

## *Liquidity Management*

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### **Introduction**

The core purpose of liquidity management for an FHLBank is being able to obtain funding when it is needed. Section 917.1 of the Finance Board regulations defines liquidity risk as the risk that an FHLBank will be unable to meet its financial obligations as they come due or meet the credit needs of its members and associates in a timely and cost-efficient manner. Section 917.3 also establishes guidelines requiring all FHLBanks to maintain a risk management policy that addresses standards regarding day-to-day operational liquidity needs and contingent liquidity needs, including: an enumeration of specific types of investments to be held for such liquidity purposes; and the methodology to be used for determining the FHLBank's operational and contingency liquidity needs.

In general, FHLBank System liquidity is high. The primary source of funding is the consolidated obligations (COs) issued by the Office of Finance. Each FHLBank has uninterrupted access to these CO bonds and other debt securities as a government sponsored enterprise (GSE), allowing it to raise sufficient funds to meet its potential liquidity needs. However, liquidity issues may arise when an FHLBank's access to capital markets is impeded due to a disaster or the inability of the Office of Finance to issue COs.

While FHLBank System liquidity is generally high, the increasingly complex funding of mortgage-related and option-embedded or structured assets can create liquidity management challenges for the FHLBanks. Such option-embedded assets and liabilities make it difficult for the FHLBanks to accurately estimate cash flows and the amount of cash needed to meet both operational liquidity needs (funds needed in the normal course of business) and contingent liquidity needs (funds needed for operational needs when access to capital markets is impeded). The increased use of global wholesale funds providers and the growth of assets, liabilities, and derivative financial instruments with uncertain maturities make it increasingly important for FHLBanks to properly manage their liquidity.

Traditionally, FHLBanks have relied upon domestic and global institutional investors. These wholesale sources of funds are generally highly stable and low cost. FHLBanks may also accept demand and time deposits from members; however, member deposits historically constitute an insignificant part of the FHLBank's total funding. FHLBanks successfully use market sources to diversify their funding bases among funds providers and across maturities. Unlike deposits, whose maturities are generally determined by the preferences of the member, funds in the capital markets can be accessed at a variety of tenors. The many choices among market funding alternatives have provided FHLBanks with greater flexibility in managing their cash flows and liquidity needs.

Reliance on market funding sources, however, has left FHLBanks more exposed to the price and credit sensitivities of major funds providers. As a general rule, institutional funds providers are more credit sensitive and will be less willing than members to

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provide funds to an FHLBank facing real or perceived financial difficulties. An FHLBank's ability to access the capital markets may also be adversely affected by outside events. For example, market exposure and accounting problems experienced by another GSE may “spill over” to the FHLBanks and adversely affect the FHLBank System’s ability to access funding at a reasonable cost.

Technological advancements intensify challenges for liquidity managers. Large sums of money can now move electronically from one account to another very rapidly. Evolving technology is changing how the FHLBanks obtain and disburse funds. Internet or website portals and evolving electronic funds transfer mechanisms are just a few of the products and services that an FHLBank should consider when assessing and managing liquidity.

In view of recent complexities in the FHLBanks’ balance sheets and rapid changes in the financial marketplace, the FHLBanks must establish an effective funds management function that is independent of trading activities. Funds management is the core of effective planning and financial management. It encompasses the management of the FHLBank's liquidity position and management of its assets and liabilities to provide adequate financial resources to meet anticipated funding demands. Effective liquidity planning includes the consideration of the effect that future events may have on funding requirements, as well as the probability of such events occurring.

All FHLBanks should also have contingency plans in case projections are incorrect. Effective contingency planning involves identifying minimum and maximum liquidity needs under various scenarios and weighing alternative courses of action designed to meet those needs.

### **Regulatory Environment**

The primary authorities governing liquidity management activities are set forth below. The discussion does not address the application of authorities other than the FHLBank Act and the regulations, interpretations and issuances of the Finance Board to the FHLBanks. The examiner should ensure that the application of such authorities to an FHLBank has been considered by the FHLBank and its legal counsel.

**1) *Rules and Regulations of the Federal Housing Finance Board***, which include the following parts and sections relevant to liquidity management:

Part 917 of the Finance Board regulation addresses powers and responsibilities of the FHLBank boards of directors and senior management. In particular, Section 917.3, Risk Management, is pertinent.

Part 965 of the Finance Board regulations sets forth sources of funds for business operations for which an FHLBank is authorized to incur liabilities, including COs,

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demand deposits, cash accounts, purchased Federal funds (Fed Funds) and repurchase agreements (Repos).

Part 965 also requires each FHLBank to hold liquidity reserves against members' deposits. In addition to these reserves, Section 932.8 requires that each FHLBank hold contingency liquidity in the amount sufficient to enable the institution to meet its liquidity needs, at a minimum to cover five business days of inability to access the consolidated obligation debt markets.

