institution's liquidity risks and periodically reviews information necessary to maintain this understanding;
- Establishes an asset/liability committee (ALCO) and guidelines for electing committee members, assigning responsibilities, and establishing meeting frequencies;
- Establishes executive-level lines of authority and responsibility for managing the institution's liquidity risk;
- Provides appropriate resources to management for identifying, measuring, monitoring, and controlling liquidity risks; and
- Understands the liquidity risk profiles of significant subsidiaries and affiliates.

Management is responsible for appropriately implementing board-approved liquidity policies, procedures, and strategies. This responsibility includes overseeing the development and implementation of appropriate risk measurement and reporting systems, contingency funding plans, and internal controls. Management is also responsible for regularly reporting the institution's liquidity risk profile to the board.

An ALCO (or similar entity) should actively monitor the institution's liquidity profile. The ALCO should have sufficient representation across major functions (e.g., lending, investments, wholesale and retail funding, etc.) to influence the liquidity risk profile. The committee should ensure that liquidity reports include accurate, timely, and relevant information on risk exposures.

Examiners should evaluate corporate governance by reviewing liquidity management processes (including daily, monthly, and quarterly activities), committee minutes, liquidity and funds management policies and procedures, and by holding discussions with management. Additionally, examiners should consider the findings of independent reviews and prior reports of examination when assessing the effectiveness of corrective actions.

### **Liquidity Management Strategies**

Liquidity management strategies involve short- and long-term decisions that can change over time, especially during times of stress. Therefore, management should meet regularly and consider liquidity costs, benefits, and risks as part of the institution's overall strategic planning and budgeting processes. As part of this process, management should:

- Perform periodic liquidity and profitability evaluations for existing activities and strategies;
- Identify primary and contingent funding sources needed to meet daily operations, as well as seasonal and cyclical cash flow fluctuations;
- Ensure liquidity management strategies are consistent with the board's expressed risk tolerance; and
- Evaluate liquidity and profitability risks associated with new business activities and strategies.

### **Collateral Position Management**

Assets are a key source of funds for financial institutions as they can generate substantial cash inflows through principal and interest payments. Assets can also provide funds when sold or when used as collateral for borrowings. Financial institutions routinely pledge assets when borrowing funds or obtaining credit lines through Federal

Home Loan Banks, the Federal Reserve discount window, or other banks.

Institutions should set up reporting systems that facilitate the monitoring and management of assets pledged as collateral for borrowed funds. At a minimum, pledged asset reports should detail the value of assets currently pledged relative to the amount of security required and identify the type and amount of unencumbered assets available for pledging.

Reporting systems should be commensurate with borrowing activities and the institution's strategic plans. Institutions with limited amounts of long-term borrowings may be able to monitor collateral levels adequately by reviewing monthly or quarterly reports. Institutions with material payment, settlement, and clearing activities should actively monitor short- (including intraday), medium-, and long-term collateral positions.

Management should thoroughly understand all borrowing agreements (contractual or otherwise) that may require the bank to provide additional collateral, substitute existing collateral, or deliver collateral. Such requirements may be triggered by changes in an institution's financial condition. Management should consider potential changes to collateral requirements in cash flow projections, stress tests, and contingency funding plans. Institutions should be aware of the operational and timing requirements associated with accessing collateral at its physical location (such as a custodian institution or a securities settlement system where the collateral is held).

## **← POLICIES, PROCEDURES, & REPORTING**

### **Liquidity Policies and Procedures**

Comprehensive written policies, procedures, and risk limits form the basis of liquidity risk management programs. All financial institutions should have board-approved liquidity management policies and procedures specifically tailored for their institution.

Even when operating under a holding company with centralized planning and decision making, directors must ensure that the structure, responsibility, and controls for managing their institution's liquidity risk are clearly documented. Directors should regularly monitor reports that highlight bank-only liquidity factors.

While there is no reason to criticize the existence of centralized planning and decision making, each bank's board of directors has a legal responsibility to maintain

policies, procedures, and risk limits tailored to its individual bank's risk profile.

At least annually, boards should review and approve appropriate liquidity policies. Written policies are important for defining the scope of the liquidity risk management program and ensuring that:

- Sufficient resources are devoted to liquidity management,
- Liquidity risk management is incorporated into the institution's overall risk management process, and
- Management and the board share an understanding of strategic decisions regarding liquidity.

Policies and procedures should address liquidity matters (such as legal, regulatory, and operational issues) separately for legal entities, business lines, and, when appropriate, individual currencies. Sound liquidity and funds management policies typically:

- Provide for the effective operation of the ALCO. ALCO policies should address responsibilities for assessing current and projected liquidity positions, implementing board-approved strategies, reviewing policy exceptions, documenting committee actions, and reporting to the board.
- Provide for the periodic review of the bank's deposit structure. The reviews should include assessments of the volume and trend of total deposits, the types and rates of deposits, the maturity distribution of time deposits, and competitor rate comparisons. Other information should be considered when applicable, such as the volume and trend of large time deposits, public funds, out-of-area deposits, high-rate deposits, wholesale deposits, and uninsured deposits.
- Address permissible funding sources and concentration limits. Items to address should include funding types with similar rate sensitivity or volatility, such as brokered or Internet deposits and deposits generated through promotional offers.
- Provide a method of computing the bank's cost of funds.
- Establish procedures for measuring and monitoring liquidity. Procedures should generally include static measurements and cash flow projections that forecast base case and stress scenarios.
- Address the type and mix of permitted investments. Items to address include the maturity distribution of the portfolio, which investments are available for liquidity purposes, and the level and quality of unpledged investments.
- Provide for an adequate system of internal controls. Controls should ensure periodic, independent reviews

of the liquidity management process and compliance with policies, procedures, and limits.

- Include a contingency funding plan that identifies alternative funding sources if liquidity projections are incorrect or a liquidity crisis arises.
- Require periodic testing of liquidity lines.
- Establish procedures for documenting and reviewing assumptions used in liquidity projections.
- Define procedures for approving exceptions to policies, limits, and authorizations.
- Identify permissible wholesale funding sources.
- Define authority levels and procedures for accessing wholesale funding sources.
- Establish a process for measuring and monitoring unused borrowing capacity.
- Convey the board's risk tolerance by establishing target liquidity ratios and parameters under various time horizons and scenarios.
- Include other items unique to the bank.

### Risk Tolerances

Policies should reflect the board's tolerance for risk and delineate qualitative and quantitative guidelines appropriate for the institution's business profile and balance sheet complexity. Typical risk guidelines include:

- Targeted cash flow gaps over discrete and cumulative periods and under expected and adverse business conditions.
- Expected levels of unencumbered liquid assets.
- Measures for liquid asset coverage ratios and limits on potentially unstable liabilities.
- Concentration limits on assets that may be difficult to convert into cash (such as complex financial instruments, bank-owned life insurance, and less-marketable loan portfolios).
- Limits on the level of borrowings, brokered funds, or exposures to single fund providers or market segments.
- Funding diversification standards for short-, medium-, and long-term borrowings and instrument types.
- Limits on contingent liability exposures such as unfunded loan commitments or lines of credit.
- Collateral requirements for derivative transactions and secured lending.
- Limits on material exposures in complex activities (such as securitizations, derivatives, trading, and international activities).

Management and the board should establish meaningful risk limits and periodically evaluate the appropriateness of established limits. Management should regularly provide the board, or a designated board committee, reports that compare actual results to approved risk limits. Policy

exceptions should be noted in the minutes, and management should document steps to correct any policy exceptions.

### Liquidity Reporting

Timely and accurate information is a prerequisite to sound funds management practices. Liquidity risk reports should clearly highlight the bank's liquidity position, risk exposures, and level of compliance with internal risk limits.

In normal business environments, staff tasked with ongoing liquidity administration should receive liquidity risk reports at least daily, senior officers should receive liquidity risk reports at least monthly, and the board of directors should receive liquidity risk reports at least quarterly. Depending upon the complexity of the institution's business mix and liquidity risk profile, management reporting may need to be more frequent. If necessary, an institution should be able to increase the frequency of reporting on short notice.

The format and content of reports will vary depending on the characteristics of each bank and its funds management practices. Typically, an institution's management information systems and internal reports should provide information regarding:

- Liquidity needs and the sources of funds available to meet these needs over various time horizons and scenarios. These reports are often referred to as pro-forma cash flow reports, sources and uses reports, or scenario analyses.
- Collateral positions, including pledged and unpledged assets, and if applicable, the availability of collateral by legal entity, jurisdiction, and currency exposure.
- Public funds and other material providers of funds (including rate and maturity information).
- Funding categories and concentrations.
- Asset yields, liability costs, net interest margins, and variations from the prior month and budget. The reports should be detailed enough to permit an analysis of interest margin variations.
- Early warning indicators for contingency funding events.
- Policy exceptions.
- Interest rate projections and economic conditions in the bank's trade area.
- Information concerning non-relationship or higher-cost funding programs.
- The stability of deposit customers and providers of wholesale funds.
- The level of highly liquid assets.
- Stress test results.

- Other items unique to the bank.

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### LIQUIDITY RISK MEASUREMENT

Risk measurement and monitoring are important components of the risk management framework. To identify potential funding gaps, management should regularly monitor cash flow forecasts and collateral positions and periodically assess the stability of funding sources.

