Funds Management

Funds management encompasses both the treasury management and asset/liability management functions. The goal of funds management is to achieve an association's targeted risk and return objectives through the effective management of the association's resources. Funds management is the management of an association's balance sheet mix and pricing of assets and liabilities.

Funds management encompasses the coordination and integration of a broad range of functions, policies, and decisions that influence the association's net interest earnings, net interest margin, and net portfolio value, including the following:

- Asset and liability composition
- Loan and deposit pricing
- Funds transfer pricing policies
- Capital structure and capital financing
- Asset securitizations
- Hedging activities.

LINKS

Program

An effective funds management process should increase the likelihood that an association will achieve its financial objectives. Successful funds management programs typically have four elements:

- Management that understands how to structure the balance sheet and price deposits, loans, and other products to achieve risk and return objectives.
- A clearly defined funds management process that includes sound policies, procedures, and controls.
- Effective information systems that provide the information needed to make sound funds management decisions.
- An effective performance measurement system.

The sophistication of an association's funds management process and systems should be appropriate to the size and complexity of the association.

In assessing an association's funds management, you should:

- Review the policies, procedure, and controls governing the funds management process.
- Determine whether the policies, procedures, and controls are sufficient given the size and complexity of the association.
- Determine whether the association's information/analytical systems are adequate given the size and complexity of the association.
- Review the reports to the board that summarize major decisions and transactions.
- Determine compliance with policies, procedures, and controls governing funds management.

SETTING FINANCIAL GOADS: THE RISK/RETURN PROFILE

The Risk/Return Tradeoff

The board of directors and senior management should define the association's overall financial objectives with clearly defined risk and return measures.

An association usually states its overall financial objectives regarding return with accounting-based earnings and profitability measures or with economic or market value-based performance measures. In specifying these goals, a number of specific measurement gauges may be appropriate, either individually or in combination.

The most common accounting-based measures are:

- Return on assets
- Return on equity
- Net Interest Margin.

The economic/market value-based measures that associations commonly use are:

- Net portfolio value
- Market value capitalization
- Total return.

Associations sometimes seek to achieve short- term earnings and profitability targets by accepting greater risk and in the process compromise long-term earnings and market value objectives.

THE FUNDS MANAGEMENT DECISION-MAKING PROCESS

You should review the funds management policies and procedures.

- Are the policy limits reasonable given the association's financial condition?
- Is management complying with the board-approved policies?
- Are periodic reports to the board adequate?

An integrated, funds management process is important. A piecemeal approach to funds management, or a structure in which one or more of the financial functions are autonomous, will complicate the attainment of a common overall risk/return profile. The funds management process in small associations may be informal, while in larger associations the process may be very formal.

FUNDS MANAGEMENT FUNCTIONS

Presented below are the functions of the typical funds management process:

- Determine financial objectives and set policy for each of the financial functions.
- Provide periodic reports to the board concerning funds management.
- Periodically review the funds management policies with the board.
- Oversee funding activities.
- Coordinate asset and liability product pricing.
- Evaluate proposed strategies and transactions through sound methodology, including simulation and scenario analysis.
- Oversee investment portfolio management activities.
- Monitor the economic and interest-rate environment, including local economic conditions, prepayment trends, and volatility.
- Identify instruments that the board of directors authorized for use to manage the association's risk exposures.
- Oversee funding and capital financing activities, including debt and equity issuance, and dividend policies.

PROCEDURES AND CONTROLS

If the funds management process is not functioning properly, then you should focus on the related operating procedures and internal controls. Typically in a large association, extensive documented procedures are necessary to accommodate a large volume of data flow from numerous functional areas to the manager responsible for funds management. In smaller associations such complex procedures are not necessary.

Internal Procedures

Associations should document and follow procedures that allow for the smooth and timely flow of data to the funds management function. Flow charts documenting the physical flow of data to and from all departments are usually very informative. Other procedures may be necessary to accommodate the funds management function at certain associations.

Internal Control

In small associations, the lack of adequate internal controls may be more of a concern because one individual will often perform multiple functions. For example, the CFO may direct funds management, but may also execute transactions, oversee the disbursement of cash, and authorize the related accounting entries. Associations should segregate these duties to the extent possible to ensure adequate internal control.

You should verify that internal controls are adequate in the following areas:

- Transaction authorizations – both internal (officers authorized to transact business) and external (approved dealers).
- Position and transaction limits, regulatory requirements or limits, and other guidelines.

REFERENCES

Code of Federal Regulations (12 CFR)

§ 563.172	Financial Derivatives
§ 563.176	Interest Rate Risk Management Procedures

Office of Thrift Supervision Bulletins

RB 3a-1	Policy Statement on Growth for Savings Associations
TB 13a	Management of Interest Rate Risk, Investment Securities, and Derivatives Activities

TB 13a-2	Structured Advances

FFIEC Policy Statements

Supervisory Policy Statement on Investment Securities and End-User Derivatives Activities

Financial Accounting Standards Board (FASB)

No. 107	Disclosures About Fair Value of Financial Instruments
No. 115	Accounting for Certain Investments in Debt and Equity Securities
No. 133	Accounting for Derivative Instruments and Hedging Activities

Other References

Standard & Poor's, Inc. Credit Review

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Funds Management

Program

Examination Objectives

Ascertain whether the institution has sufficient funds management policies, procedures, and controls.

Verify that management uses appropriate instruments to manage the institution's risk/return profile.

Examination Procedures

Level I

		Wkp. Ref.
1.	Review scoping materials applicable to funds management. Due to the nature of the funds management review, consult and coordinate with the examiner(s) assigned to review interest rate risk, cash flow and liquidity management, investment management, and related areas. Discuss the scope of the proposed review with the examiner in charge if needed.	
2.	Review the previous report of examination and all funds management-related exceptions noted and determine if management has taken appropriate corrective action.	
3.	Identify the institution's return objectives and risk constraints.	
4.	Review and evaluate trends in the institution's return on equity, return on assets, and net interest margin. Review the interest rate risk exposure report to evaluate trends in net portfolio value.	

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5. Review the institution's policies, procedures, and controls regarding funds management. Determine whether objectives are reasonable, and whether risk constraints are prudent given the association's capital and earnings characteristics. Determine whether written policies, procedures, and controls are adequate.

6. Review applicable board or committee minutes and reports.

7. Determine whether the board of directors and management have a comprehensive funds management process and adequately performs the funds management functions.

8. Evaluate senior management's depth of understanding of the funds management process.

9. Study the flow of data from the functional areas. Review any assumptions the association uses.

10. Review output reports from any analytical models used in funds management. Determine whether they are adequate to fulfill the needs of the funds management function.

11. Determine whether the institution relies excessively on outside vendors or consultants for financial modeling.

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12. Review the execution and related documentation of the association's strategies. If there are procedural or control concerns, expand scope to include Level II procedures.

13. Determine compliance with board-approved funds management policies.

14. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from performance of Level I procedures.

LEVEL II

1. Review related internal procedures and controls in detail. Verify the institution follows all procedures and controls.

2. Determine whether any inaccuracies in or misuse of data or assumptions are contributing to inappropriate or poorly executed funds management decisions.

3. Review the assumptions used in any financial modeling systems. Determine whether the models are appropriate given the association's size and complexity. Perform on-site review of vendor or consultant models, if necessary.

4. Recommend changes in structure, functions, and other aspects of the funds management process, if necessary.

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5. Ensure that your review meets the Objectives of this Handbook Section. State your findings and recommendations on the appropriate work papers and report pages.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

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Reviewed By:	
Docket #:	

Cash Flow and Liquidity Management

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

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

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

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

LINKS

Program

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

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

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

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

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

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

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

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

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

SOURCES OF LIQUIDITY

Liquidity Assets

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

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

Cash and Deposits with Other Institutions

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

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

Money Market Instruments and Securities

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

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

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

Securitizations

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

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

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

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

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

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

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

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

Mortgage Loans

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

Pledged Assets

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

Liquidity Liabilities

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

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

Retail Deposits

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

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

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

Wholesale Funding

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

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

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

- Review borrowing contracts.

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

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

- Review stress tests.

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

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

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

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

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

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

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

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

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

Securities Sold Under Repurchase Agreements

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

Dollar Rolls

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

Federal Home Loan Bank (FHLB) Advances

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

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

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

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

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

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

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

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

Lines of Credit

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

Federal Reserve Primary and Secondary Credit

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

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

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

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

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

Federal Funds Purchased

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

Treasury Tax and Loan Funds (TT&L)

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

Brokered Deposits and Other Rate Sensitive Deposits

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

Eurodollar Time Deposits

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

MEASURING LIQUIDITY

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

Financial Ratio Analysis

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

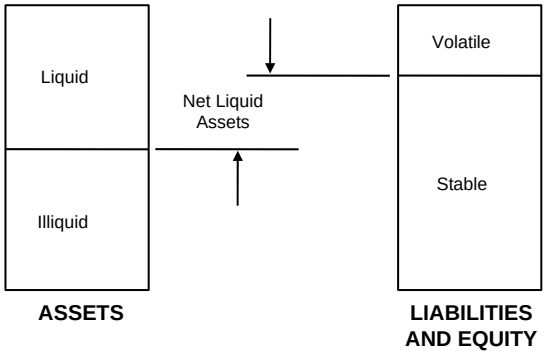
- Loans to deposits.
- Liquid assets to total assets.
- Volatile liabilities to total assets.
- Liquid assets to volatile liabilities.
- Net liquid assets to total assets.
- Unpledged eligible collateral to total assets.
- Net unused FHLB borrowing capacity to total assets.
- Unpledged collateral to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

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

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

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

Figure 1. Static Balance Sheet Model



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

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

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

Liquidity Gap Analysis

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

Table 1. Liquidity Gap Schedule

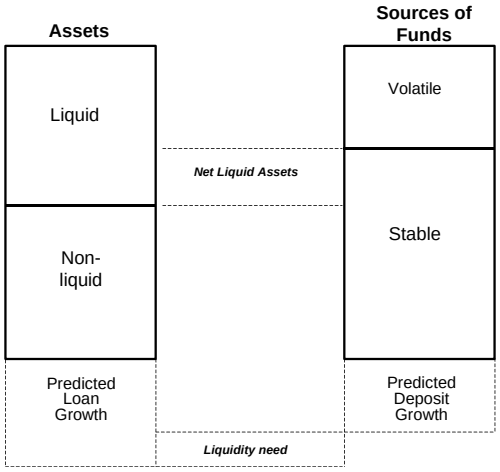
	Less than 10 days	Over 10 days but less than 3 months	Over 3 months but less 6 months	Over 6 months but less than one year	1 to 5 years	Over 5 years and capital	Total
Assets	10	10	10	5	65	0	100
Liabilities & Equity	50	30	15	0	0	5	100
Net outflow (assets minus liabilities)	(40)	(20)	(5)	5	65	(5)	0
Cumulative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

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

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

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

Figure 2. Projected Balance Sheet Model



Liquidity/Cash Flow Forecasting

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

A sample forecast is presented in Table 2.

LIQUIDITY MANAGEMENT

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

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

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

Table 2. Cash Flow Forecast

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

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

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

Board and Senior Management Oversight

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

Board of Directors

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

Senior Management

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

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

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

Policies and Procedures

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

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

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

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

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

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

  — Minimum ratio of liquid assets to total assets.

  — Maximum overnight borrowings to total assets.

  — Maximum ratio of FHLB advances to total assets.

  — Maximum ratio of brokered deposits to total assets.

  — Maximum ratio of total wholesale borrowings to total assets.

  — Maximum ratio of pledged assets to total assets.

  — Maximum ratio of loans to deposits.

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

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

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

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

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

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

Management Information Systems

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

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

Measuring and Monitoring Liquidity

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

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

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

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

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

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

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

Contingency Planning

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

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

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

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

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

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

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

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

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

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

Managing Access to Funding Sources

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

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

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

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

Liquidity Support Between Affiliates

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

Liquidity Risk of the Holding Company

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

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

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

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

SUPERVISORY CONCERNS

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

Early Warning Signals

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

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

Mortgage Banking and Loan Sale Activities

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

Federal Home Loan Bank Membership and Liquidity

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

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

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

Troubled Associations

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

Brokered Deposits

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

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

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

Limitations on Interbank Liabilities

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

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

REFERENCES

Statutes

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

Code of Federal Regulations (12 CFR)

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

Office of Thrift Supervision Bulletins

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

Interagency Guidance

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

Statement of Financial Accounting Standards

SFAS No. 115	Accounting for Certain Debt & Equity Securities

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Liquidity Management

Program

Examination Objectives

To determine the adequacy and effectiveness of the association's liquidity policies, liquidity management strategies, and contingency funding plans.

To determine management's ability to measure, monitor, and control the association's liquidity position.

To determine if the association's officers and employees are in compliance with established policies and procedures regarding liquidity management.

To determine the adequacy of the association's liquidity.

To determine the availability of assets readily convertible to cash without undue loss.

To determine access to money markets and other sources of funding.

To determine diversification of funding sources.

To determine reliance on short-term, volatile sources of funds, including borrowings and brokered deposits.

To determine the trend and stability of deposits.

To summarize findings and to initiate corrective action as needed.

Examination Procedures

Level I

WKP. REF.

1. Review scoping materials applicable to this program. Review liquidity and funding reports, cash flow forecasts, and new borrowing contracts and indentures. Review liquidity ratios.

Exam Date:	
Prepared By:	
Reviewed By:	
Docket #:	

WKP. REF.

2. Determine if the savings association corrected previously identified liquidity-related problems or weaknesses. Review:

   - Prior examination report comments and exceptions.
   - Independent audit exceptions.
   - Any enforcement or supervisory actions and directives.

3. Obtain and review the adequacy of written policies, procedures, business strategies, and contingency plans governing liquidity management.

4. Determine if the association's officers and employees are operating in compliance with established policies and procedures regarding liquidity management.

5. Review the association's internal reports applicable to liquidity management. Determine whether the reports provide the information needed to effectively measure and control the association's liquidity position.

6. Determine the adequacy of liquidity in relation to current and expected cash flow needs:

   - Measure the availability of assets readily convertible to cash without undue loss.
   - Determine the level of access to, and diversification of, funding sources.
   - Determine the degree of reliance on short-term, volatile sources of funds, including wholesale borrowings and brokered deposits.
   - Determine the ability of the association to fund outstanding commitments.

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WKP. REF.

- Determine the degree of reliance on securitizations.

7. Review the level of the association's dependence on Federal Home Loan Bank (FHLB) borrowings and determine the amount of its unused borrowing capacity with the FHLB. Determine the amount of unpledged, eligible collateral that is available to secure FHLB borrowing.

8. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from performance of Level I procedures.

LEVEL II

1. Review the contractual terms of borrowing contracts and indentures to assess any liquidity implications. Determine whether the contracts and indentures contain options and other option-like features that could have adverse liquidity implications.

2. Determine the trend and stability of deposits.

3. Determine the ability of the association to securitize and sell certain pools of assets.

4. Review the adequacy of the association's pipeline report for fixed-rate commitments and assess the adequacy of liquidity.

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WKP. REF.

5. Determine the association's contingency plans for short-, intermediate-, and long-term liquidity needs. Review wehther the association has adequate diversification in its potential sources of funds it may use.

6. Ensure that your review meets the Objectives of this Handbook Section. Present on the appropriate work papers and report pages your findings, conclusions, and recommendations for corrective measures.

LEVEL III

1. Discuss with the EIC additional procedures that you are to do when work in Level II is insufficient to draw conclusions on the adequacy of liquidity management performance.

2. Estimate the amount of cash that the association could raise by selling unpledged marketable securities. Estimate the unrealized gain or loss on those securities as a percentage of earnings and capital.

3. Review cash budget projections for the next year under assumptions of stable, declining, and increasing interest rates.

4. Estimate the effect of a ten percent deposit run on the association. Estimate the effect of the loss of access to the repurchase and dollar roll markets.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

Exam Date:	
Prepared By:	
Reviewed By:	
Docket #:	

Investment Securities

Savings associations must conduct their investment activities prudently and within the bounds of a clear and well-reasoned investment policy. Associations should have diversified portfolios that achieve an appropriate balance between risk and return. In addition, associations should establish appropriate risk management systems and controls to monitor and control investment portfolio activity and performance.

This section outlines the following areas:

- Role of the investment portfolio
- Permissible investments
- The investment process
- Investment risks
- TB 13a requirements and guidance
- Use of investment consultants
- Reporting and accounting for securities
- Collateralized Mortgage Obligation (CMO) issuances

LINKS

- Program
- Questionnaire
- Appendix A
- Appendix B
- Appendix C

In addition, this section has three appendices that cover the following areas:

Appendix A – Total Return Analysis

Appendix B – Money Market, Fixed-Income Market, and Equity Market Securities

Appendix C – Mortgage-Related Securities

Role of the Investment Portfolio

A savings association's investment portfolio serves as a source of income and liquidity, as well as a tool for asset/liability management. At many associations, the primary influences of loan demand and

liquidity needs determine the percentage of assets allocated to the investment portfolio. When loan demand is weak, the association deploys excess cash inflows in the investment account, and when loan demand is strong, the association draws down the investment account.

Since savings associations can change the composition of an investment portfolio with relative ease, many savings associations also use the investment portfolio to adjust their overall interest rate risk exposure. Similarly, some associations use the investment portfolio to manage diversification, asset quality, and risk-based capital levels.

PERMISSIBLE INVESTMENTS

Section 5 of the Home Owners' Loan Act (HOLA) outlines permissible investments for federal savings associations. Applicable OTS regulations include those in Part 560, Lending and Investment.

Subject to certain restrictions and limitations, the following types of investments are permissible investments for savings associations:

- Bankers' bank stock
- Business development credit corporations
- Commercial paper
- Corporate debt securities
- Community development equity investments
- Deposits in insured depository institutions
- U.S. Treasury securities
- Securities and instruments issued by U.S. Government-sponsored enterprises
- Foreign assistance investments
- HUD-insured or guaranteed investments
- Liquidity investments
- Mortgage-backed securities
- National Housing Partnerships Corporation and related partnerships and joint ventures
- Open-end management investment companies registered with the SEC

- Small business investment companies
- Small business-related securities
- State and local government obligations
- State and local housing
- State housing corporations.

See Appendices B, Money Market, Fixed-Income Market, and Equity Market Securities; and C, Mortgage-Related Securities, for information on specific types of investments.

THE INVESTMENT PROCESS

A sound investment program results from clear policies and objectives, and a sound investment process. The savings association should begin the investment process by determining its objectives for return requirements and risk tolerance. Management should have a clear understanding of how much return they expect the investment portfolio to generate and how much risk they can tolerate. Management should determine risk and return objectives in the context of the various investment constraints faced by the savings association, including those that restrict the list of permissible investments. The association's investment objectives and constraints provide the foundation for developing sound investment policies.

Investment Objectives

The savings association should clearly state portfolio objectives. The objectives should focus on the trade-off between risk and return. In formulating risk and return objectives, a savings association should consider the following constraints:

- Liquidity
- Interest rate risk
- Investment horizon
- Taxes
- Laws and regulations
- Other needs.

The investment objectives should be internally consistent and supportive of other efforts such as the interest rate risk policy, funds management, capital plan, and profit plan. The investment policy should fit into the association's overall direction as described in the business plan.

INVESTMENT RISKS

Investment Risk Versus Portfolio Risk

While management should understand the risks associated with individual securities, the decision of whether to buy a security should not rest on the risk of a security alone. Management should evaluate how the addition of the security to the portfolio affects the overall risk and return of the portfolio. The addition of a risky security to a portfolio can either raise or lower portfolio risk depending on the characteristics of the security and the portfolio.

Management should have a clear understanding of how changes in the composition of the investment portfolio affect the risk of the investment portfolio and the overall risk of the savings association. In a sense, the investment portfolio is a portfolio within a larger portfolio that includes all the assets, liabilities, and off-balance sheet contracts of the savings association. The overall risk of the savings association should be the primary consideration of management.

All investments, even U.S. Treasury securities, carry some elements of risk. The primary risks associated with investments are:

- Market risk (including interest rate risk)
- Credit risk
- Prepayment risk
- Liquidity risk
- Operational risk.

Market Risk

We define market risk as the potential that the market price of a security will fall due to changes in interest rates, exchange rates, commodity prices, or other market or political conditions.

A primary market risk faced by investors in fixed income securities is interest rate risk. Simply put, interest rate risk is the risk that the price of a security will change when interest rates rise or fall. Almost all fixed income securities decline in price when interest rates rise.

A savings association can control the degree of interest rate risk in its investment portfolio by managing the weighted average maturity of the securities in its portfolio. In general, the longer the weighted average maturity of a portfolio, the greater the interest rate risk. Similarly, a savings association can also

control interest rate risk exposure by managing the duration of the portfolio. Duration is a more precise measure of the interest rate sensitivity of a security or a portfolio of securities than weighted average maturity. Duration is a measure of the average time required to receive all the cash flows (interest and principal) from a security or a portfolio of securities. The higher a portfolio's duration, the greater the losses when interest rates rise. In general, bonds with longer maturities and higher durations carry more risk. For more information on interest rate risk, see Section 650.

Credit Risk

Credit risk is the risk that an issuer may default (fail to pay) on principal or interest payments. Savings associations can manage the credit risk of an investment portfolio by using the following techniques:

- Portfolio diversification – investing in a variety of securities with differing credit risks.
- Investment selection – managing the quality of securities in the portfolio.

Savings associations can assess the overall quality of individual bonds by analyzing the financial condition of the issuer and other related factors. Such factors include the quality of management, competitive conditions in the industry, economic conditions, and so forth.

Many investors rely on credit rating agencies to measure the quality of corporate and municipal bonds. The most widely used bond rating agencies are Standard & Poor's Ratings Services and Moody's Investors Service.

Savings associations may only invest in investment grade bonds. Investment grade bonds are those in one of the four highest rating categories by a nationally recognized investment rating service such as Standard & Poor's and Moody's. Savings associations, by statute, may not invest in non-investment grade bonds. The table below shows investment-grade and non-investment-grade ratings of these agencies.

Bond-Quality Ratings

Moody's	Standard & Poor's
Investment Grade: Aaa – Highest Quality Aa A Baa	Investment Grade: AAA – Highest Quality AA A BBB
Non-Investment Grade ("Junk Bonds") Ba and below	Non-Investment Grade ("Junk Bonds") BB and below

Savings associations that invest in corporate bonds should obtain current bond ratings before purchase and should review the ratings of their holdings on a regular basis. For more detailed information on bond ratings, see Appendix B, Money Market, Fixed-Income Market, and Equity Market Securities.

For both rated and non-rated issues, associations should develop a system of periodic credit review. Refer to Examination Handbook Section 260, Classification of Assets, for classification of non-investment-grade corporate debt securities.

Prepayment Risk

Prepayment risk is the risk that an issuer may repay all or part of the principal on a bond prior to maturity. Prepayment risk is a particular concern with mortgage-backed securities (MBS). Issuers back MBS by mortgages that borrowers can prepay or refinance. When this occurs, the principal of the MBS is reduced and the issuer returns the cash flows from prepayments to the holders of the MBS. The risk is that the bonds will repay at an inopportune time, such as when interest rates are falling. Periods of falling interest rates usually generate widespread prepayments. If the investor wants to reinvest the proceeds from the prepayments, the prevailing yields on newly issued bonds are generally lower than the investor previously earned on the bond that prepaid.

Liquidity Risk

Liquidity risk is the risk that a security will be difficult to sell at a reasonable price within a reasonable time. On occasion, the liquidity of entire securities markets can seize up due to financial crisis or panic. Certain types of securities, however, such as those of small firms and securities with unusual features, are inherently illiquid.

By law, savings associations may not invest in corporate securities that they cannot sell with reasonable promptness at a price that corresponds reasonably to the fair value of the security. See 12 CFR §541.7.

Operational Risk

Operational risk is the risk that deficiencies or failures in personnel, technology, or systems will result in unexpected losses.

Settlement Risk

Settlement is an arrangement between parties for payment or receipt of cash or securities. Settlement risk is the possibility that a counterparty will fail to honor its obligation to deliver cash or securities at settlement, and is a key operational risk in managing investment portfolios.

The careful selection of brokers and dealers can mitigate settlement risk. The selection process should include a review of each firm's financial statements and an evaluation of its ability to honor its commitments.

An inquiry into the general reputation of the dealer is also appropriate. This includes review of information from state or federal securities regulators and industry self-regulatory organizations. For example, the National Association of Securities Dealers provides public information concerning any formal enforcement actions against the dealers, their affiliates, and associated personnel.

TB 13A REQUIREMENTS

You should ensure that the savings association conducts its investment activities in accordance with Thrift Bulletin 13a. Part III of TB 13a identifies, in broad terms, the types of analysis a savings association should undertake before making securities investments. A savings association should exercise diligence in assessing the risks and returns associated with investment securities, including expected total return. For a discussion of total return, see Appendix A, Total Return Analysis. As a matter of sound practice, before taking an investment position, an institution should:

- Ensure that the investment is legally permissible. Review the terms and conditions of the investment. Ensure that the investment is allowable under the institution's investment policies and is consistent with the institution's objectives and liquidity needs. Exercise diligence in assessing the market value, liquidity, and credit risk of the investment.

- Conduct a pre-purchase portfolio sensitivity analysis for any significant investment (see TB 13a for details).

- Conduct a pre-purchase price sensitivity analysis of any complex security before taking a position (see TB 13a for details).

TB 13a states that, "Investments in complex securities and the use of financial derivatives by associations that do not have adequate risk measurement, monitoring, and control systems may be viewed as an unsafe and unsound practice."

Risk Reduction

In general, savings associations should limit investments in complex securities with high price sensitivity (see TB 13a) to transactions and strategies that lower interest rate risk. Any savings association that invests in such securities for a purpose other than that of reducing portfolio risk should do so in accordance with safe and sound practices.

Sound Practices for Market Risk Management

You should assess the overall quality and effectiveness of the savings association's risk management process as it relates to investment activities. In making this assessment, you should review TB 13a, Appendix B, *Sound Practices for Market Risk Management*. This section summarizes the key elements of that Appendix.

Board and Senior Management Oversight

The board and senior management should understand their oversight responsibilities regarding the management of investment activities. Board oversight need not involve the entire board, but may be carried out by an appropriate subcommittee of the board. In particular, the board, or an appropriate subcommittee of board members, should take the following steps:

- Approve broad objectives and strategies and major policies governing investment activities.
- Provide clear guidance to management regarding the board's tolerance for risk.
- Ensure that senior management takes steps to measure, monitor, and control risk.
- Review periodically information that is sufficient in timeliness and detail to allow the board to understand and assess the institution's investment activities.
- Assess periodically compliance with board-approved policies, procedures, and risk limits.
- Review policies, procedures, and risk limits at least annually.

Senior management should ensure the effective management of the institution's operations, establish and maintain appropriate risk management policies and procedures, and ensure that resources are available to conduct the institution's activities in a safe and sound manner. In particular, senior management should take the following steps:

- Ensure that effective risk management systems are in place and properly maintained.
- Establish and maintain clear lines of authority and responsibility for managing investment activities.
- Ensure that competent staff with technical knowledge and experience consistent with the nature and scope of their activities conducts the institution's operations and activities.
- Provide the board of directors with periodic reports and briefings on the institution's investment activities and risk exposures.
- Review periodically the institution's investment risk management systems, including related policies, procedures, and risk limits.

Adequate Policies and Procedures

Savings associations should have written policies and procedures governing investment activities. Such policies and procedures should be consistent with the institution's strategies, financial condition, risk-management systems, and tolerance for risk. An institution's policies and procedures (or documentation issued pursuant to such policies) should do the following:

- Identify the staff authorized to conduct investment and derivatives activities, their lines of authority, and their responsibilities.
- Identify the types of authorized investments and investment instruments.

- Specify the required type and scope of pre-purchase analysis for various types or classes of investment securities.

- Define, where appropriate, position limits and other constraints on each type of authorized investment, including constraints on the purpose(s) for which such instruments may be used.