Section 966.9(b) requires each FHLBank president to certify that the FHLBank will remain in compliance with the liquidity requirements in Section 11(g) of the FHLBank Act and the Finance Board Financial Management Policy and will remain capable of making full and timely payment of all of its current obligations, including direct obligations, coming due during the next quarter.

- 2) ***Advisory Bulletins of the Federal Housing Finance Board*** that provide supervisory guidance relating to the topic of liquidity management activities are the following:

Advisory Bulletin 02-06, dated April 9, 2002, provides that the quarterly certification required to be filed by each FHLBank president pursuant to Section 966.9 (b)(1) of the Finance Board regulations should specify that the certificate is filed to comply Sections 932.8 and 965.3.

Advisory Bulletin 03-2, dated February 10, 2003 and Advisory Bulletin 02-3, dated February 13, 2002, which offer guidance on specific attributes to be considered by FHLBanks in the formulation of their business continuity plans, and the establishment of bilateral agreements with other FHLBanks.

Advisory Bulletin 05-05, dated May 18, 2005, provides guidance on the risk management responsibilities of the board of directors, senior management, and risk management function.

- 3) ***Issuance of the Board of Governors of the Federal Reserve System that address Intraday Liquidity Management and Payment System Risk Policy.***

In July 2006, the Board of Governors of the Federal Reserve System implemented changes in their daylight overdraft policy for GSEs and certain international organizations. The changes required these organizations to eliminate their daylight overdrafts at the Federal Reserve Banks relating to their interest and redemption payments and to pay a penalty fee if daylight overdrafts occur in their accounts as a result of their general corporate payment activity.

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### **FHLBank Environment**

Within the FHLBank system, liquidity management is a day-to-day activity. Cash management/treasury personnel generally have the responsibility for ensuring that the FHLBank has sufficient funds to meet its day-to-day obligations, commitments, and the financing needs of customers. This requires adequate forecasting of these needs and ensuring that the FHLBank not only has the financial capacity to raise funds, but also the balance sheet capacity to leverage capital and comply with the applicable regulatory requirements.

Close coordination with other key operating areas of the institution is required including:

- 1) Customer funding;
- 2) Acquired member assets;
- 3) Correspondent bank services;
- 4) Capital markets; and
- 5) Accounting.

The key processes associated with liquidity management are as follows:

- 1) Liquidity requirements are addressed in the FHLBank's risk management policy detailing guidelines for how risks to the institution's liquidity are measured, monitored, and controlled. The risk management policy must address: statutory requirements with respect to deposit reserves; maintenance and management of operational and contingency liquidity; and the FHLBank's ability to meet potential funding needs arising from credit demand, deposit withdrawals and debt redemption in a timely and cost-efficient manner.
- 2) Duties and responsibilities that pertain to liquidity management should be segregated between the key/critical functions of the FHLBank, such as capital markets, cash management/treasury, correspondent bank services, and accounting and management committees. Specific examples may include, but are not limited to, the following:
  - a) Specific capital markets personnel are authorized to execute investment transactions;
  - b) Cash management/treasury personnel are responsible for forecasting financing and liquidity needs and obtaining funding on a daily basis to satisfy those needs. Target balances have been established to meet start-of-day and end-of-day liquidity needs. Excess funds are usually invested in money market transactions;
  - c) Correspondent bank personnel are responsible for processing wire transactions;
  - d) Accounting personnel are responsible for posting transactions to the general ledger and reconciling the accounts;
  - e) Asset/liability management personnel provide reports to management that should reflect the institution's degree of compliance with liquidity requirements; and

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- f) Liquidity planning and funding is periodically reviewed with the applicable management committee(s).
- 3) The responsibility for monitoring the FHLBank's position with the Federal Reserve Bank is usually assigned to the FHLBank's cash management/treasury personnel. They should have inquiry access to the wire system allowing them to monitor large incoming/outgoing wire activity. In addition, the automated wire system should have software controls that establish internal dollar limits to reduce the potential for daylight overdrafts.
- 4) The FHLBank's investment policies should authorize specific individuals to execute investments, restrict investments to only highly-rated counterparties, and require the diversification of money market transactions, reducing concentrations with specific counterparties.
- 5) The FHLBank's credit personnel should monitor the credit quality and collateral of advance borrowers, and unsecured credit counterparties.
- 6) The FHLBank should establish agreements with other FHLBanks to serve as a surrogate for liquidity in times of need.
- 7) The following information should be periodically reported to the asset liability committee and the board of directors:
  - a) Liquidity position and compliance;
  - b) Regulatory liquidity and reserve position compliance; and
  - c) Projected asset and liability maturity gaps to assess whether liquidity targets in excess of policy requirements should be maintained.
- 8) Section 931.3 of the Finance Board regulations requires members to purchase capital stock of the FHLBank in accordance with the institution's capital plan. Requests for large capital redemptions require review by cash management/treasury personnel to ensure sufficient consolidated obligation capacity will be available to meet forecasted activity.
- 9) Credit lines should be established and agreements entered into with approved counterparties in order to permit the FHLBank to purchase Fed Funds or enter into Repos. The FHLBank's legal counsel should review the legal agreements, including master repurchase agreements, and be able to opine that the FHLBank's interests are adequately protected under them.
- 10) Duties, responsibilities, and liabilities of the respective parties to agreements among the FHLBank and its key/critical vendors and outside service providers should be addressed in such legal agreements. The FHLBank's legal counsel should review the

