

Interest-rate risk (IRR) is the exposure of an institution's financial condition to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value. However, excessive levels of IRR can pose a significant threat to an institution's earnings and capital base. Accordingly, effective risk management that maintains IRR at prudent levels is essential to the safety and soundness of banking institutions.

Evaluating an institution's exposure to changes in interest rates is an important element of any full-scope examination and, for some institutions, may be the sole topic for specialized or targeted examinations. Such an evaluation includes assessing both the adequacy of the management process used to control IRR and the quantitative level of exposure. When assessing the IRR management process, examiners should ensure that appropriate policies, procedures, management information systems, and internal controls are in place to maintain IRR at prudent levels with consistency and continuity. Evaluating the quantitative level of IRR exposure requires examiners to assess the existing and potential future effects of changes in interest rates on an institution's financial condition, including its capital adequacy, earnings, liquidity, and, where appropriate, asset quality. To ensure that these assessments are both effective and efficient, examiner resources must be appropriately targeted at those elements of IRR that pose the greatest threat to the financial condition of an institution. This targeting requires an examination process built on a well-focused assessment of IRR exposure before the on-site engagement, a clearly defined examination scope, and a comprehensive program for following up on examination findings and ongoing monitoring.

Both the adequacy of an institution's IRR management process and the quantitative level of its IRR exposure should be assessed. Key elements of the examination process used to assess IRR include the role and importance of a preexamination risk assessment, proper scoping of the examination, and the testing and verification of both the management process and internal measures of the level of IRR exposure.<sup>1</sup>

1. This section incorporates and builds on the principles

## SOURCES OF IRR

As financial intermediaries, banks encounter IRR in several ways. The primary and most discussed source of IRR is differences in the timing of the repricing of bank assets, liabilities, and off-balance-sheet (OBS) instruments. Repricing mismatches are fundamental to the business of banking and generally occur from either borrowing short-term to fund longer-term assets or borrowing long-term to fund shorter-term assets. Such mismatches can expose an institution to adverse changes in both the overall level of interest rates (parallel shifts in the yield curve) and the relative level of rates across the yield curve (nonparallel shifts in the yield curve).

Another important source of IRR, commonly referred to as basis risk, occurs when the adjustment of the rates earned and paid on different instruments is imperfectly correlated with otherwise similar repricing characteristics (for example, a three-month Treasury bill versus a three-month LIBOR). When interest rates change, these differences can change the cash flows and earnings spread between assets, liabilities, and OBS instruments of similar maturities or repricing frequencies.

An additional and increasingly important source of IRR is the options in many bank asset, liability, and OBS portfolios. An option provides the holder with the right, but not the obligation, to buy, sell, or in some manner alter the cash flow of an instrument or financial contract. Options may be distinct instruments, such as exchange-traded and over-the-counter contracts, or they may be embedded within the contractual terms of other instruments. Examples of instruments with embedded options include bonds and notes with call or put provisions (such as callable U.S. agency notes), loans that

and guidance provided in SR-96-13, "Interagency Guidance on Sound Practices for Managing Interest Rate Risk." It also incorporates, where appropriate, fundamental risk-management principles and supervisory policies and approaches identified in SR-93-69, "Examining Risk Management and Internal Controls for Trading Activities of Banking Organizations"; SR-95-17, "Evaluating the Risk Management of Securities and Derivative Contracts Used in Nontrading Activities"; SR-95-22, "Enhanced Framework for Supervising the U.S. Operations of Foreign Banking Organizations"; SR-95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies"; and SR-96-14, "Risk-Focused Safety and Soundness Examinations and Inspections."

give borrowers the right to prepay balances without penalty (such as residential mortgage loans), and various types of nonmaturity deposit instruments that give depositors the right to withdraw funds at any time without penalty (such as core deposits). If not adequately managed, the asymmetrical payoff characteristics of options can pose significant risk to the banking institutions that sell them. Generally, the options, both explicit and embedded, held by bank customers are exercised to the advantage of the holder, not the bank. Moreover, an increasing array of options can involve highly complex contract terms that may substantially magnify the effect of changing reference values on the value of the option and, thus, magnify the asymmetry of option payoffs.