- Identify dealers, brokers, and counterparties that the board or a board-designated committee authorizes the institution to conduct business with and identify credit exposure limits for each authorized entity.

- Ensure that contracts are legally enforceable and documented correctly.

- Establish a code of ethics and standards of professional conduct applicable to personnel involved in investment and derivatives activities.

- Define procedures and approvals necessary for exceptions to policies, limits, and authorizations.

Monitoring and Reporting

Savings associations should have accurate, informative, and timely management information systems, both to inform management and to support compliance with investment policy. The board of directors and senior management should receive reports for monitoring investment risk on a timely basis.

The board of directors and senior management should monitor investment activities on a regular basis. The types of reports prepared for the board and various levels of management will vary depending on the size and complexity of the saving's associations operations.

Record Keeping

Savings associations must maintain accurate and complete records of all securities transactions according to 12 CFR § 562.1. In particular, savings associations should retain any analyses (including pre- and post-purchase analyses) relating to investment transactions. A savings association should make these records available to you upon request.

Internal Controls

Savings associations should have adequate internal controls over investment activities. A fundamental component of the internal control system involves regular independent reviews and evaluations of the effectiveness of the system.

Internal controls should promote effective and efficient operations, reliable financial and regulatory reporting, and compliance with relevant laws, regulations, and institutional policies. An effective system of internal control should include the following elements:

- Effective policies, procedures, and risk limits.
- An adequate process for measuring and evaluating risk.
- Adequate risk monitoring and reporting systems.
- A strong control environment.
- Continual review of adherence to established policies and procedures.

Savings associations should review their system of internal controls at least annually. Individuals independent of the function being reviewed should conduct the review. Reviewers should report results directly to the board. You should consider the following factors when reviewing an institution's internal controls:

- Does the association maintain risk exposures at prudent levels?
- Does the association employ the risk measures that are appropriate to the nature of the portfolio?
- Does the association have board and senior management actively involved in the risk management process?
- Does the association document policies, controls, and procedures adequately?
- Do association personnel follow the established policies and procedures?
- Does the association adequately document the assumptions of the risk measurement system?
- Does the association accurately process data?
- Is the risk management staff adequate?
- Has the association changed risk limits since the last review?
- Have there been any significant changes to the institution's system of internal controls since the last review?
- Are internal controls adequate?

Analysis and Stress Testing

Management should thoroughly analyze the various risks associated with investment securities before making an investment. (See TB 13a, Part III.) In addition, management should periodically review the portfolio.

Before taking a position in any complex securities, management should analyze how the future direction of interest rates and other changes in market conditions could affect the instrument's cash flows and market value. In particular, management should understand the following elements of the complex security:

- The structure of the instrument.
- The best case and worst-case interest rate scenarios for the instrument.
- How the existence of any embedded options or adjustment formulas might affect the instrument's performance under different interest rate scenarios.
- The conditions, if any, under which the instrument's cash flows might be zero or negative.
- The extent to which price quotes for the instrument are available.
- The instrument's universe of potential buyers.
- The potential loss on the instrument (that is, the potential discount from its fair value) if sold prior to maturity.

That the issuer, together with any guarantors, has the financial capacity, and willingness to meet the repayment terms of the investment.

That analysis of the legal structure of the investment affirms the institution's authority to make such investment.

How the investment is expected to perform under various loss and interest rate scenarios, the impact on the overall risk profile of the institution and how all covenants of any trust agreement apply to the senior tranches.

The effect of the payment priority should the security be divided into separate tranches with unequal payments.

That a review and analysis of the collateral managers includes historical performance to document investment prudence.

Evaluation of New Products, Activities, and Financial Instruments

New investment products and activities can entail significant risk. Senior management should evaluate the risks inherent in new products and activities to ensure that they are subject to adequate review procedures and controls. The board, or an appropriate committee, should approve major new initiatives involving new products and activities.

Before authorizing a new initiative, the review committee should review the following items:

- A description of the relevant product, activity, or instrument.
- An analysis of the appropriateness of the proposed initiative in relation to the institution's overall financial condition and capital levels.
- Descriptions of the procedures to measure, monitor, and control the risks of the proposed product, activity, or instrument.

Management should ensure that adequate risk management procedures are in place before undertaking any significant new initiatives.

USE OF INVESTMENT CONSULTANTS

Some savings associations use consultants in the investment process. The association should limit the role of consultants and brokers to advising management and executing transactions approved by management. The savings association should not delegate investment decision-making authority to third parties, including brokers or consultants. Ceding decision-making power to a consultant or broker represents an unsafe and unsound practice.

Any savings association that engages a consultant must have a formal written contract that covers the following elements:

- The types of assets that the consultant or broker can buy and sell on a pre-approved basis.
- The requirement for authorization from the board or senior management for any transactions not pre-approved in the contract.
- The documentation and rationale for each trade made for the savings association.
- The requirement of the consultant or broker to maintain records and submit evidence that they obtain prices from several brokers for all transactions, particularly if the consultant is a broker.
- Compensation programs that do not encourage churning (excessive trading activity) of portfolios or short-term strategies that are not in the savings association's best interest.
- The right of the savings association or its agent to audit the records of transactions executed for the savings association.
- The authority of OTS to examine the records of the consultant or broker that pertain to the transactions for the savings association.

If a savings association uses consultants, it should establish internal policies, controls, and procedures that include the following criteria:

- Establish limitations on the assets managed by consultants with consideration to the types and level of risk of the assets authorized for purchase.

- Monitor compliance with the limitations established by the board.

- Require senior management personnel or an independent agent to periodically audit the consultant or broker to ensure that the firm is buying and selling securities at the most favorable price for the savings association.

- Guarantee that the savings association always has a perfected security interest on securities bought for its account.

The savings association should measure the performance of the consultant against a relevant benchmark (for example, a standard bond index). In measuring the performance (total return) of the consultant against a benchmark, the association should factor in fees and expenses charged by the consultant. Savings associations should note that consultants and contractors may be subject to OTS enforcement actions as provided for by Section 8 of the FDIA, as amended by FIRREA.

Senior management personnel should supervise the activities of the consultant to ensure conformity to the savings association's investment, liquidity, and interest rate risk management plan. Management must keep the board of directors informed of the performance of the consultant, through periodic reports.

Reporting and Accounting for Securities

Part 562 of the OTS regulations, require savings associations to record and report their financial condition according to GAAP. This responsibility includes the obligation to properly account for the savings association's securities under GAAP.

Savings associations must categorize each security as trading, available-for-sale (AFS), or held-to-maturity consistent with FASB Statement No. 115, Accounting for Certain Investments in Debt and Equity Securities, as amended. A savings association should determine whether securities are for its trading accounts, AFS, or held-to-maturity at the time it purchases or originates the securities. The savings association should not record securities in a suspense account until it determines the appropriate category. Management should periodically reassess its security categorization decisions to ensure they remain appropriate.

Trading Assets

Savings associations should classify as trading assets securities that the association intends to hold principally for the purpose of selling them in the near term. Trading activity includes active and frequent buying and selling of securities for the purpose of generating profits on short-term fluctuations in price. Savings associations must report securities held for trading purposes at fair value; and recognize unrealized gains and losses in current earnings and regulatory capital.

Held-to-Maturity

Held-to-maturity securities are debt securities that the savings association has the positive intent and ability to hold to maturity. Savings associations generally report held-to-maturity securities at amortized cost.

Available-for-Sale

Savings associations must report securities not categorized as trading or held-to-maturity as available-for-sale. Savings associations must report AFS securities at fair value on the balance sheet. Savings associations must exclude unrealized gains and losses from earnings and report them in a separate component of equity capital.

Section 260, Classification of Assets, states that savings associations holding noninvestment grade securities with maturities of July 1, 1994, or later must classify these securities as held for sale since they do not have the ability to hold them to maturity.

Changes in Categorization

If a savings association judges a decline in fair value of a held-to-maturity or AFS security to be other than temporary, the cost basis of the individual security shall be written down to fair value as a new cost basis and include the amount of the write-down in earnings. For example, if it is probable that a savings association will be unable to collect all amounts due according to the contractual terms of a debt security not impaired at acquisition, an other-than-temporary impairment has occurred.

Sales from the held-to-maturity portfolio could call the intent to hold to maturity into question and result in tainting the remaining portfolio. The savings association may need to redesignate the portfolio as AFS and be subject to mark-to-market adjustments. As a result, savings associations normally limit portfolio restructuring activities to AFS portfolios.

Proper Categorization of Securities

The proper categorization of securities ensures that savings associations promptly recognize trading gains and losses in earnings and regulatory capital.

Trading Activity

While designating certain assets for trading can be consistent with prudent investment securities management, you may consider certain practices speculative or otherwise abusive. OTS and the other banking agencies consider the following practices to be trading activities.

Gains Trading

Gains trading is the purchase of a security and the subsequent sale of the same security at a profit after a short holding period. Savings associations typically retain securities acquired for this purpose that the association cannot sell at a profit in the AFS or held-to-maturity portfolio. Savings associations may use

gains trading to defer recognition of losses because unrealized losses on AFS and held-to-maturity debt securities do not directly affect regulatory capital. Generally, savings associations do not report unrealized losses in income until the security is sold. A pattern of selling above-market securities at a gain while retaining below-market securities overstates the institution's financial health.

When-Issued Securities Trading

When-issued securities trading is the buying and selling of securities in the period between the announcement of an offering and the issuance and payment date of the securities. A purchaser of a when-issued security acquires the risks and rewards of owning a security and may sell the when-issued security at a profit before having to take delivery and pay for it. Because savings associations intend such transactions to generate profits from short-term price movements, savings associations should categorize such transactions as trading.

Pair-offs

Pair-offs are security purchase transactions that are closed-out or sold at, or prior to, settlement date. In a pair-off, a savings association commits to purchase a security. Then, prior to the predetermined settlement date, the savings association will pair-off the purchase with a sale of the same security. Pair-offs are settled net when one party to the transaction remits the difference between the purchase and sale price to the counter party. Pair-offs may also involve the same sequence of events using swaps, options on swaps, forward commitments, options on forward commitments, or other off-balance sheet derivative contracts.

Extended Settlements

In the U.S., regular-way settlement for federal government and federal agency securities (except mortgage-backed securities and derivative contracts) is one business day after the trade date. Regular-way settlement for corporate and municipal securities is three business days after the trade date. For mortgage-backed securities, it can be up to 60 days or more after the trade date. Securities dealers may offer the use of extended settlements to facilitate speculation on the part of the purchaser, often in connection with pair-off transactions. Savings associations should report as trading assets securities acquired through the use of a settlement period in excess of the regular-way settlement periods to facilitate speculation.

Repositioning Repurchase Agreements

A repositioning repurchase agreement is a funding technique offered by a dealer in an attempt to enable a savings association to avoid recognition of a loss.

A repositioning repurchase agreement occurs when a savings association enters into a when-issued trade or a pair-off (which may include an extended settlement) that the savings association cannot close out at a profit on the payment or settlement date. The dealer provides financing in an effort to fund its speculative position until the security can be sold at a gain. The savings association purchasing the security typically pays the dealer a small margin that approximates the actual loss in the security. The

dealer then agrees to fund the purchase of the security, typically by buying it back from the purchaser under a resale agreement. The savings association should report as trading assets any securities acquired through a dealer financing technique such as a repositioning repurchase agreement that the association uses to fund the speculative purchase of securities.

Short Sales

A short sale is the sale of a security that the savings association does not own. The purpose of a short sale generally is to speculate on a fall in the price of a security.

Adjusted Trading

Adjusted trading is not acceptable under any circumstances. Adjusted trading involves the sale of a security to a broker dealer at a price above the prevailing market value. Simultaneously, the savings association purchases and books a different security, frequently a lower-rated or lower quality issue or one with a longer maturity, at a price above its market value. Thus, the savings association reimburses the dealer for losses on the purchase from the savings association and ensures the dealer a profit. Such transactions inappropriately defer the recognition of losses on the security sold and establish an excessive cost basis for the newly acquired security. Consequently, the banking agencies prohibit such transactions. In addition, these transactions may be in violation of 18 USC §§ 1001, False Statements or Entries, and 1005, False Entries.

Limits on MBS Trading Activity

Savings associations may buy and sell securities to manage risk or to improve profitability. Active management of an MBS portfolio may presume an ability to anticipate changes in market interest rates. In practice, interest rates are notoriously difficult to predict. Active portfolio management requires outguessing the market consensus sufficiently to cover transaction costs. Historical data suggests that very few investment professionals can outperform a passive fixed income indexing strategy with active portfolio management.

OTS allows savings associations to use an MBS portfolio for trading purposes only in limited cases and subject to certain safeguards. The institution should have the core earnings and capital to absorb potential trading losses. The savings association should also possess the financial expertise and management information systems to monitor and evaluate trading activity effectively.

You should determine the amount of MBS trading activity by reviewing the volume of trades transacted since the previous examination. You should quantify the volume and compare it with the change in portfolio balances since the previous examination. Calculate portfolio turnover ratio by comparing the dollar amount of securities sold, by type, with the balance of the portfolio at the beginning of a period. For example, if the savings association sold $10 million of MBSs all with the same coupon rate during the quarter, compared with the balance of $10 million of this coupon rate at the beginning of the quarter, the turnover ratio would be 100 percent. You can make these comparisons on a monthly or annual basis.

There is no threshold of turnover that automatically indicates that the MBS portfolio is part of a trading portfolio. You should review the composition of the trades and determine the rationale for the transactions.

While designating certain assets for trading can be consistent with prudent portfolio management, you may consider certain practices speculative or otherwise abusive.

Collateralized Mortgage Obligation (CMO) Issuances

Some savings associations issue CMOs. The issuer may retain a subordinate interest in the CMO as a credit enhancement to outside investors. The gain recognized on the sale depends on the relative fair values assigned to the sold and retained tranches. The higher the value assigned to the retained pieces, the lower the cost basis for the securitized assets, and the larger the recognized gain on sale. There is often no liquid market for the retained securities, so their fair values may be difficult to verify. You must analyze the savings association's valuation assumptions to ensure that the savings association bases its gain on sale upon the economics of the transaction rather than merely an inflated value assigned to retained tranches. Particularly important variables include the assumed prepayment rate, loss rate on the underlying mortgages, and required rate of return (discount rate).

Consult Appendix C of this section and Section 560, Deposits/Borrowed Funds, for a more detailed discussion of CMO issuances.

References

United States Code (12 USC)

§ 1464(c)(1)	Loans for Investments Without Percentage of Asset Limitation
§ 1464(c)(2)	Loans or Investments Limited to Stated Percentage of Assets or Capital
§ 1464(c)(4)	Other Loans and Investments

Code of Federal Regulations (12 CFR)

§ 560.40	Commercial Paper and Corporate Debt Securities
§ 560.42	Government Obligations
§ 560.93	Lending Limitations
§ 562.2	Regulatory Reports
§ 563.172	Financial Derivatives
Part 566	Liquidity

Office of Thrift Supervision Bulletins and Memoranda

RB 3b	Policy Statement on Growth for Savings Associations
TB 13a	Management of Interest Rate Risk, Investment Securities, and Derivative Activities
TB 13a-2	Structured Advances

FFIEC Policy Statement

Supervisory Policy Statement on Investment Securities and End-User Derivatives Activities (April 23, 1998)

Financial Accounting Standards Board, Statement of Financial Accounting Standards (SFAS)

No. 91	Accounting for Nonrefundable Fees and Costs Associated with Originating or Acquiring Mortgages with Initial Direct Cost of Leases
No. 107	Disclosures about Fair Value of Financial Instruments
No. 115	Accounting for Certain Investments in Debt and Equity Securities
No. 140	Accounting for Securitizations

Emerging Issues Task Force (EITF)

No. 86-38	Implications of Mortgage Prepayments on Amortization of Servicing Rights

Other References

Committee on Sponsoring Organizations of the Treadway Commission (COSO), Internal Control Issues in Derivatives Usage: An Information Tool for Considering the COSO Internal Control – Integrated Framework for Derivatives Applications.

Investment Securities Program

EXAMINATION OBJECTIVES

To determine the adequacy of the savings association's policies, procedures, and internal controls regarding its investments.

To determine if the savings association's investment policy, interest rate risk policy, funds management policy, and business plan adequately describe the type and level of authorized investments.

To determine if the savings association documents and describes the rationale for all investments.

To determine if the savings association adequately analyzes its investments prior to purchase.

To determine if these investments are appropriate based on the savings association's current portfolio, interest rate risk structure, and regulatory capital position.

To determine the prudence of risk management strategies through evaluation of practices and procedures.

To determine if the savings association's officers and employees are operating in conformance with the established policies and whether these individuals have the necessary expertise to execute the authorized strategies.

To determine the overall quality of the savings association's investments and assess the effect of the portfolio quality on the overall soundness of the savings association.

To determine if the savings association is in compliance with the regulations and whether the savings association records transactions according to generally accepted accounting principles (GAAP).

To determine the scope and adequacy of the internal and external audit functions considering the type and complexity of the savings association's investments.

To determine if the savings association incurred any significant prepayment risk from its investment in mortgage-backed securities (MBSs) or mortgage-derivative products (MDPs).

To determine if the savings association actively monitors its investments.

To determine if the savings association, at least quarterly, obtains or performs analysis of each complex security purchased with board of director approved techniques demonstrating that the security reduces overall interest rate risk.

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To determine if the savings association engages in speculative trading.

To evaluate investment and trading activities to determine if the volume and number of transactions have any broad and potentially adverse effect on the savings association's financial health.

To summarize findings and initiate corrective actions when there are deficiencies.

EXAMINATION PROCEDURES

LEVEL I

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1. Review scoping materials applicable to this program. If another examiner performed the review of scoping materials, obtain a written or oral summary of the review(s) of items concerning this program.

2. Determine if the savings association corrected any transactions or policies and procedures subject to any of the following:

   - Previous examination report comments and previous examination exceptions.
   - Independent audit exceptions.

3. Review the current written investment policy and business plan.

4. Review all procedures related to investment activities.

5. Ascertain whether the board adopted any policy revisions since the previous examination.

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6. Judge the adequacy of the guidance in the written investment policy.

7. Evaluate the objectives of the savings association's investment activities as stated in the investment policy and business plan. Discuss any apparent conflicting objectives with management.

8. Evaluate whether management has the expertise necessary to carry out the objectives of the policy. Identify any backup expertise available to management.

9. Review management's reports to the board for accuracy and completeness.

10. Review board meeting minutes to determine the following:

    - Did the board approve the broad objectives, strategies, and major policies for investment activities?
    - Do the investment strategies contain an adequate amount of detail?
    - Did the board establish appropriate dollar and percentage limits on investment securities?
    - Do the reports to the board accurately and adequately detail the returns from the investment activity?

11. Review the securities transactions in the context of the savings association's funds management structure and current interest rate risk profile, profitability, capital, and liquidity positions. Discuss findings with examiners working on liquidity, funds management, earnings, operations, interest rate risk, and capital.

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12. Evaluate whether the savings association classifies transactions appropriately in the portfolio as held-to-maturity, available-for-sale (AFS), or trading.

13. Assess policies and procedures for reviewing investment securities for asset classification purposes or coordinate with the examiner reviewing classifications.

14. Identify methods used to estimate prepayments for investment securities.

    - Determine if prepayment assumptions differ markedly from those of securities with similar underlying collateral.
    - Determine the yield and estimated maturity of the investment portfolio.

15. Examine the documentation of the analysis of investment securities.

16. Considering a review of the information gathered through procedures, observations, and discussions with management and other personnel, determine the following:

    - The adequacy of internal controls.
    - Proper authorization of all trades.
    - Compliance with regulations and conformance with GAAP.
    - Management's level of expertise and conformance by management with the savings association's policies and procedures.
    - The adequacy of the management report and information system used to provide management and the directors with accurate decision-making information and the ability to monitor compliance with established guidelines.

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17. Summarize findings, obtain management responses, and update programs and the continuing examination file (CEF), if applicable, with any information that will facilitate future examinations. File exception sheets in the general file.

18. Determine that investment securities meet applicable regulatory and policy requirements, including:

- 12 CFR 560.40, Commercial Paper and Corporate Debt Securities.
- 12 CFR 560.32, Pass-Through Securities.
- TB 13a, Management of Interest Rate Risk, Investment Securities, and Derivatives Securities.

19. Determine that investment securities are suitable to the institution's operational and strategic goals and that the securities are safe and sound.

20. Determine that the institution performed thorough underwriting analyses prior to purchase.

21. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from performance of Level I procedures.

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LEVEL II

1. Obtain a listing of all investment securities held. The list should contain, at a minimum, the following information:

   - Description of the security.
   - Classification as held-to-maturity, AFS, or trading.
   - Committee on Uniform Securities Identification Procedures (CUSIP) number.
   - Purchase price or cost.
   - Date of purchase.
   - Par value and principal amount purchased.
   - Current book value including any unaccreted discounts or unamortized premiums.
   - Maturity date and call provisions, if any.
   - Current market value.

2. Ascertain whether management shifted its risk posture. Also determine if the association is taking on riskier investments.

   - Obtain a list of securities purchased, sold, and matured between examinations.
   - Categorize the securities by type, for example, U.S. Government, agency, state and municipal obligations, corporate debt.
   - Review the analysis of municipal and corporate issues by rating classification. For non-U.S. Government securities, obtain most recent bond ratings by an independent bond rating service.
   - Determine the total in each rating class and total of unrated issues.
   - Determine the total of unrated investment securities issued by obligors located outside the savings association's trade area.

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3. Identify any changes in the portfolio composition from the previous examination by type and rating.

4. Ascertain whether any concentration of credit exists by type, area, or in any one entity.

5. Ascertain whether market value depreciation is significant in comparison with capital and total investment portfolio.

6. Evaluate the overall effectiveness of investment activities and the portfolio's contribution to the income stream.

   - Analyze yields and spreads of the investment portfolio. Ascertain whether investment strategies are effective in maintaining targeted yields and spreads.
   - Review net trading gains/losses, taking into consideration broker/dealer commissions.

7. Compare the coupon rates and yields of recently acquired investments with similar instruments. Discuss with management the appearance of any differences where coupon rates or yields may be significantly higher or lower.

8. Evaluate the savings association's transactions to determine if securities are held to maturity, AFS, or for trading. Ascertain if the savings association records trading and AFS portfolios at fair value.

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9. Determine if the association's trading activity is speculative or abusive. Also determine if the association makes adjusted trades.

10. Review any transfers or swaps of securities from the trading or AFS portfolios to the held-to-maturity portfolio.

11. Evaluate the adequacy of credit analysis procedures. Review the savings association's credit analysis of the following:

    - The obligor on securities purchased under agreement to resell, when the readily marketable value of the security is not sufficient to satisfy the obligation or when collateral custody procedures are inadequate to ensure the association's unassailable right to the collateral.
    - All money market instruments acquired since the previous examination.

12. Determine if management identifies credit and default risk; and all defaulted issues.

13. Ascertain any changes in the credit rating after the savings association purchased the security.

14. Review the savings association's classification of securities in accordance with asset classification regulations. Indicators of the extent of credit deterioration include credit rating downgrades or market value depreciation (excluding that caused by interest-rate shifts). The savings association should classify the market value depreciation of defaulted issues as Loss.

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15. Review the use of outside investment consultants:

- Determine the extent of the capacity in which the consultant serves.
- Review the consultant's contract.
- Determine the consultant's background and expertise.
- Determine the consultant's investment powers and authority.
- Evaluate the supervision, level of control over, and degree of dependence upon outside consultants.

16. Review safekeeping of records to determine location of securities held by third parties. Determine if management has procedures to verify that securities are being held in safekeeping.

17. If the savings association's stock trades publicly, review the applicable reports filed with the Securities and Exchange Commission, including the 10K (Annual) and 10Q (Quarterly) for any mention of investments. Determine the accuracy of these references and report any discrepancies to OTS Washington pursuant to procedures in Section 110, Capital Stock and Ownership.

18. Determine if the savings association's investment in MBSs or MDPs exacerbated or caused any deficiencies noted in areas such as:

- The purchase of excessive quantities of low-coupon rate or discount securities that would increase interest rate risk.
- Reliance on nonrecurring gains from the sale of MBSs or MDPs to sustain profitability.

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- Inadequate capital to sustain adverse fluctuations in the returns from stripped mortgage-backed securities (SMBSs) or the residual interest in multiple-class securities.

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19. Obtain a detailed listing of the mortgage securities as of the examination date. Determine the following:

    - The type, coupon rate, and maturity of the securities in the portfolio.
    - The dollar amount of these investments as a percentage of total assets.
    - If there was a significant increase in the portfolio, identify the funding source and the cause of the increase.

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20. For MDPs, also ascertain the following:

    - The particular class of the security purchased and the terms of that class.
    - The characteristics of the collateral underlying the MDP, for example, the type of security, weighted average coupon (WAC), and maturity.
    - If the savings association performed an analysis of the MDPs.

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21. Obtain the contract registers, general and subsidiary ledgers, and trade confirmations from brokers to determine:

    - The extent of trading activity by reviewing the amount and composition of the portfolio turnover and existence of margin accounts.
    - If the savings association obtained documented comparative price quotes from brokers/dealers other than the broker/dealer that executed the transaction.
    - If the savings association's contract register and general and subsidiary records correspond to the information detailed on confirmations from brokers.

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- The location of all investment securities in safekeeping with other parties or pledged as collateral for any transaction.

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22. Assess the effect of these transactions on the viability of the savings association. Identify the cause of the problems that could involve inadequate management expertise or lack of adequate research prior to execution of the strategy. Obtain management's intended corrective action.

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23. Review the adjustable-rate MBSs purchased since the previous examination. Determine the following:

- The index, margin, interest rate caps, and any other adjustment features of the adjustable-rate MBS portfolio.
- The dollar amount of the adjustable-rate MBSs retained in portfolio with a large portion of the underlying collateral having teaser rates.
- The inerest rate risk of this portfolio by comparing the current interest rate with the lifetime cap and the frequency of interest-rate adjustments.

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24. Determine if the savings association purchased the residual interest in an MDP. If so, determine the following:

- If the board of directors approved the transaction and if management updates the board regularly on the actual yield.
- If, prior to purchase, the thrift analyzed the effect on yield and potential value changes under varying prepayment assumptions.
- The expected return and prepayment assumptions the savings association based this yield upon.
- The underlying structure of the MDP.

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- The characteristics of the collateral that underlies the MDP, such as the type of securities (GNMA, Freddie Mac, or Fannie Mae) or whole mortgages, the weighted average remaining maturity (WARM), the coupon rate, and the actual prepayment experience.
- If the issuer based the security upon real estate mortgage investment conduit (REMIC) authority.
- If the savings association intended the investment to be a hedging vehicle, and if so, the identity of the matched item and the estimated amount of interest-rate protection provided by the residual.
- If the savings association classifies a residual interest in securitized assets properly and accounts for them as AFS or trading securities in accordance with SFAS 125 and SFAS 115.

25. Determine if the savings association purchased a SMBS or any security with similar characteristics. If so, determine the following:

- If the board of directors approved the investment and if management updates the board regularly on the investments actual yield and market value.
- If, prior to purchase, the savings association analyzed the expected yield based on various changes in interest and prepayments.
- If the interest only (IO) or principal only (PO) comprises most of the interest.
- The expected yield from the investment and the prepayment assumptions used to determine this yield.
- If the savings association intended to use the SMBS as a hedging vehicle, and if so, the matched item and the estimated amount of interest-rate protection provided by the SMBS.

26. Determine if the savings association purchased MBSs backed by commercial real estate. If so, determine the following:

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- The type of property.
- The rating of the security, if any.
- If management reviewed the prospectus and supplement with particular attention to the risks of the underlying loans and the nature and quality of credit supports.

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27. Determine if the savings association purchased an interest in a senior/subordinated security. If so, determine the following:

- If the savings association acquired the senior or subordinated interest.
- The types of mortgages underlying the security.
- The investment rating.
- The potential risk of default if the savings association purchased the subordinated interest.
- If the savings association is properly reporting its interest in the senior/subordinated securities in accordance with the recourse provisions in OTS regulatory capital guidelines.