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relevant legal agreements and be able to opine that the FHLBank's interests are adequately protected. In addition, SAS 70 reviews should be obtained, or alternative methods performed to obtain assurances on the internal control structure of outside service providers that are utilized by the FHLBank.

- 11) Insurance should be obtained to mitigate the FHLBank's risk and exposure.
- 12) A business continuity plan should be established to ensure continuation of FHLBank's operations due to a disabling event. The plan should include the establishment and periodic testing of bilateral or "buddy bank" relationships with one or more other FHLBanks.

### **FHLBank Funding Sources**

FHLBanks rely heavily on liquidity generated on the liability side of the balance sheet. Generally, they have ready access to CO debt markets. By managing liabilities instead of assets, FHLBanks can tailor liabilities to fit their cash flow needs instead of apportioning asset types and amounts to a given liability base. Locking-in term funding can also reduce risk to an FHLBank's liquidity, especially if an FHLBank can extend the duration of its liability structure. By accessing wholesale funding sources, they also can obtain funds quickly and in large amounts instead of slowly accumulating demand or time deposits. FHLBanks also use derivatives as an effective interest rate risk management tool. By using derivatives, they can convert their fixed-rate asset and liabilities in to floating rate or convert floating-rate assets and liabilities into fixed-rate instruments. The use of derivatives can facilitate the management of interest rate risk as well as help reduce funding costs.

Below is the summary of the FHLBank's funding instruments:

#### ***1) FHLBank CO Debt Program***

Discount Note (DN) funding is the most economical way for FHLBanks to meet short-term or unanticipated demand for funds. Discount notes are offered into the market through the window, or through regularly scheduled competitive auctions. DNs are auctioned twice weekly, on Tuesdays and Thursdays, to the selling group members. After issuance, DNs can be traded in the secondary market through securities dealers and banks. OF has an Extended Hours Program that extends the trading day to 22 hours.

FHLBank CO bonds are issued in a wide variety of sizes, structures and maturities. All earn the highest ratings from both Moody's and S&P (Aaa/AAA). In addition, customized debt products tailored for specific investors/markets are actively considered, subject to the FHLBank System's funding requirements. COs are available in maturities ranging from less than one year to 30 years, with the majority

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of issues between one and five years. Issue sizes can range from under \$1 billion to \$7 billion, and individual bonds can be reopened to meet additional demand.

Global Bonds are known for their flexibility; all can be investor-customized with different structures, terms and currencies. The most common global structures are bullets, floaters (both callable and non-callable) and fixed-rate callable bonds, with maturities of 18 months through 5 years. Global Bonds are available in maturities ranging from 1 year to 30 years. Issue sizes can range from \$10 million to \$7 billion or more.

The TAP Issue Program was launched on July 6, 1999, as a refinement to the FHLBank bullet bond auction process. Rather than frequently bringing numerous small bullet issues of similar maturities to market, the TAP Issue Program aggregates the most common maturities (2-, 3-, 5-, and 7-year) by reopening them over a three-month period. As a result, these “on-the-run” issues grow to \$1 billion to \$3.5 billion in each cycle. TAP Issues generally remain open for three months, after which they are closed and a new series of TAP Issues is opened to replace them. Among other things, the TAP Issue Program has reduced the number of separate bullet bonds issued and provided enhanced funding diversification for the FHLBanks.

Because the FHLBank System runs a conservative matched-book of assets and liabilities, particularly for advances, and is an active user of swaps to reduce risk, there is a great deal of flexibility with the structures and terms of issues brought to market. Bullets and fixed-rate callables predominate, but the FHLBank System can place floaters, step-ups/downs, zeros, and many others, including range notes and amortizing prepayment-linked bonds. These option-embedded debt securities have improved the FHLBanks' funding costs, but have also created complexity in the funding structure. Nonetheless, the ability to issue option-embedded debt securities is an important interest rate risk management tool.