#### Pro-Forma Cash Flow Projections

Traditionally, many financial institutions only used single point-in-time (static) measurements (such as loan-to-deposit or loan-to-asset ratios) to assess their liquidity position. Static liquidity measures provide valuable information and should remain a key part of a bank's liquidity analysis. However, cash flow forecasting can enhance a financial institution's ability to manage liquidity risk.

Cash flow forecasts are useful for all banks and become essential when operational areas (loans, deposits, investments, etc.) become more complex or distinct from other areas in the bank. Cash flow projections enhance management's ability to evaluate and manage these areas individually and collectively.

The sophistication of cash flow forecasting ranges from the use of simple spreadsheets to comprehensive liquidity risk models. Some vendors that offer interest rate risk (IRR) models can provide options for modeling liquidity cash flows because the base information is already maintained for IRR modeling. In all cases, management's goal should be to compare sources of funds to liquidity needs over various periods—using separate assumptions that are appropriate for managing liquidity rather than IRR.

Cash flow projections typically forecast sources and uses of funds over short-, medium-, and long-term time horizons. Non-complex community banks that are in a sound condition may forecast short-term positions monthly. More complex institutions may need to perform weekly or daily reports, and institutions with large payment systems and settlement activities are expected to conduct intra-day measures. All institutions should have the ability to increase the frequency of monitoring and reporting during a stress event.

Ultimately, cash flow projections should allow management to determine an appropriate response to both tactical (short-term) and strategic (medium- and long-term) needs. Management should document the procedures,

assumptions, and information used to develop their cash flow projections. When gathering data, institutions should be aware that excessive account aggregations in liquidity measurements can mask substantial liquidity risk. Similar to measuring IRR, there are advantages to utilizing account level information. For some institutions, gathering and measuring information on specific accounts may not be feasible due to information system limitations or management resource constraints. Although the advantages of using detailed account information may not be as evident for a non-complex institution, management should consider the benefits of using more detailed information in its liquidity modeling.

Management should not rely solely on contractual cash flow requirements for projecting cash flows. They should also include expected cash flows in their base case analysis. For example, if an institution has a material amount of construction loans, management should estimate the amount of available credit that will actually be drawn in a given period, not simply include the full contractual obligation in the analysis. Additionally, management should estimate the amount of maturing time deposits that will and will not be renewed in given periods. Often, institutions must rely on assumptions to estimate expected cash flows. Management should base their assumptions on reliable data and appropriate sources. For example, institutions with a sizable volume of certificates of deposit obtained through deposit rate promotions should analyze the retention rate of such deposits and use assumptions based on the results of the analysis.

Cash flow projections can also provide a basis for stress tests and contingency funding plans. The institution would start with base case projections that assume normal cash flows, market conditions, and business operations over the selected time horizon. Management would then test stress scenarios by changing the applicable cash flow assumptions in the base case scenario. For example, if the stress scenario assumes a change in a Prompt Corrective Action (PCA) capital category that would trigger interest rate restrictions and brokered deposit limitations, management should adjust assumptions to reflect the restrictions and possible limitation or elimination of access to these funds.

Given the critical role assumptions play in measuring liquidity risks and cash flow projections, management should ensure all key assumptions are appropriate and well documented, and the board should periodically review and formally approve the assumptions used. The board and management should also closely review the assumptions used to assess the liquidity risk of complex assets, liabilities, and off-balance sheet positions. Ensuring the accuracy of assumptions applied to positions with uncertain cash flows is especially important when

evaluating the availability of funding sources under adverse contingent liquidity scenarios.

Management should periodically assess the accuracy of cash flow projections by evaluating its assumptions about customer behavior and by separately estimating gross cash flows on both sides of the balance sheet. Management should also compare projections to actual results (back testing) and make adjustments as appropriate to reflect changes in cash flow characteristics. If management finds that it cannot reliably project cash flows, they should maintain a higher liquid asset cushion.

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## FUNDING SOURCES - ASSETS

The amount of liquid assets that a bank should maintain is a function of the stability of its funding structure and the risk characteristics of the bank's balance sheet and off-balance sheet activities. Generally, a relatively lower level of unencumbered liquid assets may be sufficient if funding sources are stable, established borrowing facilities are largely unused, and other risk characteristics are predictable. A higher level of unencumbered liquid assets may be required if:

- Bank customers have numerous alternative investment options,
- Recent trends show a substantial reduction in large liability accounts,
- The bank has a material reliance on potentially volatile funding sources,
- The loan portfolio includes a high volume of non-marketable loans,
- The bank expects several customers to make material draws on unused lines of credit,
- Deposits include substantial amounts of short-term municipal accounts,
- A concentration of credits was extended to an industry with existing or anticipated financial problems,
- A close relationship exists between individual demand accounts and principal employers in the trade area who have financial problems,
- A material amount of assets is pledged to support wholesale borrowings, or
- The institution's access to capital markets is impaired.

A bank's assets provide varying degrees of liquidity and can create cash inflows and outflows. While an institution should retain sufficient levels of highly liquid assets, other types of investments can provide some degree of liquidity for meeting daily operational needs and responding to contingent funding events. To balance profitability and liquidity, management must carefully weigh the full benefits (yield and increased marketability) of holding

liquid assets against the expected higher returns associated with less liquid assets. Income derived from holding longer-term, higher-yielding assets may be offset if an institution is forced to sell the assets quickly due to adverse balance sheet fluctuations.

### Cash and Due from Accounts

Cash and due from accounts are essential for meeting daily liquidity needs. Institutions rely on cash and due from accounts to fund deposit account withdrawals, disburse loan proceeds, cover cash letters, fund bank operations, meet reserve requirements, and provide compensating balances relating to correspondent bank accounts/services.

### Loan Portfolio

The loan portfolio is an important factor in liquidity management. Loan payments provide steady cash flows, and loans can be used as collateral for secured borrowings or sold for cash in the secondary loan market. However, the quality of the loan portfolio can directly impact liquidity. For example, if an institution encounters asset quality issues, operational cash flows may be affected by the level of non-accrual borrowers and late payments.

For many institutions, loans serve as collateral for wholesale borrowings such as Federal Home Loan Bank (FHLB) borrowings. If asset quality issues exist, an institution may find that delinquent loans do not qualify as collateral. Also, higher amounts of collateral may be required because of doubts about the overall quality of the portfolio. These “haircuts” can be substantial and should be considered in stress tests.

Management must consider contractual requirements and customers’ behavior when forecasting loan cash flows. Prepayments and renewals can significantly affect contractual cash flows for many types of loans. Customer prepayments are a common consideration for residential mortgage loans (and mortgage-backed securities) and can also be a factor for commercial and commercial real estate loans (and related securities). Assumptions related to revolving lines of credit and balloon loans can also have a material effect on cash flows. Management should not assume that loans will generate cash flows in accordance with contractual obligations if there is no historical basis for the assumption.

### Asset Sales/Securitizations

As noted above, assets can be used as collateral for secured borrowings or sold for cash in the secondary market. Sales in the secondary market can provide fee income, relief from interest rate risk, and a funding source to the

originating bank. However, for an asset to be saleable at a reasonable price in the secondary market, management must ensure it generally conforms to market (investor) requirements. Because loans and loan portfolios may have unique features or defects that hinder or prevent their sale into the secondary market, management should thoroughly review loan characteristics and document assumptions related to loan portfolios when developing cash flow projections.

Some institutions are able to use securitizations as a funding vehicle by converting a pool of assets into cash. Asset securitization typically involves the transfer or sale of on-balance sheet assets to a third party that issues mortgage-backed securities (MBS) or asset-backed securities (ABS). These instruments are then sold to investors. The investors are paid from the cash flow from the transferred assets. Assets that are typically securitized include credit card receivables, automobile receivables, commercial and residential mortgage loans, commercial loans, home equity loans, and student loans.

Securitization can be an effective funding method for some banks. However, there are several risks associated with using securitization as a funding source. For example:

- Some securitizations have early amortization clauses to protect investors if the performance of the underlying assets does not meet specified criteria. If an early amortization clause is triggered, the issuing institution must begin paying principal to bondholders earlier than originally anticipated and will have to fund new receivables that would have otherwise been transferred to the trust. The issuing institution must monitor deal performance to anticipate cash flow and funding ramifications due to early amortization clauses.
- If the issuing institution has a large concentration of residual assets, the institution’s overall cash flow might be dependent on the residual cash flows from the performance of the underlying assets. If the performance of the underlying assets is worse than projected, the institution’s overall cash flow will be less than anticipated.
- Residual assets retained by the issuing institution are typically illiquid assets for which there is no active market. Additionally, the assets are not acceptable collateral to pledge for borrowings.
- An issuer’s market reputation can affect its ability to securitize assets. If the bank’s reputation is damaged, issuers might not be able to economically securitize assets and generate cash from future sales of loans to the trust. This is especially true for institutions that are relatively new to the securitization market.
- The timeframe required to securitize loans held for sale may be considerable, especially if the institution

has limited securitization experience or encounters unforeseen problems.