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28. Determine whether the savings association securitized assets and retained a residual interest in those securitized assets or subordinated interests. If so, determine the following:

- If the savings association calculates the gain or loss on the sale in accordance with GAAP.
- If the savings association bases the fair value assigned to the retained tranche(s) upon reasonable assumptions concerning prepayments and defaults on the underlying loans.
- Whether the savings association uses a reasonable discount rate that reflects the risk of the securities.

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- The sensitivity of value of the retained tranches to changes in interest rates, prepayments, defaults, or discount rates.

29. Ensure that your review meets the Objectives of this Handbook Section. State your findings and conclusions, and appropriate recommendations for any necessary corrective measures, on the appropriate work papers and report pages.

LEVEL III

1. Reconcile the trial balances to general ledger accounts. Cross check investment trial balances with other schedules or records to determine if securities exist.

2. Verify the accuracy of registers by comparing broker advices with trade tickets. Send confirmation to brokers, if necessary.

3. Review pledged securities reports. Identify securities that may be overpledged or cross-collateralized with other securities.

4. Review the maturity distribution schedule and determine if the association is extending or shortening the portfolio's maturity in line with policy objectives.

5. Test for proper accounting for premiums and discounts.

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6. Determine proper accounting for gains and losses.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

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Investment Securities

Questionnaire

GENERAL QUESTIONNAIRE

		Yes	No
1.	Did the board of directors approve a written investment policy?	☐	☐
2.	Does the savings association update its investment policy annually and whenever unanticipated conditions dictate?	☐	☐
3.	Does the investment policy address the assignment of responsibilities and duties?	☐	☐
4.	Do the investment policy and business plan confirm the following requirements:		
	• Safety and soundness?	☐	☐
	• Regulatory limitations?	☐	☐
	• The board of director's requirements?	☐	☐
5.	Does the savings association monitor adherence to the policy?	☐	☐
	• How often?_____		
6.	Is the investment strategy appropriate based upon the savings association's investment portfolio, interest rate risk, profitability, and regulatory capital position?	☐	☐
7.	Does the policy define the acceptable level of risk?	☐	☐
8.	Does the association take the following considerations into account when looking at the composition of the portfolio:		
	• Investment objectives?	☐	☐
	• Investment strategy	☐	☐
	• Types and level of allowable investments?	☐	☐
	• The decision-making process?	☐	☐
	• Monitoring of investments?	☐	☐
	• Record keeping and documentation requirements?	☐	☐
9.	Does the savings association engage in speculative trading strategies?	☐	☐
10.	Does the savings association engage in any unsuitable investment practices?	☐	☐

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		Yes	No
11.	Is the savings association's trading activity appropriate based on the type and amount of activity?	☐	☐
12.	Does the composition of the investment securities portfolio take into consideration the following items:		
	• Quality levels?	☐	☐
	• Diversification?	☐	☐
	• Maturity structure?	☐	☐
	• Liquidity?	☐	☐
13.	Does the savings association have procedures in place to prevent over-collateralization?	☐	☐
14.	Does the savings association maintain an adequate control register for its investment securities clearly showing the following information:		
	• Types of securities?	☐	☐
	• Outstanding position?	☐	☐
	• Volume of purchases and sales?	☐	☐
	• Realized and unrealized gains or losses on these positions?	☐	☐
15.	Do subsidiary records of investment securities show all pertinent information, including the following items:		
	• A description of the security?	☐	☐
	• The safekeeping location of the security?	☐	☐
	• Pledged or unpledged status of the security?	☐	☐
	• Premium amortization?	☐	☐
	• Discount accretion?	☐	☐
	• Interest earned, collected, or accrued?	☐	☐
16.	Does the savings association perform a price sensitivity analysis of complex securities prior to purchase?	☐	☐

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		Yes	No
17.	Does the savings association perform an internal analysis of its investment securities at least quarterly?	☐	☐
18.	Does the savings association obtain periodic market valuations for the following investment securities:		
	• Thinly traded investments?	☐	☐
	• Issues not quoted daily on major markets?	☐	☐
19.	Does the savings association perform credit analyses independently of the investment department?	☐	☐
20.	Does the association obtain bond ratings from any of the well-known bond rating services?	☐	☐
	• Which services? _____		
21.	Does the savings association appropriately classify investment securities?	☐	☐
22.	Did the savings association purchase any SMBSs or the residual interest in an MDP? If so:	☐	☐
	• Did the board of directors approve the investment?	☐	☐
	• Does the savings association analyze the investment prior to purchase, including the estimated yields under various interest-rate and prepayment scenarios?	☐	☐
	• Does the savings association document the expected yield and the prepayment assumptions used?	☐	☐
	• Are the initial prepayment assumptions reasonable considering the interest rate on the underlying collateral when compared with prevailing mortgage interest rates?	☐	☐
23.	Does the savings association periodically adjust the yield or book value of an MBS or MDP based upon changes in the prepayment experience of the underlying collateral?	☐	☐
24.	Does the savings association purchase commercial MBSs? If so, review the following question:	☐	☐
	• Do any of these securities have teaser rates?	☐	☐
	• If so, how close was the current interest rate to the lifetime cap: _____		

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		Yes	No
25.	Does the savings association issue CMOs or MDPs through a subsidiary?	☐	☐
26.	Did the savings association purchase the senior interest of a senior/subordainted security structure? If so, answer the following questions:	☐	☐
	• What was the investment rating? _____		
	• What was the underlying collateral? _____		
27.	Did the savings association purchase the subordinated interest in the security?	☐	☐
28.	Is there adequate segregation between the individuals responsible for executing the transactions, accounting for the transactions and transferring funds?	☐	☐
29.	Do trade tickets contain the following information:		
	• Trade date?	☐	☐
	• Settlement date?	☐	☐
	• Purchase or sale transaction?	☐	☐
	• Contract description?	☐	☐
	• Quantity?	☐	☐
	• Price?	☐	☐
	• Reason for trade?	☐	☐
	• Identity of person conducting transaction?	☐	☐
30.	Does someone other than the person who authorizes, executes, or controls the securities record the transaction?	☐	☐
31.	Does someone other than the person with custody or control of securities post transaction records?	☐	☐
32.	Does the savings association reconcile subsidiary records at least monthly?	☐	☐
	• How often? _____		
	• Does the savings association test them for accuracy?	☐	☐

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Investment Securities

Questionnaire

		Yes	No
33.	Does an independent party, not connected with the transaction, review commitments and advices?	☐	☐
34.	Does the savings association verify delivery or safekeeping records?	☐	☐
35.	Who has custody or control of securities? _____		
36.	Does the savings association obtain comparative price quotes from at least two broker/dealers other than the broker/dealer that executed the transaction?	☐	☐
37.	Does the savings association use reputable dealers?	☐	☐
38.	Is there a concentration of activity with one broker/dealer?	☐	☐
39.	Does the association properly safeguard the physical securities?	☐	☐
40.	Does the savings association have procedures in place to ensure proper access and control?	☐	☐
41.	Does the savings association review safe keeping records for accuracy?	☐	☐

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TOTAL RETURN ANALYSIS

This appendix discusses total return analysis and shows how to measure the expected return of fixed-income securities. In evaluating the expected return of an individual fixed-income security or portfolio of fixed-income securities, investors typically use internal rates of return, such as yield to maturity (YTM) or yield to call (YTC), as selection criteria. These two yield measures, however, are unlikely to reflect the correct expected investment return. Instead, total return provides a better measure of prospective investment return.

Investment decisions made using YTM or YTC can lead to investments with lower total returns depending on the following variables:

- Changes in reinvestment rates.
- End-of-period required yields.
- Length of the investment horizon.

However, there is an important caveat. In computing total returns based on scenario analysis, investors should be aware that total return estimates will only reflect investment returns if expectations regarding reinvestment rates and end-of-period yields turn out to be correct.

Background

Both the Federal Financial Institutions Examination Council (FFIEC) and the Office of Thrift Supervision (OTS) issued policy guidance that recommends institutions conduct a total return analysis in assessing the effects of interest rate changes on the returns associated with investment securities and financial derivatives prior to taking a position in these financial instruments. The 1998 FFIEC policy statement states: "The agencies agree that the concept of total return can be a useful way to analyze the risk and return tradeoffs for an investment. This is because the analysis does not focus exclusively on the stated yield to maturity. Total return analysis, which includes income and price changes over a specified investment horizon, is similar to stress testing securities under various interest rate scenarios. The agencies' supervisory emphasis on stress testing has, in fact, implicitly considered total return. Therefore the agencies endorse the use of total return analysis as a useful supplement to price sensitivity analysis for evaluating the returns for an individual security, the investment portfolio, or the entire institution." In Thrift Bulletin 13a, issued December 1998, OTS states: "Management should exercise diligence in assessing the risks and returns (including expected total return) associated with investment securities and financial derivatives."

Conventional Measures of Investment Return

The price of a bond is equal to the present value of the bond's expected cash flows. By definition, the yield, or internal rate of return, is that interest rate that equates the present value of a bond's cash flows to its current market price. As stated earlier, YTM and YTC are two frequently used measures of return

(or yield) on fixed-income securities. YTM is used to price and trade non-callable bonds, while YTC is used to price and trade callable bonds.

YTM is the internal rate of return on a non-callable bond that is held until maturity. In using this yield measure, one assumes that the security is held until maturity and that all cash flows can be reinvested at the same constant YTM. YTC is the internal rate of return on a callable bond that is held until either the first call or first par call date. In using this yield measure, one assumes that the security is held until being called by the issuer and that all cash flows can be reinvested at the same constant YTC.

Both of these return measures have several important drawbacks:

- Investors typically do not hold fixed-income investments until these investments mature or are called.
- Interim cash flows cannot be reinvested at the assumed constant yields.
- It is not possible to compare the likely returns on investments with different maturities or more complex return/risk profiles.

Total Return Analysis in Theory

Total return analysis avoids the shortcomings associated with using the two conventional yield measures, YTM and YTC, and provides an investor with a better measure of the expected return on fixed-income investments. The total return (also known as the horizon or total holding-period return) accounts for the three sources of potential dollar return on a bond:

- Coupon interest payments,
- Capital gain or loss when bond matures, is sold, or called, and
- Income from reinvestment of coupon interest payments (interest-on-interest income).

Therefore, to calculate the total return for a non-callable bond, an investor chooses an investment horizon or holding period, a reinvestment rate, and a selling price for the bond at the end of the investment horizon (that is, end-of-period required return). Based on the values chosen for these parameters, the total return calculation is straightforward. First, calculate total coupon payments plus interest-on-interest income for the assumed reinvestment rate over the given investment horizon using the following expression:

where

$$\text{Coupon plus interest - on - interest} = \text{Coupon}\left[\frac{[(1+r)^{h}-1}{r}\right]$$

h = length of investment horizon, and

r = assumed reinvestment rate.

Second, calculate the predicted sales price of the bond at the end of the investment horizon. Third, calculate total future dollars derived from the bond over the holding period by summing total coupon payments, reinvestment income, and the predicted sales price. Finally, substitute this value into the following expression to obtain the total return:

$$y_h = \left[\frac{\text{Total future dollars}}{\text{Purchase price of bond}} \right]^{1/h} - 1$$

where r and h are defined as above, and

Total future dollars = Coupon payments + Interest-on-interest income + Sales price.

For example, to obtain the total return on a bond-equivalent basis for a bond with semiannual coupon payments, the semiannual total return calculated using the above expression would be multiplied by a factor of two.[1]

Total Return Analysis in Practice

There are three different approaches an investor or portfolio manager can use to calculate total return:

- Subjective forecasts of the reinvestment rate and required yield at the end of the investment horizon.
- Implied forward rates from the yield curve (for instance, U. S. Treasury or LIBOR yield curves) to determine the reinvestment rates and the yield on a bond at the end of the investment horizon. This approach to total return analysis produces *an arbitrage-free total return* because the calculation is based on the market's expectations of the reinvestment rate and end-of-period required yield.
- Scenario analysis. Scenario analysis involves specifying different possible values for the reinvestment rate and the required yield at the end of a given investment horizon, and then calculating the total return associated with each scenario.

Of the three approaches, total return analysis based on scenario analysis is the best approach because it allows an investor, or portfolio manager, to measure how sensitive a bond's expected performance is to differing reinvestment rates and end-of-period required yields. One can also use total return analysis to compare the expected returns of a bond for investment horizons of varying lengths. In the two examples that follow, scenario analysis is used to compare:

- The total returns for a bond using two different investment horizons.
- The total returns for two bonds of different maturities.

[1] This discussion draws on material from Frank J. Fabozzi, editor, *The Handbook of Fixed Income Securities*, 5th Edition, 1997, Chapter 4. See this chapter for further discussion of the total return concept.

Assess the effect on a bond's total return by varying the length of the investment horizon using scenario analysis. Assume Bond A is a 9 percent coupon, 20-year non-callable bond with a current market price of $109.90 and a yield to maturity of 8 percent. Tables 1 and 1A show scenarios for the reinvestment rate and end of period required yields for Bond A for a three-year and ten-year investment horizon, respectively.

Table 1

Scenario Analysis for Bond A's Total Return

Required Yield at End of 3-Year Investment Horizon (%)			
	6.0	**8.0**	**10.0**
Reinvestment Rate (%)			
4.0	13.36	7.78	3.06
5.0	13.44	7.87	3.16
6.0	13.53	7.97	3.26

Table 1A

Sensitivity of Bond A's Total Return to Investment Horizon

Required Yield at End of 10-Year Investment Horizon (%)			
	6.0	**8.0**	**10.0**
Reinvestment Rate (%)			
4.0	7.59	6.88	6.24
5.0	7.85	7.16	6.53
6.0	8.11	7.43	6.82

As shown in the tables, there are three different reinvestment rates, 4, 5, and 6 percent, and three different end-of-period required yields, 6, 8, and 10 percent. In both tables, for each combination of reinvestment rate and end-of-period yield, there is a total return estimate for Bond A. As shown in the two tables, the total return estimates vary substantially across the two investment horizons. The differences in the total return estimates illustrate the effect that the choice of investment horizon has on a bond's

expected return since the relative importance of the reinvestment rate and end-of-period required return change is related to investment horizon. For short investment horizons, reinvestment income is small, but it increases in size as the investment horizon lengthens.

The second example compares the total returns for two bonds of different maturities. The first bond, Bond A, is the same bond used in the previous example. The second bond, Bond B, is a 7.25 percent coupon, 14-year non-callable bond with a current market price of $94.55 and a yield to maturity of 7.9 percent.[2] In comparing the total returns for the two bonds below, the investment horizon is set to three years. Based on yield to maturity, Bond A appears to be a better investment than Bond B because of Bond A's higher yield to maturity. However, as the example shows convincingly, yield to maturity is not a reliable measure of expected investment return.

Table 1 and Table 2 show various scenarios for the reinvestment rate and end of period required yields for Bond A and Bond B, respectively. There are three different reinvestment rates, 4, 5, and 6 percent, and three different end of period required yields, 6, 8, and 10 percent. These are the same values used in the previous example.

Table 2

Scenario Analysis for Bond B's Total Return

Required Yield at End of 3-Year Investment Horizon (%)			
	6.0	**8.0**	**10.0**
Reinvestment Rate (%)			
4.0	12.00	7.50	3.48
5.0	12.08	7.58	3.57
6.0	12.16	7.67	3.67

The total return estimates for both bonds vary substantially across the different rate scenarios. For Bond A, these estimates range from a maximum value of 13.53 percent to a minimum value of 3.06 percent. For Bond B, these estimates range from a maximum value of 12.16 percent to a minimum value of 3.48 percent. This example shows the high degree of sensitivity of a bond's expected return to different values for reinvestment rates and end-of-period required yields.

If a portfolio manager currently owned Bond B, the higher yield to maturity on Bond A might induce the manager to swap Bond A for Bond B in a pure yield pickup swap transaction. However, Tables 1 and 2 show that the likely returns on both bonds are sensitive to what happens to interest rates, despite

[2] This example is adapted from Fabozzi, *The Handbook of Fixed Income Securities*, 5th Edition, pages 72-75.

the higher promised yield to maturity for Bond A. To see this more clearly, Table 3 shows the total return for Bond A minus the total return for Bond B in basis points.

Table 3

Bond A's Total Return Minus Bond B's Total Return (in Basis Points)

Required Yield at End of 3-Year Investment Horizon (%)			
	6.0	**8.0**	**10.0**
Reinvestment Rate (%)			
4.0	136	28	-42
5.0	137	29	-41
6.0	137	30	-41

Table 3 shows that for required yields of 6 and 8 percent, Bond A's total return exceeds that of Bond B's for all three reinvestment rates. However, for a required yield of ten percent, the situation reverses dramatically, with Bond B's total return exceeding that of Bond A. These results suggest that investment decisions based only on stated yield to maturity will not produce the best total returns as interest rates change. The results of this simple example demonstrate the importance of conducting a stress test over various interest rate scenarios when evaluating the expected return on investment securities before taking positions in these financial instruments.

MONEY MARKET, FIXED-INCOME MARKET, AND EQUITY MARKET SECURITIES

There are investment opportunities in each of the three major areas that make up the money and capital markets:

- Money market
- Fixed-income market
- Equity market.

Money Market

The money market is the arena where financial institutions and other businesses adjust their liquidity positions. This primarily consists of debt instruments with a remaining maturity of one year or less. Money market securities generally have a high degree of liquidity and low risk to principal. The money market operates through dealers, money center banks, and the Open Market Trading Desk of the New York Federal Reserve Bank.

Federal Funds

Federal funds are balances at the Federal Reserve that financial institutions lend to one another and are not subject to reserve requirements. The purchasing institution uses these funds to meet reserve requirements or for a special arbitrage funding arrangement. Federal funds sold are subject to default risk, as with any unsecured loan. The shorter the term of the transaction, the less default risk is a primary concern. The majority of federal funds transactions are for overnight or over weekends. Term federal funds, however, are not uncommon. They transact at a fixed rate for a period longer than one day, typically 30, 60, or 90 days. Term federal funds are subject to loans-to-one-borrower and other lending limitations.

Negotiable Certificates of Deposit

These certificates are usually issued by money center or large regional banks in denominations of $1M or more and the issuing institution may issue them at face value with a stated rate of interest, or at a discount similar to U.S. Treasury bills. These certificates are widely traded and offer substantial *liquidity*.

Eurodollar Time Deposits

Eurodollar time deposits are certificates of deposit issued by banks in Europe, with interest and principal paid in dollars. Such certificates of deposit usually have minimum denominations of $100,000 and short-term maturities of less than two years. Usually they have interest rates pegged to LIBOR.

Certificates of Deposit

Certificates of deposit are time deposits in banks or savings associations with maturities longer than 30 days. Most certificates of deposit have an original maturity of one to three months. Variable-rate

certificates of deposit are also available, typically either six-month with a 30-day roll or one year with a three-month roll. In general, certificates of deposit have a slightly higher return, are slightly riskier, and are slightly less liquid than Treasury bills. A prudent investment manager should limit holdings in any depository institution to amounts covered by federal deposit insurance.

Repurchase Agreements

In a repurchase transaction, an institution loans funds and, in effect, buys securities from a counterparty. They also commit to resell the same securities back to the counterparty, at a later date at a specified price. In a reverse repurchase transaction an institution receives funds from and sells securities to a counterparty. They also promise to repurchase the same securities at a specified price and date. Repurchase agreements are short-term in nature; therefore, the transaction takes place in the money market.

Treasury Bills

U.S. Treasury bills are U.S. Government securities with three-month, six-month, and one-year maturities. The government issues them in minimum denominations of $10,000 and multiples of $5,000 thereafter. The government issues treasury bills at a discount from face value. They are exempt from state and local taxation, and are backed by the full faith and credit of the U.S. Government.

Municipal Notes

Short-term municipal bond with a maturity of one year or less.

Municipal Bonds

Municipal bonds based on the general taxing authority of the issuer or general obligation bonds have certain factors that may adversely affect the creditworthiness of these types of bonds. These factors include the following:

- Declining property values and an increasing number of delinquent taxpayers.
- Increasing tax burden relative to other regions.
- Increasing property tax rate in conjunction with declining population.
- Actual general fund revenues consistently falling below budgeted amounts.
- Budget expenditures increasing annually in excess of inflation rate.
- General obligation debt increasing while property values remain static.
- Declining economy as measured by increased unemployment and declining population.
- Investment activities that involve excessive leveraging to achieve enhanced yields.

Floating-rate notes usually have a maturity of five to seven years, and interest payments periodically adjust, often every six months. A money market index, usually Treasury bills or Eurodollar rates determine the interest rate. State, municipal, and other political subdivisions, including independent school districts, issue municipal bonds that are usually dependent upon the general taxing authority of the locality or on specific revenue generating projects for repayment. Interest income generated by state and municipal obligations is not subject to federal income taxes and is usually exempt from taxation by the issuing state and local authorities. Other state and municipal obligations include Bond Anticipation Notes (BANs), Tax Anticipation Notes (TANs), and Revenue Anticipation Notes (RANs). These notes are short-term obligations to finance current expenditures pending receipt of proceeds from expected bond offerings or revenues.

Section 560.42 permits savings associations to invest in obligations of state or political subdivisions. The obligations must meet the following requirements:

- Rated in one of the four highest grades.
- Issued by a public housing agency.
- Backed by the full faith and credit of the United States.

The regulation limits investments in state or political subdivisions ten percent of capital for any one issuer, excluding general obligations of any one issuer. A savings association may invest, in the aggregate, up to one percent of its assets outside of the rating requirements and guarantee provisions within the state or political subdivision where the savings association's home or branch office is located.

Revenue Bonds

Revenue bonds are dependent upon the income generated by specific projects established by government authority. A type of revenue bond often held by savings associations are public housing authority revenue bonds. Although they have corporate debt characteristics, the FDIC does not consider such public entity issues to be corporate debt securities and are not subject to the FDIC divestiture requirements. The credit quality of these issues varies greatly and is dependent upon the revenue source, any guarantees, sinking funds, and market value of collateral, if any.

Because the taxing authority does not support revenue bonds, unless rated, you should classify them the same as other commercial credits. Other factors that negatively affect their creditworthiness include:

- Decreasing coverage of debt service by net revenues.
- Regular use of debt reserves and other reserves by the issuer.
- Growing financial dependence of the issuer on unpredictable federal and state aid appropriations for meeting operating budget expenses.
- Unanticipated cost overruns and schedule delays on capital construction projects.

- Frequent or significant user rates increases.
- Deferred capital plant maintenance and improvement.
- Shrinking customer base.
- New and unanticipated competition.

Commercial Paper

Top-rated corporations issue commercial paper with 2- to 270-day maturities. Commercial paper is unsecured, usually discounted and possibly backed by bank lines of credit. Standard and Poor's rates commercial paper ranging from A, the highest quality, to D, the lowest quality. Moody's uses designations of Prime-1 to Prime-3, and Not Prime (issuers that do not fall within any of the Prime rating categories).

Banker's Acceptances

Banker's acceptances arise mostly out of foreign trade transactions and are similar to commercial paper in form. They are noninterest-bearing notes sold at a discount and redeemed by the accepting bank at maturity for full face value. Banker's acceptances are short-term instruments with maturities of nine months or less. Most banker's acceptances are for very large amounts, although some are available for as low as $5,000. Liquidity risk varies considerably based on the size of the security. There is no secondary market for the very low denomination instruments. Banker's acceptances have very low credit risk since the accepting bank and the ultimate borrower both guarantee payment.

Federal Agency Discount Notes and Coupon Securities

Although they are only a small portion of the money market, federal agency securities are second highest in credit quality. The purposes, maturities, and types of agency securities issued vary widely. Typically the government backs these issues with collateral such as cash, U.S. Government securities, and debt obligations the issuing agency acquires through its lending activities. The more common types of federal agency securities include obligations of the following agencies:

- Federal Home Loan Banks (FHLBs)
- Farm Credit System (FCS)
- Federal National Mortgage Association (Fannie Mae)
- Federal Home Loan Mortgage Corporation (Freddie Mac)
- Government National Mortgage Association (GNMA)
- Student Loan Marketing Association (SLMA).

Obligations of the U.S. Government and federal agencies are safe and liquid. Federal agency securities (except for GNMAs) generally do not bear the full faith and credit of the U.S. Government. They do bear the full faith and credit of the U.S. Government agency or government sponsored enterprise that sponsors them.

Structured Notes

Federal agency notes include structured notes that are securities with derivative-like characteristics. Structured notes are fixed-income securities with embedded options where the bond's coupon, average life, or redemption value are dependent on a reference rate, an index, or formula. Fannie Mae, Freddie Mac, and the FHLBs are the primary issuers of structured notes. OTS considers structured notes a complex security and they require a price sensitivity analysis. See TB 13a-2 for more information.

Structured notes take various forms. The term structured notes includes the following securities:

- Dual-indexed floaters
- De-leveraged floaters
- Inverse floaters
- Leveraged inverse floaters
- Ratchet floaters
- Range floaters
- Leveraged cap floaters
- Stepped cap/floor floaters
- Capped callable floaters
- Stepped spread floaters
- Multi-step bonds
- Indexed amortization notes.

The major type of structured note owned by financial institutions are step-up bonds. These bonds have successively higher coupons over their life and the issuer may call them. Institutions should carefully evaluate the purchase of a step-up bond. See the explanation of the call feature of step up bonds immediately below in the description of corporate bonds.

OTS does not consider standard, non-leveraged, floating rate securities (where the interest rate is not based on a multiple of the index) to be structured notes.

Shares in Money Market Funds

The combined money of many entities that is jointly invested in high yield financial instruments including U.S. government securities, certificates of deposits, and commercial paper. A money market fund is a mutual fund that makes its profit by buying and selling various forms of money rather than buying and selling shares of ownership in corporations.

Fixed-Income Investments

The bond (or debt) market represents debt instruments with maturities of longer than one year and includes longer-term U.S. Government and federal agency bonds and notes, corporate debt securities, and municipal bonds.

Bond Ratings

Bond ratings are good threshold indicators of the probability of default, but savings associations should conduct a thorough credit analysis of the security issuer before buying a security. Savings associations should also monitor the security after the purchase. The issuer should have the capacity to meet principal and interest payments as they become due. Failure to do so results in a default. Credit analysis should, at a minimum, encompass a review of the issuing entity's financial statement, level of capitalization, management, earnings, business reputation, and other relevant factors. Other relevant factors may include: adequacy of sinking funds, collateralization, refinancing needs, and callability.

Besides performing the very basic credit analysis, each type of bond or industry has a unique set of factors. The institution should also review these factors when performing a credit review.

Rated Securities

We identify Moody's ratings first, and Standard & Poor's ratings in parentheses.

Investment Grade

- Aaa (AAA): Bonds judged to be of the best quality that carry the smallest degree of risk. The capacity to pay interest and repay principal is extremely strong.

- Aa (AA): Bonds judged to be of high quality by all standards. These securities have a very strong capacity to pay interest and repay principal. They differ from the higher-rated issues only in a small degree.

- A (A): Bonds of upper-medium-grade obligation with many favorable investment attributes. These securities have a strong capacity to pay interest and principal. However, they are somewhat more susceptible to the adverse effects of changes in circumstance and economic conditions than debt in higher-rated categories.

- Baa (BBB): Bonds considered to be of medium-grade obligation. They are not highly protected nor poorly secured. These securities have an adequate capacity to pay interest and repay principal. Normally, debt in this category exhibits adequate protection limits. However, adverse

economic conditions or changing circumstances are more likely to lead to a weakened capacity to pay interest and repay principal than in higher-rated categories.

Below Investment Grade

- Ba (BB): Bonds judged to have speculative elements. Often the protection of interest and principal payments may be moderate and thereby not well safeguarded.

- B (B): These bonds generally lack the characteristics of a desirable investment. Assurance of principal and interest payments or maintenance of other contract terms over a long period may be suspect.

- Caa, Ca, C (D): These bonds are of poor standing. Such issues may be in default or have other shortcomings.