### **2) *Member Deposit Funding***

Deposit funding is supplied by the deposits an FHLBank receives from its members. These deposits represent a limited funding source, but are a relatively stable source of funds. Members' customers usually maintain transaction accounts that include demand deposit accounts (DDAs) and time certificates of deposit (CDs). The returns from investment alternatives may affect the amount of funds provided by members.

For example, if higher returns are available from alternative investments, an FHLBank's deposit funding may decline. On the other hand, a sudden economic downturn may adversely affect the returns from investment alternatives and could result in significant cash inflows if investors perceive FHLBanks as safe havens for their money during times of market turmoil. Generally, deposits as a funding source

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are insignificant and on an average, may not represent more than two percent of the FHLBanks' total funding.

### **3) *Other Borrowings***

The FHLBank may borrow Fed Funds from the interbank market. The Fed Funds market is the day-to-day unsecured lending of excess reserve funds between banks. Such lending is referred to as "Fed Funds sold" by the lending bank and "Fed Funds purchased" by the borrowing bank. If a bank has excess reserves, it can sell the reserves and record the sale as an asset. If an FHLBank needs funds to meet either its reserve requirements or other obligations, it can purchase the excess reserves of another bank. The primary Fed Funds market is overnight, but maturities may extend a few days or weeks. Fed Funds are not deposits. Credit risk exists for the seller; however, if an FHLBank experiences financial difficulties, it may find its ability to borrow in the Fed Funds market hampered or eliminated. Historically, FHLBanks have rarely used Fed Funds as a funding source.

### **4) *Assets as Liquidity Sources***

FHLBanks typically hold liquid assets to supplement liquidity from deposits and other liabilities. These assets can be quickly and easily converted to cash at a reasonable cost, or are timed to mature when the managers anticipate a need for additional liquidity. Also, liquid assets include those that can be pledged or used in a repurchase agreement. Money market investments are usually the most liquid assets of an FHLBank. They include overnight and term Fed Funds, certificate of deposits, and Bankers Acceptances. These are funds that normally can be withdrawn or transferred within one to two business days. However, a large money market investment portfolio may cause reputation risk for the FHLBank as it could be deemed as an arbitrage strategy for the purpose of profits.

An FHLBank's investment securities can provide liquidity in three ways: (1) the maturity of a security; (2) the sale of securities for cash; or (3) the use of securities as collateral in a repurchase agreement or other borrowing. For an investment security to be saleable, it must not be encumbered. A security that is severely depreciated, has a small face amount, is already pledged or encumbered, or of poor credit quality is not a good candidate for collateral.

In accordance with Financial Accounting Standard 115, "Accounting for Certain Investments in Debt and Equity Securities," investment securities are separated into three categories; trading, available-for-sale (AFS) and held-to-maturity (HTM). HTM securities can be pledged or used as collateral in a repurchase agreement and, in this manner, provide an FHLBank with a source of secondary liquidity. Because securities held for trading and available-for-sale are not subject to the "intent and



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ability" restrictions of HTM securities, the FHLBank can sell, pledge, or use these trading and AFS securities as collateral for liquidity.

### **5) *Other Off-Balance-Sheet Activities***

Off-balance sheet activities, which have become increasingly important in the management and analysis of liquidity, can either supply or use liquidity, depending on the transaction as well as the level of interest rates at the time. For example, an FHLBank enters into an interest rate swap agreement in which it pays a floating rate and receives a fixed rate. If the fixed rate is higher than the floating rate when the agreement commences, the FHLBank receives a payment for the difference between the two rates. If the floating rate subsequently becomes higher than the fixed rate, the FHLBank will be required to pay the difference between the two rates, and what was originally a cash inflow will become a cash outflow. Potential cash inflows and outflows from the derivative portfolio should be considered in determining an FHLBank's liquidity needs.

Loan commitments, such as fee-paid letters of credit used as backup lines, are traditional uses of funds that are off-balance-sheet. Commitments to purchase a security "when issued" are another example of off-balance sheet uses of funds. Management should be able to estimate the amount of unfunded commitments that will require funding over various time horizons. Liquidity managers should assess how these and other off-balance-sheet activities will affect the FHLBank's cash flows and liquidity.

### **Risks Associated with Liquidity Management**

The FHLBank's primary risks relating to liquidity operations are set forth below.

#### **1) *Lack of Sound Corporate Governance (Board of Directors and Senior Management Oversight)***

- a) Key risks and controls are not adequately identified, measured, monitored, and controlled.
- b) A sound risk management framework composed of policies and procedures, risk measurement and reporting systems, and independent oversight and control processes has not been developed and implemented.
- c) Senior management has not adequately analyzed new products or activities, taking into account pricing, processing, accounting, legal, risk measurement, audit, and technology considerations.
- d) Risk management, monitoring, and control functions are not sufficiently independent of the position-taking functions.
- e) Duties, responsibilities, and staff expertise, including segregation of operational and control functions, are not adequately defined.