Institutions that identify asset sales or securitizations as contingent liquidity sources, particularly institutions that rarely sell or securitize loans, should periodically test the operational procedures required to access these funding sources. Market-access testing helps ensure procedures work as anticipated and helps gauge the time needed to generate funds; however, management should be aware that testing does not guarantee the funding sources will be available or on satisfactory terms during stress events.

A thorough understanding of applicable accounting and regulatory rules is critical when securitizing assets. Accounting standards make it difficult to achieve sales treatment for certain financial assets. The standards influence the use of securitizations as a funding source because transactions that do not qualify for sales treatment require the selling institution to account for the transfer as a secured borrowing with a pledge of collateral. As such, institutions must account for, and risk weight, the transferred financial assets as if the transfer had not occurred. Accordingly, institutions should continue to report the transferred assets in financial statements with no change in the measurement of the financial assets transferred.

When financial assets are securitized and accounted for as a sale, institutions often provide contractual credit enhancements, which may involve over-collateralization, retained subordinated interests, asset repurchase obligations, cash collateral accounts, spread accounts, or interest-only strips. Part 325 of the FDIC Rules and Regulations requires the issuing institution to hold capital as a buffer against the retained credit risk arising from these contractual credit enhancements.

There can also be non-contractual support for ABS transactions that would be considered implicit recourse. The recourse may create credit, liquidity, and regulatory capital implications for issuers that provide implicit support for ABS transactions. Institutions typically provide implicit recourse in situations where management perceives that the failure to provide support, even though not contractually required, would damage the institution's future access to the ABS market. Institutions deemed to be providing implicit recourse are generally required to hold capital against the entire outstanding amount of assets sold, as though they remained on the books, for risk-based capital purposes.

The federal banking agencies' concerns over the retained credit and other risks associated with such implicit support are detailed in its Interagency Guidance on Implicit

Recourse in Asset Securitizations (FDIC Financial Institution Letter 52-2002).

### Investment Portfolio

An institution's investment portfolio can provide liquidity through regular cash flows, maturing securities, the sale of securities for cash, or by pledging securities as collateral for borrowings, repurchase agreements, or other transactions. Management should periodically assess the quality and marketability of the portfolio to determine:

- The level of unencumbered securities available to pledge for borrowings,
- The financial impact of unrealized gains and losses,
- The effect of changes in asset quality, and
- The potential need to provide additional collateral should rapid changes in market rates significantly reduce the value of longer-duration investments pledged to secure borrowings.

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### FUNDING SOURCES – LIABILITIES

Deposits are the most common funding source for many institutions; however, other liability sources such as borrowings can also provide funding for daily business activities, or as alternatives to using assets to satisfy liquidity needs. Deposits and other liability sources are often differentiated by their stability and customer profile characteristics.

#### Core Deposits

Core deposits are generally stable, lower-cost funding sources that typically lag behind other funding sources in repricing during a period of rising interest rates. The deposits are typically funds of local customers that also have a borrowing or other relationship with the institution. Convenient branch locations, superior customer service, extensive ATM networks, and low or no fee accounts are factors that contribute to the stability of the deposits. Other factors include the insured status of the account and the type of depositor (retail, commercial, municipality, etc.). Generally, high-cost or non-relationship deposits, such as Internet deposits or deposits obtained through high-rate promotions, should not be considered stable sources of funds for liquidity purposes. Brokered deposits are not considered core deposits or a stable funding source due to the brokered status and wholesale characteristics.

*Core deposits* are defined in the Uniform Bank Performance Report (UBPR) User's Guide as the sum of all transaction accounts, money market deposit accounts (MMDAs), nontransaction other savings deposits



(excluding MMDAs), and time deposits of \$250,000 and below, less fully insured brokered deposits of \$250,000 and less. In some instances, core deposits included in the UPBR's core deposit definition might exhibit characteristics associated with more volatile funding sources. For example, out-of-area certificates of deposit (CDs) of \$250,000 or less that are obtained from a listing service may have a higher volatility level, but be included in core deposits under the UBPR definition. Management and examiners should not automatically view these deposits as a stable funding source without additional analysis. Alternatively, some deposit accounts generally viewed as volatile, non-core funds by UBPR definitions (for example, CDs larger than \$250,000) might be considered relatively stable after a closer analysis. For instance, a local depositor might have CDs larger than \$250,000 that may be considered stable because the depositor has maintained those deposits with the institution for several years.

While some deposit relationships over \$250,000 have proven stable when the institution is in good condition, such relationships might become volatile due to their uninsured status if the institution experiences financial problems. Additionally, deposits identified as stable during good economic conditions may not be reliable funding sources during stress events. Therefore, the bank should identify deposit accounts likely to be unstable in times of stress and appropriately reflect such deposits in its liquidity stress testing.

It is not prudent to assume that all deposits that meet the UBPR's definition of *core* are necessarily stable, or that all deposits defined as *non-core* are automatically volatile. Management should analyze the stability of significant customer relationships and deposit accounts and reflect them accordingly in the bank's internal monitoring and reporting systems. Management and examiners should consider UBPR ratios in light of the balance sheet composition, risk profile, deposit stability trends, and other relevant and unique characteristics of the institution.

### Deposit Management Programs

The critical role deposits play in a bank's successful operation demonstrates the importance of implementing programs for retaining or expanding the deposit base. Strong competition for depositors' funds and customers' preference to receive market deposit rates also highlight the benefit of deposit management programs. Effective deposit management programs generally include:

- Regular reports detailing existing deposit types and levels,
- Projections for asset and deposit growth,
- Associated cost and interest rate scenarios,

- Clearly defined marketing strategies,
- Procedures to compare results against projections, and
- Steps to revise the plans when needed.

A deposit management program should take into account the make-up of the market-area economy, local and national economic conditions, and the potential for investing deposits at acceptable margins. Other considerations include management competence, the adequacy of bank operations, the location and size of facilities, the nature and degree of bank and non-bank competition, and the effect of monetary and fiscal policies on the bank's service area and capital markets in general.

Deposit management programs should be monitored and adjusted as necessary. The long-range success of such a program is closely related to management's ability to identify the need for changes quickly. To be effective, management must accurately project deposit trends and carefully monitor the potential volatility of the accounts (e.g., stable, fluctuating, seasonal, brokered, etc.).

### Wholesale Funds

Wholesale funds include, but are not limited to, brokered deposits, Internet deposits, deposits obtained through listing services, foreign deposits, public funds, federal funds purchased, FHLB advances, correspondent line of credit advances, and other borrowings.

Providers of wholesale funding closely track institutions' financial condition and may cease or curtail funding, increase interest rates, or increase collateral requirements if they determine an institution's financial condition is deteriorating. As a result, some institutions may experience liquidity problems due to a lack of wholesale funding availability when funding needs increase.

The Internet, listing services, and other automated services enable investors who focus on yield to easily identify high-yield deposits. Customers who focus primarily on yield are a less stable source of funding than customers with typical deposit relationships. If more attractive returns become available, these customers may rapidly transfer funds to new institutions or investments in a manner similar to that of wholesale investors.

It is important to measure the impact of the loss of wholesale funding sources on the institution's liquidity position. The challenge of measuring, monitoring, and managing liquidity risk typically increases as the use of wholesale and nontraditional funding sources increases. Institutions that rely more heavily on wholesale funding will often need enhanced funds management and measurement processes, such as scenario modeling. In

addition, contingency planning and capital management will take on added significance.

### Brokered and High-Rate Deposits

Section 29 of the FDI Act, as implemented by Part 337 of the FDIC Rules and Regulations, defines a brokered deposit as a deposit obtained through or with assistance of a deposit broker. The term deposit broker is generally defined by Section 29 as any person engaged in the business of placing deposits, or facilitating the placement of deposits, of third parties with insured depository institutions.

The brokered deposit regulations provide several exceptions to this broad definition of deposit broker. Exceptions include an insured depository institution or its employee placing funds with that insured depository institution, certain trust departments of insured depository institutions, certain trustees and plan administrators, an agent whose primary purpose is not to place funds with insured depository institutions, and insured depository institutions acting as an intermediary or agent for a government sponsored minority or women-owned deposit program.

### Listing Services

The FDIC has determined that a listing service company does not fall under the definition of a deposit broker if certain criteria are met. A listing service is a company that connects banks seeking a deposit with those seeking to place a deposit. In doing so, the listing service compiles and posts the banks' deposit rate information for consideration by interested depositors. A particular company can be a listing service (compiler of information) as well as a deposit broker (facilitating the placement of deposits). In recognition of this possibility, the FDIC has set forth criteria for determining when a listing service qualifies as a deposit broker. Under the FDIC's criteria, a listing service is not a deposit broker if the listing service satisfies each of the following requirements:

- The person or entity providing the listing service is compensated solely by means of subscription fees (fees paid by subscribers as payment for their opportunity to see the rates gathered by the listing service) and/or listing fees (fees paid by depository institutions as payment for their opportunity to list their rates). The listing service does not require a depository institution to pay for other services offered by the listing service or its affiliates as a condition precedent to being listed.
- The fees paid by depository institutions are flat fees (i.e., they are not calculated based on the number or dollar amount of deposits accepted by the depository

institution as a result of the listing of the depository institution's rates).