The rating agencies (Moody's or Standard & Poor's) may append a designation of Provisional (Moody's) or Conditional (Standard & Poor's) to a rating. For example, the provisional or conditional description is when the issuer does not specify an offering date.

Subquality debt is, on balance, predominantly speculative regarding capacity to pay interest and repay principal according to the terms of the obligation. Large uncertainties on major risk exposures to adverse conditions outweigh any quality and protective characteristics. Debt rated D is in payment default. Rating companies use the D rating category when issuers do not make interest or principal payments on the date due. They assign the D rating even if the applicable grace period has not expired, unless the rating agency believes that the issuer will make such payments during the grace period.

Institutions should obtain current bond ratings or credit analysis before any purchase. Associations invested in corporate bonds should regularly review the current ratings of their holdings for any adverse changes, and management should report the result of these credit reviews to the board of directors.

Non-Rated Securities

For non-rated securities, institutions should establish guidelines to ensure that the securities meet legal requirements and that the institution fully understands the risk involved. Institutions should establish limits on individual counterparty exposures. Policies should also provide credit risk and concentration limits. Such limits may define concentrations relating to a single or related issuer or counterparty, a geographical area, or obligations with similar characteristics.

U.S. Treasury Securities

Treasury Notes

A U.S. government long-term security, sold to the public and having a maturity of one to ten years.

Treasury Bonds

A U.S. government long-term security, sold to the public and having a maturity longer than ten years.

Zero-Coupon Treasuries or STRIPS

Zero-coupon bonds, although they can be U.S. Government or agency securities, are most frequently corporate bonds. The market sells zero-coupon bonds at a deep discount from par value. They accumulate and compound interest and pay full face value at maturity. Zero-coupon bonds are highly sensitive to interest rates and tend to exacerbate interest rate risk in the majority of savings associations. As a result, it may be an unsafe and unsound practice for savings associations with excessive exposure to interest rate risk to invest in zero-coupon bonds. Moreover, taxable zero-coupon securities receive unfavorable tax treatment. Even though the savings association receives no cash, thrifts must pay taxes annually on accrued interest.

Corporate Bonds

Corporate bonds can consist of subordinated debentures, collateralized or mortgage bonds, and floating-rate notes. Corporate debt securities face the same risks as loans to a business entity. Section 560.40 restricts investments in corporate obligations that sets forth requirements for minimum credit quality and loan-to-one-borrower limitations. Federal institutions may only invest in investment grade corporate bonds. Investment grade corporate debt securities are those that, at the time of their purchase, were in one of the four highest rating categories by at least one nationally recognized statistical rating organization.

Collateralized Bonds

Corporate bonds come in many varieties with differing features and characteristics such as being secured or unsecured. The real estate mortgage or capital equipment that the bond money purchases usually collateralizes the bond. The bondholder can sell the collateral to satisfy a claim if the bond issuer fails to pay principal and interest when due. The full faith and credit of the issuer, but not any specific collateral backs an unsecured bond or debenture.

Debenture Bonds

A bond that has no specific security set aside or allocated for repayment of the principal. A debenture bond is secured only by the general credit of the issuer.

Callable Bonds

Institutions should carefully evaluate provisions that permit the issuer to modify the maturity of a bond. Many corporate bonds contain call privileges that permit the issuer to redeem the bond, either fully or partially, before the scheduled maturity. Call provisions are generally detrimental to investors since they run the risk of losing a high-coupon bond when rates begin to fall. Call provisions also tend to limit the price appreciation of the bond that might otherwise occur when interest rates decline. The presence of call protection, however, limits the right of the issuer to call the bond to a specified number of years early in the life of the bond.

Sinking Fund Bonds

Sinking fund provisions are a form of maturity modification most often found in industrial bonds but increasingly found in other types of bonds as well. A sinking fund provision can take either of two

forms. In one form, the issuer makes periodic payments to a segregated fund that is sufficient to retire the bonds upon maturity.

The other form mandates the issuer to retire some portion of the debt in a prearranged schedule during its life and before the stated maturity. Sinking funds are beneficial because they assure an orderly retirement of debt and enhance liquidity. Sinking funds can also be disadvantageous to investors. In particular those investors holding one of the early bonds to be called for a sinking fund are disadvantageous to the investor.

Equity Instruments

The equity markets are the primary exchanges for the trading of stocks. The shares of common stock and preferred stock bought and sold in these markets represent actual ownership interest in a corporate entity. The major markets are the New York Stock Exchange, the American Stock Exchange, and the over-the-counter market. Savings associations may not generally invest in or retain equity securities. The Home Owners' Loan Act permits the following investments:

Federal Agency Securities

Savings association may invest in certain equity securities of FHLBs, Freddie Mac, Fannie Mae, SLMA and GNMA.

Banker's Banks

A federal savings association may purchase for its own account shares of stock of a bankers' bank, provided the following conditions are met:

- The institution is insured by the Federal Deposit Insurance Corporation or a holding company that owns or controls such an insured institution, if the stock of such institution or company is owned exclusively by depository institutions or depository institution holding companies.

- Such bank or company and all subsidiaries are engaged exclusively in providing services to or for other depository institutions, their holding companies, and the officers, directors, and employees of such institutions and companies, and in providing correspondent banking services at the request of other depository institutions or their holding companies.

- The total amount of such stock held by the association in any bank or holding company must not exceed at any time ten percent of the association's capital stock and paid in and unimpaired surplus.

- The purchase of such stock must not result in an association's acquiring more than five percent of any class of voting securities of such bank or company.

Trust-Preferred Securities

Savings associations may invest in trust-preferred securities in accordance with the limitations established in 12 CFR § 560.40. Trust preferred securities are non-perpetual cumulative preferred stock

issued by a wholly owned trust subsidiary of a corporation. Revenue from the sale of the trust-preferred securities is exchanged for junior subordinated debentures issued by the parent corporation. These debentures feature coupon payment and term to maturity identical to those of the trust preferred securities. See Thrift Bulletin 73 for a complete discussion of trust secured preferred securities.

MORTGAGE-RELATED SECURITIES

Mortgage-Backed Securities

High default rates on mortgage bonds during the Great Depression inhibited demand for these instruments until the introduction of the Government National Mortgage Association (GNMA) pass-through security in 1970. Even with the federal government guarantee there was considerable skepticism about the acceptance of mortgage securities in the investment community when GNMA first issued its securities.

The mortgage-backed securities (MBSs) introduced by GNMA in 1970, consisted only of Federal Housing Administration (FHA) and Veteran's Administration (VA) mortgages. Conventional lenders had indirect access to the capital markets only through the Federal Home Loan Mortgage Corporation (Freddie Mac) beginning in 1971. Originators could sell mortgages to Freddie Mac, which pooled and sold the resulting securities as Participation Certificates (PCs).

In 1981, Freddie Mac began a swap program, Guarantor I, that allowed lenders to exchange conventional mortgages for pass-through securities. In the first Freddie Mac swap of mortgages for securities, no cash exchanged hands. The seller received payment as PCs representing ownership in the mortgages sold. In this exchange or swap of assets, the savings association believed it could sell its low-rate mortgages more easily and at a higher price in security form rather than mortgage form. Soon after, the Federal National Mortgage Association introduced its Mortgage-Backed Security program. This restructuring of savings association mortgage portfolios was the major factor in the rapid growth of conventional mortgage securities.

As the mortgage securities market grew, lenders began to recognize that the swap programs provided an attractive alternative method for mortgage sales. In addition, many lenders began to securitize their portfolio mortgages to add both value and liquidity. Most issuers now issue the securities through the swap programs. Fannie Mae, Freddie Mac, and GNMA all collect a small guarantee fee throughout the life of the mortgages for the service.

The term mortgage security describes a variety of mortgage-related financial instruments. Although characteristics can vary widely, there are only two basic types of mortgage securities:

- A certificate representing ownership of an undivided interest in a proportionate share of each mortgage in a pool, referred to as a mortgage pass-through security or a mortgage-backed security (MBS).

- A debt obligation secured by a specified pool of mortgages, referred to as a mortgage derivative product (MDP).

Within each type, the market designed variations to appeal to certain investor classes or to reduce the cost of security financing.

Some mortgage derivative products (MDPs) exhibit considerably more price volatility than mortgages or ordinary mortgage pass-through securities and can expose investors to significant risk of loss if not

managed in a safe and sound manner. Uncertain cash flows that result from changes in the prepayment rates of the underlying mortgages cause this price volatility.

Because these products are complex, savings associations need a high degree of technical expertise to understand how their prices and cash flows may behave in various interest-rate and prepayment environments. An institution's management should understand the risks and cash flow characteristics of its investments. This is particularly important for products that have unusual, leveraged, or highly variable cash flows. Moreover, because the secondary market for some of these products is relatively thin, they may be difficult to liquidate should the need arise. Finally, there is additional uncertainty because the market continues to introduce new variants of these instruments. Savings associations are not able to test their price performance under varying market and economic conditions because the products are too new.

Savings associations should ensure that levels of activity involving MDPs are reasonable and appropriately relate to a savings association's capital, capacity to absorb losses, and level of in-house management sophistication and expertise. OTS considers investments in complex securities and the use of financial derivatives by institutions that do not have adequate risk measurement, monitoring, and control systems to be an unsafe and unsound practice. Appropriate managerial and financial controls must be in place and the savings association must analyze, monitor, and prudently adjust its holdings of MDPs in an environment of changing price and maturity expectations.

Secondary Mortgage Market

Through this market, original lenders are able to sell loans in their portfolios to build liquidity to support additional lending. Mortgage agencies, such as Freddie Mac, Fannie Mae, and investment bankers buy mortgage loans. In turn, these agencies and investment bankers create pools of mortgages that they repackage as mortgage-backed securities, which they sell to investors. Mortgage-backed securities or mortgage pass-through certificates provide investors with payments of interest and principal on the underlying mortgages. Since the underlying issuer guarantees the mortgage pass-through certificate, the default risk is low for this type of security.

The buying, selling, and trading of existing mortgage loans and mortgage-backed securities constitutes the secondary mortgage market. This has become a significant activity for many savings associations.

The payments for MBSs resemble mortgage payments but without delinquencies. Principal and interest payments, less guarantee and servicing fees, pass through to the investor whether or not the issuer collects them. The servicer advances the delinquencies to the investor until the mortgage either becomes current or foreclosure is complete. Prepayments pass through to the investor as received.

The servicer collects mortgage payments on a monthly basis from the mortgagor and remits those funds less its servicing fee to a central collection point, or directly to the investors for GNMA I. Fannie Mae, Freddie Mac, and GNMA II collect their guarantee fee either directly from the payments that they pass through or from the servicer.

Fannie Mae and GNMA have always guaranteed the timely payment of both principal and interest to investors for their MBSs, requiring the servicer to advance its own funds to the investor to make up for delinquencies. Freddie Mac only guaranteed the timely payment of principal until they developed their

Gold PC and now it, too, guarantees the timely payment of both principal and interest. The following characteristics determine the structure of an MBS:

- Types of mortgages in the pool.
- Weighted-average coupon on the pool of underlying mortgages.
- Pass-through rate on the MBS.
- Weighted-average remaining maturities of the mortgages.
- Number and size of the mortgages.
- Geographic distribution of mortgages.

Weighted-Average Coupon and Pass-Through Rate

The weighted-average coupon (WAC) of the mortgage pool is an important factor in determining prepayment speeds. In general, higher WACs relative to current mortgage rates result in faster prepayments because homeowners have an incentive to refinance at lower market rates. Lower WACs relative to current mortgage rates lead to slower prepayments because lower refinancing rates are not readily available.

The average interest rate on the underlying mortgages of an MBS usually exceeds the pass-through rate. The spread between the WAC and the pass-through rate represents guarantee fees and servicing fees. A savings association that originates and packages loans for securitization can set limits on the permissible range of interest rates in a pool. These limits must be within the guidelines established by the guarantor of the MBS for each specific program.

Original Term and Weighted-Average Remaining Maturity

The original term and the weighted-average remaining maturity (WARM) also affect the rate of repayment. Longer terms to maturity mean that amortization of principal will spread out over a longer period. This means the security passes through less principal during the early years of the security. In addition, prepayment patterns vary by original terms such as 30 years or 15 years. Loan age, which represents the difference between original and remaining maturity, also affects the rate of repayment. Payments on older mortgages allocate more to principal than to interest. Prepayments on a mortgage pool also tend to increase as the mortgages age, or become more seasoned. Eventually, prepayments slow down, or burn out. This occurs when most of the mortgagors remaining in the pool are either unwilling or unable to prepay. The maturity date of an MBS is generally the date on which the last mortgage in the pool repays in full. Each guarantor of an MBS sets limits on the permissible range of interest rates and maturities for each specific program.

Geographic Distribution

The location of the mortgages comprising the pool affects the likelihood and predictability of prepayments. Different areas of the country prepay at much different rates. Geographical diversity

permits greater predictability of cash flows as the mortgage pool is less subject to regional economic conditions and other local influences. More mortgages in a given pool tend to diversify risks and make cash flows more regular and predictable.

Types of Mortgage-Backed Securities

Agency-Issued MBS

Agency-issued MBSs are attractive to certain investors because of their minimal credit risk, ease of trading, and liquidity. The low credit risk of MBSs results from the guarantees that Fannie Mae, Freddie Mac, or GNMA places on its mortgage securities.

Non-Agency MBSs

Other issuers, including mortgage bankers, insurance companies, investment banks, and other financial institutions that issue MBSs, also create and issue securities from a pool of loans. Non-agency MBSs include both pass-through and pay-through structures.

These securities typically have more credit risk and less liquidity than agency MBSs but still often carry AA or AAA ratings due to various credit enhancements. These credit enhancements include primary mortgage insurance and reserve funds. Some issuers split the security into a senior/subordinated structure. The senior/subordinated structure splits the security into low-credit risk (senior) and high-credit risk (subordinated) pieces or tranches. The subordinated tranche(s) absorb the first wave of losses. Only after exhausting the subordinate class(es) does the senior tranche(s) incur losses. The credit risk of the subordinated tranches depends on the credit risk of the underlying mortgages and the deal structure. Therefore, the credit risk depends on the amount of loss exposure assigned to the tranche. Investors should monitor the credit ratings on MBSs and CMOs issued by private conduits.

Non-agency MBSs often include nonconforming mortgages that are too large or otherwise ineligible for securitization by the agencies. Non-agency MBSs also tend to be more geographically concentrated than Fannie Maes, Freddie Macs, and GNMAs.

Fixed-Rate MBSs

Fannie Mae, Freddie Mac, and GNMA issue fixed-rate MBSs with terms of 30 years, 20 years, and 15 years. They also issue pools of balloon mortgages that follow a 30-year amortization schedule but mature after five or seven years. Graduated Payment Mortgages (GPMs) and Tiered Payment Mortgages (TPMs) pay a pre-established but increasing rate over time.

Adjustable-Rate MBSs

The issuance of MBSs backed by adjustable-rate mortgages (ARMs) provides an additional type of pass-through security in the secondary market. An adjustable-rate MBS offers protection against rising rates by linking its interest rate to a market-based index, like the one-year Constant Maturity Treasury (CMT) rate or the Eleventh District Cost of Funds. Periodic and lifetime caps along with teaser rates limit that protection by constraining the extent of rate adjustment. A teaser ARM features a low introductory interest rate designed to induce borrowers to select ARMs over fixed-rate mortgages.

ARMs often have periodic caps, lifetime caps, or both. A typical periodic cap on a one-year ARM limits the increase or decrease in the coupon to two percent per year. While an annual cap limits the amount of rate adjustment during any given year, the lifetime cap establishes a maximum coupon on the ARM throughout the life of the mortgage. Some ARMs without periodic caps still have payment caps that limit the increase in monthly payments rather than the interest rate. Negative amortization can occur, that is, the principal balance increases, if the mortgage reaches its payment cap.

You should determine the effect of teaser rates, periodic caps, and lifetime caps on the savings association's ARM MBS portfolio. The interaction between teaser rates and periodic caps is particularly important. Consider an ARM with a teaser rate of five percent, a fully indexed rate of eight percent, and an annual cap of two percent. This ARM offers the investor no protection against rising rates for at least two years. The rate at the start of the second year will be the same (seven percent) if rates fall one percent or rise four percent. The ARM only reaches its fully indexed rate in the third year if the index rate increases by 100 basis points or more. A teaser rate affects the lifetime cap as well. With a five percent teaser rate, the lifetime cap will typically be 11 percent, or only 300 basis points above the current, fully indexed rate.

Mortgage-Backed Security Considerations

MBS Yields and Prices

Present value analysis discounts the future cash flows of mortgages by their required rate of return, which equals the rate available in the market for investments of similar risk. This process calculates an MBS's present value or estimated market value. Alternately, given a market price, it is possible to determine the rate of return or yield that would make the sum of the discounted cash flows equal to the market price. Two common measures of yield are the cash flow yield and the option-adjusted yield.

Cash Flow Yield

To determine the cash flow, or static yield of an MBS, discount the sum of all future cash flows back to the current market price. The cash flow yield calculation requires two major inputs: the current price of the security and a projection of future cash flows. Issuers usually base prepayment estimates upon Wall Street forecasts for similar MBSs and incorporate those prepayment estimates into the analysis.

The cash flow yield assumes cash flows will follow projections. Actual prepayments may exceed or fall short of projections, depending largely on the future course of interest rates. Falling market interest rates encourage homeowners to prepay their mortgages and refinance them at the new, lower rate. Rising interest rates encourage homeowners to retain mortgages, which would then have below-market rates. The cash flow yield does not take the variability of future interest rates and, therefore, prepayments into account. While cash flow yield may be an adequate measure (particularly for MBSs at or near par), it is less accurate than the option-adjusted yield measure described below.

Option-Adjusted Yield

The option-adjusted yield method can provide a more accurate comparison of the yield on investments with embedded options, like the prepayment option on a mortgage, to investments without embedded options such as noncallable corporate bonds. The option-adjusted yield does not rely on a single projected cash flow using a single prepayment estimate. The option-adjusted yield derives from many

projected cash flows and prepayment estimates. The option-adjusted yield equals the discount rate (internal rate of return) that makes the average present value of the cash flows equal to the market price of the security. As shown in the example below, option-adjusted yields are typically lower than nominal yields. The difference between nominal and option-adjusted yields is greatest when prepayments are most interest-rate sensitive.

Example: Nominal Yield Vs. Option-Adjusted Yield

Compare an MBS with a seven percent coupon and a five-year base case weighted average life to a five-year noncallable corporate bond also with a seven percent coupon and of similar credit risk and liquidity. Both are priced at par. Consider three possible interest-rate scenarios: rates rise 100 basis points (25 percent probability), rates fall 100 basis points (25 percent probability), and rates stay the same. The weighted average life of the MBS increases to seven years if rates go up 100 basis points and decreases to three years if rates fall 100 basis points. The discount rate (internal rate of return) needs to equal 6.84 percent for the average present value of the cash flows to equal the current market price.

Rate Scenario	Probability	Present Value	Discount Rate
Flat	.50	100.668	6.84%
Up 100 basis points	.25	95.54	7.84%
Down 100 basis points	.25	103.15	5.84%
Weighted Average	1.00	100.00	6.84%

Although the bond and MBS provide the same nominal yield (seven percent), the bond outperforms the MBS by an average of 16 basis points once the investor considers interest rate and cash flow volatility. The option-adjusted yield is usually superior to cash flow yield as a measure of the yield of financial instruments with embedded prepayment options. This is because the option-adjusted yield considers the estimated probability distribution of potential prepayment rates instead of using a single estimate.

MBS Accounting

The interest method is the required accounting measurement for recording the yield for MBSs. Savings associations should amortize or accrete into income premiums and discounts using the interest method over the expected life of the mortgage security. This should result in a constant rate of interest (level-yield) when applied to the amount outstanding at the beginning of any given period.

Account for differences between anticipated and actual prepayments by recalculating the effective yield to reflect actual payments to date and anticipated future payments. This adjusts the net investment in the MBS to the amount that would have existed had the new effective yield been applied since acquisition.

For adjustable-rate MBSs, savings associations may base the effective yield on either the rate in effect at acquisition or recalculate the effective yield each time the rate on the MBSs change. Solicit comparable market quotes from at least two brokers other than the broker that executes the transactions. Even if a savings association does not have significant volume, they should obtain comparable price quotes.

Mortgage-Backed Bonds

A mortgage-backed bond is unlike a mortgage-backed pass-through security because they do not convey ownership of any portion of the underlying pool mortgages. However, mortgage-backed bonds do offer a more predictable maturity and thus offer a form of call protection. The bond issuer retains nearly all the risk associated with the security, including the interest rate risk and the credit risk. A pay-through bond has less risk exposure for the issuer than a straight bond, but greater risk than a pass-through security.

Mortgage Derivative Products

OTS defines a financial derivative in § 563.172. A financial derivative is a financial contract whose value depends on the value of one or more underlying assets, indices, or reference rates. The most common types of financial derivatives are futures, forward commitments, options, and swaps. OTS does not consider certain mortgage derivative securities such as collateralized mortgage obligations (CMOs) or real estate mortgage investment conduits (REMICs) as financial derivatives.

Collateralized Mortgage Obligations

Freddie Mac first issued collateralized mortgage obligations (CMOs) in 1983. Freddie Mac designed CMOs in the early 1980s to broaden investor demand. They do this by splitting an underlying pool of mortgages and MBSs into different classes, or tranches, that appeal to different types of investors. For example, Freddie Mac splits a pool of 30-year, fixed-rate MBSs into short-term, intermediate-term, and long-term tranches. Listed below are various types of CMO tranches found in savings association portfolios.

A major initial drawback to widespread use of the CMO was the substantial size of the mortgage pool; $100 million or more was necessary to support the cost of issuance. The appearance of CMO conduits, however, made CMO issues feasible for smaller lenders. The conduit achieves the economies of scale needed to make the issue cost-effective for the lender by pooling collateral supplied by a number of lenders. Only a few of the conduits survived and, as a result, Fannie Mae, Freddie Mac, GNMA, and investment bankers that have access to large volumes of collateral dominate the list of issuers.

CMOs demand higher yields than other investments of similar quality and maturity because the actual life of the bond is uncertain. Some CMOs, like PACs, offer more predictability of prepayments than mortgages or other types of mortgage-backed bonds because of the large collateral pools backing each type of issue and the prioritization of cash flows.

The market's assumptions regarding the average life and average life volatility of each investor class determine CMO yields and yield spreads over comparable treasuries. Short-term agency PACs, which have little average life volatility, often trade at spreads of less than 50 basis points over Treasury. More volatile tranches earn significantly wider spreads. As with mortgage investments, the actual prepayment of the mortgages will determine the actual yield to maturity.

Prepayments on a CMO tranche are a function of prepayments on the underlying mortgages and the tranche structure. Faster or slower prepayments on the underlying mortgages can affect the weighted average life of an individual CMO tranche, but not necessarily proportionately. As noted above, PACs

usually have much more stable cash flows than the underlying mortgages, but support tranches have much more volatile cash flows.

Geographic concentrations, loan size, and market interest rates affect prepayments on non-agency MBSs. If the MBS consists of mortgages concentrated in a particular state, prepayments on the MBS may differ substantially from national prepayment patterns. Prepayments on the large loans that characterize many non-agency MBSs tend to accelerate more quickly when market interest rates fall.

CMO Risks

The tranche structure of CMOs allocates rather than eliminates the risk of the underlying mortgages. The creation of tranches with shorter average lives than the underlying mortgages requires the creation of tranches with longer average lives. Stable PAC tranches require volatile support tranches. Investment-grade senior classes create speculative-grade subordinated tranches. The yield and market value of subordinate interests in CMOs are extremely sensitive to prepayment fluctuations. These kinds of riskier tranches can still attract investors in one of two ways. They may appeal to investors with different risk profiles; for example, long-term CMOs can match the long-term liability structure of insurance companies. Issuers may also attract investors by offering higher yields.

CMO structures can also present risks that are less obvious. These risks include PAC drift, cap risk, basis risk, and illiquidity.

- PAC Drift

The industry designed PACs to provide a predictable stream of cash flows across a range of prepayments, known as a PAC band. Many investors incorrectly assume that PAC bands remain fixed. In fact, faster-than-predicted prepayments can cause the band to narrow or drift. The support tranches will shrink or prepay entirely. The planned amortization rate guarantee disappears without a support tranche available to cushion future prepayment volatility. Investors often refer to these securities as busted PACs.

The amount of protection afforded by the PAC depends on the following factors:

— Width of the PAC band – wider bands provide more protection.

— Relative sizes of the PACs and supports in the deal – more supports provide greater insulation against prepayment volatility.

— Prepayment volatility of the underlying mortgages.

The consequences of a PAC's drifting or "busting" depend on the security type. For a traditional PAC, the CMO merely assumes the prepayment characteristics of the underlying mortgages. Narrowing or eliminating the PAC band causes Type II PACs to assume the prepayment characteristics of a support tranche and can be much more volatile than the underlying mortgages.

- Cap Risk

Lifetime caps limit the extent to which floating-rate CMOs can adjust to rising market interest rates. One can consider a lifetime cap an embedded option and, as the value of the option increases, the price of the security falls. As with any option, the effect of a lifetime cap on price and price volatility depends on the following factors:

— The option's intrinsic value, that is, the distance between the cap and the current rate on the CMO.

— The volatility of the index.

— The time to expiration (the average life of the CMO).

Many issuers use floaters as support tranches. With floaters, an increase in market interest rates causes a reduction in the distance to the lifetime cap and an extension (sometimes dramatic) of the average life of the CMO. Savings associations must fully incorporate the effect of lifetime caps on price sensitivity when self-reporting the price sensitivity of floating-rate CMOs on Schedule CMR.

- Basis Risk

Mismatched floaters can expose institutions to considerable basis risk if the index rate on the floater diverges significantly from short-term market interest rates, such as LIBOR. Such a divergence can arise from a nonparallel shift in the yield curve (if the index is the Ten-Year CMT) or from a lag between current market rates and the index rate (if the index is COFI). Basis risk is most significant for mismatched floaters with long or volatile average lives. Savings associations should evaluate the potential effect of nonparallel yield curve shifts on mismatched floaters.

- Liquidity Risk

Volatile or exotic CMO tranches tend to be the least liquid. Illiquidity places both purchasers and sellers at a disadvantage. The lack of an available market makes the asset difficult to sell without considerable price concessions. Illiquidity also makes it difficult to determine the true market value for a security and increases the possibility that the savings association will overpay. Illiquidity imposes transaction costs on buyers and sellers of securities. The broker receives the difference between the amount paid by the buyer and received by the seller, known as the bid-ask spread. A wide bid-ask spread means the buyer pays more and the seller receives less.

Types of CMOS

- Sequential Pay

Issuers often structure CMO deals as a series of Sequential Pay bonds. Each investor class generally receives monthly interest payments on the outstanding principal balance of its class. The bond allocates principal payments to each investor class in the order of maturity. The shortest outstanding maturity receives all principal payments until that class is fully retired, then holders of the second class begin to

receive principal payments, and so forth. Most CMO issues have a compound interest or accrual class (called the Z Bond) that receives no interest or principal payments until the retirement of all other investor classes. The accrual bond's coupon rate compounds during the accrual phase and converts to an interest-paying instrument following retirement of all shorter maturity classes.

- Planned Amortization Class

A CMO innovation that was very popular in the late 1980s is the Planned Amortization Class (PAC). The PAC structure reduces cash flow uncertainty by guaranteeing a specific cash flow stream, provided that prepayments on the underlying mortgages remain within an established range or band. The increased certainty of PAC tranches causes other tranches in the issue (known as companion or support tranches) to have more uncertain cash flows. A Type II PAC represents a hybrid between a PAC and a support tranche. Type II PACs offer predictable cash flows, but within a narrower range of prepayments. If prepayments fall outside that range, Type II PACs assume the cash flow volatility of a support tranche.