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- f) Independent audit coverage and testing is limited; auditors are inexperienced or lack the technical expertise to test the control environment.

### **2) Operational Risk**

Although not exhaustive, the following provides a list of events or lack of actions that can result in increased operational risk:

- a) Inability of the FHLBank to meet its critical needs and those of its customers or to fulfill its legal obligations resulting from inaccurate estimates of funding needs and available sources of liquidity.
- b) Daily monitoring and future forecasting of the FHLBank's liquidity position and the critical needs of its customers are not performed.
- c) Credit lines and agreements have not been completed with applicable counterparties to access the Fed Funds and Repo markets.
- d) Daylight overdrafts are not monitored and minimized, resulting in the discontinuation of Federal Reserve Bank services.
- e) Funding commitments and available cash for funding are not reconciled.
- f) A business continuity plan, which includes the identification and periodic testing of bilateral agreements with one or more other FHLBanks, has not been adequately developed, communicated to key personnel, tested and kept current with the technical environment to ensure that all critical functions can recover in the event of a disabling event. An inadequate business continuity plan, or a plan that is inadequately tested may result in the following risks:
  - (1) The FHLBank relies on consolidated debt issuance as a source of primary funding to meet its financial obligations. The institution may be unable to issue debt due to a disabling event at the Office of Finance.
  - (2) The FHLBank relies on the Federal Reserve Bank and correspondent bank relationships to wire funds, process automated clearing house (ACH) transactions and settle securities transactions. The inability to send/receive wires, process ACH transactions and deliver/receive securities could result in the FHLBank's defaulting on its financial obligations.
  - (3) The FHLBank relies on the Federal Reserve Bank, correspondent bank and securities dealer relationships to obtain secondary funding. The institution may be unable to obtain access to the Fed Funds and Repo markets to obtain such funding.
  - (4) FHLBank management relies heavily on spreadsheets and electronic information obtained from various systems. In the event of a disabling event, FHLBank personnel may not be able to recreate and/or obtain the necessary information to manage the FHLBank's liquidity position.

Operational risk may also arise from the FHLBank's failure to manage liquidity in accordance with Finance Board regulations such as:

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- a) The FHLBank has not established the risk management policy required by Section 917.3 that includes each of the following elements:
  - (1) Standards for day-to-day operational liquidity needs and contingency liquidity needs;
  - (2) An enumeration of specific types of investments to be held for such liquidity purposes; and
  - (3) The methodology to be used for determining the operational and contingency liquidity needs.
  
- b) The FHLBank has not maintained liquidity reserves for deposits as required by Section 965.3 and has not held contingency liquidity as required by Section 932.8.
  
- c) The FHLBank has not provided the Finance Board with certification of compliance with applicable regulations required by Section 966.9(b).

An FHLBank's lack of compliance with regulations and supervisory guidance is indicative of poor corporate governance. When sufficiently severe, poor corporate governance could cause the rating agencies to downgrade the credit rating of the FHLBank System, thereby making the FHLBank System's debt securities less attractive to investors. Consequently, the FHLBank's funding cost advantage and uninterrupted access to capital markets could suffer.

Operational risk may also arise when management uses the FHLBank as an outlet for arbitrage activities for the sole purpose of profitable gains. For the purpose of liquidity management, the FHLBank may hold certain amounts of liquid assets such as investments in money market instruments, including overnight and term Fed Funds.

However, holding a large money market investment portfolio relative to the FHLBank's liquidity needs and/or engaging in active trading may be indicative of an arbitrage strategy. In such cases, the FHLBank issues discount notes and invest the proceeds in overnight Fed Funds or other short-term instruments in order to take advantage of the spread difference between Fed Funds and discount note rates. Such a strategy may cause reputation risk for the FHLBank.

### **3) *Credit Risk***

Credit events may occur when the FHLBank relies on the maturities of investments and advances to provide cash flow for future needs and obligations. The inability of customers and investment counterparties to meet their obligations to the FHLBank could compromise the institution's ability to meet its cash needs under certain circumstances. Management must periodically review the creditworthiness of

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counterparties and must be able to estimate potential credit losses. The potential losses should be considered in determining contingency liquidity needs.