- In exchange for fees, the listing service performs no service except the gathering and transmission of information concerning the availability of deposits.
- The listing service is not involved in placing deposits. Any funds to be invested in deposit accounts are remitted directly by the depositor to the insured depository institution and not, directly or indirectly, by or through the listing service.

### Brokered Sweep Accounts

Some brokerage firms, which are investment companies that invest money in stocks, bonds, and other investments on behalf of clients, operate sweep programs in which brokerage customers are given the option to sweep uninvested cash into a bank deposit. This arrangement provides the brokerage customer with additional yield and insurance coverage on swept funds. These swept funds are generally considered brokered deposits unless the sweep program is specifically structured to meet the primary purpose exception. An institution must receive a favorable determination from the FDIC before it can exclude these funds from regulatory reporting of brokered deposits. Exception applications are made through the appropriate regional office. In making this determination, each of the following criteria must be met:

- The brokerage firm is affiliated with the bank.
- The funds are not swept into time deposit accounts.
- The amount of swept funds does not exceed 10 percent of the total amount of program assets handled by the brokerage firm (permissible ratio) on a monthly basis. When the brokerage also sweeps funds to nonaffiliated banks, which is typically done when the deposit exceeds the \$250,000 deposit insurance limit, these deposits are added to the amount of swept funds for purposes of calculating the permissible ratio.
- The fees in the program are flat fees (i.e., equal per-account or per-customer fees representing payment for recordkeeping or administrative services and not representing payment for placing deposits).

### Network Deposits

Banks sometimes participate in networks established for the purpose of sharing deposits. In such a network, a participating bank places funds, either directly or through a third-party network sponsor, at other participating network banks in order for its customer to receive full deposit insurance coverage. Network deposits meet the definition of a brokered deposit, even when the banks exchanging deposits are affiliated.

Some bank networks establish reciprocal agreements allowing participating banks to send and receive identical deposit amounts simultaneously. This reciprocal agreement allows banks to maintain the same amount of funds they had when the customer made their initial deposit while ensuring that deposits well in excess of the \$250,000 deposit limit are fully insured. Reciprocal network deposits also meet the definition of a brokered deposit. The stability of reciprocal deposits may differ depending on the relationship of the initial customer with the institution. Management should support their assessments of the stability of reciprocal deposits, or any funding source, for liquidity management and measurement purposes.

### **Brokered Deposit Restrictions**

Section 29 of the FDI Act limits the use of brokered deposits. An undercapitalized insured depository institution may not accept, renew, or roll over any brokered deposit. An adequately capitalized insured depository institution may not accept, renew, or roll over any brokered deposit unless the institution has applied for and been granted a waiver by the FDIC. Under Section 29, only a well-capitalized insured depository institution is allowed to solicit and accept, renew, or roll over any brokered deposit without restriction. If a bank is under any type of formal agreement pursuant to Section 8 of the FDI Act with a directive to meet or maintain any specific capital level, it will no longer be considered well capitalized for the purposes of Part 337.

With respect to adequately capitalized institutions that have been granted a brokered deposit waiver, any safety and soundness concerns arising from the acceptance of brokered deposits are ordinarily addressed by the conditions imposed in granting the waiver application. In monitoring such conditions, it is incumbent on the examiner not only to verify compliance, but also to assess whether any unanticipated problems are being created.

### **High-Rate Deposit Restrictions**

Section 29 of the FDI Act includes restrictions on the acceptance of brokered deposits and certain restrictions on deposit interest rates. Deposit rate restrictions prevent a bank that is not well capitalized from circumventing the prohibition on brokered deposits by offering rates significantly above market in order to attract a large volume of deposits quickly. Under FDIC regulations, a bank that is not well capitalized may not offer deposit rates more than 75 basis points above average national rates for deposits of similar size and maturity.

The national rate is a simple average of rates paid by all banks and branches. On a weekly basis, the FDIC

publishes national rate data (at [www.fdic.gov](http://www.fdic.gov)) that can be used to determine conformance with the interest rate restrictions. If a bank believes that the national rate does not correspond to the actual rates in the bank's particular market, the bank is permitted to request a determination from the applicable regional office that the bank is operating in a high-rate area.

Examiners should review conformance with interest rate restrictions during examinations of banks that are not well capitalized. The interest rate restrictions become applicable for existing CDs at the time of rollover. Rates for non-maturity accounts and new CDs must conform to the interest rate restrictions at the time the restrictions become effective. If a bank has not received a determination that it is operating in a high-rate area, deposit rates must not exceed the national rate caps posted on the FDIC website. If an institution receives a determination that it is operating in a high-rate area, the institution can establish its market area based on its branch locations and marketing scope. The deposit rates of all FDIC-insured institutions inside the market area must be used when calculating the prevailing rate. When using the local market approach, the rate cap for local deposits cannot exceed the prevailing rate of the local market plus 75 basis points. Deposits accepted outside the market area are subject to the national rate caps, even for institutions that have received a determination they are operating in a high-rate area. While in some cases the FDIC may grant a brokered deposit waiver to a less than well capitalized bank, the FDIC may not waive the interest rate restrictions under the brokered deposit regulations.

### **Brokered Deposits Use**

Brokered deposits can be a suitable funding source when properly managed as part of an overall, prudent funding strategy. However, some banks have used brokered deposits to fund unsound or rapid expansion of loan and investment portfolios, which has contributed to weakened financial and liquidity positions over successive economic cycles. The overuse and failure to properly manage brokered deposits by problem institutions have contributed to bank failures and losses to the deposit insurance fund.

Management should establish policies that describe permissible brokered and rate-sensitive funding types, amounts, and concentration limits. Management should assess potential risks to earnings and capital associated with brokered and rate-sensitive deposits, carefully monitor how such funds are used, and understand the restrictions that may apply if the institution's PCA capital category falls below well capitalized.

Management should perform adequate due diligence procedures before entering any business relationship with a

deposit broker. Similarly, management should perform due diligence with other business partners that provide rate-sensitive deposits, such as deposit listing services. Deposit brokers and deposit listing services are not regulated by bank regulatory agencies.

The acceptance of brokered deposits by well capitalized institutions is subject to the same considerations and concerns applicable to any type of special funding. These considerations relate to volume, availability, cost, volatility, maturity, and how the use of such special funding fits into the institution's overall liability and liquidity management plans.

When brokered deposits are encountered in an institution, examiners should consider the effect on overall funding and investment strategies and verify compliance with Part 337. Any loans tied to specific brokered deposits should receive special scrutiny. Apparent violations of Part 337 or inappropriate use of brokered deposits should be discussed with management and the board of directors, and appropriately addressed in the ROE.

Examiners should not wait for PCA provisions to be triggered, or the viability of the institution to be in question, before raising relevant safety and soundness issues with regard to the use of brokered and high-rate deposit sources. Appropriate supervisory action should be considered if examiners determine that management's use of these funding sources is inappropriate, that risks are excessive, or that the use of brokered or high-rate deposit sources adversely affects the bank's condition.

### **Public Funds**

Public funds are deposits of government entities such as state or local municipalities. Some states require institutions to secure the uninsured or entire balance of these accounts. Although various forms of collateral may be pledged, high-quality assets such as securities of U.S. government or government-sponsored enterprises (GSE) are most commonly pledged. Some institutions may also use letters of credit (for example, from one of the Federal Home Loan Banks) to secure public funds.

The stability of public fund accounts can vary significantly due to several factors. Account balances may fluctuate due to timing differences between tax collections and expenditures, the funding of significant projects (e.g., school or hospital construction), placement requirements, and economic conditions. Placement requirements may include rotating deposits between institutions in a particular community, obtaining bids and placing funds with the highest bidder, and minimum condition standards for the institution receiving the deposits (such as specific capital levels or the absence of formal enforcement

actions). Economic conditions can affect the volatility of public deposits since public entities may experience lower revenues during an economic downturn.

Although public deposit accounts often exhibit volatility, the accounts can be reasonably stable over time, or their fluctuations quite predictable. Therefore, examiners should closely review public deposit relationships to make informed judgments as to the stability of the balances.

### **Secured and Preferred Deposits**

Banks are usually required to pledge securities (or other readily marketable assets) to cover secured and preferred deposits. Banks must secure U.S. government deposits, and many states require banks to secure public funds, trust accounts, and bankruptcy court funds. In addition to strict regulatory and bookkeeping controls associated with pledging requirements, management should establish appropriate monitoring controls to ensure deposits and pledged assets are appropriately considered in liquidity analysis. Accurate accounting for secured or preferred liabilities is also important if a bank fails, because secured depositors and creditors may gain immediate access to some of the bank's most liquid assets.

### **Large Depositors and Deposit Concentrations**

For examination purposes, a large depositor is a customer or entity that owns or controls 2 percent or more of the bank's total deposits. By virtue of their size, these deposits are considered to be potentially volatile liabilities; however, some of the deposits may remain relatively stable over long periods.

A large deposit might be considered stable if the customer has ownership in the institution, has maintained a long-term relationship with the bank, has numerous accounts, or uses multiple bank services. Conversely, a large depositor that receives a high deposit rate, but maintains no other relationships with the institution, may move the account quickly if the rate declines. Therefore, examiners should consider the overall relationship between customers and the institution when assessing the volatility of large deposits.