## EFFECTS OF IRR

Repricing mismatches, basis risk, options, and other aspects of a bank's holdings and activities can expose an institution's earnings and value to adverse changes in market interest rates. The effect of interest rates on accrual or reported earnings is the most common focal point. In assessing the effects of changing rates on earnings, most banks focus primarily on their net interest income—the difference between total interest income and total interest expense. However, as banks have expanded into new activities to generate new types of fee-based and other noninterest income, a focus on overall net income is becoming more appropriate. The noninterest income arising from many activities, such as loan servicing and various asset-securitization programs, can be highly sensitive to changes in market interest rates. As noninterest income becomes an increasingly important source of bank earnings, both bank management and supervisors need to take a broader view of the potential effects of changes in market interest rates on bank earnings.

Market interest rates also affect the value of a bank's assets, liabilities, and OBS instruments and, thus, directly affect the value of an institution's equity capital. The effect of rates on the economic value of an institution's holdings and equity capital is a particularly important consideration for shareholders, management, and supervisors alike. The economic value of an instrument is an assessment of the present value of its expected net future cash flows, discounted

to reflect market rates. By extension, an institution's economic value of equity (EVE) can be viewed as the present value of the expected cash flows on assets minus the present value of the expected cash flows on liabilities plus the net present value of the expected cash flows on OBS instruments. Economic values, which may differ from reported book values due to GAAP accounting conventions, can provide a number of useful insights into the current and potential future financial condition of an institution. Economic values reflect one view of the ongoing worth of the institution and can often provide a basis for assessing past management decisions in light of current circumstances. Moreover, economic values can offer comprehensive insights into the potential future direction of earnings performance since changes in the economic value of an institution's equity reflect changes in the present value of the bank's future earnings arising from its current holdings.

Generally, commercial banking institutions have adequately managed their IRR exposures, and few banks have failed solely as a result of adverse interest-rate movements. Nevertheless, changes in interest rates can have negative effects on bank profitability and must be carefully managed, especially given the rapid pace of financial innovation and the heightened level of competition among all types of financial institutions.

## SOUND IRR MANAGEMENT PRACTICES

As is the case in managing other types of risk, sound IRR management involves effective board and senior management oversight and a comprehensive risk-management process that includes the following elements:

- effective policies and procedures designed to control the nature and amount of IRR, including clearly defined IRR limits and lines of responsibility and authority
- appropriate risk-measurement, monitoring, and reporting systems
- systematic internal controls that include the internal or external review and audit of key elements of the risk-management process

The formality and sophistication used in managing IRR depends on the size and sophistication of the institution, the nature and complexity

of its holdings and activities, and the overall level of its IRR. Adequate IRR management practices can vary considerably. For example, a small institution with noncomplex activities and holdings, a relatively short-term balance-sheet structure presenting a low IRR profile, and senior managers and directors who are actively involved in the details of day-to-day operations may be able to rely on relatively simple and informal IRR management systems.

More complex institutions and those with higher interest-rate-risk exposures or holdings of complex instruments may require more elaborate and formal IRR management systems to address their broader and typically more complex range of financial activities, as well as provide senior managers and directors with the information they need to monitor and direct day-to-day activities. More complex processes for interest-rate-risk management may require more formal internal controls, such as internal and external audits, to ensure the integrity of the information senior officials use to oversee compliance with policies and limits.

Individuals involved in the risk-management process should be sufficiently independent of business lines to ensure adequate separation of duties and avoid potential conflicts of interest. The degree of autonomy these individuals have may be a function of the size and complexity of the institution. In smaller and less complex institutions with limited resources, it may not be possible to completely remove individuals with business-line responsibilities from the risk-management process. In these cases, the focus should be on ensuring that risk-management functions are conducted effectively and objectively. Larger, more complex institutions may have separate and independent risk-management units.