- Floating-Rate CMOs

The market developed floating-rate tranches to attract investors more concerned with interest rate risk. Floaters typically adjust monthly or quarterly based on some index, such as LIBOR. Rate adjustments are usually subject to a lifetime cap, but periodic caps are unusual.

- Mismatched Floaters

A further innovation involves mismatched floating-rate CMOs that may adjust monthly or quarterly. Their rate adjustment ties either to a longer-term index, such as the Ten-Year Constant Maturity Treasury (CMT), or to a lagging index, such as COFI. These CMOs offer higher yields than traditional floaters but present basis risk from lack of perfect correlation between the index rate and short-term market interest rates.

- Kitchen Sink Bonds

Typically, a homogeneous pool of MBSs creates a diverse group of CMO tranches. A kitchen sink bond (also called a re-REMIC or a Matched Principal Bond) reverses the process by creating a single CMO from a dissimilar group of mortgage securities. Risky individual securities make up kitchen sink bonds. The resulting bond may not necessarily be volatile due to offsetting risks (that is, combining IOs and POs) but is usually difficult to analyze due to its complex composition.

Real Estate Mortgage Investment Conduits

Congress passed Real Estate Mortgage Investment Conduit (REMIC) legislation in 1987. This legislation provided a new vehicle for issuing MBSs. Issuers structure REMICs much like CMOs and other securitized receivables but REMICs offer certain tax advantages. The government does not generally tax the special purpose entity formed to issue the pass-through or pay-through certificate at the entity level. Also, the savings association does not typically consolidate the special purpose entities. This allows for increased securitizations in REMIC form and leveraging of savings association capital

because the assets are off-balance sheet. Nearly all CMOs are REMICs, as are most non-agency MBSs, including those with a pass-through structure.

Futures, Forwards, and Options

In the futures market, investors buy and sell contracts for the future delivery of a commodity or security. The forward market is a market in which participants trade some commodity, security, or instrument at a fixed price at a future date. The proper use of derivatives such as futures, forwards, swaps, and options can reduce an institution's exposure to interest rate risk and can provide a framework for hedging strategies. Improper use of these securities can generate extreme losses. See the discussion of swaps in this section under Mortgage Derivative Products. See also Sections 650, Interest Rate Risk Management; and 660, Derivative Instruments and Hedging.

Stripped Mortgage-Backed Securities

In 1986, Fannie Mae issued the first stripped mortgage-backed securities (SMBSs). This instrument created two new classes of investors or security holders. Each class received a percentage of the principal and interest payments from either the MBS or from the whole mortgages that served as the underlying collateral. For example, one class of the SMBS may receive 99 percent of the interest payments and one percent of the principal payments from the underlying MBS. Investors in different classes of SMBSs buy a derivative mortgage instrument that has significantly different characteristics from the underlying mortgages or the MBSs. The industry also refers to these classes as tranches.

In 1987, Fannie Mae introduced an SMBS composed of an interest only (IO) class and a principal only (PO) class. The holder of the IO receives all the interest payments from the underlying MBS while the holder of the PO receives all the principal payments.

Investment bankers also create their own version of SMBSs both through private placements and public offerings. Investment bankers normally create the private placement through a participation agreement that entitles the holder to a certain predefined percentage of the principal and interest payments from the underlying mortgages or the MBS. These private placements are similar to the original Fannie Mae SMBSs in that holders receive varying percentages of the principal and interest payments rather than a percentage of all the interest or principal. In addition, Freddie Mac issues its own version of IOs and POs using participation certificates rather than MBSs.

Fallen Angels

Examiners refer to securities not performing as expected due to changes in either tranche structure or market conditions as fallen angels. Savings associations may continue to account for fallen angels as held-to-maturity. You should consider unrealized losses on these securities in your evaluation of the institution's capital adequacy.

Mortgage Swaps

Mortgage swaps are off-balance sheet transactions designed to replicate the purchase of MBSs with reverse repurchase agreements or some other short-term or floating-rate source of funding. In essence, the transaction combines a forward commitment to purchase MBSs with an amortizing interest-rate

swap. Unlike the traditional purchase of mortgage securities, however, the issue makes no cash payment at the outset of the agreement.

Mortgage swaps are an alternative to a straight purchase of MBSs. They involve a great deal of leverage because the initial collateral on the transaction is a small fraction (typically four points) of the par value of the mortgage securities and the transaction is off-balance sheet. They also may enable the investor to effectively finance mortgage securities at a rate tied to a floating-rate index below LIBOR on a guaranteed multiyear basis.

Collateralized Loan Obligations

Collateralized loan obligations (CLOs) are securities primarily collateralized by commercial loans of varying quality. Some issues may also be collateralized in part by high-yield corporate debt securities.

CLOs are generally sold in several progressively risky tranches. The first tranche often has a high investment rating, such as AAA, due to its payment priority and the initial overcollateralization of the security. The collateral also sequentially supports the next tranche(s). CLOs typically have a revolving period and an amortization period. During the revolving period, principal payments are reinvested in other assets in accordance with the terms of the agreement. During the amortization period, any principal payments are used to first repay the Class A note holders in full, then any remaining principal is used to pay junior tranche investors in order of their priority.

The middle tranches are often rated at the lower investment grade ratings, such as BBB. The lowest priority tranche, or the residual interest tranche, is generally not rated. It is typically subordinated not only to senior tranches, but also to expenses of the issuing trust. These residual tranches are typically difficult to value and are illiquid investments by themselves. To make the residual tranche more marketable, the CLO issuer or trustee may swap the residual interest tranche for certificates guaranteed by a AAA-rated counterparty as to the principal amount at maturity (generally up to 12 years).

While the swap creates a guarantee of the full principal at maturity, the amount guaranteed must be discounted to its present value if terminated early. In that respect, the guaranteed portion of the security is similar to a zero-coupon Treasury bond. Therefore, the credit support provided by the guarantor may cover less than 50 percent of the face value of the certificate at purchase. Unlike zero-coupon bonds, however, these certificates are generally sold at par. Investors must rely on the performance of the reference asset (the residual tranche in this case) to return the remaining portion of their investment and provide any yield. The performance of the reference asset is not, however, guaranteed. Therefore, these investments are not, and should not be considered, fully rated.

Apparently, the motivation to purchase such certificates is the high yield projected if the CLO collateral pool (and thereby the reference asset) performs well. However, there is no guarantee of residual cash flows, and the certificates will not default if no cash flows are paid to the investors. These investments are speculative, and are clearly not intended to hedge interest rate risk or credit risk. Based on discussions with rating agencies, and the lack of supporting cash flow analysis, it is difficult to assess the likelihood that a particular return could be achieved on these investments. In essence, an institution should not be misled by split ratings where only a part of the security is either guaranteed or rated investment grade.

It is imperative that institutions properly underwrite investment securities for quality, applicable regulatory and policy compliance, and suitability to operational and strategic plans.

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Deposits / Borrowed Funds

Deposits/borrowed funds, liquidity management, and funds management are integrally related. It is recommended that Handbook Sections 530, Cash Flow and Liquidity Management, and 510, Funds Management, be reviewed in conjunction with this Section.

The OTS reinvented its deposit rules October 22, 1997. This regulatory reinvention streamlined the regulations by eliminating outdated provisions as well as provisions that duplicated or overlapped other applicable requirements such as the Truth in Savings Act, and Federal Reserve Board Regulations D (Reserve Requirements) and DD (Truth in Savings), which apply to savings associations as well as banks. Additionally, OTS codified its long- standing position on federal preemption of state laws affecting deposit-related activities. OTS also consolidated all deposit-related regulations, except definitions, in a new Part 557.

DEPOSITS

LINKS

Program

Questionnaire

Deposits typically represent the largest source of a thrift's funds. Therefore, it is important that the thrift implement policies and procedures to generate and retain its deposit base as well as to monitor its overall deposit structure. An effective deposit management program should include all of the following elements:

- A clearly defined marketing strategy within the business plan that identifies the desired market share in terms of growth or shrinkage, market niche, and present and potential competition.
- Identification of core and volatile deposits and analysis of the cost of core and volatile deposits, including operating costs to maintain the various deposit products and deposit branches, and targeted spreads between deposit costs and earnings on assets funded by deposits.
- Periodic analysis of present and anticipated funding and liquidity needs, and comparative analysis of costs of deposits versus alternative sources of funds to meet those needs.
- Frequent review of deposit pricing, volume, sources, volatility, and trends in relation to overall funds management goals, interest rate risk exposure, spread, net interest margin, and profitability.

Core deposits are important in evaluating the stability of funding sources and costs, and in measuring liquidity risk. Core deposits may include regular and passbook savings, certificates of deposit (CDs), and various types of retirement and special savings. Typically, core accounts carry high average operating

expenses and low deposit balances. Although, by definition, a stable source of funds, some core deposits will be lost over time if interest rates paid become noncompetitive.

Types of Deposit Accounts

The regulator's efforts to analyze the character of the overall deposit structure should be directed to types of deposit accounts shown by experience to be significant in presenting problems to management. The following paragraphs discuss common types of deposit accounts and practices that, under certain circumstances, can become problems.

- *Brokered and Money Desk-Originated Deposits*: Brokered deposits are usually obtained through a broker acting as an intermediary between the thrift and the depositor. Money desk operations are usually staffed by in-house personnel. Brokered and money desk-solicited deposits are a volatile and usually high-cost source of deposits. The cost is usually high because of higher interest rates needed to attract volume. Operating costs such as the fees paid to brokers and salaries or commissions paid to money desk personnel also contribute to the cost of these deposits. The depositors have no loyalty to the thrift. Brokered and money desk deposits are highly susceptible to withdrawal if interest rates paid become noncompetitive or the solvency of the thrift is threatened.

- A high volume of high interest rate, short-term brokered or money desk-originated deposits usually indicates excessive risk. Active solicitation of such deposits without the benefit of a well-designed risk management program is unsafe and unsound.

- *Bank Investment Contracts* (BIC): BICs are a deposit contract between a financial institution and its 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 to the end of the contract. A BIC is the counterpart of the insurance industry's Guaranteed Investment Contract (GIC). The customers for BICs and GICs are, in most cases, sponsors of employee benefit plans such as pension plans or deferred compensation plans that qualify under section 401(k) of the Internal Revenue Code (commonly referred to as "401(k) Plans").

Brokered Deposit Restrictions

Section 301 of the Federal Deposit Insurance Improvement Act (FDICIA) of 1991 mandated that the Federal Deposit Insurance Corporation (FDIC) place limitations on brokered deposits and deposit solicitations. Section 337.6 of the FDIC regulations applies to all thrifts and restricts the use of brokered deposits on the basis of capital adequacy. Under the regulation, institutions are divided into categories of well-capitalized, adequately capitalized, and undercapitalized condition. Only well-capitalized institutions may continue to accept brokered deposits without restrictions. Adequately capitalized institutions must now obtain a waiver from the FDIC in order to continue accepting brokered deposits. Undercapitalized institutions are prohibited from accepting brokered deposits.

Well-capitalized institutions are defined in the regulation based on § 38 of the Federal Deposit Insurance Act dealing with prompt corrective action.

A well-capitalized institution has:

- a ratio of total capital to risk-weighted assets of not less than 10 percent;
- a ratio of tier 1 capital to risk-weighted assets of not less than 6 percent;
- a ratio of tier 1 capital to total book assets of not less than 5 percent; and
- not been notified by the Office of Thrift Supervision (OTS) that it is in troubled condition.

An adequately capitalized institution is defined as neither well-capitalized nor undercapitalized.

An undercapitalized institution fails to meet minimum OTS regulatory capital requirements.

Adequately capitalized institutions must now obtain an FDIC waiver in order to accept, renew, or roll over brokered deposits. An adequately capitalized institution that needs a waiver should contact the appropriate OTS regional office to coordinate filing the waiver application with the FDIC. A copy of the waiver application should be submitted to the OTS regional office.

Adequately capitalized institutions are restricted as to the interest they may pay on brokered deposits. Any adequately capitalized institution that has been granted a waiver to accept, renew, or roll over a brokered deposit may not pay an effective yield on the deposits that exceeds the following yield by 75 basis points: (1) the effective yield paid on deposits of comparable size and maturity in such institution's normal market area for deposits accepted from within its normal market area or (2) the national rate paid on deposits of comparable size and maturity for deposits accepted outside the institution's normal market area. The FDIC has established that the national rate shall be 120 percent of the current yield on similar U.S. Treasury obligations; or in the case of any deposit that is at least half uninsured, 130 percent of such yield.

A deposit broker may not solicit or place any deposit with an insured depository institution unless it provides a notice to the FDIC that it is acting as a deposit broker.

OTS staff should refer to definitions and provisions of § 337 of the FDIC regulations to determine compliance with the brokered deposits provisions.

Deposit development and brokered deposit retention policies should recognize the following issues:

- Restriction on accepting, renewing or rolling over brokered deposits.
- Limits imposed by prudent competition.
- The risks of over-reliance on brokered deposits as a funding source.

Regulators should monitor their caseload of undercapitalized thrifts to identify violations of the prohibition on brokered deposits. If a thrift is in violation of the prohibition, staff should communicate

this fact to the FDIC, request progress reports from the thrift regarding its disposition of brokered deposits, and initiate corrective action to ensure that the thrift ceases its violation.

- *Out-of-Area Accounts*: A high volume of deposits from customers who reside or conduct their business outside of the normal market area should be monitored by the thrift and reviewed by the regulator regarding their volatility and pricing. Such deposits may be the product of personal relationships or good customer service. However, large out-of-area deposits sometimes are related to liberal credit accommodations or have been attracted by paying significantly higher rates of interest than offered by competitors. Such deposits might prove costly in terms of excessive credit risks taken to generate sufficient revenue to pay for volatile, overpriced deposits.

- Only well-capitalized institutions may accept, renew, or roll over such deposits without restriction. Adequately capitalized institutions are subject to the interest rate caps described above.

- *Public Funds*: Public funds deposits should be reviewed because of their size and potential volatility. Public funds normally fluctuate on a seasonal cycle following the timing differences between tax collections and expenditures. Government officials controlling public deposits have a responsibility to ensure that such deposits are placed with a financial institution that can provide or arrange the best service at the least cost, and often place deposits with the highest bidder. Frequently, state laws require financial institutions to pledge collateral against public funds deposits. Public funds deposits acquired through political influence should always be regarded as volatile.

- *Stock Market-Indexed Certificates of Deposit*: Certificates of deposit with interest rates tied to a stock market index where a deposit brokerage firm covers the risk of increasing index values still entail certain risks. The movements of such indexes are subject to fluctuations that are unpredictable and, compared with the usual indexes used for variable-rate certificates of deposit, extraordinary. Pursuant to safety and soundness concerns, a savings association issuing such accounts must take precautionary measures. Accordingly, savings associations that offer variable-rate certificates of deposit tied to a stock market index must:

  — Have the skills required to effectively analyze the potential interest expenses of the account.

  — Take precautionary measures to ensure that it will not be subject to the payment of unrestrained interest expenses.

  — Analyze the creditworthiness and financial strength of the brokerage firm, including the broker's specific plans to cover its interest rate risk exposure due to both upward or downward movements in the index.

  — Have on file a record (for example, a broker's periodic status report) sufficient to disclose the broker's ongoing interest rate risk exposure from the date the association paid its "fixed fees" for receipt of the savings to the date of such a report.

— Ensure that the brokerage firm is contractually obligated to appropriately reimburse it in the event of an early withdrawal in view of an association's initial payment of a "fixed fee," representing prepaid interest costs paid on the assumption that the certificates will be held to maturity.

— Comply with the safety and soundness requirements of § 563.174 and § 563.175 of the OTS regulations and TB 13 if engaged in the interest rate futures or financial options transactions to cover interest rate risk exposure resulting from the issuance of these market-indexed accounts.

— Document the board of directors' approval of the form of account. The form must comply with the requirements of applicable law and regulations and the association's charter and bylaws; the minutes must include a detailed explanation as to how the interest rate risk exposure is to be covered. Otherwise comply with the requirements in §563.7.

— Comply with all other potentially applicable laws or regulations, such as those that the Securities and Exchange Commission and the Commodity Futures Trading Commission enforce. In light of this requirement, savings associations must consult with those agencies regarding the issuances of stock market-indexed certificates of deposit, or obtain for the file a legal opinion stating that the market-indexed CDs comply with all applicable law.

- *Large Deposits*: Large deposits are defined as those concentrations of funds under one control, or payable to one entity, that aggregate two percent or more of the institution's total deposits.

- *Demand Deposits*: Both bank and savings associations are prohibited from paying interest on demand deposits. The banking agencies (FDIC and FRB) have issued interpretations that permit premiums to be paid and describe when premiums will not be considered to be interest. Institutions may pay any premium that is not, directly or indirectly, related to or dependent on the balance in a demand deposit account and the duration of the account balance. OTS agrees that such premiums are not interest and generally follows the banking agencies interpretations on this point.

- *Sweep Accounts*: These are cash managed services that permit customers to earn interest on otherwise idle cash balances. Many institutions, particularly large, commercial banks and some savings associations, now offer these services to retail commercial and trust companies. Sweep accounts automatically "sweep" cash balances out of a checking or non-interest bearing deposit account into short term, typically overnight, investments outside the depository institution. A widely used vehicle by depository institutions is to "sweep" funds out of checking accounts into money market mutual funds that operate independently of the bank/savings association. Funds are swept from checking accounts into a money market mutual fund as frequently as every day after the close of business at the depository institution. The "sweep" is triggered by the amount of cash in the deposit account, which can be set by the depositor. The "sweep" also may be reversed so that shares in the money market mutual fund are redeemed and cash is deposited into the checking or non-interest bearing account at certain times or when certain dollar limits are reached. Depository institutions receive a fee for the "sweep" service.

- The impetus for "sweep" accounts results from the statutory and regulatory prohibition on the payment of interest on demand accounts. Commercial checking accounts are non-interest bearing demand deposits owned by commercial entities, and against which checks may be written. Negotiable order of withdrawal (NOW) accounts are available only to individuals, including sole proprietorships or an unincorporated business owned by a husband and wife; non-profit organizations and for the deposit of public funds. While not technically demand deposits, NOW accounts permit the payment of interest on accounts which are subject to check writing but only for entities that qualify to use them. Because individuals and certain other non-corporate entities may hold NOW accounts which function as checking accounts, "sweep" arrangements for non-corporate entities do not necessarily raise legal questions. Since interest may be paid on NOW accounts held by individuals and certain non-corporate entities, "sweep" accounts are geared heavily toward corporations. It is essential that depository institutions have systems in place to ensure that "sweep" accounts comply with regulatory requirements.

- Federal savings associations, unlike national banks, do not have the authority to directly invest customers' funds in mutual funds. Federal savings associations may, however, accomplish the same result for their customers through service corporations or with third-party broker-dealers. The service corporation or third party, pursuant to an agreement with the customer/ depositor, could in turn buy mutual fund shares for the customer and sell those same investments the next day. Upon sale, the sale proceeds belong to the depositor, who may deposit the proceeds back into the checking account at the federal savings association. "Sweeps" using mutual funds may involve more steps for federal savings associations than for national banks, but are permissible under applicable law.

- Federal savings associations that wish to offer mutual fund "sweeps" through a service corporation have two options. Either the service corporation never holds mutual fund shares in its own name, so the type of mutual fund investments are unrestricted. Or, the service corporation holds the mutual funds in its own name and restricts the investments to those that savings associations can make. Savings associations may invest only in investment grade corporate debt securities.

- An alternative method to structure a "sweep" is to invest excess cash of a checking account into repurchase agreements ("repos"). Such arrangements must comply with the Government Securities Act of 1986, as amended. See Examination Handbook, Section 563, Government Securities Act. Although permissible, this method is somewhat cumbersome because it requires substantial disclosures and a perfected security interest under state law for each sale subject to repurchase.

- The simplest and most practical "sweep" arrangement is the so-called linked account "sweep" using two accounts at the same depository institution, one a checking account and the other some type of interest-bearing, non-checking account, such as a savings account or money market deposit account. However, the federal banking agencies have not allowed linked account "sweep" arrangements, either because these "sweeps" appear to evade the prohibition on paying interest on commercial checking accounts or, in the Federal Reserve Board's ("FRB's") case, because they interfere with the "FRB's" monetary policy.

BORROWED FUNDS

Borrowings provide thrifts with a complementary and often attractive alternative to deposits as a source of funds. Generally, thrifts pursuing a strategy of moderate growth find borrowing an attractive funding alternative to retail deposits. However, rapid growth based on short-term borrowed funds, without well-established risk management controls, has also contributed to the failure of several financial institutions.

The thrift's present and anticipated use of borrowed funds should be integrated into the overall goals and objectives of the business plan and its funds management strategy. Borrowing is subject to criticism if precipitated by poorly planned funds management practices**.** Prudent management of borrowed funds should include:

- The clear identification of the purpose of the borrowing;
- Analysis of present and anticipated funding and liquidity needs;
- Analysis of the cost of the borrowing (including the desired spreads between the cost of the borrowing and the earnings from the assets funded, and, if issuing securities, the cost of issuance);
- Analysis of the availability of collateral;
- Comparative analysis of the costs of various alternative types of borrowings and deposits; and
- Frequent monitoring of the borrowing activity to ensure that it remains appropriate to the thrift's overall goals of interest rate risk management, liquidity management, funds management, and near-term and longer-term profitability.

Many thrifts have become active solicitors of funds in the financial markets through transactions such as reverse repurchase agreements and various debt security issuances. Access to the financial markets and the cost of such borrowings is related to the thrift's credit reputation, which is primarily based upon the thrift's financial condition and adequacy of capital.

Although borrowings in the financial markets can be an attractive alternative to deposits, they have certain costs and risks that must be considered. Borrowings through debt issuance have operating costs that should be considered such as issuance expenses and investment banker fees. A more important consideration is that thrift borrowings typically are collateralized. The amount that a thrift can borrow is related to the market value of the collateral. When interest rates increase, the market value of most financial collateral declines. Consequently, rising interest rates often require a thrift to pledge additional collateral or repay some debt. Such rising-rate scenarios can place a considerable strain on the thrift's liquidity. In a rising-interest rate environment, the thrift's financial condition will also be negatively affected if it has a significant mismatch of short-term borrowings financing long-term assets that are required to be held as collateral for borrowings.

Securities that are collateralized by direct obligations of or are fully guaranteed as to principal and interest by the United States or any agency thereof should not be "sold" in repurchase agreements under $100,000 with maturities of 90 days or more unless they meet the requirements under § 563.84 of the OTS regulations. In addition, the OTS considers the following to be "agencies" for the purposes of government repurchase agreements:

- Federal Home Loan Bank(s) (FHLB) (including time deposits and overnight deposits). Note: FHLB overnight deposits are eligible collateral for retail repos only if a security interest may be perfected in such account as required in § 563.84(b)(3).
- Federal National Mortgage Association
- Government National Mortgage Association
- Bank(s) for Cooperatives, including the Central Bank of Cooperatives*
- Federal Land Bank(s)*
- Federal Intermediate Credit Bank(s)*
- Tennessee Valley Authority
- Export-Import Bank of the United States
- Commodity Credit Corporation
- Federal Financing Bank
- Federal Home Loan Mortgage Corporation
- Student Loan Marketing Association

* Federal Farm Credit Banks

Major Sources of Borrowed Funds

Federal Home Loan Bank Advances

A traditional source of borrowing has been FHLB advances. The FHLB policies determine the types of advances, terms available, and any commitment fees. FHLB advances may be short- or long-term and may be secured or unsecured. An institution may use mortgages or other assets including notes secured by loans, funds on deposit with the FHLB, and obligations issued, insured, or guaranteed by the U.S. Government as security for an advance. Whether an advance is otherwise unsecured or secured, the institution's FHLB stock is pledged against all advances.

The Federal Housing Finance Board (FHFB) also determines the availability of FHLB advances to member institutions. An FHLB will not make new advances available to a tangibly insolvent member without advance request to the FHLB and notification of the FHFB. Such advances may be renewed for up to 30 days at the discretion of the FHLB. Requests from the OTS or FDIC that an FHLB not renew advances will be honored and must be submitted through the FHFB. For an institution that fails one or more capital requirements, an FHLB may make new advances as long as the institution is tangibly solvent. Such a member institution's access to advances may be limited or eliminated by an FHLB at the written request of the OTS or FDIC through the FHFB.

Reverse Repurchase Agreement

Reverse repurchase agreements (reverse repos) with investment broker/dealers are commonly used by thrifts as a short-term source of funds. Reverse repos are collateralized borrowings wherein the thrift "sells" securities to a broker, agreeing to repurchase the same securities at a specified price and date.

Any repurchase agreement program should be authorized by a savings association's board of directors only after consideration of the association's financial plan, operational system, and risk controls. An association must create and maintain a system of appropriate internal control procedures similar to those instituted for other debt securities issuances and structured financings. Associations must comply with the federal securities laws, as well as with other regulatory and fiduciary requirements. Board minutes relating to the initial approval and subsequent review of such programs should also reflect compliance with all applicable OTS and Securities and Exchange Commission (SEC) requirements. As a result, any repurchase program authorization should document the board of directors' consideration of these matters and the conclusions should be recorded in the board's minutes. An association's repurchase agreement program must also be monitored closely by association management with appropriate expertise and experience in managing repurchase agreement programs.

As with any securities offering, the thrift should follow the regulatory requirements found in 12 CFR §§ 563.76, 563.80, 563.84 and Part 563g of the OTS regulations.

In order to satisfy the requirements of §563.84(b)(3) that the interest of a repurchase agreement purchaser in the security or securities underlying the repurchase agreement constitutes a perfected security interest under applicable state law, an issuing institution must structure its repurchase agreement program as a secured lending transaction. Repurchase agreement programs structured as a sale by the institution of undivided fractional interests in a government security or a pool of government securities, subject to the institution's obligation to repurchase those interests, do not satisfy the requirements of § 563.84(b)(3).

The issuance of repurchase agreements constitutes securities offerings and are subject to the requirements of the federal securities laws. These requirements include registration under the Securities Act of 1933, the Securities Exchange Act of 1934, and the Investment Company Act of 1940, unless exempted or the association's program is operating within the parameters of a "no action" position. Thrifts must comply with the OTS requirements related to securities offerings set forth in 12 CFR Part 563g, which applies the Securities Act and Securities Exchange Act specifically to thrifts under OTS jurisdiction.

The anti-fraud provisions of the federal securities laws also are applicable to repurchase agreement programs and may result in the imposition of severe sanctions against an association's directors and managers, including civil and criminal liability. These anti-fraud provisions prohibit fraudulent conduct, including making false or misleading representations in offering materials, advertisements, or otherwise if related to repurchase agreements.

If similar but not identical securities are sold and repurchased, they are referred to as dollar reverse repurchase agreements (dollar reverse repos) or dollar rolls. Reverse repos, wherein identical securities are exchanged, are accounted for as financing transactions. Depending on the terms of the agreement, dollar reverse repos are accounted for either as financings or as purchase and sales. For accounting purposes, dollar reverse repos can be considered financings if the securities returned at the repurchase date are "substantially the same" as the securities "sold" at the origination date. If the returned securities are not substantially the same, the transaction becomes a sale for accounting purposes.

Substantially the Same. Securities are considered substantially the same when they have similar characteristics and similar yields. The issuer, coupon interest rate, maturity, and anticipated prepayments of the underlying loans must all be consistent to be considered substantially the same. The issuer of the security (e.g., GNMA or FHLMC) is important because differences exist in relative creditworthiness. Loans packaged into a pool security must yield the same composite interest rate and have similar maturities. For example, GNMA issues two general types of securities: GNMA I's (characterized by loans with little deviation in individual interest rates with 30-year terms and from a similar geographic area) and GNMA II's (characterized by loans with a wider spread in their individual interest rates with 15- or 30-year terms and with more geographic diversity). Therefore, because of differing characteristics, a GNMA I generally cannot be exchanged for a GNMA II and fulfill the substantially same criteria. Exchanges of GNMA I's for GNMA II's must be reviewed individually to determine that the securities have similar yields and maturities in order to be considered substantially the same.