Management should actively monitor deposit concentrations and maintain funds management policies and strategies that consider potentially volatile concentrations and significant deposits that mature simultaneously. Key considerations include potential cash flow fluctuations, pledging requirements, affiliated relationships, and the narrow interest spreads that may be associated with large deposits. Examiners should consider

these issues when assessing large deposit relationships and concentration risks.

### Negotiable Certificates of Deposit

Negotiable CDs warrant special attention as a component of large (uninsured) deposits. These instruments are usually issued by large regional or money center banks in denominations of \$1,000,000 or more and may be issued at face value with a stated rate of interest or at a discount similar to U.S. Treasury bills. Major bank CDs are widely traded, may offer substantial liquidity, and are the underlying instruments for a market in financial futures. Their cost and availability are closely related to overall market conditions, and any adverse publicity involving either a particular bank or banks in general can impact the CD market. These CDs have many features similar to borrowings and can be quite volatile.

### Assessing the Stability of Funding Sources

Assessing the stability of funding sources is an essential part of liquidity risk measurement and liquidity management. Institutions may rely on a variety of funding sources, and a wide array of factors may impact the stability of those funding sources. The following factors should be considered when assessing the stability of funding sources:

- **The cost of the bank's funding sources compared to market costs and alternative funding sources:** If a bank pays significantly above local or national rates to obtain or retain deposits, the bank's deposit base may be highly cost sensitive, and depositors may be more likely to move deposits if terms become more favorable elsewhere. Examiners should determine whether an institution uses rate specials or one-time promotional offerings to obtain deposits or to retain rate-sensitive customers. Examiners should also assess how much of the deposit base consists of rate specials and determine if management measures and reports the level of such deposits.
- **Large deposit growth or large changes in deposit composition:** In particular, strategies that rely on volatile funding sources to fund significant growth in new business lines should be carefully considered. The potential for misjudging the level of risk in new strategies is high and could be compounded with the use of volatile funding sources.
- **Stability of insured deposits and fully secured borrowings:** Insured deposits and borrowings secured by highly liquid assets are more likely to be stable than uninsured deposits or borrowings secured

by non-liquid assets. Uninsured deposits should not automatically be considered volatile; however, the historical and projected stability of uninsured deposits should be assessed.

- **The current rate environment:** Depositors may be less rate sensitive in a low-rate environment due to the limited benefits (marginally higher rates) obtained by shifting deposits into longer-term investments.
- **The current business cycle:** If the national or local economy is in a downward cycle, individuals and businesses may decide to keep more cash on hand versus spending or investing it.
- **Contractual terms and conditions:** Terms and requirements related to the condition of the bank, such as the bank's PCA category, credit ratings, or capital levels will impact liquidity. Specific contractual terms and conditions are often associated with brokered deposits, funds from deposit listing services, correspondent bank accounts, repurchase agreements, and FHLB advances.
- **The relationship with the funding source:** Large depositors might be more stable if the deposit is difficult to move (e.g., the deposit is in a transaction account used by a payroll provider), if the depositor is an insider in the institution, or if the depositor has a long history with the institution. However, examiners should consider that depositors may withdraw funds during stress periods regardless of difficulties or the effect on the bank.

### Borrowings

Stable deposits are a key funding source for most insured depository institutions; however, institutions are becoming increasingly reliant upon borrowings and other wholesale funding sources to meet their funding needs. Borrowings include debt instruments or loans that banks obtain from other entities and include, but are not limited to, correspondent lines of credit, federal funds, and FHLB and Federal Reserve Bank advances.

Generally, examiners should view borrowings as a supplemental funding source, rather than as a replacement for core deposits. If an institution is using borrowed funds to meet contingent liquidity needs, management should have a complete understanding of the associated risks, commensurate risk management practices, and a comprehensive contingency funding plan that specifically addresses funding plans if the institution's financial condition or the economy deteriorates. Active and effective risk management, including funding-

concentration management by size and source, can mitigate some of the risks associated with the use of borrowings.

Management must be aware of the composition and characteristics of its funding sources at all times. Examiners and banks should be aware of the following risks associated with borrowed funds:

- Pledging assets to secure borrowings can negatively affect a bank's liquidity profile by reducing the amount of securities available for sale during periods of stress.
- Unexpected changes in market conditions can make it difficult for the bank to secure funds and manage its funding maturity structure.
- It may be more difficult to borrow funds if the institution's condition or the general economy deteriorates.
- Banks may incur relatively high costs to obtain funds and may lower credit quality standards in order to invest in higher-yielding loans and securities to cover the higher costs. If a bank incurs higher-cost liabilities to support assets already on its books, the cost of the borrowings may result in reduced or negative net income.
- Preoccupation with obtaining funds at the lowest possible cost, without proper consideration given to diversification and maturity distribution, intensifies a bank's exposure to funding concentrations and interest rate fluctuations.
- Some borrowings have embedded options that make their maturity or future interest rate uncertain. This uncertainty can increase the complexity of liquidity management and may increase future funding costs.

Common borrowing sources include:

- Federal funds purchased,
- Federal Reserve Bank facilities,
- Repurchase agreements,
- Dollar repos,
- Bank investment contracts,
- Commercial Paper, and
- International funding sources.

## **Federal Funds**

Federal funds are reserves held in an institution's Federal Reserve Bank account that can be lent (sold) by institutions with excess reserves to other institutions with an account at a Federal Reserve Bank. Institutions borrow (purchase) federal funds to meet their reserve requirements or other funding needs. Institutions rely on the Federal Reserve Bank or a correspondent bank to facilitate federal

funds transactions. State non-member banks that do not maintain balances at the Federal Reserve purchase/sell federal funds through a correspondent bank.

Lending and borrowing these balances has become a convenient method for banks to avoid reserve deficiencies or invest excess reserves over a short period of time. In most instances, federal funds transactions take the form of overnight or short-term unsecured transfers of immediately available funds between banks. However, banks also enter into continuing contracts that have no set maturity but are subject to cancellation upon notice by either party to the transaction. Banks also engage in federal funds transactions of a set maturity, but these include only a small percentage of all federal funds transactions. In any event, these transactions should be supported with written verification from the lending institution.

Some institutions may access federal funds as a liability management technique to fund a rapid expansion of its loan or investment portfolios and enhance profits. In these situations, examiners should ensure that appropriate board approvals, limits, and policies are in place and should discuss with management and the board the institution's plans for developing appropriate long-term funding solutions. Institutions should avoid undue reliance on federal funds purchased, as the funds are usually short-term, highly credit sensitive instruments that may not be available if an institution's financial condition deteriorates.

## **Federal Reserve Bank Facilities**

The Federal Reserve Banks provide short-term collateralized credit to banks through the Federal Reserve's discount window. The discount window is available to any insured depository institution that maintains deposits subject to reserve requirements. The most common types of collateral are U.S. Treasury securities; agency, GSE, mortgage-backed, asset-backed, municipal, and corporate securities; and commercial, agricultural, consumer, residential real estate, and commercial real estate loans. Depending on the collateral type and condition of the institution, collateral may be transferred to the Federal Reserve, held by the borrower in custody, held by a third party, or reflected by book entry.

Types of discount window credit include primary credit (generally overnight credit to meet temporary liquidity needs), secondary credit (available to institutions that do not qualify for primary credit), seasonal credit (available to banks that demonstrate a clear seasonal pattern to deposits and assets), and emergency credit (rare circumstances).

The Federal Reserve's primary credit program was designed to ensure adequate liquidity in the banking system and is intended as a back-up of short-term funds for

eligible institutions. In general, depository institutions are eligible for primary credit if they have a composite CAMELS rating of 1, 2, or 3 and are at least adequately capitalized.

Since primary credit can serve as a viable source of back-up, short-term funds, examiners should not automatically criticize the occasional use of primary credit. At the same time, over-reliance on primary credit borrowings or any one source of short-term contingency funds may indicate operational or financial difficulties. Institutions should ensure the use of primary credit facilities is accompanied by viable exit strategies.

Secondary credit is available to depository institutions that do not qualify for primary credit and is extended on a very short-term basis at a rate above the primary credit rate. This program entails a higher level of Reserve Bank administration and oversight than primary credit.

If a bank's borrowing becomes a regular occurrence, Federal Reserve Bank officials will review the purpose of the borrowing and encourage the bank to initiate a program to eliminate the need for such borrowings. Appropriate reasons for borrowing include preventing overnight overdrafts, loss of deposits or borrowed funds, unexpected loan demand, liquidity and cash flow needs, operational or computer problems, or a tightened federal funds market.

The Federal Reserve will not permit banks that are not viable to borrow at the discount window. Section 10B(b) of the Federal Reserve Act limits Reserve Bank advances to not more than 60 days in any 120-day period for undercapitalized institutions or institutions with a composite CAMELS rating of 5. This limit may be overridden only if the primary federal banking agency supervisor certifies the borrower's viability or if, following an examination of the borrower by the Federal Reserve, the Chairman of the Board certifies in writing to the Reserve Bank that the borrower is viable. These certifications may be renewed for additional 60-day periods.