### ***4) Financial Condition and Performance***

Off-balance-sheet instruments that an FHLBank uses to manage its interest rate risk may also adversely affect the level and adequacy of the institution's liquidity reserves and thereby its financial condition and performance. The cash flows of those instruments often are very sensitive to changes in rates, and if not properly managed, can result in unexpected funding requirements or other cash outflows during periods of volatile interest rates. In addition, the FHLBank's inability to profitably unwind its derivative portfolio in times of need due to adverse market conditions may increase pressure upon its liquidity reserves.

If the FHLBank relies heavily on the proceeds from the sales of its investment securities to meet the liquidity needs in times of emergency, the FHLBank may face serious liquidity inadequacy under adverse market conditions.

### **Specific Risk Controls Related to Liquidity Management**

Regardless of organizational structure, an FHLBank's risk management process should include systems to identify, measure, monitor, and control its liquidity exposures. Management should be able to accurately identify and quantify the primary sources of risk to an FHLBank's liquidity. To properly identify the sources, management should understand both existing risks and the risks associated with new business or legal initiatives. Management should always be alert for new sources of risk to the institution's liquidity at both the transaction and portfolio levels.

Key elements of an effective risk management process include adequate board of directors and senior management oversight; appropriate liquidity management policies and procedures; appropriate risk measurement methodology, monitoring, and reporting systems; adequate management information systems and internal controls; and an effective contingency funding plan.

#### ***1) Board of Directors and Senior Management Oversight***

The board of directors and senior management have the ultimate responsibility for the design, implementation, and monitoring of the FHLBank's liquidity management. Specific attributes of board and senior management oversight in the context of liquidity include establishing comprehensive liquidity management and anti-fraud policies; developing a thorough risk assessment process, and implementing sound internal controls, information systems, and business contingency plans.

The board of directors should:

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- a) Establish and guide the FHLBank's strategic direction and tolerance for risks to the institutions' liquidity.
- b) Select senior managers who will have the authority and responsibility to manage liquidity.
- c) Monitor the FHLBank's performance and overall adequacy of liquidity.
- d) Ensure that risks to liquidity are identified, measured, monitored, and controlled.
- e) Establish a liquidity management policy that must address:
  1. Operational liquidity (day-to-day operational liquidity requirements);
  2. Contingency liquidity (specific liquidity requirements in the event that the FHLBank cannot obtain access to the consolidated obligation debt markets);
  3. Regulatory liquidity (specific liquidity requirements in relation to the deposits received from its members); and
  4. The methodology to be used for determining the FHLBank's operational and contingency liquidity needs.

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

- a) Develop and implement procedures and practices that translate the board of director's goals, objectives, and risk tolerances into operating standards that are well understood by FHLBank personnel and consistent with the board's intent.
- b) Adhere to the lines of authority and responsibility that the board of directors has established for managing liquidity.
- c) Oversee the implementation and maintenance of management information and other systems that identify, measure, monitor, and control the risks to the FHLBank's liquidity.
- d) Establish effective internal controls over the liquidity management process.

### **2) *Measuring, Monitoring and Reporting Risk Exposures***

The FHLBank must establish an appropriate liquidity model to accurately identify and measure its liquidity exposure. In selecting the systems that are appropriate for the FHLBank, management should understand the nature and mix of the FHLBank's products and activities. FHLBanks that rely significantly on wholesale funding should have sophisticated measurement systems. In determining potential liquidity needs and risk management strategies, the estimate of losses from potential credit and market events should be considered.

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

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Senior management and the board of directors, or a committee thereof, should receive reports on the adequacy of the FHLBank's liquidity, including the level and trend of risks to the institution's liquidity, at least quarterly. If the exposure is high or if it is moderate and increasing, the reports should be more frequent. From these reports, senior management and the board should be able to determine how much risk the FHLBank is assuming, whether management is complying with risk limits, and whether management's strategies are consistent with the board's expressed risk tolerance.

### **3) *Contingency Funding Plans***

Section 917.1 of the Finance Board's regulations defines "contingency liquidity" to mean the sources of cash an FHLBank may use to meet its operational requirements when its access to the capital markets is impeded, which includes: (1) marketable assets with a maturity of one year or less; (2) self-liquidating assets with a maturity of seven days or less; (3) assets that are generally accepted as collateral in the repurchase agreement market; and (4) irrevocable lines of credit from financial institutions rated not lower than the second highest credit rating category by an NRSRO.

In addition to meeting the deposit liquidity requirements contained in Section 965.3 of this chapter, Section 932.8 requires each FHLBank to hold contingency liquidity in an amount sufficient to enable the FHLBank to meet its liquidity needs, which shall, at a minimum, cover five business days of inability to access the consolidated obligation debt markets. An asset that has been pledged under a Repo cannot be used to satisfy minimum liquidity requirements.