Over-Collateralization. One of the primary sources of risk in reverse repos is required over-collaterization. Excessive over-collateralization of reverse repos is an unsafe and unsound practice that poses a serious risk to the earnings and assets of the institution. Should the purchaser be unable for any reason to redeliver the securities upon maturity of the repurchase agreement, large losses would result. The term of the agreement, the type of collateral transferred, and the likelihood of market value fluctuations in the value of the collateral are the primary determinants of the collateralization level necessary for reverse repos. The percentage of collateralization is based on the market value, not the face value, of the securities at the time of the transaction.

Typical collateralization levels required by reputable broker-dealers approximate the following:

Type of Security/ Term of Agreement	
U.S. agency securities/	
less than 1 month	2%
1 month	3-4%
2 month	4-5%
3 month	5-6%

U.S. government notes/	
1 month	1/4%
2 month	1/2%
3 month	3/4%
U.S. government bonds/	
1 month	1/2%
2 month	1%
3 month	1-1/2%
Collateralized mortgage obligations*	
1 month	5-7%
2 month	6-8%
3 month	7-9%

Riskier securities, such as stripped mortgage- backed securities, planned amortization class, targeted amortization class, and collateralized mortgage obligation residuals, have substantially higher and wider-ranging collateralization requirements.

Collateralization levels in excess of these for U.S. agency or government securities should necessitate further review and comment by the regulator and the board of directors' awareness and involvement in the transaction. For all such transactions, thrifts should attempt to minimize the necessary collateralization requirements by contacting several reputable brokers to obtain quotes. These quotes should be documented.

Counter-Party Risk. Excessive over-collateralization is not the sole risk factor affecting reverse repurchase agreements. The strength of the counter-party is also critical to minimizing risks to the thrift. Thrifts should routinely monitor the creditworthiness of counter-parties. At a minimum, this should include determining whether the counter-party is a primary dealer and length of time in business, reviewing counter-party reports filed with the SEC, reviewing financial statements of the counter-party with respect to capital levels, evaluating previous experience with the dealer, and researching the reputation of the counter-party with the SEC and the National Association of Securities Dealers.

Regulators should also review provisions for the assignment of collateral, rights to rehypothecate, and collateral maintenance practices for reverse repurchase agreements.

To satisfy the requirements of § 563.84(b)(3) -- that the interest of a repurchase agreement purchaser in the security or securities underlying the repurchase agreement constitutes a perfected security interest under applicable state law -- an issuing institution must structure its repurchase agreement program as a

* For institutions with capital (excluding goodwill) exceeding $16 million. Smaller institutions would require a minimum of 20 percent, and often much more, to effect these transactions.

secured lending transaction. Repurchase agreement programs structured as a sale by the institution of undivided fractional interests in a government security or a pool of government securities, subject to the institution's obligation to repurchase those interests, do not satisfy the requirements of § 563.84(b)(3).

Short Funding. Some thrifts fund the purchase of mortgage-backed securities (MBSs) by entering reverse repos. If there is a significant difference between short- and long-term interest rates (yield curve is positively sloped), sizable spreads can be achieved. However, these spreads can be achieved only by assuming a significant amount of interest- rate risk. If the dollar amount invested in this strategy comprises a significant percentage of assets or exceeds explicit exposure limits required by the board of directors in accordance with TB 13, Responsibilities of the Board of Directors and Management with Regard to Interest Rate Risk, the strategy may be considered unsafe and unsound.

Collateralized Mortgage Obligation (CMO)

Thrifts issuing CMOs use MBSs or mortgage loans to collateralize the CMO security. A CMO is structured so that the cash flows from the underlying collateral, given conservative prepayment and interest rate level assumptions, are sufficient to repay, with stated interest, the obligation arising from the issuance of the CMO. A high investment rating, resulting from conservative prepayment assumptions, coupled with the CMO's various maturity structures and interest rates provides appeal to a broad range of investors.

The issuer of a CMO agrees to pay monthly, semiannually or quarterly coupons on the outstanding bond value and to retire the bond principal according to prescribed structure. For instance, a CMO structure is characterized by classes, or "tranches." Typically, the tranches may consist of: (1) a short-term, fast-pay tranche, (2) a short-intermediate tranche, (3) a long-intermediate tranche, and (4) a slow-pay, zero-coupon ("Z" or "accretion") tranche. In a CMO, some tranches receive a coupon, while other tranches receive principal payments from the collateral as well. When the first tranche is retired (paid-off), the second tranche receives principal, and so on. Normally, the class with the shortest maturity receives all of the principal prepayments until it is retired. In the interim, the zero-coupon tranche accrues interest, which is added to its principal balance, resulting in negative amortization. Once faster paying tranches are retired, the zero-coupon tranche begins to receive payments on the then-higher principal.

In recent years, CMOs have been structured ranging from a single class to dozens of classes. Some CMOs contain floating-rate tranches in which the bond coupon is periodically readjusted based on an index, typically the London Interbank Offering Rate (LIBOR). A "straight" floating-rate tranche moves in the same direction as changes in the index; an "inverse" floating-rate tranche moves inversely to changes in the index. Many CMOs contain a planned amortization class (PAC) or targeted amortization class (TAC) tranche designed to provide investors increased protection against prepayment risk. PAC and TAC tranches transfer risk to the non-PAC and non-TAC tranches. Tranches that are specifically designed to absorb prepayment risk from PAC and TAC tranches are referred to as "support classes."

The effective interest rate (effective cost to the issuing thrift) and the term of the borrowing arising from the CMO will depend upon the prepayments of the collateral underlying the CMO. Also considered in the interest rate on the borrowing are the costs of issuing the CMO (legal, accounting,

and other costs). These costs will be amortized over the expected life of the CMO. Therefore, faster prepayments of the underlying collateral will require a faster write-off of the expenses increasing the effective cost. It is very important to determine where the proceeds from the CMO are invested. Since the term and effective interest rate of the CMO will vary based upon prepayments of underlying collateral, it is important to determine the expected return from the assets in which the proceeds from the CMO are reinvested. The expected term of these assets should be determined.

Residual cash flows arise due to the conservative assumptions required by rating agencies to be used in structuring the CMO and assessing the characteristics of the underlying collateral to ensure that the CMO is self-supporting. To the extent that actual cash flow exceeds these conservative assumptions, "excess" or residual cash flows are created. The residual interest represents the present value of all amounts expected to revert to the issuer or its affiliates (including reinvestment earnings).

The shorter CMO tranches will generally bear a lower interest rate than the underlying mortgages that are collateral for the issuance. This means that during the early life of the CMO, the issuer will receive income in excess of the interest expense it pays, while during the later years, the income will be less than the interest expense it pays to the CMO holders. The excess of income over the interest expense during the early life of the CMO is known as phantom income. Since it will be offset in later years, it is not income in the real economic sense. This phantom income is accrued to the issuer as the holder of the residual interest and will be transferred to buyers of the residual interest.

Frequently, thrifts have established a finance subsidiary to issue a CMO. In the past, one benefit of issuing a CMO through a finance subsidiary had been the exclusion of the CMO security from the thrift's minimum capital requirement calculation. However, under the present capital regulations, this exclusion is eliminated. Effective January 1, 1997, specific authority for finance subsidiaries contained in former 12 CFR § 545.82 was removed and all existing finance subsidiaries are deemed operating subsidiaries under 12 CFR § 559.11. All the functions of a finance subsidiary may be done with fewer restrictions by an operating subsidiary.

Effective January 1, 1987, REMIC legislation permitted various security structures such as CMOs, senior subordinated interests, and regular pass-through securities to be issued under the REMIC tax authority. The REMIC legislation provided flexibility in structuring multiclass mortgage securities as asset sales or financings subject to GAAP accounting standards. For example, a thrift using MBSs with unrealized losses as underlying collateral will likely choose to classify its CMO issuance as a financing, rather than a sale, for financial reporting to avoid recording the loss. However, for tax purposes, under REMIC treatment, the transaction can be structured as a sale to record the losses and thus reduce the tax liability. Prior to the REMIC legislation, if sale treatment was desired, CMO transactions needed to pass very stringent tests. Although the transaction could theoretically pass the tests for accounting purposes, the result was almost inevitably unacceptable from a tax viewpoint.

The underlying collateral of CMOs structured to meet the GAAP standards for a sale of assets are treated as if sold, and the liability associated with the issue does not appear on the issuer's financial statements. If the transaction is treated as a financing, the MBSs or mortgages stay on the issuer's books and the balance sheet is simply grossed up to reflect the cash received from the offering and the related liability under the bonds. (Any costs incurred are deferred and amortized over the life of the liability.)

Other Sources of Borrowed Funds

Common sources of thrift borrowed funds include the following:

- Federal funds purchased (commercial bank loans).
- Issuance of various other debt securities.
- Retail reverse repurchase agreements.
- Loans from a parent or affiliate.
- Loans secured by the thrift's office building.
- Underlying mortgage in a wrap-around loan unless the holder of the underlying mortgage has accepted a subordinate position.
- Liabilities for capital leases related to the institution's offices or premises and equipment.
- Redeemable preferred stock issued by consolidated subsidiaries to third parties.
- Commercial paper issued.
- Eurodollars issued.
- Liability from "sale" of loans with recourse accounted for as a financing.

Also considered a source of borrowed funds are overdrafts in the institution's transaction accounts in other depository institutions, where there is no right of offset against other accounts in the same financial institution, unless the overdraft is in a zero-balance account or an account that is not routinely maintained with sufficient balances to cover checks drawn in the normal course of business.

Deposits/Borrowed Funds Analysis

Cost and Risk Analysis

Management should analyze and monitor the deposit and borrowing composition to determine the effect of the financial costs on the net interest margin and profitability, and to assess the risks associated with these liabilities. The analysis should assist management in determining an acceptable liability mix. The regulator should evaluate the adequacy of management's analysis and its monitoring systems. Cost and risk analysis should include:

- The identification of the overall rate/volume/ mix of deposits and of borrowings and the periodic evaluation of changes (variance) in interest expense due to changes in rate/ volume/mix.

- An evaluation of the risk/benefit trade-offs of the various sources of funds. (See discussion of risk/benefit trade-offs below.)

- A procedure to estimate the effect of an instantaneous and sustained shift in interest rates of ± 100, ± 200, ± 300, ± 400 basis points on the net portfolio value of deposits and borrowings. (Refer to Examination Handbook Section 650, Interest Rate Risk Management, for detailed discussion.)

- An analysis of the marginal cost to generate additional funds.

- An analysis of the potential effects on profitability of paying below-market rates on deposits.

Risk/Benefit Trade-Offs

Management should not attempt to increase net interest income by merely increasing the level of risk in the liability structure without adequately analyzing and evaluating the risk/benefit trade-offs. Examples of risk/benefit trade-offs include:

Retail versus brokered (including money desk) deposits: Retail deposits generally are more stable and less interest costly than brokered deposits, but usually carry higher operating costs and are limited in total volume by the size of the local market area and the competition within the local market area. Brokered deposits, although usually higher risk in terms of volatility and interest costs, nevertheless, may be appropriate for some thrifts, provided that they are well-capitalized, or have a waiver from the FDIC permitting them to offer brokered deposits if they are adequately capitalized.

Borrowings versus deposits: Borrowings can provide a large volume of funds quickly, while retaining current deposit pricing strategies. The cost of certain large-volume borrowings (e.g., certain issuance costs, effective reverse repo rates) may benefit from economies of scale. However, borrowings introduce collateral risk. Depending upon their maturity and payment characteristics, an increase in either borrowings or deposits may aggravate interest rate risk.

Thrifts generating large volumes of volatile short-term deposits or accessing large volumes of short-term borrowings should evaluate the feasibility of hedging to alleviate their interest rate risk. (Refer to Examination Handbook Section 660, Derivative Instruments and Hedging.)

Marginal Cost Analysis

When interest rates are changing, average cost and marginal cost of deposits will differ. Consideration of marginal cost is especially appropriate for monitoring and evaluating the cost of new deposits. When rates are rising, the true cost of acquiring new deposits (marginal cost) will be greater than the simple average of the incremental cost of a higher rate paid on new deposits and an unchanged cost on existing deposits. The higher rate must be paid not only to the new depositors, but also to the existing depositors who would have been willing to hold deposits at the lower rate. The larger the volume of existing accounts, the higher the marginal cost. In addition, the cost of servicing accounts will rise as deposits increase. Moreover, an increase in the rate at one maturity level might necessitate a change in

rate at other maturity levels. The reaction of competing thrifts should also be considered in setting interest rates on deposits.

Analysis of the true cost of additional deposits places management in a better position to control these costs. Some thrifts have paid high rates to attract new deposits, resulting in a marginal cost that exceeds the return on the loans and investments funded by those deposits. Such conditions encourage decisions to relax loan and investment credit underwriting standards.

Marginal cost analysis may not be as appropriate for monitoring and evaluating the cost of additional borrowings because the rate paid on new borrowings is limited to the incremental funds raised, not total funds. However, a comparative analysis of the marginal cost of new deposits to the incremental cost of new borrowings should be done. (See Examination Handbook Section 530, Cash Flow and Liquidity Management.)

Below-Market Rates

Thrifts considering a strategy to shrink the balance sheet by paying below-market rates on deposits must research their market. A primary risk of the strategy is underestimating the expected deposit outflow. The rate sensitivity of deposits differs from product to product, among different locations, and among different customer groups.

The effect of a below-market rate strategy on profitability may be approximated by comparing estimated cost savings (represented by the expected volume of deposit outflow times the rate that had been paid on these deposits; plus the cost savings represented by the spread between the market rate and the below-market rate paid on the remaining deposits); with the estimated cost (represented by the yield given up on interest-earning assets expected to be sold times the volume expected to be sold, and/or the cost of any anticipated new borrowings needed to replace the deposit outflow as a continuing funding source).

REFERENCES

United States Code (12 USC)

Chapter 16: Federal Deposit Insurance Corporation

§ 1831f Brokered Deposits

Code of Federal Regulations (12 CFR)

Federal Deposit Insurance Corporation
Subchapter B: Regulations and Statements of General Policy

§ 337.6 Brokered Deposits

Office of Thrift Supervision

§ 545.16	Public Deposits, Depositories, and Fiscal Agents
Part 557	Deposits
§ 561.16	Demand Accounts
§ 561.28	Money Market Deposit Accounts
§ 561.29	Negotiable Order of Withdrawal Accounts
§ 563.80	Borrowing Limitations
§ 563.81	Issuance of Subordinated Debt Securities and Mandatorily Redeemable Preferred Stock
§ 563.84	Transfer and Repurchase of Government Securities
§ 563.174	Futures Transactions
§ 563.175	Financial Options Transactions
Part 563g	Securities Offerings

Office of Thrift Supervision Bulletins

RB 3b	Policy Statement on Growth for Savings Associations
TB 13	Responsibilities of the Board of Directors and Management with Regard to Interest Rate Risk

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Deposits / Borrowed Funds Program

Examination Objectives

To determine if the established strategic plans, policies, procedures, and practices related to deposit solicitation/retention and borrowed funds adequately addresses safety and soundness, near- and longer-term profitability, and compliance with laws and regulations.

To determine whether the thrift's officers and employees are operating in conformance with the established plans, policies, procedures, laws, and regulations.

To determine the thrift's ability to generate market rate deposits, and its ability to access borrowed funds.

To determine the adequacy of management's monitoring of deposits/borrowed funds.

Examination Procedures

Level I

		Wkp. Ref.
1.	Coordinate responsibilities and communicate findings with the examiner(s) assigned to the review of cash flow/liquidity management and funds management.	
2.	Review the previous report of examination and all deposits and borrowed funds-related exceptions noted and determine if management has taken appropriate corrective action.	
2.	Obtain and review strategic plans, marketing plans, policies, and procedures related to deposits and borrowed funds. Determine whether these plans and policies are integrated in the goals and objectives of the business plan. Planning and policy guidelines should address safety and soundness issues, near-term and longer-term profitability, and compliance with laws and regulations.	

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3. Determine that written plans, policies, and procedures are reviewed and updated as necessary and that policy changes are communicated to appropriate personnel.

4. Analyze the present sources, volumes, and trends of deposits and other borrowed money (e.g., core deposits, volatile deposits, short- or longer-term borrowings).

5. Assess the adequacy of management's evaluation of the thrift's near-term and longer-term funding needs, and of the advantages/disadvantages of alternative funding sources as well as the thrift's access to those sources.

6. Evaluate the present deposit and other borrowing structure in terms of:

   - Deposit pricing (e.g., at, above, or below-market competition);
   - Cost of the various major types of deposits and borrowings in relation to the thrift's overall cost of funds and the spreads between these sources of funds and the earnings of the assets funded;
   - Availability of assets to collateralize borrowings;
   - Major mismatching of short-term sources of funds financing long-term assets;
   - Liquidity;
   - Level of capital; and
   - Ability to extend or repay maturing borrowings.

7. Evaluate whether planned growth is achievable, cost/beneficial, and supported by adequate capital. Refer to the supervisory guidelines contained in Regulatory Bulletin 3b, Policy Statement on Growth for Savings Associations.

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8. Review the adequacy of management reports and the information systems to provide management and the directors with information that is accurate, relevant, and useful for decision making and for monitoring compliance with on-going plans and policy guidelines.

9. Evaluate management's expertise to carry out its responsibilities to conduct deposit solicitation/retention and borrowing activities in a prudent, safe, and sound manner.

10. Analyze brokered deposits to determine the volume of uninsured deposits, concentrations of deposits from a particular broker or group of brokers, money desk activity, and adequacy and completeness of records.

11. Determine if more than two percent of the deposits are concentrated under the control of, or payable to, one entity.

12. If the thrift is not well capitalized, determine compliance with the restrictions or prohibition on brokered deposits.

13. Review reports of broker fees paid and subsidiary expense ledgers for any unusual brokered deposit activity. Confirm that a deposit broker is registered with the FDIC per § 337.6 if needed.

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14. Review a sample of trade tickets and confirmations of financial market borrowing transactions such as reverse repurchase agreements. Test check that these transaction records correspond to the transaction logs, reports to management and the directors, and to the general and subsidiary ledgers.

15. Evaluate the appropriateness of amounts of collateral for reverse repurchase agreements, and report any evidence of over-collateralization.

16. Review the reconciliation of suspense accounts.

17. Review the Level II procedures and perform those necessary to test, support, and present conclusions derived from the performance of Level I procedures.

LEVEL II

1. Obtain a listing of deposit accounts of directors, officers, and other affiliated persons. Test check these accounts for preferential rates and appropriate board approval of overdrafts.

2. Reconcile borrowed funds balances to the general ledger.

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3. Ensure that the Objectives of this Handbook Section have been met. State your findings and conclusions, as well as appropriate recommendations for any necessary corrective measures, on the appropriate work papers and report pages.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

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Deposits/Borrowed Funds

Questionnaire

GENERAL QUESTIONNAIRE

		Yes	No
1.	Has management developed a clearly defined retail deposit marketing strategy that identifies desired market share and assesses present and potential competition?	☐	☐
2.	Is the retail deposit marketing strategy integrated with the goals and objectives of the business plan?	☐	☐
3.	Does management analyze the deposit structure and identify core and volatile deposits?	☐	☐
4.	Have substantial amounts of funds been obtained through deposit brokers or money desk operations?	☐	☐
	• Is the board of directors aware of the high amount of brokered or money desk deposits?	☐	☐
	• Are more than two percent of the deposits concentrated under the control of, or payable to, one entity?	☐	☐
5.	If accepting "brokered deposits" (including brokered, money desk, and deposits paying a significantly higher rate of interest than the prevailing rate offered by other thrifts in the normal market area), is the thrift well-capitalized, or if adequately capitalized, does it have a waiver from the FDIC?	☐	☐
6.	Does management analyze its present and anticipated funding needs?	☐	☐
7.	Does management analyze the cost of deposits versus the cost of other borrowing alternatives?	☐	☐
8.	Does management analyze and monitor the availability of collateral for borrowings?	☐	☐
9.	Does management regularly monitor pricing, volume, sources, volatility, and trends of its deposits and borrowings in relation to the overall goals of interest rate risk management, liquidity management, funds management, and near- and longer-term profitability?	☐	☐
10.	If the association has stock market-indexed certificates of deposit, has it complied with the safety and soundness, legal, reporting, and records requirements for offering these instruments?	☐	☐
11.	Is the level of over-collateralization of reverse repurchase agreements acceptable?	☐	☐
12.	Are the savings and borrowings trial balances reconciled to the general ledger on at least a monthly basis?	☐	☐

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Deposits/Borrowed Funds

Questionnaire

		Yes	No
13.	Are files of trade tickets and confirmations of borrowings from the financial markets maintained?	☐	☐
14.	Are the trade tickets and confirmations accurate?	☐	☐
15.	Are internal control procedures regarding deposits and borrowings adequate?	☐	☐

COMMENTS

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Reserve Requirements (Regulation D)

Office of Thrift Supervision May 1998 Regulatory Handbook 561.1 Under the Depository Institutions Deregulation and Monetary Control Act of 1980, every depository institution that has transaction accounts or nonpersonal time deposits must maintain reserves on those deposits as prescribed by the Federal Reserve Board (FRB). The FRB's Regulation D, Reserve Requirements of Depository Institutions (12 CFR § 204), contains the rules related to reporting deposits and maintaining reserve balances. Depository institutions, whether members of the Federal Reserve System or not, are required to file a periodic report of deposits with the Federal Reserve Bank in the Federal Reserve District in which it is located.

LINKS

Program

The reports of deposits (i.e., FR 2900 for weekly reporters, FR 2910q for quarterly reporters, and FR 2910a for annual reporters) are used by the Federal Reserve to more precisely define the components of the money supply, set reserve requirements, and, in aggregate, help formulate monetary policy. Errors in reporting or in maintaining proper reserve balances may adversely affect the conduct of monetary policy by the Federal Reserve and result in: (1) higher reserve requirements and a reduction in potential earnings, (2) the assessment of reserve deficiency charges, and (3) a more frequent reporting requirement.

Regulation D is a highly complex regulation that requires careful study to master. It is suggested that all regulators read the regulation.

This Handbook Section only touches on the highlights of the regulation and focuses on those areas that are frequently misunderstood.

Transaction Accounts

Transaction accounts are defined with great specificity in 12 CFR § 204.2(e). Such accounts include:

- demand deposits,
- certain accounts on which the depository institution has reserved the right to require at least seven days written notice prior to withdrawal or transfer of any funds. These accounts include those subject to check, draft, or other similar item, those subject to automatic withdrawal, also those that permit a depositor to make more than six withdrawals per month or statement cycle,
- deposits or accounts maintained in connection with an agreement that permits the depositor to obtain credit directly or indirectly through the drawing of a negotiable or nonnegotiable check or similar device, and

- certain other accounts that the FRB has determined by rule or order, to be transaction accounts.

Savings deposits as defined in 12 CFR § 204.2(d) are not transaction accounts.

Nonpersonal time deposits are defined in 12 CFR § 204.2(f). Reserves are no longer required to be held against these deposits.

Eurocurrency liabilities are defined in 12 CFR § 204.2(h). Reserves are no longer required to be held against these liabilities.

Reserve Requirements

Regulation D (12 CFR § 204.9(a)(1)) specifies the reserve requirement ratios for all depository institutions as shown in Table 1.

There is a zero percent reserve requirement on the first $4.4 million of the institution's transaction accounts subject to the low reserve tranche ($49.3 million). A three percent reserve requirement is applied on the remainder of the low reserve tranche.

The FRB establishes before the beginning of each year the amount of transaction accounts subject to the three percent ratio requirement. This adjustment is known as the low reserve tranche adjustment. The FRB also establishes on an annual basis the amount of reservable liabilities of each depository institution that is subject to a reserve requirement of zero percent. This is known as the reservable liability exemption. Reservable liabilities include transaction accounts, nonpersonal time deposits, and Eurocurrency liabilities as defined in § 19(b)(5) of the Federal Reserve Act. The reserve ratio on nonpersonal time deposits and Eurocurrency liabilities is zero percent.

Deposit cutoff levels are used in conjunction with the reservable liability exemption to determine the frequency of deposit reporting. Nonexempt institutions are those with total reservable liabilities exceeding the amount exempted from reserve requirements while exempt institutions are those with total reservable liabilities not exceeding the amount exempted from reserve requirements.

Table 1

Category	*Reserve Requirement*
Net Transaction Accounts	
$0 - $4.4 M	*0% of amount**
$4.4 - $49.3 M	*3% of amount*
>$49.3 M	*$1,479,000 + 10% of amount > $49.3 M*
Nonpersonal Time Deposits	*0%*
Eurocurrency Liabilities	*0%*

** See 12 CFR 204.3(a)(3) for a technical explanation of the allocation of exemption from reserve requirements.*

Specific Rules for Certain Types of Savings Deposit Accounts

Preauthorized or automatic transfers for savings deposits such as passbook and statement savings accounts and money market deposit accounts (MMDAs) are limited to six transfers and withdrawals, or a combination of such, per calendar month or statement cycle of at least four weeks. Three of these transfers may be made by check, draft, or similar order drawn by the depositor to third parties. Telephone transfers to another account of the same depositor are also restricted to the six-transactions limitation.

MMDAs and other savings deposits should be reported separately where called for according to reporting instructions for the specific reports.

Institutions are required to implement procedures either to prevent transfers in excess of the limitations or to monitor accounts on a periodic basis and contact customers who exceed these limits. Further, proper disclosure to customers of these limitations may serve to ensure compliance.

If the account limitations are exceeded, the account will be either closed and the funds placed in another account that the depositor is eligible to maintain, or the transfer and draft capacities of the account will be taken away.

Frequency of Reporting

The frequency of filing the report of deposits with the Federal Reserve ranges from weekly to annually and is based on the level of total deposits and reservable liabilities. Institutions are screened during the second quarter of each year to determine reporting frequency beginning the following September.

Effective December 17, 1996, nonexempt institutions with total deposits of $59.3 million or more are required to report weekly while nonexempt institutions with total deposits less than $59.3 million may report quarterly, in both cases on FR 2900. Similarly, exempt institutions with total deposits of $48.2 million or more are required to report quarterly on form FR 2910q while exempt institutions with total deposits less than $48.2 million may report annually on form FR 2910a. Institutions with total deposits below $4.4 million are excused from reporting if their deposits can be estimated from other sources.

Where Reserve Balances are Maintained

Each depository institution can satisfy its reserve requirements with a combination of vault cash and balances held at a Federal Reserve Bank. Depository institutions may deposit their required reserve balances directly with a Federal Reserve Bank. Depository institutions that are not members of the Federal Reserve alternatively may elect to pass through their required reserve balances to the Federal Reserve through a correspondent -- which may be the District Federal Home Loan Bank. The correspondent will pass through this required reserve balance dollar for dollar to the Federal Reserve Bank in the Federal Reserve District in which the main office of the respondent institution is located. However, every depository institution that maintains transaction accounts or nonpersonal time deposits is required to file its report of deposits directly with the Federal Reserve Bank of its District, regardless of the manner in which it chooses to maintain required reserve balances.

The Federal Reserve Bank that receives the reports shall notify the reporting depository institution of its reserve requirements. If a pass-through arrangement exists, the Reserve Bank will also notify the correspondent that passes reserve balances through to the Federal Reserve of the depository institution's required reserve balance.

Reserve Deficiency Charges

Deficiencies in a depository institution's required reserve balance are subject to reserve deficiency charges. Federal Reserve Banks are authorized to assess charges for deficiencies in required reserves at a rate of two percent per year above the lowest rate in effect for borrowings from the Federal Reserve Bank on the first day of the calendar month in which the deficiencies occurred. Charges are assessed on the basis of daily average deficiencies during each maintenance period. In satisfaction of a reserve deficiency and any charges accruing, a Federal Reserve Bank may, after consideration of the circumstances, permit a depository institution to eliminate deficiencies in its required reserve balance by maintaining additional reserves during subsequent reserve maintenance periods.