### **Repurchase Agreements**

In a securities repurchase agreement (repo), an institution agrees to sell a security to a counterparty and simultaneously commits to repurchase the security at a mutually agreed upon date and price. In economic terms, a repurchase agreement is a form of secured borrowing. The amount borrowed against the securities generally is the full market value less a reasonable discount. Typically, the securities do not physically change locations or accounting ownership; instead, the selling bank's safekeeping agent makes entries to recognize the purchasing bank's interest in the securities.

From an accounting standpoint, repurchase agreements involving securities are either reported as secured borrowings, or sales and a forward repurchase commitment based on whether the selling institution maintains control over the transferred financial asset. Generally, if the repurchase agreement both entitles and obligates the selling bank to repurchase or redeem the transferred assets from the transferee (i.e., the purchaser) the selling bank should report the transaction as a secured borrowing if various other conditions outlined in Generally Accepted Accounting Principles have been met. If the selling bank does not maintain effective control of the transferred assets according to the repurchase agreement, the transaction would be reported as a sale of the securities and a forward repurchase commitment. For further information, see the Call Report Glossary entries pertaining to Repurchase/Resale Agreements and Transfers of Financial Assets.

Examiners may encounter two types of repurchase agreements: bilateral and tri-party. Bilateral repurchase agreements involve only two parties. In tri-party repurchase agreements, an agent is involved in matching counterparties, holding the collateral, and ensuring the transactions are executed properly.

The majority of repurchase agreements mature in three months or less. One-day transactions are known as overnight repos, while transactions longer in duration are referred to as term repos. Institutions typically use repurchase agreements as short-term, relatively low cost, funding mechanisms. The interest rate paid on a repurchase agreement depends on the type of underlying collateral. In general, the higher the credit quality of the collateral and the easier the security is to deliver and hold, the lower the repo rate. Supply and demand factors for the underlying collateral also influence the repo rate.

Properly administered repurchase agreements conducted within a comprehensive asset/liability management program are not normally subject to regulatory criticism. However, repos that are inadequately controlled can expose an institution to risk of loss and may be regarded as an unsuitable investment practice. Since the fair value of the underlying security may change during the term of the transaction, both parties to a repo may experience credit exposure. Although repo market participants normally limit credit exposures by maintaining a cushion between the amount lent and the value of the underlying collateral, and by keeping terms short to allow for redemption as necessary, it is critical to conduct a thorough credit review of repo counterparties prior to the initiation of transactions. The Policy Statement on Repurchase Agreements of Depository Institutions with Securities Dealers and Others, dated February 10, 1998, provides guidance on repurchase

agreements, associated policies and procedures, credit risk management practices, and collateral management practices.

A reverse repurchase agreement, which requires the buying institution to sell back the same asset purchased, is treated as a loan for Call Report purposes. If the reverse repurchase agreement does not require the institution to resell the same, or a substantially similar, security purchased, it is reported as a purchase of the securities and a commitment to sell securities.

Reverse repos can involve unique risks and complex accounting and recordkeeping challenges, and management should establish appropriate risk management policies and procedures. In particular, institutions should be cautious when relying on reverse repos that are secured with high-risk assets. The value of the underlying assets may decline significantly in a stress event, creating an undesirable amount of exposure.

### **Dollar Repurchase Agreements**

Dollar repurchase agreements, also known as dollar repos and dollar rolls, provide financial institutions with an alternative method of borrowing against securities owned. Unlike standard repurchase agreements, dollar repos require the buyer to return substantially similar, versus identical, securities to the seller. Dealers typically offer dollar roll financing to institutions as a means of covering short positions in particular securities. Short positions arise when a dealer sells securities that it does not currently own for forward delivery. To compensate for potential costs associated with failing on a delivery, dealers are willing to offer attractive financing rates in exchange for the use of the institution's securities in covering a short position. Savings associations, which are the primary participants among financial institutions in dollar roll transactions, typically use mortgage pass through securities as collateral for the transactions.

Supervisory authorities do not normally take exception to dollar repos if the transactions are conducted for legitimate purposes and the institution has instituted appropriate controls.

### **Bank Investment Contracts**

A bank investment contract (BIC) is a deposit contract between a bank and a customer that permits the customer to deposit funds over a period of time and obligates the bank to repay the amounts deposited plus interest at a guaranteed rate at the end of the contract term. Contract terms vary and may include maturities ranging from six months to ten years. Occasionally, BICs have been

structured as non-transferable liabilities (i.e., not saleable in a secondary market). Customers for BICs are often sponsors of employee benefit plans such as pension plans or deferred compensation plans.

Examiners should consider the volume, maturity, and cost of BIC funding in relation to the bank's other deposit and non-deposit funding sources. Examiners should also be aware of the terms and conditions of the BICs. A BIC may provide specific periods and conditions under which additional deposits or withdrawals can be made to or from such accounts. The bank's liquidity planning must reasonably estimate cash flows from BIC funding under different interest rate scenarios.

### **International Funding Sources**

International funding sources exist in various forms. The most common source of funds is the Eurodollar market. Eurodollar deposits are U.S. dollar-denominated deposits taken by a bank's overseas branch or its international banking facility. Reserve requirements and deposit insurance assessments do not apply to Eurodollar deposits. The interbank market is highly volatile, and management should analyze Eurodollar deposit activities within the same context as all other potentially volatile funding sources.

### **Commercial Paper**

Institutions can issue commercial paper to quickly raise funds from the capital markets. Commercial paper is generally a short-term, negotiable promissory note issued for short-term funding needs by a bank holding company, large commercial bank, or other large commercial business. Commercial paper usually matures in 270 days or less, is not collateralized, and is purchased by institutional investors.

Some commercial paper programs are backed by assets referred to as asset-backed commercial paper. Some programs also involve multi-seller conduits where a special-purpose entity is established to buy interests in pools of financial assets (from one or more sellers). Entities fund such purchases by selling commercial paper notes, primarily to institutional investors.

Institutions that provide liquidity lines or other forms of credit enhancement to their own or outside commercial paper programs face the risk that these facilities could be drawn upon during a crisis situation. Institutions should plan accordingly for such events and include such events in stress scenario analysis and contingency plans. In addition, management should address the bank's ability to



continue using commercial paper conduits as a funding source in the bank's contingency funding plan.

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## OFF-BALANCE SHEET ITEMS

Off-balance sheet items can be a source or use of funds.

### Loan Commitments

Loan commitments are common off-balance sheet items. Typical commitments include unfunded commercial, residential, and consumer loans; unfunded lines of credit for commercial and retail customers; and fee-paid, commercial letters of credit. Management should closely monitor the amount of unfunded commitments that require funding over various periods. Management should also estimate anticipated demands against unfunded commitments in its internal reporting and contingency planning. Examiners should consider the nature, volume, and anticipated use of the institution's loan commitments when assessing and rating the liquidity position.

### Derivatives

Financial institutions can use derivative instruments (financial contracts that generally obtain their value from underlying assets, interest rates, or financial indexes) to reduce business risks. However, like all financial instruments, derivatives contain risks that must be properly managed. For example, interest rate swaps typically involve the periodic net settlement of swap payments that can substantially affect an institution's cash flows. Additionally, derivative contracts may have initial margin requirements that require an institution to pledge cash or investment securities that reflect a specified percentage of the contract's notional value. Variation margin requirements (which may require daily or intra-day settlements to reflect changes in market value) can also affect an institution's cash flows and investment security levels. Banks engaging in derivative activities must understand and carefully manage the liquidity, interest rate, and price risks of these instruments.

### Other Contingent Liabilities

Legal risks can have a significant financial impact on institutions that may affect liquidity positions. Institutions should identify these contingencies when measuring and reporting liquidity risks as exposures become more certain.

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## LIQUIDITY RISK MITIGATION

There are many ways management can mitigate liquidity risk and control the institution's current and future liquidity positions within the risk tolerance targets established by the board. For managing routine and stressed liquidity needs, institutions should establish diversified funding sources and maintain a cushion of high-quality liquid assets. Management should use contingency funding plans that identify back-up funding sources and action steps to address more acute liquidity needs. Management should stress test various scenarios to identify risks that should be mitigated and addressed in the contingency funding plans.

### Diversified Funding Sources

An important component of liquidity management is the diversification of funding sources. Undue reliance on any one source of funding can have adverse consequences in a period of liquidity stress. In general, funding should be diversified across a range of retail sources and, if utilized, across a range of wholesale sources, consistent with the institution's sophistication and complexity. Institutions that rely primarily on retail deposit accounts would generally not be criticized for relying on one primary source, but alternative sources should be identified in formal contingency plans and periodically tested.

When evaluating funding sources, management should consider correlations between sources of funds and market conditions and have available a variety of short-, medium-, and long-term funding sources. The board is responsible for setting and clearly articulating a bank's risk tolerance in this area through policy guidelines and limits for funding diversification.

While the use of diversified funding sources can reduce funding concentration risks, the benefits of diversification are directly related to the cost and volatility of the funding sources. That is, an institution should tailor its diversification standards to the potential volatility of its funding sources and place less reliance on the more volatile funding sources. In particular, strategies that rely on volatile funding sources to fund significant growth in new business lines should be carefully considered. The potential for misjudging the level of risk in new strategies is high and could be compounded with the use of volatile funding sources.