## Board and Senior Management Oversight

Effective oversight by a bank's board of directors and senior management is critical to a sound IRR management process. The board and senior management should be aware of their responsibilities related to IRR management, understand the nature and level of interest-rate risk taken by the bank, and ensure that the formality and sophistication of the risk-management process is appropriate for the overall level of risk.

## Board of Directors

Ultimately, the board of directors is responsible for the level of IRR taken by an institution. The board should approve business strategies and significant policies that govern or influence the institution's interest-rate risk. It should articulate overall IRR objectives and provide clear guidance on the level of acceptable IRR. The board should also approve policies and procedures that identify lines of authority and responsibility for managing IRR exposures.

Directors should understand the nature of the risks to their institution and ensure that management is identifying, measuring, monitoring, and controlling them. Accordingly, the board should monitor the performance and IRR profile of the institution. Information that is timely and sufficiently detailed should be provided to directors to help them understand and assess the IRR facing the institution's key portfolios and the institution as a whole. The frequency of these reviews depends on the sophistication of the institution, the complexity of its holdings, and the materiality of changes in its holdings between reviews. Institutions holding significant positions in complex instruments or with significant changes in their composition of holdings would be expected to have more frequent reviews. In addition, the board should periodically review significant IRR management policies and procedures, as well as overall business strategies that affect the institution's IRR exposure.

The board of directors should encourage discussions between its members and senior management, as well as between senior management and others in the institution, regarding the institution's IRR exposures and management process. Board members need not have detailed technical knowledge of complex financial instruments, legal issues, or sophisticated risk-management techniques. However, they are responsible for ensuring that the institution has personnel available who have the necessary technical skills and that senior management fully understands and is sufficiently controlling the risks incurred by the institution.

A bank's board of directors may meet its responsibilities in a variety of ways. Some board members may be identified to become directly involved in risk-management activities by participating on board committees or gaining a sufficient understanding and awareness of the institution's risk profile through periodic briefings and management reports. Information pro-

vided to board members should be presented in a format that members can readily understand and that will assist them in making informed policy decisions about acceptable levels of risk, the nature of risks in current and proposed new activities, and the adequacy of the institution's risk-management process. In short, regardless of the structure of the organization and the composition of its board of directors or delegated board committees, board members must ensure that the institution has the necessary technical skills and management expertise to conduct its activities prudently and consistently within the policies and intent of the board.

### *Senior Management*

Senior management is responsible for ensuring that the institution has adequate policies and procedures for managing IRR on both a long-range and day-to-day basis and that clear lines of authority and responsibility are maintained for managing and controlling this risk. Management should develop and implement policies and procedures that translate the board's goals, objectives, and risk limits into operating standards that are well understood by bank personnel and that are consistent with the board's intent. Management is also responsible for maintaining (1) adequate systems and standards for measuring risk, (2) standards for valuing positions and measuring performance, (3) a comprehensive IRR reporting and monitoring process, and (4) effective internal controls and review processes.

IRR reports to senior management should provide aggregate information as well as sufficient supporting detail so that management can assess the sensitivity of the institution to changes in market conditions and other important risk factors. Senior management should periodically review the organization's IRR management policies and procedures to ensure that they remain appropriate and sound. Senior management should also encourage and participate in discussions with members of the board and—when appropriate to the size and complexity of the institution—with risk-management staff regarding risk-measurement, reporting, and management procedures.

Management should ensure that analysis and risk-management activities related to IRR are conducted by competent staff whose technical knowledge and experience are consistent with

the nature and scope of the institution's activities. There should be enough knowledgeable people on staff to allow some individuals to back up key personnel, as necessary.