REFERENCES

United States Code (12 USC)

Subchapter XIV - Bank Reserves

§ 461 (19(a) - (c)) Reserve Requirements

Code of Federal Regulations (12 CFR)

Federal Reserve System Rules and Regulations

Part § 204	Reserve Requirements of Depository Institutions

FRB Amendments/Interpretations of Regulation D

61 FR 60171, November 27, 1996 - Reserve Requirements of Depository Institutions

61 FR 69020, December 1, 1996 - Reserve Requirements of Depository Institutions

62 FR 34613, June 27, 1997 - Reserve Requirements of Depository Institutions and Issue and Cancellation of Capital Stock of Federal Reserve Banks

Chapter V - Office of Thrift Supervision, Department of the Treasury

Part 557	Deposits
§561.9	Certificate Account
§561.16	Demand Account
§561.28	Money Market Deposit Accounts
§561.29	Negotiable Order of Withdrawal Accounts
§561.42	Savings Account

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Reserve Requirements (Regulation D) Program

EXAMINATION OBJECTIVES

To determine that the institution has procedures in place to comply with Regulation D.

To determine that the institution is in compliance with the reporting and reserve balance requirements of the regulation.

EXAMINATION PROCEDURES

LEVEL I

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1. Identify whether the institution prepares a report of deposits and submits it to the Federal Reserve Bank in its district.

2. Determine whether the institution has implemented operating procedures and a system of internal controls to ensure compliance with the reporting requirements.

3. Obtain the institution's records detailing charges incurred or instances of returned forms, indicating inadequate compliance with Regulation D. Determine whether the institution has corrected any problem areas.

4. Determine whether the institution's internal audit program provides adequate coverage to assure that the reporting requirements are monitored on a regular basis. If the institution does not have an internal audit function, a program of management reviews or self audits should include the reporting requirements.

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5. Identify whether the institution has procedures in place to identify and monitor the monthly transaction limitations on regular passbook accounts and money market accounts to ensure that they do not exceed regulatory limits.

6. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from performance of Level I procedures.

LEVEL II

1. Review the two most recent reports of deposits to determine whether the items listed are accurate and properly classified.

2. Perform a limited review of all line items on the report of deposits.

3. Perform a review and evaluation of the institution's system of internal controls for Regulation D reporting compliance. Typical internal controls include independent review and verification of forms for accuracy prior to submission and the maintenance of proper supporting documentation.

4. Ensure that the Objectives of this Handbook Section have been met. State your findings and conclusions, as well as appropriate recommendations for any necessary corrective measures, on the appropriate work papers and report pages.

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Reserve Requirements (Regulation D)

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LEVEL III

1. If substantive exceptions are noted in examination procedures 1-5, perform a detailed review of all line items on the report of deposits and reconcile the form line items with the general ledger accounts for the specific time period under review.

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Government Securities Act

A succession of highly publicized failures of government securities broker/dealers occurred from the mid-1970s to the mid-1980s (e.g., Drysdale, Lombard-Wall, E.S.M.) causing large losses to investors. Four practices were common to the failed government securities broker/dealers:

- Selling multiple interests in the same securities under several repurchase agreements while maintaining custody of the securities and the pledging of customer securities without transferring title or possession;
- Inadequate collateral given to customers when the broker/dealer engaged in repurchase transactions with customers or excessive collateral demanded when reversing securities from customers;
- Poor recordkeeping; and
- Inadequate capital.

LINKS

Program

Appendix A

As a result of these failures and improper practices, Congress was impelled to exercise its authority over the largely unregulated government securities market through passage of the Government Securities Act of 1986 (GSA). The stated purpose of the GSA and its implementing regulations is to enhance the protection of investors in government securities by establishing and enforcing appropriate financial responsibility and custodial standards. The GSA applies to all financial institutions that engage in government securities activities. For the purposes of the GSA, government securities include:

- U.S. Treasury bills, bonds, and notes;
- Discount notes, bonds, certain collateralized mortgage obligations, pass-throughs, master notes, and other obligations of the Government National Mortgage Association (GNMA), the Federal National Mortgage Association (FNMA), the Federal Home Loan Mortgage Corporation (FHLMC), the Student Loan Marketing Association (SLMA), the Farm Credit System (FCS), and the Financing Corporation; and
- FNMA or FHLMC stock.

"Off-exchange" puts, calls, straddles, and "similar privileges" on government securities are considered to be government securities except for the rules addressing custodial holding of securities.

Custodial Holding Requirements

All thrift institutions that hold government securities as fiduciary, custodian, or otherwise for the account of a customer (including a counterparty to a hold-in-custody repurchase agreement) must comply with the requirements relating to the safeguarding and custody of those securities. All government securities held for customers, including those subject to repurchase agreements with customers, must be segregated from the thrift's own assets and kept free from lien of any third party or the thrift. A thrift that holds securities held for a customer through another institution, a custodian institution, must notify that custodian institution that such securities are customer securities. The custodian institution must maintain the customer securities in an account that is designated for customers of the thrift. The thrift must notify the custodian institution that these securities are to remain free of any lien, charge, or claim. In turn, the custodian institution, upon the instruction of the thrift, is required to treat the securities as customer securities and maintain those securities in accordance with 17 CFR § 450. The custodian institution does not have to keep records that identify individual customers of the thrift.

When a thrift maintains customer securities in an account at a Federal Reserve Bank, it is considered to be in compliance with the requirements to hold customer securities free of lien if any lien of the Federal Reserve Bank or other party claiming through it expressly excludes customer securities.

The thrift is not required to maintain customer securities in a separate custody account at the Federal Reserve Bank, although segregation is encouraged. The thrift must segregate the customers' securities on its own records.

A thrift may lend customer securities held in safekeeping to third parties and remain in compliance with the GSA as long as any securities loans are made under a written agreement with the customer and in compliance with OTS and FFIEC guidelines for securities lending.

An institution engaged in safekeeping U.S. Government securities for customers is required to issue to the customer a confirmation or safekeeping receipt for each government security held that identifies the issuer, maturity date, par amount, and coupon rate of the security being confirmed.

Recordkeeping Requirements

The institution must also maintain a recordkeeping system of government securities held for customers that is separate and distinct from other records of the institution. These records must: (1) identify each customer and each government security held for a customer; (2) describe the customer's interest in the security (e.g., pledged to secure a public deposit), and (3) indicate all receipts and deliveries of securities and cash in connection with the securities. A copy of the safekeeping receipt or confirmation given to customers must be maintained. The institution is required to conduct a count at least annually--and document it within seven days--of physical securities and securities held in book-entry form.

An annual reconcilement with customer account records must also be performed. In order to count securities held outside the thrift, such as book entry securities held at a Federal Reserve Bank, the thrift must reconcile its records to those of the outside custodian. Any securities in transfer, in transit,

pledged, loaned, borrowed, deposited, failed to receive or deliver, or subject to a repurchase or reverse repurchase agreement must be verified when they have been out of the thrift's possession for longer than 30 days. All custodial holding requirement records must be maintained in an easily accessible place for at least two years and not disposed of for at least six years. This system of records must provide an adequate basis for an audit. Additional information on custodial and fiduciary holdings, including examination procedures and an examination checklist, can be found in Trust Activities Handbook Section 300, Operations and Internal Controls.

Hold-In-Custody Repurchase Agreements

All thrift institutions that engage in repurchase transactions and/or forward repurchase transactions ("forward repos") with customers while retaining custody or control of government securities ("hold-in-custody" repurchase transactions) must comply with the GSA requirements relating to written agreements, confirmations, and disclosures. Forward repos are repurchase and reverse repurchase transactions that settle in a next-day or longer timeframe**.** Repurchase transactions for the purposes of the GSA may be characterized and accounted for by the parties as either a sale and repurchase of a security or as a secured loan. Securities are considered to be retained in custody even when the securities are maintained through an account at another institution and the securities continue to be under the control of the thrift. All hold-in-custody repurchase transactions are required to be conducted pursuant to a specific written repurchase agreement. If the customer agrees to allow substitution of securities in a hold-in-custody repurchase transaction, then authority for the financial institution to substitute securities must be contained in the written repurchase agreement. In all hold-in-custody repurchase agreements where the financial institution reserves the right to substitute securities, the following disclosure statement must be prominently displayed in the written repurchase agreement immediately preceding the provision allowing the right to substitution:

> REQUIRED DISCLOSURE
>
> The (seller) is not permitted to substitute other securities for those subject to this agreement and, therefore, must keep the (buyer's) securities segregated at all times, unless in this agreement the (buyer) grants the (seller) the right to substitute other securities. If the (buyer) grants the right to substitute, this means that the (buyer's) securities will likely be commingled with the (seller's) own securities during the trading day. The (buyer) is advised that, during any trading day that the (buyer's) securities are commingled with the (seller's) securities, they may be subject to liens granted by the (seller) to third parties and may be used by the (seller) for deliveries on other securities transactions. Whenever the securities are commingled, the (seller's) ability to resegregate substitute securities for the (buyer) will be subject to the (seller's) ability to satisfy any lien or to obtain substitute securities.

No editing or paraphrasing of the above language of the required disclosure statement is permitted under the regulation, except for inserting the appropriate names for the buyer and seller. Any thrift issuing a hold-in-custody repurchase agreement must disclose to the customer in writing that the funds held pursuant to the repurchase agreement are not a deposit and are not federally insured.

Written confirmations describing the specific securities subject to the transaction must be sent to the customer by close of business on the day on which the trade takes place, as well as on any day on which substitution of securities occurs. Issuance of confirmations on the trade date for forward repo transactions in government securities is especially important since these transactions usually settle in a longer timeframe than normal settlement. Confirmations must identify the specific securities by issuer, maturity, coupon, the money or the par amount, market value, CUSIP or mortgage pool number of the underlying securities**,** and whether there are any rights of substitutions. Market value is defined as the most recently available bid price for the security, plus accrued interest.

Pooling of securities as collateral for repurchase agreements is no longer permitted. "Blind pooled" hold-in-custody repurchase transactions occur when a seller does not deliver securities and does not identify specific securities as belonging to specific customers. Instead, the financial institution sets aside, or otherwise designates, a pool of securities to collateralize its outstanding repurchase obligations. The regulations require that the written confirmation sent to a customer must identify the specific securities that are the subject of the hold-in-custody repurchase transaction. A specific security identified to a customer must be in an authorized denomination, that is, in a deliverable par amount.

Broker/Dealer Notification Requirements

A much more limited number of thrift institutions are subject to the broker/dealer notification requirements set forth in the GSA. Thrift institutions that are government securities brokers or dealers are required to notify OTS of their status upon becoming a government securities broker or dealer and to comply with applicable requirements relating to those activities.

A thrift institution will generally be considered a government securities broker if it engages in the following government securities activities:

- Representing itself as a government securities broker or inter-dealer broker, or
- Actively soliciting purchases or sales of government securities on an agency basis.

A thrift institution will generally be considered a government securities dealer if it engages in the following government securities activities:

- Underwriting or participating in a selling group for the sale of government securities;
- Advertising or otherwise representing itself to other dealers or investors as a dealer in government securities; or
- Quoting a market for government securities, and in connection with such quotations, standing ready to purchase or sell government securities.

A thrift institution that buys or sells government securities solely for investment for its own account or accounts for which it acts as fiduciary will not generally be considered as a broker or dealer and subject to notification requirements, even if such purchases and sales are made with some frequency. Although

still subject to custodial holding (except for savings bond transactions) and hold-in-custody repurchase agreement requirements, a thrift may engage solely in the following government securities activities without filing a written notice or associated requirements:

- Issuing or handling savings bond transactions (exemption from custodial holding requirements permitted);
- Submitting tenders for the account of customers for purchase on original issues of U.S. Treasury securities;
- Engaging in limited government securities dealer activities, such as entering into repurchase or reverse repurchase agreements, or sales or purchases in a fiduciary capacity; or
- Engaging in limited brokerage activities: either effecting fewer than 500 government securities brokerage transactions per year, or effecting brokerage transactions only through another government securities broker or dealer on a fully disclosed basis where its employees perform only clerical, ministerial, or order-taking functions.

Notice by thrift institutions of their government securities broker or dealer activities is to be filed with OTS on Forms G-FIN and G-FIN-4. Once an institution has filed notice of its status as a government securities broker or dealer, any changes to the status of its filing must be reported within 30 days. If a thrift institution ceases its government securities activities, it must file a notice of termination using Form G-FINW. See Appendix A for exhibits of the current G-FIN and G-FINW forms.

REFERENCES

Code of Federal Regulations (17 CFR)

Chapter IV: Department of the Treasury Subchapter A: Regulations under Section 15c of the Securities and Exchange Act of 1934

Subchapter B: Regulations under Title II of the Government Securities Act of 1986

Part 450--Custodial Holdings of Governmental Securities by Depository Institutions

PL 99-571 The Government Securities Act of 1986

Form G-FIN (Department of Treasury) - Notice by Financial Institutions of Government Securities Broker or Government Securities Dealer Activities

Form G-FINW (Department of Treasury) – Notice by Financial Institutions of Termination of Activities as a Government Securities Broker or Government Securities Dealer

Department of Treasury Staff Interpretation of Regulations Implementing the Government Securities Act of 1986 - Letter from Bureau of Public Debt dated April 19, 1996, clarifying GSA recordkeeping requirements regarding forward repurchase agreement transactions

OTS Trust Activities Handbook Section 300

Government Securities Act

Program

Examination Objectives

To determine that the thrift institution has procedures in place to comply with the GSA.

To determine that the thrift institution is in compliance with the custodial holding requirements, hold-in-custody repurchase agreement requirements, and reporting requirements of the regulation.

Examination Procedures

Level I

		Wkp. Ref.
1.	Ascertain whether the thrift holds government securities as a fiduciary, custodian, or otherwise for the account of a customer. If so, ascertain whether the institution has procedures in place to maintain segregated assets and records and to conduct an annual count of securities.	
2.	Review the previous report of examination and all GSA-related exceptions noted and determine if management has taken appropriate corrective action.	
3.	Ascertain whether the thrift engages in repurchase transactions with customers while retaining custody or control of the government securities. If so, ascertain whether the institution has procedures in place for transaction confirmations.	
4.	Ascertain whether the thrift is currently or has been a government securities broker or dealer. If so, ascertain whether associated GSA reporting requirements have been met.	

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WKP. REF.

5. Review and ascertain whether the institution's internal audit program provides adequate coverage to monitor the extent of applicability of the GSA.

6. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from performance of Level I procedures.

LEVEL II

1. Review a sample of customer confirmations.

2. Verify that customer securities are, in fact, segregated from those of the thrift.

3. Verify that the recordkeeping system contains sufficient information.

4. Review the annual count of securities.

5. If a custodian institution is used, review a sample of transactions to determine whether the custodian has received appropriate notification.

6. Review a sample of repurchase transactions with customers to validate disclosures and confirmations.

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7. Ensure that the Objectives of this Handbook Section have been met. State your findings and conclusions, as well as appropriate recommendations for any necessary corrective measures, on the appropriate work papers and report pages.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

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Form G-FIN

Notice By Financial Institutions of Government Securities Broker or Government Securities Dealer Activities

(This booklet includes instructions and blank forms.)

Board of Governors of the Federal Reserve System

OMB No. 7100-0224

Federal Deposit Insurance Corporation

OMB No. 3064-0093

Office of the Comptroller of the Currency

OMB No. 1557-0184

Office of Thrift Supervision

OMB No. 1550-0019

Securities and Exchange Commission

OMB No. 3235-0083

This notice is required by law [15 U.S.C. 78o-5(a)(1)(B)].

NOTICE REQUIREMENTS

This notice must be filed by all financial institutions that are government securities brokers or government securities dealers that are not exempt from the notice requirement under regulations of the Department of the Treasury. Generally, a financial institution will not be required to file as a government securities broker or dealer if its only government securities activities are to: (1) Buy or sell government securities solely for investment for its own account; (2) Buy or sell government securities for fiduciary accounts; (3) Handle savings bond transactions; (4) Submit tenders for the account of customers for purchase on original issue of U.S. Treasury securities; (5) Enter into repurchase or reverse repurchase agreements; (6) Effect fewer than 500 government securities brokerage transactions per year; (7) Effect brokerage transactions only through another government securities broker or dealer on a fully disclosed basis; or (8) Effect brokerage transactions that do not involve active solicitations.

For further information on the requirements to file this notice, please refer to the instructions.

Form G-FIN

FR G-FIN
OMB No. 7100–0224
Average hours per response: 1.0
Approval expires April 30, 2010

OFFICIAL USE

Notice of Government Securities Broker or Government Securities Dealer Activities To Be Filed by a Financial Institution Under Section 15C(a)(1)(B) of the Securities Exchange Act of 1934

1. Check appropriate regulatory agency (ARA):

   A. ☐ Comptroller of the Currency
   B. ☐ Board of Governors of the Federal Reserve System
   C. ☐ Federal Deposit Insurance Corporation
   D. ☐ Office of Thrift Supervision
   E. ☐ Securities and Exchange Commission

2. Conducts business as:

   A. ☐ Government Securities Broker
   B. ☐ Government Securities Dealer
   C. ☐ Government Securities Broker and Dealer

3. Filing status of notice:

   A. ☐ Notice
   B. ☐ Amendment

4. A. Full name of the financial institution:

   _____

   B. Address of principal office of financial institution:

   _____

   C. Address of principal office where government securities broker or government securities dealer activities will be conducted (if different from item (B)):

   _____

   D. Mailing address if different from (B) or (C):

   _____

   E. Name, title and telephone number of contact person with respect to this notice:

   _____
   Name Title Telephone

5. Does financial institution conduct, or will it conduct, government securities broker or government securities dealer activities at any location other than given in Question 4 above? A. ☐ Yes B. ☐ No

   (If yes, provide addresses and describe activities.)

   _____

   _____

   _____

   _____

   _____

6. Furnish the name and title of each person who is directly engaged in the management, direction or supervision of any of the financial institution's government securities broker or government securities dealer activities:

Full Name

Last	First	Middle	Title
Last	First	Middle	Title
Last	First	Middle	Title
Last	First	Middle	Title
Last	First	Middle	Title

Note: Attach a separate Form G-FIN-4 (or, if previously filed, a copy of Form MSD-4 or Form U-4) for each person named in item 6.

7. Has any "associated person" (see definition in paragraph A.7. of the instructions) responded "yes" to any question in Item 17 of Form G-FIN-4, or "yes" to one or more questions in Items 23 through 26 of Form MSD-4 or Item 22 on Form U-4?

A. ☐ Yes B. ☐ No

Note: The financial institution and the person executing this form are responsible for making an inquiry of all other employers of any associated person during the immediately preceding three years for the purpose of verifying the accuracy of the information furnished on Form G-FIN-4. (See 17 C.F.R. 400.4(c).) Similar requirements are applicable to Form MSD-4 and Form U-4.

8. The financial institution submitting this notice and the person executing it represent that all of the information contained herein is true, current and complete.

Please print name and title of person executing this notice:

First	Middle	Last	Title

Manual Signature Date

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Payments Systems Risk

Since the 1950s, major corporations and financial institutions have increasingly replaced checks with electronic funds transfers as the principal means of payment. As a result, several payment networks have been established to process the bulk of the transactions. For financial institutions, these transactions are handled by wholesale or large dollar systems such as Fedwire or private networks like the Clearing House Interbank Payment System (CHIPS).

Wholesale or Large Dollar Funds Transfer Systems

Fedwire is a nationwide electronic payments network operated by the Federal Reserve System. It provides immediate and irrevocable payments for electronic transfers, and it functions as both a clearing and settlement facility. Institutions make up the network, and each member is required to maintain a reserve or clearing account with the Federal Reserve Bank in order to be eligible to use the network's services.

LINKS

- Program
- Questionnaire
- Appendix A

CHIPS is a private international payments clearing system for transactions between U.S. domestic and foreign institutions. The Federal Reserve Bank of New York provides an escrow account for CHIPS in which settlement payments are accumulated and disbursed. CHIPS participants settle at the end of each business day by making transfers to the escrow account through Fedwire. Unlike Fedwire, all payments are provisional and subject to final settlement.

Daylight Overdrafts and Risk

Increased activity in electronic transfers of funds has heightened the concern regarding the risks involved in these activities. On both Fedwire and private networks (e.g., CHIPS), institutions are subjected to risk by permitting customers to make transfers against uncollected or insufficient balances in anticipation of their coverage before the end of the business day. Intraday or daylight overdrafts occur when funds are transferred from an account in excess of collected balances during the same day. Daylight overdrafts can occur anytime during a business day when transactions are debited or credited to an institution's account.

On Fedwire, all transactions are immediate and irrevocable. The Federal Reserve Bank of the sending institution guarantees that funds are immediately available to the receiving institution. The receiving institution can immediately pass collected funds to its customer and will bear no risk if the sending institution fails to settle its obligation. This risk of participants not paying their creditors at the end of the business day is known as settlement risk. The Federal Reserve Bank assumes direct risk in the event

a participant fails to settle its net position. Potential loss exposure due to errors and omissions and fraud is another risk associated with Fedwire.

Since October 1990, CHIPS has had controls in place to help ensure timely end-of-day settlement in the event that a participant with a large intraday net debit position is unable to cover its obligations by the close of business. Concrete commitments between participants of CHIPS are in the form of loss-sharing arrangements backed by either collateral or lines of credit. These features help to ensure the liquidity and resources needed to guarantee settlement in the event of default by one or more participants.

PAYMENTS SYSTEM RISK POLICY STATEMENT

The Board of Governors of the Federal Reserve System issued the Payments Systems Risk (PSR) policy statement on May 17, 1985 in its approach to control and reduce the risks to institutions participating in large dollar wire transfer systems. The policy statement defined the role of the Federal Reserve Bank and other financial institution supervisors in monitoring, examining, and counseling institutions to reduce the credit risk associated with their participation in these systems.

The policy statement established limits on intraday credit exposure for institutions and private networks that exchange large dollar transfers and settle their net positions on Federal Reserve accounts. An amendment established a 25% reduction in limits as of May 19, 1988. Three further amendments in the areas of an exempt category, a *de minimis* cap, and a revised capital definition were adopted by the Federal Reserve in January 1991.

ELEMENTS OF THE PSR POLICY STATEMENT

Self-Assessment and Net Debit Cap

If institutions do not qualify for one of the exemptions below, then they must conduct a self-assessment before incurring daylight overdrafts. Under the PSR policy statement, institutions that incur daylight overdrafts are encouraged to adopt caps that restrict their net dollar payment volume for both an individual network basis and an overall system basis.

Each private network participant establishes a maximum ceiling on the aggregate net debit position that an individual sender can incur on a single private network during the day at a point in time. This cap is referred to as the net debit cap.

The net debit cap is a maximum ceiling or cap on the aggregate net debit position (i.e., the value of all funds sent in excess of all funds received) that an individual sender can incur at any point during the day.

The net debit cap is based on a self-assessment of three criteria: (1) creditworthiness, (2) operational controls, policies, and procedures, and (3) credit policies and procedures. An overall assessment is developed consolidating the evaluations for each area to establish the net debit caps. The caps are

expressed as multiples of an institution's total capital, as defined under the policy statement, and limit transfers on both a daily and two-week average basis. The self-assessment and resultant cap are meant to be used for internal self-disciplinary purposes.

Total Capital

Effective January 10, 1991, the Board of Governors amended its capital policy to replace adjusted primary capital with the capital qualifying for risk-based capital for the purpose of calculating maximum permissible daylight overdrafts. Risk-based capital, or total capital for savings associations, includes-until 1995-a declining amount of supervisory goodwill.

De Minimis Cap

Certain institutions that meet appropriate standards of safety and soundness, with the approval of their boards of directors, are able to adopt *de minimis* caps. The *de minimis* cap allows the institution to incur daily peak overdrafts equal to 20% of total capital without conducting a self-assessment.

Institutions choosing the *de minimis* cap option are required to submit to their Federal Reserve Bank the annual board-of-directors' resolution that approves the use of daylight overdraft credit up to the level of the *de minimis* cap. This *de minimis* cap is useful to larger depository institutions that may have overdrafts of an amount between the exempt-from-cap category amount and the lowest cap level that requires a self-evaluation and board-of-directors' resolution. Institutions using *de minimis* should not habitually incur daylight overdrafts, as it is clear from the PSR policy that the *de minimis* option is for occasional use only.

Institutions that adopt a *de minimis* cap and that regularly incur daylight overdrafts will be counseled by their Federal Reserve Bank. Reserve Banks have the discretion to limit their own risk exposure from *de minimis* cap Depository Institutions (DIs) by imposing on individual DIs unilateral collateral requirements, or a lower cap or a zero cap, or all of the above. Institutions that fail to respond to counseling will be required to file for a higher cap (and do a self-evaluation) if their overdrafts exceed 20% of total capital.

Exemptions

Effective January 10, 1991, healthy depository institutions that only rarely incur Fedwire overdrafts that are in excess of the lesser of $10 million or 20% of total capital are excused from filing board-of-directors' resolutions or self-evaluations with their Reserve Banks. However, even for depository institutions meeting these size and frequency standards, the exemption is granted at the discretion of each Reserve Bank, which could-on the basis of consultation with supervisory personnel within the Reserve Bank or at other agencies-limit its own risk exposure to institutions that are under financial duress or that otherwise present unusual risk to the Reserve Bank by unilaterally imposing collateral requirements and a lower cap or a zero cap. Depository institutions on which the Reserve Banks have imposed a zero cap are prohibited from incurring funds overdrafts and-if they had access to the discount window-would have to collateralize any book-entry overdrafts. Depository institutions are free to file for a cap if they choose to do so and are required to do so if they exceed their exemption limits.

Role of the Board of Directors

The role of an institution's board of directors under the policy is threefold:

- ***Understanding*** the institution's business as it relates to the payment systems and the risks both accepted by their institution and imposed on others by virtue of its participation in large dollar payment systems.

- ***Controlling*** the risk associated with cross-system activity by establishing either a *de minimis* cap or a net debit cap based on its assessment of creditworthiness, operational controls, and credit policies, and, if necessary, by approving interaffiliate funds transfer arrangements.

- ***Reviewing*** the institution's performance within the parameters of the program adopted to assure compliance.

The threefold role assumes that directors will be actively involved in the establishment and oversight of policy on electronic payments system activities and will be alert to the risks in extending daylight overdraft credit to customers and participating with other institutions on private networks.

The board of directors is required to communicate the self-assessment results by providing the Federal Reserve Bank with a copy of the annual directors' resolution. A directors' annual resolution should include: (1) the date the board of directors acted; (2) the rating for creditworthiness; (3) the rating for operational controls, policies, and procedures; (4) the rating for credit policies and procedures; (5) the overall self-assessment; (6) the associated cap for a two-week average period; and (7) the associated cap for a single day.

The Self-Assessment Process

In general, an institution need not complete a self-assessment if it establishes a *de minimis* cap, is in the exempt category, or does not incur daylight overdrafts on Fedwire.

For all other institutions, the key elements of the PSR policy statement can be summarized as follows:

- The program is based on voluntary compliance. Institutions are encouraged to conduct self-assessments focused on three criteria that are evaluated separately:

  — Creditworthiness;

  — Operational controls, policies, and procedures; and

  — Customer credit policies and procedures.

- The three evaluations are consolidated in a single overall assessment falling into one of four cap classes. Each category corresponds to a cap multiple of total capital, as defined in the PSR policy statement, to determine the maximum allowable single-day and two-week daily average cross-system daylight overdraft:

Cap Class	Cap Multiples: Single Day	Cap Multiples: Two Week Average
High	2.250	1.500
Above Average	1.875	1.125
Average	1.125	0.750
No Cap	0.000	0.000

- The self-assessment should be reviewed and endorsed annually by the institution's board of directors or by the board of directors of a higher- level unit within a holding company structure.

- Regulators review the institution's self-assessment, documentation, and performance, taking appropriate action when warranted by safety and soundness considerations.

- The Federal Reserve Board of Governors periodically reviews performance under this voluntary program to determine if the net debit caps need to be modified or if a more formal regulatory approach is necessary.