When assessing the diversification of funding sources, important factors to consider include:

- Internal evaluations of risks associated with funding sources (e.g., stress tests and diversification limits) and whether or not the evaluations are reasonable and well documented,
- Potential curtailment of funding or significantly higher funding costs during periods of stress,
- Time required to access funding in stressed and normal periods,
- Sources and uses of funds during significant growth periods, and
- Available alternatives to volatile funding sources.

Maintaining market access is also an essential component of ensuring funding diversity. Market access is critical as it affects an institution's ability to raise new funds and to liquidate assets. Senior management should ensure that market access is actively managed, monitored, and tested by appropriate staff. Such efforts should be consistent with the institution's liquidity risk profile and sources of funding. For example, access to the capital markets is an important consideration for most large complex banks, whereas the availability of correspondent lines and other sources of wholesale funds are critical for community banks. Reputation risk plays a critical role in a bank's ability to access funds readily and at reasonable terms. For this reason, liquidity risk managers should be aware of any information, such as an announcement of a decline in earnings or a downgrade by a rating agency, that could affect perceptions of an institution's financial condition.

### The Role of Equity

Issuing new equity is often a relatively slow and costly way to raise funds and should not be viewed as an immediate or direct source of liquidity. However, to the extent that a strong capital position helps an institution quickly obtain additional debt and economically raise funds, issuing equity can be considered a liquidity facilitator.

### Cushion of Highly Liquid Assets

One of the most important components of an institution's ability to effectively respond to liquidity stress is the availability of unencumbered, highly liquid assets (i.e., assets free from legal, regulatory, or operational impediments). Unencumbered liquid assets can be sold or pledged to obtain funds under a range of stress scenarios. The quality of the assets is a critical consideration, as it significantly affects a bank's ability to sell or pledge the assets in times of stress.

When determining what type of assets to hold for contingent liquidity purposes, management should consider the following attributes:

- **Level of credit and market risk:** Assets with lower levels of credit and market risk tend to have higher liquidity profiles.
- **Correlation during stress events:** High-quality liquid assets should not be subject to significantly increased risk during stress events. For example, certain assets, such as specialty assets with small markets or assets from industries experiencing stress, are likely to be less liquid in times of liquidity events in the banking sector.
- **Ease and certainty of valuation:** Prices based on trades in sizeable and active markets tend to be more reliable, and an asset's liquidity increases if market participants are more likely to agree on its valuation. Formula-based pricing is less desirable than data from recent trades. If used, the pricing formula should be easy to calculate, based on active trades, and not depend heavily on assumptions or modeled prices. The inputs into the pricing formula should also be publicly available.

Institutions should be able to monetize their liquid assets through the sale of the assets or the use of secured borrowings. This generally means an institution's cushion of liquid assets should be concentrated in due from accounts, federal funds sold, and high-quality assets, such as U.S. Treasury securities or GSE bonds.

Occasionally, it may be appropriate to consider pledged assets as part of the highly liquid cushion, such as when a bank pledges Treasury notes as part of an unfunded line of credit. In other instances, it may be appropriate to consider an asset that has not been explicitly pledged as illiquid. For example, if an institution is required to deposit funds at a correspondent institution to facilitate operational services, it should exclude these funds from its liquidity reports, or denote them separately as unavailable.

The size of the institution's liquid asset cushion should be aligned with its risk tolerance and profile and supported by stress test results. Factors that may indicate a need to maintain a higher liquid asset buffer include:

- Easy customer access to alternative investments,
- Recent trends showing substantial reductions in large liability accounts,
- Significant volumes of volatile funding,
- High levels of assets with limited marketability (due to credit quality issues or other factors),
- Expectations of elevated draws on unused lines of credit or loan commitments,
- A concentration of credit to an industry with existing or anticipated financial problems,

- Close ties between deposit accounts and employers experiencing financial problems,
- A significant volume of assets are pledged to wholesale borrowings, and
- Impaired access to funds from capital markets.

## ← CONTINGENCY FUNDING

### Contingency Funding Plans

All financial institutions, regardless of size or complexity, should have a formal contingency funding plan (CFP) that clearly defines strategies for addressing liquidity shortfalls in emergency situations. The CFP should delineate policies to manage a range of stress environments, establish clear lines of responsibility, and articulate clear implementation and escalation procedures. It should be regularly tested and updated to ensure that it is operationally sound. Senior management should coordinate liquidity risk management plans with disaster, contingency, and business planning efforts, as well as with business line and risk management objectives, strategies, and tactics.

While a CFP should be tailored to the risk and complexity of the individual institution, at a minimum, all CFPs should:

- Establish a liquidity event-management framework (including points of contact and public relation plans),
- Establish a monitoring framework,
- Identify potential contingent funding events,
- Identify potential funding sources,
- Require stress testing, and
- Require periodic testing of the CFP framework.

### Contingent Funding Events

The goal of a CFP should be to identify risks from contingent funding events and establish an operational framework to deal with those risks. Contingent funding events are often managed based on their probability of occurrence and potential effect. CFPs should generally focus on events that, while relatively infrequent, could have a high-impact on the bank's operations. The plans should set a course of action to mitigate, manage, and control all significant contingent funding risks.

However, before management implements a framework to respond to potential stress events, it must first identify the events that may occur. Stress factors can be institution-specific or systemic and may involve one or more of the following:

- Deterioration in asset quality;
- Downgrades in credit ratings;
- Downgrades in PCA capital category;
- Deterioration in the liquidity management function;
- Widening of credit default spreads;
- Operating losses;
- Rapid growth;
- Inability to fund asset growth;
- Inability to renew or replace maturing funding liabilities;
- Price volatility or changes in the market value of various assets;
- Negative press coverage;
- Declining institution equity prices;
- Deterioration in economic conditions or market perceptions;
- Disruptions in the financial markets; and
- General or sector-specific market disruptions (e.g., payment systems or capital markets).

Stress events can also be caused by counterparties (both credit and non-credit exposures). For example, if a bank sells financial assets to correspondent banks for securitization and its primary correspondent exits the market, the bank may need to use a contingent funding source.

Management should identify institution-specific events that may impact on- and off-balance sheet fund flows given the specific balance-sheet structure, business lines, and organizational structure. For example, if the bank securitizes loans, the CFP should include a stress event where an institution loses access to the market, but must still honor its commitments to customers to extend loans.

The CFP should delineate various stages and severity levels of each contingent liquidity event. For example, asset quality can deteriorate incrementally and have various levels of severity, such as less than satisfactory, deficient, and critically deficient. The timing and severity levels identified should also address temporary, intermediate-term, and long-term disruptions. For example, a natural disaster may cause temporary disruptions to payment systems, while deficient asset quality may occur over a longer term. Institutions can then use the stages or severity levels identified to establish various stress test scenarios and early-warning indicators.

### Stress Testing Liquidity Risk Exposure

After identifying potential stress events, institutions should implement quantitative projections, such as stress tests, to assess the liquidity risk posed by the potential events. Stress testing helps an institution better understand the vulnerability of certain funding sources to various risks

and helps identify when and how alternative sources should be accessed. Stress testing also helps institutions identify methods for rapid and effective responses, guide crisis management planning, and determine how large of a liquidity buffer should be maintained. The magnitude and frequency of stress testing should be commensurate with the complexity of the financial institution and the level of its risk exposures.

Liquidity stress tests are typically based on existing cash-flow projections that are appropriately modified to reflect potential stress events (institution-specific or market-wide) across multiple time horizons. Management should use stress tests to identify and quantify potential risks and to analyze possible effects on the institution's cash flows, liquidity position, profitability, and solvency. For instance, during a crisis an institution's liquidity needs can quickly escalate while liquidity sources can decline (e.g., customers may withdraw uninsured deposits, or lines of credit may be reduced or canceled). Stress testing allows an institution to evaluate the possible impact of these events and plan accordingly.

Assumptions regarding the cash flows used in stress test scenarios should be documented and incorporate:

- Customer behaviors (early deposit withdrawals, renewal/run-off of loans, exercising options);
- Prepayments on loans and mortgage-backed securities;
- Seasonality (public-fund fluctuations, agricultural credits, construction lending); and
- Various time horizons.

Assumptions should incorporate both contractual and non-contractual behavioral cash flows, including the possibility of funds being withdrawn. Examples of non-contractual funding requirements that may occur during a financial crisis include supporting auction rate securities, money market funds, commercial paper programs, and structured investment vehicles. Assets may be taken on balance sheet from sponsored off-balance sheet vehicles, or institutions may be compelled to financially bolster shortfalls in money market funds or asset-backed paper that does not sell or roll due to market stress. While this financial support is not contractually required, institutions may determine that the negative press and reputation risks outweigh the costs of providing the financial support.

Stress testing should reasonably assess various stress levels and stages ranging from low- to severe-stress scenarios. To establish appropriate stress scenarios, management can use the different stages and severity levels that the institution assigned to stress events. For example, a low-stress scenario may include several events identified as low severity, while a severe stress scenario may combine

several high-severity events. A severe stress scenario may include severe declines in asset quality, financial condition, and PCA category.