As part of a comprehensive liquidity management program, all FHLBanks should develop and maintain a contingency funding plan (CFP). A CFP is a cash flow projection and comprehensive funding plan that forecasts funding needs and funding sources under market scenarios including aggressive asset growth or rapid liability erosion. The CFP should represent management's best estimate of balance sheet changes that may result from a liquidity or credit event. The CFP can help manage day-to-day liquidity adequacy by demonstrating that the FHLBank can find sources of funds to cover its uses of funds in the event of a liquidity or credit event. A CFP helps ensure that an FHLBank can prudently and efficiently manage routine and extraordinary fluctuations in liquidity.

To reduce the risk of inadequate funding and liquidity, FHLBanks should: (1) maintain a sizable liquid asset portfolio; (2) monitor maturity and repricing gaps between assets and liabilities; and (3) gain an ability to estimate the cash flow impact of embedded options in the balance sheet.

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### **4) *Business Continuity and Recovery***

The FHLBank should have written procedures for operations at its designated hot-site. Back-up tapes should be stored off-site and be easily retrievable. If the automated wire system is not available at the hot-site, FedLine terminals, off-line codeword authorizations, and bilateral agreements with one or more FHLBanks may need to be used to effectuate the FHLBank's transaction requests. Each FHLBank must have at least one back-up system and must test it periodically to ascertain its reliability.

### **Examination Guidance**

A work program for Liquidity Management accompanies this narrative. What follows below are examples of attributes that should be considered by the examiner in completing the analyses required in the work program. In determining the extent of review and testing to be conducted in completing each analysis, the examiner should take into account his or her assessment of the quality and effectiveness of corporate governance, risk management policies, procedures, and practices, internal controls and audit coverage relating to liquidity management.

#### **1) *Organizational structure***

Evaluate the effectiveness of the functional organizational structure, including board of directors and management committees to determine whether the current structure is efficient and effective for the purpose of liquidity management. Specific examples to consider include, but are not limited to the following:

- a) Identification of functional department and reporting responsibilities;
- b) Identification of key personnel responsible for liquidity management activities and reporting lines;
- c) Identification of primary duties, responsibilities and technical expertise of personnel;
- d) Segregation of duties, ensuring that liquidity management responsibilities are segregated from lending, investment, funding, hedging derivatives, accounting, wire transfer and safekeeping activities;
- e) Cross-training of personnel;
- f) Coordination with other departments such as risk management, information technology, treasury, investment, cash management, accounting, and wire transfer;
- g) Identification of management and board of directors committees with the responsibility of monitoring risks to the FHLBank's liquidity ; and
- h) Identification of significant changes since the last examination and changes anticipated.

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**2) *Establishment of risk tolerances and development of key policies and oversight by the board of directors. Adequacy of senior management oversight and the risk management function.***

Assess risk tolerances and the development of key liquidity policies and procedures for liquidity management, as well as oversight by the board of directors. Evaluate the adequacy of senior management oversight over the liquidity management activities, which may include the following:

- a) The establishment of board and management committees to oversee liquidity management function;
- b) The development, review and approval of risk measurement methodology and risk management strategies;
- c) The development, adoption, and periodic review of the liquidity management policy that establishes:
  - 1. Sources of operational and contingency liquidity;
  - 2. Methodologies for measuring operational and contingency liquidity needs;
  - 3. Guidelines for periodic monitoring and reporting liquidity positions;
  - 4. Requirement for submission of monthly certification of compliance with regulations to the Finance Board;
  - 5. Internal control structure and parameters;
  - 6. Business continuity and recovery plans; and
  - 7. Guidelines for monitoring liquidity position and policy exception reporting.

**3) *Key FHLBank policies and procedures, which may include those relating to the following:***

- a) Departmental liquidity operating procedures;
- b) Risk management;
- c) Information security;
- d) Fraud prevention;
- e) Whistleblower provisions of SARBOX;
- f) Background and credit investigations;
- g) Business conduct and ethics; and
- h) Business continuity and recovery.

**4) *Risk assessment under Part 917 and internal control evaluation under SARBOX***

- a) Evaluate the effectiveness of the annual risk assessment under Part 917 that identifies the key risks arising from and controls established by the institution over liquidity management activities and includes quantitative and qualitative evaluations;
- b) Evaluate the effectiveness of evaluations conducted pursuant to SARBOX that



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- identify the key risks and controls pertaining to financial reporting and evaluate potential fraud, and procedures implemented to periodically attest to the adequacy of the control environment; and
- c) Assess corrective actions on control weaknesses identified by the annual risk assessments and evaluations conducted under SARBOX.

### **5) *Testing performed by external and internal auditors and outside consultants***

- a) Evaluate the adequacy of the scope and testing performed by external and internal auditors;
- b) Evaluate the adequacy of the scope and testing performed by outside consultants; and
- c) Assess the adequacy of tracking systems for monitoring implementation of corrective actions.