Self-assessment review guidelines are provided in Appendix A. The Federal Reserve Board is in the process of amending its self-assessment guidelines. When the new guidelines are issued, the Office of Thrift Supervision (OTS) will revise its examination procedures and Appendix A to reflect any changes applicable to savings associations.

OTS Responsibilities

The Board of Governors of the Federal Reserve System established the following key responsibilities of the OTS:

- Regulators should review the self-assessment file of each institution that has established net debit caps.

- Regulators should determine whether the institution diligently applied the guidelines of the PSR policy statement, whether the underlying analysis and methodology were reasonable, and whether the resultant self-assessment is consistent with the overall findings of the examination.

- An institution whose self-assessment rating is considered unreasonable is to be given the opportunity to review its self-assessment.

- Regulators should include any material findings as comments in the relevant sections of the report of examination, and these comments should be discussed with the board of directors.

- In the event the regulators determine that an institution's net debit caps should be lower than that reported to the Federal Reserve Bank, that determination should be reported to the specified liaison officer at the appropriate regional office.

- The appointed regional office liaison officer will notify the Federal Reserve Bank if an examination indicates that an institution's self-assessment is unreasonable.

OTHER PAYMENTS SYSTEMS RISK

Regulation F

On December 18, 1992, the Federal Reserve Board issued Regulation F (OTS Transmittal No. 79, dated January 22, 1993) to implement Section 308 of the Federal Deposit Insurance Corporation Improvement Act. The rule requires federally insured depository institutions to develop and implement internal control procedures to evaluate and control their exposure to their correspondent banks. Federal Home Loan Banks and Federal Reserve Banks are not considered correspondents for the purposes of Regulation F.

Regulation F requires savings associations to maintain written policies and procedures that mitigate excessive exposure to any individual correspondent. The regulation also requires periodic reviews of the overall financial condition of any correspondent to which the association has significant exposure. Furthermore, Regulation F requires associations to limit credit exposure to any individual correspondent to no more than 25% of the savings association's total capital unless the correspondent is at least adequately capitalized (as defined in 12 CFR 565.4 - total risk-based capital ratio of 8% or greater and Tier 1 capital ratio of 4% or greater). Because examination ratings are confidential and cannot be disclosed, Regulation F makes no provision for a lower leverage ratio if the correspondent has a composite rating of "1" under the CAMEL rating system.

Although Regulation F was effective December 19, 1992, savings associations had until June 19, 1993, to establish their policies and procedures for selecting and monitoring correspondents. Furthermore, the 25% limit on credit exposure to less than adequately capitalized correspondents is phased in. For the one-year period beginning June 19, 1994, the credit exposure for correspondents that are less than adequately capitalized is 50% of the association's capital. After June 19, 1995, the 25% limit becomes effective.

During regular examinations, examiners should determine: (1) if a savings association uses correspondents; (2) if it has credit exposure to its correspondents; (3) if it has written policies in place with regard to the selection and monitoring of its correspondents; and (4) if its exposure is limited as required by Regulation F.

Unposted Electronic Transfer Funds

Another type of electronic transfer system gaining widespread use, known as the Automated Clearing House (ACH), arose as a computer-based counterpart to the paper-based system for facilitating the

collection and settlement of check-like payments. An ACH transaction is any data transmission from one institution to another via the ACH system. Payment instructions are sent from a Federal Reserve Bank to the ACH who then transmits the payment instructions to the receiving institution. The receiving institution posts the payments to the checking or saving accounts of the recipient. These ACH payments, chiefly salaries and benefits, are also known as direct deposits payments. ACH payments are governed by sections 210.7(e) and (f) of the Federal Reserve regulations.

Increased use of direct deposit payments for distribution of government transfer payments has heightened the risk of an institution's failure to return funds transmitted via ACH that cannot be properly posted to recipients' accounts. Common reasons payments cannot be posted are the death or legal incapacity of a recipient, the death of a beneficiary, or the recipient does not have a current account.

Sections 210.7(e) and (f) of the Federal Reserve regulations requires institutions to immediately return any payments that cannot be posted. The Financial Management Service (FMS), a bureau of the Department of the Treasury, issues Operational Guides that outline procedures for returning unposted funds and notifying government agencies of corrections or changes to recipients' account information.

Recovering unposted funds can be a complicated and time-consuming process that is not expected of regulators. Rather, regulators are requested to identify institutions that fail to post funds and to refer institution management to the appropriate procedures for returning funds.

FMS has developed an awareness program that includes training, self-auditing, and detailed guidance with a goal of promoting a higher degree of industry compliance with returns and reclamation regulations. The detailed guidelines are found in the Green Book, a supplement to the Treasury Financial Manual.

REFERENCES

United States Code (15 USC)

§ 1693	Electronic Funds Transfer Act

Code of Federal Regulations (12 CFR)

Federal Reserve Board

§ 205.2	Electronic Funds Transfer (Regulation E)
§ 206	Limitations on Interbank Liabilities (Regulation F)
§ 210.25	Wire Transfers of Funds (Regulation J)

Other References

Federal Financial Institutions Examination Council, Information Technology Handbook

Board of Governors of the Federal Reserve System, Policy Statement on Large Dollar Transfer Systems

Board of Governors of the Federal Reserve System, User's Guide to the Payments Systems Risk Policy Statement

U.S. Treasury Financial Manual, Green Book Supplement

Payments Systems Risk Program

EXAMINATION OBJECTIVES

To evaluate the institution's self-assessment process and resultant net debit caps when applicable.

To determine the adequacy of electronic funds transfer internal controls, policies, practices, and procedures and the level of compliance within each.

To determine whether the institution has unposted electronic transfer funds.

To determine the adequacy of the board of directors' oversight of electronic funds transfer activities and monitoring of unposted electronic transfer funds.

To determine if the association is in compliance with Regulation F.

To determine compliance with applicable laws, rulings, and regulations.

To initiate corrective action when internal objectives, policies, or procedures are deficient, or when violations of laws, rulings, or regulations have been noted.

To ensure that institutions without self-assessments have adequate controls to prevent daylight overdrafts.

EXAMINATION PROCEDURES

LEVEL I

WKP. REF.

1. Review the most recent Electronic Funds Transfers (EFTs) policies and procedures for large dollar wire transfer system(s) used by the institution. Any weaknesses should be reviewed as part of the payments systems risk review.

2. Review the previous report of examination and all payments systems risk-related exceptions noted and determine if management has taken appropriate corrective action.

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3. Review scoping materials applicable to this program. If the review of scoping materials is performed by others, obtain a summary of the review of items concerning this program. Refer to the examiner in charge for instruction if needed.

4. Determine the level and frequency of the institution's daylight overdraft activity. Institutions may comply with the PSR policy statement by:

   - Not incurring daylight overdrafts. In this case, the institution will not have a self-assessment file. However, the examination should include a review of controls established to ensure that no daylight overdraft will occur;
   - Qualifying for a de minimis daylight overdraft cap. Although self-assessments are not required of such institutions, the policy sets forth guidelines for institutions electing this option;
   - Qualifying for the exempt category; or
   - Completing a self-assessment and establishing a net debit cap.

5. Determine if correspondents are used and whether the correspondent relationship creates a credit exposure to the association. Review the association's written policies with regard to the selection and monitoring of correspondents and determine if the policies comport with the requirements of Regulation F.

6. Review Level II procedures and perform those necessary to test, support, and present conclusions derived from the performance of Level I procedures.

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LEVEL II

1. Determine whether the institution effectively monitors its payments activity for daylight overdrafts, if necessary.

---

2. Determine whether the institution has received counseling from the Federal Reserve Bank regarding daylight overdraft activity in excess of its appropriate limit.

---

3. If a de minimis cap is used, review the board of directors' approval of the cap on the institution's daylight overdrafts.

   - Determine whether the board of directors has submitted a copy of the certification of the de minimis cap to its Federal Reserve Bank within the past 12 months.
   - Based on the results of the overall examination, determine if the de minimus cap poses undue risk.
   - Determine whether the institution meets the exempt category requirements, if it has filed for exempt status.

---

4. For institutions that incur daylight overdrafts and do not qualify for a de minimis cap, determine if a self-assessment review has been performed.

---

5. If self-assessment is used, determine whether an annual resolution by the institution's board of directors has established the self-assessment rating of the institution, and whether the current board of directors' resolution has been submitted to the institution's Federal Reserve Bank.

   - Determine whether the self-assessment is complete, reasonable, and reflective of the examiner's findings on the overall condition of the institution.

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- Determine whether the net debit cap assigned by the institution accurately reflects the self-assessment findings of the institution and the findings of the regulator.
- Review monitoring reports submitted to the institution by the Federal Reserve Bank to ensure that the institution's funds transfer activity remains within the limitations of its self-assessment rating.

---

6. If the institution has not voluntarily established a net debit cap on funds transfer activity:

   - Determine the adequacy of controls implemented to prevent daylight overdrafts.
   - Initiate, through the institution or the OTS regional office's liaison officer, remedial action in the event of inadequate controls to prevent daylight overdrafts.

---

7. Review any arrangement that permits a depository institution to have its Fedwire business conducted by a correspondent with Fedwire accessibility. The correspondent may be an affiliate of the institution or an unaffiliated company. In such cases, the PSR policy statement requires that the third-party-access arrangement conform to certain requirements or have been phased out by June 30, 1990.

   - Determine whether the institution either approves each individual transfer or has established individual customer credit limits to limit each transfer.
   - Review the adequacy of controls on the service provider to ensure adherence to the institution's net debit cap and approved credit limits.
   - Review the board of directors' approval of the service provider and the necessary agreement with the institution's Federal Reserve Bank to allow direct postings of funds transfer activity to the institution's reserve account.
   - Review the adequacy of the institution's monitoring of the service performed.

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- Determine that the institution has confirmed the absence of conflicts for the service provider and its own funds transfer activity.

8. Determine whether the institution has any unposted funds that need to be returned to the appropriate government agencies.

9. If the institution has unposted funds:

   - Determine the adequacy of controls for returning funds or notifying the government agencies of changes in recipients' account information.
   - Initiate remedial action in the event of inadequate controls.

10. Review the institution's credit files on correspondents (obtaining outside data, if necessary) and determine if the association has limited its credit exposure to correspondents as specified by the requirements of Regulation F.

11. Summarize findings, obtain management responses, and update programs and the continuing examination file (CEF) with any information that will facilitate future examinations. File exception sheets in the general file (GF).

12. Ensure that the Objectives of this Handbook Section have been met. State your findings and conclusions, as well as appropriate recommendations for any necessary corrective measures, on the appropriate work papers and report pages.

EXAMINER'S SUMMARY, RECOMMENDATIONS, AND COMMENTS

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Payments Systems Risk

Questionnaire

	Yes	No

GENERAL QUESTIONNAIRE

This questionnaire addresses the de minimis cap procedures and the review of the self-assessment file and board of directors' minutes. Separately, the regulator should review considerations regarding funds transfer risk outlined in the Retail Payment Systems Booklet and the Wholesale Payment Systems Booklet of the Federal Financial Institutions Examination Council (FFIEC) IT Examination Handbook.

De Minimis Cap Procedures

1.	Do the board of directors' minutes reflect consideration of the Federal Reserve's PSR policy statement and its implications for the institution?	☐	☐
2.	Did the board of directors approve a de minimis cap on the institution's funds transfer activity?	☐	☐
3.	Has the board of directors submitted a copy of the certification of the de minimis cap to its Federal Reserve Bank within the past 12 months?	☐	☐
4.	Can the institution monitor its payment activity for daylight overdrafts?	☐	☐
5.	Are controls in place to keep the institution from exceeding its net debit cap?	☐	☐
6.	Are the controls effective?	☐	☐
7.	Does the institution use daylight overdrafts only on an occasional basis?	☐	☐
8.	If the institution consistently incurs daylight overdrafts, has the board of directors considered implementing a self-assessment review?	☐	☐
9.	Based on the results of the overall examination, does the daylight overdraft activity within the de minimis cap present undue risk?	☐	☐

Review of the Self-Assessment File

1.	Does the file contain adequate documentation addressing all components of the self-assessment?	☐	☐
2.	Does the file indicate annual updates of the self-assessment and reports submitted to the board of directors detailing those updates?	☐	☐

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Payments Systems Risk

Questionnaire

	Yes	No
Review of the Board of Directors' Minutes		
1. Do board minutes reflect adequate consideration by the directorate of the self-assessment requirements at least annually?	☐	☐
2. Do board minutes reflect consideration of correspondence or counseling efforts by the Federal Reserve or other supervisory agency?	☐	☐
3. Does the board resolution formally establishing the institution's cap identify the following:		
• The rating for each of the three separate rating components?	☐	☐
• The institution's overall rating?	☐	☐

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Self-Assessment Review

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Three factors make-up an assessment of an institution's risk in participating in a large dollar wire transfer system: creditworthiness, operating controls, and credit policies. The following instructions for making the assessment call for separate assessments of each factor.

The institution and the regulator should each make this assessment. Self-assessment is not required if the institution adopts a *de minimis* cap, does not incur daylight overdrafts, qualifier for the exempt category, or does not participate on any large dollar wire transfer networks and is willing to accept a zero cross-system net debit cap.

I. Creditworthiness (Steps 1 through 9)

Step 1: Answer the following questions about each of the primary factors in an assessment of creditworthiness (asset quality, capital adequacy, and earnings):

A. In determining the institution's asset quality self-assessment rating, have management and the directorate considered:

	Yes	No
1. Comments from the latest supervisory examination report on asset quality and management effectiveness?	____	____
2. Level, distribution, and severity of classified assets?	____	____
3. The level and composition of nonaccrual and reduced-rate assets?	____	____
4. Loss history and adequacy of valuation allowances?	____	____
5. Ability to foresee, administer and correct problem credits?	____	____
6. Concentrations?	____	____
7. Other factors?	____	____

B. In determining the institution's capital adequacy self-assessment rating, have management and the directorate considered:

1. Comments from the latest supervisory examination report?	____	____
2. Capital guidelines established by regulators?	____	____
3. Asset quality and off-balance-sheet activity?	____	____
4. Growth?	____	____
5. Profitability?	____	____

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6. Other factors?	____	____

C. In determining the institution's earnings self-assessment rating, have management and the directorate considered:

1. Comments from the latest supervisory examination report?	____	____
2. Return on assets?	____	____
3. Quality of earnings?	____	____
4. Growth?	____	____
5. Asset quality?	____	____
6. Provisions for loan losses?	____	____
7. Tax considerations?	____	____
8. Interest-rate sensitivity?	____	____
9. Earnings history?	____	____
10. Dividend requirements?	____	____
11. Capital adequacy?	____	____
12. Other factors?	____	____

Step 2: Answer the following questions for each primary factor.

	Asset Quality			Capital Adequacy			Earnings	
	Yes	No		Yes	No		Yes	No
1. Does the institution consider available peer group and other data for institutions with similar operating characteristics, such as consumer lending or wholesale activities?	____	____		____	____		____	____
2. Do peer group comparisons generally support the self-assessment according to the guidelines in the Primary Factor Rating Form (Step 3)?	____	____		____	____		____	____

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Step 3. Both the institution and the examiner should assign an overall rating to each primary factor. Use the Primary Factor Rating Form.

Step 4: Answer the following questions for each primary factor.

	Asset Quality / Earnings			Capital Adequacy				
		Yes	No		Yes	No		Yes	No
1. Is the institution's self-assessment rating consistent with guidelines?		____	____		____	____		____	____
2. If the institution's self-assessment rating is not consistent with guidelines, has management developed sufficient data to justify the inconsistency?		____	____		____	____		____	____

Step 5: Answer the following questions about to the two modifying factors (liquidity and holding company and affiliates):

A. In determining the effect of the institution's liquidity position, have management and the directorate considered:

	Yes	**No**
1. Comments from the latest supervisory examination report addressing liquidity and overall condition of the institution?	____	____
2. Management controls and policies?	____	____
3. Borrowing history?	____	____
4. Adequacy of policies and procedures?	____	____
5. The institution's asset/liability structure?	____	____
6. Off-balance-sheet funding sources and needs?	____	____
B. If applicable, in determining the position of the institution's holding company and affiliates' self-assessment modifier, have management and the directorate considered:		
1. Comments from the most recent supervisory examination report?	____	____
2. Factors relating to capital, asset quality, and earnings of the holding company and affiliates?	____	____
3. Management?	____	____

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Step 6: Based on the review of modifying factors, both the institution and the regulator should assign a level to each modifying factor.

Rating Form for 1) Liquidity and 2) Holding Company and Affiliates

Liquidity

Institution	Examiner		
_____	_____	(o)	Liquidity is neutral. (Generally means the institution has a stable funding base with a reasonable cushion of assets or untapped funding sources available to meet contingencies.)
_____	_____	(-)	Liquidity is negative. (Generally means the institution has a funding vulnerability or is experiencing or has experienced a deterioration in the normal funding base.)
_____	_____	(+)	Liquidity is positive. (Generally means the institution is extremely liquid and has demonstrated asset liquidity as well as sound liability policies.)

Comments: _____

_____

_____

Holding Company and Affiliates

Institution	Examiner		
_____	_____	(o)	Influence is neutral. (Generally means holding company was characterized as being in satisfactory condition at its most recent examination.)
_____	_____	(-)	Influence is negative. (Generally means holding company may be experiencing or expecting significant losses at the parent or in its nonthrift affiliates and debt service requirements necessitate high dividend payout ratio at depository institution subsidiaries and affiliates.)
_____	_____	(+)	Influence is positive. (Generally means holding company has demonstrated record of active support.)

Comments: _____

_____

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Step 7: Answer the following questions for each modifying factor:

	Liquidity			Holding Company and Affiliates	
	Yes	No		Yes	No
1. Does the institution consider available peer group and other available data for institutions with similar operating characteristics, such as consumer lending or wholesale activities?	____	____		____	____
2. Do peer group comparisons generally support the self-assessment?	____	____		____	____
3. Is the institution's self-assessment rating consistent with guidelines?	____	____		____	____
4. If the institution's self-assessment rating is not consistent with guidelines, has management developed sufficient data to justify the inconsistency?	____	____		____	____

Step 8: As a first step in integrating the assessments of the primary and modifying factors, answer the following questions:

1. Do procedures employed by management and directorate to determine the creditworthiness self-assessment appear reasonable?	____	____		____	____
2. Are conclusions adequately documented?	____	____		____	____

Step 9: In the space provided, integrate the assessments of the primary and modifying factors into one combined rating for creditworthiness, using one of the following categories: excellent, very good, adequate, or below standard. The combined rating should be no higher than the lowest rating assigned in Step 3, adjusted for the ratings in Step 6 as well as the answers to the questions in Steps 4, 7, and 8. Comment on any adjustments necessary.

Combined Rating for Creditworthiness

_____

Comments _____

_____

_____

_____

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II. Operating Controls, Policies, and Procedures (Steps 10 through 18)

Note: There are two components to the assessment of the institution's operating controls, policies, and procedures. These are assessments of the institution's monitoring positions: (1) relative to net debit caps and (2) for customers.

Steps 10 through 14 are for assessing the institution's monitoring position relative to net debit caps. In addition, the regulator should conduct the applicable operations activities addressed in the Retail Payment Systems Booklet and the Wholesale Payment Systems Booklet of the Federal Financial Institutions Examination Council (FFIEC) IT Examination Handbook.

Step 10: Complete the Average Daily Activity Table and answer the questions immediately following it.

Note: This table should reflect the institution's average daily volume on each system in which it participates.

Average Daily Activity Table

System	Dollars Sent	Percent of Total	Dollars Received	Percent of Total
CHIPS	_____	_____	_____	_____
Fedwire	_____	_____	_____	_____
Total	_____	100%	_____	100%

	Yes	No
1. Does the institution update the table at a frequency consistent with its fluctuations in activity?	____	____
2. Does the table correctly reflect current level of activity?	____	____
3. Are all large dollar payments systems considered when completing the table?	____	____

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Step 11: Answer the following questions about individual system monitoring:

	Yes	No
1. What is the monitoring frequency currently used?	____	____

System	Real Time	Interim (Note frequency)	No Interim
CHIPS	_____	_____	_____
Fedwire	_____	_____	_____

2. Does the institution update the table at an acceptable frequency?	____	____
3. Is the monitoring capability appropriate for the volume of funds transfer activity?	____	____

Step 12: Answer the following questions:

1. Does the institution monitor its payments activity on a cross-system basis?	____	____
2. At what frequency?	____	____

Real time monitoring _____ Periodic (note frequency) _____ No interim monitoring _____

3. Is this information reflected in the self-assessment file?	____	____
4. Does the information reflect current activity?	____	____

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Step 13: Using the information from Steps 10 through 12, rate the institution according to the guidelines in the following form:

Rating Form for Monitoring Position Relative to Net Debit Caps

_____ **Strong:** 95% of total dollars sent and received are monitored on a real time basis, or at least every 15 minutes; and

– A cross-system calculation of the institution's net debit/credit position is computed and compared with established limits on a real time basis, or at least every 15 minutes.

_____ **Satisfactory:** 80% of the total average daily dollars volume sent is monitored on a real time basis, or at least every 30 minutes; and

– A cross-system calculation of institution's net debit/credit position is computed and compared with established limits on a real time basis, or at least every 15 minutes.

_____ Unsatisfactory: Any other condition.

Step 14: Make any necessary adjustments to the rating in Step 13, based on the following:

1. Provide a brief discussion of the institution's monitoring system, analyzing the appropriateness of the monitoring procedures in use for the volume and nature of the institution's wire transfer activity.

2. Is the institution's self-assessment rating consistent with the guidelines?

3. If the institution's self-assessment rating is not consistent with the guidelines, has management developed sufficient data to justify the conclusions?

Comment on any adjustments necessary _____

_____

Note: Steps 15 through 17 are for assessing the institution's monitoring positions for customers.

Step 15: Answer the following questions:

	Yes	**No**
1. Has the institution identified customers who regularly participate in a large volume of wire transfer activity or in frequent large wire transfers?	____	____
2. Are criteria for placement of names on the list reasonable?	____	____
3. Can the institution monitor these accounts, taking into account the source of significant transactions?	____	____

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4. Do the monitoring systems include the opening collected balance?	____	____
5. Does the institution have a system for updating the customer's balance to reflect intra-day activity? * Is the frequency of updating appropriate?	____	____
6. Does the overall system for monitoring positions of customers cover:		
a) All significant sources generating customer account entries?	____	____
b) Total transactions over established dollar limits?	____	____
c) Overdraft limits?	____	____
d) Single transfer limits?	____	____
7. Are daily transactions reports generated and reviewed?	____	____
8. Have transaction limit guidelines been established?	____	____
a) If yes, are guidelines reasonable?	____	____
b) Do transaction limits include a $50 million par value size limit on market book entry Fedwire transfers?	____	____
c) Are guidelines reviewed regularly?	____	____
9. Does the system prohibit any transaction in excess of the established limits until appropriate action is taken?	____	____
10. Is analysis of those accounts intensified for transactions that are over the limit?	____	____
11. Is staff trained in exception procedures?	____	____
12. Are exception reports generated and reviewed by appropriate management?	____	____
13. Do exception reports reflect all activity in excess of transaction limits?	____	____
14. Do internal or external auditors review the funds transfer environment at least annually? (These reviews should conform to the standards established by the Bank Administrative Institute and the Federal Financial Institutions Examinations Council.)	____	____
15. Are auditors independent?	____	____
16. Do audit reports reflect weaknesses in physical controls?	____	____
17. Are audit-exception-clearing procedures adequate?	____	____

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18. Does the institution frequently incur daylight overdrafts and send large transfers to affiliates?		
(a) Are controls in place to ensure that these extensions of credit stay within approved lines?	____	____
b) Have the limits been adhered to?	____	____
c) Have over limit extensions been approved at the appropriate level of management?	____	____
19. Are transfers to affiliates:		
(a) Made pursuant to a written agreement?	____	____
(b) Approved by the board of directors as part of an internal credit policy?	____	____

Step 16: Rate the institution's monitoring positions for its customers according to the guidelines in the following form:

Rating Form for Monitoring Positions for Customers

_____ **Strong:** Responses to all of the above are positive and comprehensive customer monitoring is in force for both debits and credits on a real time basis or at least intervals of 15 minutes or less.

_____ **Satisfactory:** Responses to all of the above are positive and comprehensive customer monitoring is in force for all debit transactions greater than or equal to the monitoring threshold on a real time basis or at intervals of 30 minutes or less.

_____ **Unsatisfactory:** Any other condition.

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Step 17: Make any necessary adjustments to the rating in Step 16, based on the following:

	Yes	No
1. Provide a brief discussion of the institution's monitoring system, specifically analyzing consistency between monitoring procedures in use and volume and nature of the institution's wire transfer activity.	____	____
2. Is the institution's self-assessment consistent with guidelines?	____	____
3. If the institution's self-assessment rating is not consistent with guidelines, has management developed sufficient data to justify the inconsistency?	____	____

Comment on any adjustments necessary _____

_____

_____

_____

Step 18: Using the information obtained in Steps 9 through 17, especially the ratings in Steps 13 and 16, determine a combined rating from the following table (circle the appropriate row):

If the rating for monitoring positions is:	and the rating for monitoring customers is:	the overall rating should be:	
Strong	Strong	Strong	
Strong	Satisfactory	Satisfactory	
Satisfactory	Strong	Satisfactory	**Combined Rating for Operational Controls**
Satisfactory	Satisfactory	Satisfactory	
Any	Unsatisfactory	Unsatisfactory	
Unsatisfactory	Any	Unsatisfactory	_____

Comments _____

_____

_____

_____

_____

_____

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III. Credit Policies and Procedures (Steps 19 through 22)

Step 19: Answer the following questions:

	Yes	No
1. Does the institution have a board of directors'-approved credit policy that specifically addresses daylight overdrafts and bilateral net credit limits if the institution is a participant on a private transfer network?	____	____
2. Does the policy address any regular extension of intraday credit to affiliates?	____	____
3. Have customers' aggregate exposures been identified?	____	____
4. Have aggregate customer limits been approved and established?	____	____
5. Do monitoring systems identify usage in excess of approved facilities on a timely basis?	____	____
6. Do reporting systems provide adequate information to support evaluations of credit usage?	____	____
7. Does the institution have exception identification and approval systems that are tailored to the speed, volume, and size of credit approvals required by its payment-system--generated exposures?	____	____
8. Are the institution's review systems geared to identify and take action on deteriorating risk situations?	____	____
9. Are all controls and procedures reviewed and tested by the institution's internal auditors?	____	____
10. Is adequate training available and required for operations, credit, and account officer staff responsible for monitoring the intra day overdraft-exposure system?	____	____

Step 20: Explain compensating controls, if any, where responses are negative.

Step 21: Rate the institution's credit policies and procedures as acceptable or unacceptable, according to the following guide:

Acceptable: All or most responses to the questions in Step 19 are positive.

Unacceptable: All or most of the responses to the questions in Step 19 are negative.

Rating for credit policies and procedures is _____

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Step 22: Combine the three component evaluations from Steps 9, 18, and 21 into a single overall assessment using the following table (circle the appropriate row):

If the rating for credit policies and procedures (Step 21) is:	and the rating for operating controls, policies, and procedures (Step 18) is:	and the rating for creditworthiness (Step 9) is:	then the overall assessment should be:
Acceptable	Strong	Excellent	High Cap
		Very Good	Above-Average Cap
		Adequate	Average Cap
		Below Standard	No Cap
Acceptable	Satisfactory	Excellent	Above-Average Cap
		Very Good	Above-Average Cap
		Adequate	Average Cap
		Below Standard	No Cap
Acceptable	Unsatisfactory	Any	No Cap
Unacceptable	Any	Any	No Cap

Final Overall Rating _____

Step 23:

	Yes	No
1. Is this rating consistent with the rating reported by the institution?	____	____
2. If not, can management justify any inconsistency?	____	____
3. If there is an inconsistency, will management review its self-assessment rating?	____	____
4. If management will not review its self-assessment rating, has the Regional office liaison Officer been notified of the inconsistency?	____	____

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