### **Policies, Procedures, and Limits**

Institutions should have clear policies and procedures for limiting and controlling IRR. These policies and procedures should (1) delineate lines of responsibility and accountability over IRR management decisions, (2) clearly define authorized instruments and permissible hedging and position-taking strategies, (3) identify the frequency and method for measuring and monitoring IRR, and (4) specify quantitative limits that define the acceptable level of risk for the institution. In addition, management should define the specific procedures and approvals necessary for exceptions to policies, limits, and authorizations. All IRR policies should be reviewed periodically and revised as needed.

### *Clear Lines of Authority*

Through formal written policies or clear operating procedures, management should define the structure of managerial responsibilities and oversight, including lines of authority and responsibility in the following areas:

- developing and implementing strategies and tactics used in managing IRR
- establishing and maintaining an IRR measurement and monitoring system
- identifying potential IRR and related issues arising from the potential use of new products
- developing IRR management policies, procedures, and limits, and authorizing exceptions to policies and limits

Individuals and committees responsible for making decisions about interest-rate risk management should be clearly identified. Many medium-sized and large banks, and banks with concentrations in complex instruments, delegate responsibility for IRR management to a committee of senior managers, sometimes called an asset/liability committee (ALCO). In these institutions, policies should clearly identify the members of an ALCO, the committee's duties and responsibilities, the extent of its decision-making authority, and the form and frequency of

its periodic reports to senior management and the board of directors. An ALCO should have sufficiently broad participation across major banking functions (for example, in the lending, investment, deposit, funding areas) to ensure that its decisions can be executed effectively throughout the institution. In many large institutions, the ALCO delegates day-to-day responsibilities for IRR management to an independent risk-management department or function.

Regardless of the level of organization and formality used to manage IRR, individuals involved in the risk-management process (including separate risk-management units, if present) should be sufficiently independent of the business lines to ensure adequate separation of duties and avoid potential conflicts of interest. Also, personnel charged with measuring and monitoring IRR should have a well-founded understanding of all aspects of the institution's IRR profile. Compensation policies for these individuals should be adequate enough to attract and retain personnel who are well qualified to assess the risks of the institution's activities.

### *Authorized Activities*

Institutions should clearly identify the types of financial instruments that are permissible for managing IRR, either specifically or by their characteristics. As appropriate to its size and complexity, the institution should delineate procedures for acquiring specific instruments, managing individual portfolios, and controlling the institution's aggregate IRR exposure. Major hedging or risk-management initiatives should be approved by the board or its appropriate delegated committee before being implemented.

Before introducing new products, hedging, or position-taking initiatives, management should ensure that adequate operational procedures and risk-control systems are in place. Proposals to undertake these new instruments or activities should—

- describe the relevant product or activity
- identify the resources needed to establish sound and effective IRR management of the product or activity
- analyze the risk of loss from the proposed activities in relation to the institution's overall financial condition and capital levels
- outline the procedures to measure, monitor, and control the risks of the proposed product or activity

### *Limits*

The goal of IRR management is to maintain an institution's interest-rate risk exposure within self-imposed parameters over a range of possible changes in interest rates. A system of IRR limits and risk-taking guidelines provides the means for achieving that goal. This system should set boundaries for the institution's level of IRR and, where appropriate, allocate these limits to individual portfolios or activities. Limit systems should also ensure that limit violations receive prompt management attention.

Aggregate IRR limits should clearly articulate the amount of IRR acceptable to the firm, be approved by the board of directors, and be reevaluated periodically. Limits should be appropriate to the size, complexity, and financial condition of the organization. Depending on the nature of an institution's holdings and its general sophistication, limits can also be identified for individual business units, portfolios, instrument types, or specific instruments. The level of detail of risk limits should reflect the characteristics of the institution's holdings, including the various sources of IRR to which the institution is exposed. Limits applied to portfolio categories and individual instruments should be consistent with and complementary to consolidated limits.

IRR limits should be consistent with the institution's overall approach to measuring and managing IRR and address the potential impact of changes in market interest rates on both reported earnings and the institution's EVE. From an earnings perspective, institutions should explore limits on net income as well as net interest income to fully assess the contribution of noninterest income to the IRR exposure of the institution. Limits addressing the effect of changing interest rates on economic value may range from those focusing on the potential volatility of the value of the institution's major holdings to a comprehensive estimate of the exposure of the institution's EVE.