### **6) *Information technology and controls***

Identify and assess the automated and manual systems and applicable controls utilized by liquidity management activities for processing funding, measuring liquidity needs and available liquidity, including cash flow projection reports, and business continuity and recovery.

### **7) *Identification and evaluation of controls and significant changes to the activity or function.***

- a) Evaluate workflow and processes as well as controls, including the level and direction of risks to liquidity adequacy and quality of liquidity management;
- b) Evaluate any significant changes to liquidity management activities that have been implemented since the last examination or are being considered that may impact the FHLBank's risk profile such as management, systems, key personnel, product lines, funding, investment and derivative strategies, regulatory requirements and processing; and
- c) In coordination with the examiner or FHLBank analyst reviewing Financial Condition and Performance, evaluate the effect of the FHLBank's liquidity management upon the institution's financial condition and performance, including the adequacy of the institution's liquidity reserves relative to its risk exposures and regulatory requirements.

### **8) *Testing***

Conduct testing as appropriate. The scope of testing should be based on the preliminary review of governance, risk management, internal controls and audit coverage. Specific attributes to consider include, but are not limited to the following:

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- a) Validations of the appropriateness of assumptions and methodologies that underlie the liquidity model used to calculate operational and contingency liquidity needs.
- b) Validations of sources of funds to be available for contingency liquidity needs by reconciling management reports to general ledger.
- c) Validations of the accuracy of the FHLBank's cash flow projections, including maturity gap, repricing gap, and option gap reports.
- d) Verification of records of periodic testing of business contingency and recovery plans.
- e) Verifications of contingency liquidity agreements with other FHLBanks and verify that the effectiveness of the agreements are tested periodically.
- f) Verifications of credit lines with other financial institutions for the purpose of meeting liquidity needs in case of emergency.
- g) Validations of FHLBank adherence to regulations and the risk management policy. Obtain recent general ledger and subsidiary system reports, as well as spreadsheets/databases, and verify compliance with the FHLBank's contingency, operational and regulatory liquidity policies and the requirements of Sections 965.3 and 932.8 of the Finance Board regulations. Verify that securities that have been pledged under a Repo are excluded from the calculation utilized to satisfy contingency liquidity requirements.
- h) Verifications of the FHLBank's liquidity status and compliance with its liquidity policies and regulatory requirements are periodically reported to management and board of directors committees. Also, verify that the management's quarterly liquidity certification report has been timely filed with the Finance Board.
- i) Verifications of agreements that are in place with Fed Funds counterparties and/or securities dealers for alternative sources of liquidity, and at least annually, the FHLBank purchases Fed Funds and/or borrow into Repos.
- j) Evaluations of the process for receiving information from key systems in order to monitor the FHLBank's liquidity position and needs through discussions with examiners and management. Examples include:
  - 1. Wire system, such as large incoming, outgoing and late wires;
  - 2. On-going monitoring of the target balance maintained at the Federal Reserve Bank;
  - 3. Daylight overdraft notices received from the Federal Reserve Bank;
  - 4. Automated clearing house transactions, such as large incoming and outgoing transactions;
  - 5. Safekeeping;
  - 6. Member deposit overdrafts;
  - 7. Acquired member assets, such as large paydowns and funding;
  - 8. Office of Finance reports utilized to monitor bond activity;
  - 9. Trading activity;
  - 10. Advances, such as large advances, paydowns and maturities;
  - 11. Outstanding loan commitments and letters of credit; and

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12. General ledger reports.

- k) Reviews of the most recent deposit overdraft report and daylight overdraft notifications received from the Federal Reserve Bank. Review with line management the situations that caused the customer deposit and/or daylight overdraft and the corrective action implemented. Evaluate whether the situations were isolated and whether they were the result of weaknesses in the design of the internal control environment or noncompliance with existing policies and procedures.

### ***9) Assessment of Risks***

Summarize the results of the activity or function examined in a separate memorandum. The memorandum must articulate the risks and the management of those risks. It should also clearly and specifically describe the basis and analysis for the assessment. The memorandum should discuss the type(s) of risk (market, credit, operational); the level of the risk (low, moderate, high); the direction of the risk (stable, decreasing, increasing); and the quality of risk management (strong, adequate, weak).

The memorandum should also discuss effects of the FHLBank's liquidity management practices upon its financial condition and performance, including the institution's level of liquidity reserves relative to its risk exposures and its compliance with regulatory liquidity requirements. A memorandum must be prepared irrespective of whether the examiner's assessment is positive or negative.

### ***10) Items requiring follow-up at the next on-site visitation***

Identify key issues that have been communicated to management (written or oral) that require follow-up during the next on-site visitation.