Management's active involvement and support is critical to the effectiveness of the stress testing process. Stress test results should be discussed with the board, and if necessary, management should take remedial actions to limit the institution's exposures, build up a liquidity cushion, and/or adjust its liquidity profile to fit its risk tolerance. In some situations, institutions may need to adjust the bank's business strategy to mitigate a contingent funding exposure.

### **Potential Funding Sources**

Identification of potential funding sources for shortfalls resulting from stress scenarios is a key component of adequate contingency funding plans. Banks should identify alternative funding sources and ensure ready access to the funds. The most important and reliable funding source is a cushion of highly liquid assets. Other common contingent funding sources include the sale or securitization of assets, repurchase agreements, and borrowings through the Federal Reserve discount window or FHLB. However, in a stress event, many of these liquidity sources may become unavailable or cost prohibitive. Therefore, stress tests should assess the availability of contingent funding in stress scenarios.

Institutions that rely on unsecured borrowings for contingency funding should consider how borrowing capacity may be affected by an institution-specific or market-wide disruption. Institutions that rely upon secured funding sources for contingency funding should also consider whether they may be subject to higher margin or collateral requirements in certain stress scenarios. Higher margin or collateral requirements may be triggered by the deterioration in the institution's overall financial condition or in a specific portfolio.

Potential collateral values also should be subject to stress tests because devaluations or market uncertainties could reduce the amount of contingent funding available from a pledged asset. Similarly, stress tests should consider correlation risk when evaluating margin and collateral requirements. For example, if an institution relies on its loan portfolio for contingent liquidity, a stress test may involve the effects of poor asset quality. If loans previously securitized were of poor credit quality, the market value and collateral value of current and future loans originated by the bank could be significantly reduced.

## Monitoring Framework for Stress Events

Early identification of liquidity stress events is critical to implementing an effective response. The early recognition of potential events allows the institution to position itself into progressive states of readiness as an event evolves, while providing a framework to report or communicate within the institution and to outside parties. As a result, the CFP should identify early warning signs that are tailored to the institution's specific risk profile. The CFP should also establish a monitoring framework and responsibilities for monitoring identified risk factors.

Early warning indicators may be classified by management as early-stage, low-severity, or moderate-severity stress events and include factors such as:

- Decreased credit-line availability from correspondent institutions,
- Demands for collateral or higher collateral requirements from counterparties that provide credit to the institution,
- Cancellation of loan commitments or the non-renewal of maturing loans from counterparties that provide credit to the institution,
- Decreased availability of warehouse financing for mortgage banking operations,
- Increased trading of the institution's debt, or
- Unwillingness of counterparties or brokers to participate in unsecured or long-term transactions.

## Testing of Contingency Funding Plans

Institutions should periodically test and update the CFP to assess the plan's reliability under times of stress. Management should test contingent funding sources at least annually. Testing can include both drawing on a contingent borrowing line and operational testing. Operational testing should ensure that:

- Roles and responsibilities are up to date and appropriate,
- Legal and operational documents are current and appropriate,
- Cash and collateral can be moved where and when needed, and
- Contingent liquidity lines are available.

Management should periodically test the operational elements associated with accessing contingent-funding sources. The tests will help ensure funds are available when needed. For example, there may be extended time constraints for establishing lines with the Federal Reserve or Federal Home Loan Banks. Management should have lines set up in advance to ensure availability and should

consider the time required to pledge assets and draw on lines. However, management should be aware that testing does not guarantee funding sources will remain available within the same time frames or on the same terms during stress events.

In addition, institutions can benefit by employing operational CFP simulations to test communications, coordination, and decision making involving managers with different responsibilities, in different geographic locations, or at different operating subsidiaries. Simulations or tests run late in the day can highlight specific problems such as difficulty in selling assets or borrowing new funds at a time when the capital markets may be less active. The complexity of these tests can range from a simple communication and access test for a non-complex bank or can include multiple tests throughout the day to assess the timing of funds access.

## Liquidity Event Management Processes

In a contingent liquidity event, it is critical that management's response be timely, effective, and coordinated. Therefore, the CFP should provide for a dedicated crisis management team and administrative structure, including realistic action plans to execute the various elements of the plan for various levels of stress. The CFP should establish clear lines of authority and reporting by defining responsibilities and decision-making authority. The CFP should also address the need for more frequent communication and reporting among team members, the board of directors, and other affected parties. Such events may also require the daily computation of regular liquidity risk reports and supplemental information. The CFP should provide for more frequent and more detailed reporting as the stress situation intensifies.

The reputation of an institution is a critical asset when a liquidity crisis occurs. Institutions should maintain proactive plans (including public relations plans) to help preserve their reputations in periods of perceived stress. Failure to appropriately manage reputation risk could cause irreversible damage to an institution.

The liquidity event management framework should also address effective communication with key stakeholders, such as counterparties, credit-rating agencies, and customers. Smaller institutions that rarely interact with the media should have plans in place for how they will manage press inquiries. Institutions should train front-line employees on how to respond to customer questions to avoid potential customer panic.

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## INTERNAL CONTROLS

Banks should have adequate internal controls to ensure the integrity of their liquidity risk management process. An effective system of internal controls should promote effective operations, reliable financial and regulatory reporting, and compliance with relevant laws and institutional policies. Internal control systems should be designed to ensure that approval processes and board limits are followed and any exceptions are quickly reported to, and addressed by, senior management and the board. Deviations from board-approved processes and limits should receive prompt attention.

### Independent Reviews

Management should ensure that an independent party regularly evaluates the various components of the liquidity risk management process. The reviews should assess the extent to which liquidity risk management programs comply with supervisory guidance and industry practices, taking into account the complexity of the institution's liquidity risk profile. Institutions may achieve independence by assigning this responsibility to the audit function or other qualified individuals independent of the risk management process. The independent review process should report key issues requiring attention (including instances of noncompliance) to the ALCO and audit committee for prompt action.

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## EVALUATION OF LIQUIDITY

### Liquidity Component Review

Under the *Uniform Financial Institutions Rating System*, a financial institution's liquidity position should be evaluated based on the current level and prospective sources of liquidity compared to funding needs, as well as the adequacy of funds management practices relative to the institution's size, complexity, and risk profile.

In general, funds management practices should ensure that an institution is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner and to fulfill the legitimate banking needs of its community. Practices should reflect the ability of the institution to manage unplanned changes in funding sources, as well as react to changes in market conditions that affect the ability to quickly liquidate assets with minimal loss.

In addition, funds management practices should ensure that liquidity is not maintained at a high cost, or through

undue reliance on funding sources that may not be available in times of financial stress or adverse changes in market conditions.

Liquidity is rated based upon, but not limited to, an assessment of the following evaluation factors:

- The adequacy of liquidity sources compared to present and future needs and the ability of the institution to meet liquidity needs without adversely affecting its operations or condition.
- The availability of assets 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.
- The degree of reliance on short-term volatile funding sources (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.
- The capability of management to properly identify, measure, monitor, and control the institution's liquidity position, including the effectiveness of funds management strategies, liquidity policies, management information systems, and contingency funding plans.

### Rating the Liquidity Factor

A rating of 1 indicates strong liquidity levels and well-developed funds management practices. The institution has reliable access to sufficient sources of funds on favorable terms to meet present and anticipated liquidity needs.

A rating of 2 indicates satisfactory liquidity levels and funds management practices. The institution has access to sufficient sources of funds on acceptable terms to meet present and anticipated liquidity needs. Modest weaknesses may be evident in funds management practices.

A rating of 3 indicates liquidity levels or funds management practices in need of improvement. Institutions rated 3 may lack ready access to funds on reasonable terms or may evidence significant weaknesses in funds management practices.

A rating of 4 indicates deficient liquidity levels or inadequate funds management practices. Institutions rated 4 may not have or be able to obtain a sufficient volume of funds on reasonable terms to meet liquidity needs.

A rating of 5 indicates liquidity levels or funds management practices so critically deficient that the continued viability of the institution is threatened. Institutions rated 5 require immediate external financial assistance to meet maturing obligations or other liquidity needs.

### **UBPR Ratio Analysis**

The UBPR is an important analytical tool that shows the impact of management's decisions and economic conditions on a bank's earnings performance and balance sheet composition. Examiners should review UBPR ratios when analyzing the institution's liquidity position. UBPR ratios should be viewed in concert with the institution's internal liquidity ratios on a level and trend basis when assessing the liquidity position. Examiners should use caution when reviewing peer group ratios as the comparisons may not be meaningful due to the varying liquidity and funding needs of different institutions.

Some of the more common ratios that examiners should review include:

- Net Non-Core Funding Dependence,
- Net Loans and Leases to Deposits,
- Net Loans and Leases to Total Assets,
- Short-Term Assets to Short-Term Liabilities,
- Pledged Securities to Total Securities,
- Brokered Deposits to Deposits, and
- Core Deposits to Total Assets.

Examiners should recognize that UBPR liquidity ratio analysis might not provide an accurate picture of the institution's liquidity position. Examiners should consider the quality, stability, and unique characteristics of asset and liability accounts before analyzing liquidity ratios. In particular, loans, securities, deposits, and borrowings should be evaluated before using UBPR ratios to draw conclusions concerning the liquidity position.