An institution's limits for addressing the effect of rates on its profitability and EVE should be appropriate for the size and complexity of its underlying positions. Relatively simple limits that identify maximum maturity or repricing gaps, acceptable maturity profiles, or the extent of volatile holdings may be adequate for institutions engaged in traditional banking activities—and those with few holdings of long-term instruments, options, instruments with embedded

options, or other instruments whose value may be substantially affected by changes in market rates. For more complex institutions, quantitative limits on acceptable changes in estimated earnings and EVE under specified scenarios may be more appropriate. Banks that have significant intermediate- and long-term mismatches or complex option positions should, at a minimum, have economic value-oriented limits that quantify and constrain the potential changes in economic value or bank capital that could arise from those positions.

Limits on the IRR exposure of earnings should be broadly consistent with those used to control the exposure of a bank's economic value. IRR limits on earnings variability primarily address the near-term recognition of the effects of changing interest rates on the institution's financial condition. IRR limits on economic value reflect efforts to control the effect of changes in market rates on the present value of the entire future earnings stream arising from the institution's current holdings.

IRR limits and risk tolerances may be keyed to specific scenarios of market-interest-rate movements, such as an increase or decrease of a particular magnitude. The rate movements used in developing these limits should represent meaningful stress situations, taking into account historical rate volatility and the time required for management to address exposures. Moreover, stress scenarios should take account of the range of the institution's IRR characteristics, including mismatch, basis, and option risks. Simple scenarios using parallel shifts in interest rates may be insufficient to identify these risks.

Large, complex institutions are increasingly using advanced statistical techniques to measure IRR across a probability distribution of potential interest-rate movements and express limits in terms of statistical confidence intervals. If properly used, these techniques can be particularly useful in measuring and managing options positions.

## Risk-Measurement and Risk-Monitoring Systems

An effective process of measuring, monitoring, and reporting exposures is essential for adequately managing IRR. The sophistication and complexity of this process should be appropriate to the size, complexity, nature, and mix of an

institution's business lines and its IRR characteristics.

### *IRR Measurement*

Well-managed banks have IRR measurement systems that measure the effect of rate changes on both earnings and economic value. The latter is particularly important for institutions with significant holdings of intermediate and long-term instruments or instruments with embedded options because the market values of all these instruments can be particularly sensitive to changes in market interest rates. Institutions with significant noninterest income that is sensitive to changes in interest rates should focus special attention on net income as well as net interest income. Since the value of instruments with intermediate and long maturities and embedded options is especially sensitive to interest-rate changes, banks with significant holdings of these instruments should be able to assess the potential longer-term impact of changes in interest rates on the value of these positions—the overall potential performance of the bank.

IRR measurement systems should (1) assess all material IRR associated with an institution's assets, liabilities, and OBS positions; (2) use generally accepted financial concepts and risk-measurement techniques; and (3) have well-documented assumptions and parameters. Material sources of IRR include the mismatch, basis, and option risk exposures of the institution. In many cases, the interest-rate characteristics of a bank's largest holdings will dominate its aggregate risk profile. While all of a bank's holdings should receive appropriate treatment, measurement systems should rigorously evaluate the major holdings and instruments whose values are especially sensitive to rate changes. Instruments with significant embedded or explicit option characteristics should receive special attention.

IRR measurement systems should use generally accepted financial measurement techniques and conventions to estimate the bank's exposure. Examiners should evaluate these systems in the context of the level of sophistication and complexity of the institution's holdings and activities. A number of accepted techniques are available for measuring the IRR exposure of both earnings and economic value. Their complexity ranges from simple calculations and

static simulations using current holdings to highly sophisticated dynamic modeling techniques that reflect potential future business and business decisions. Basic IRR measurement techniques begin with a maturity/repricing schedule, which distributes assets, liabilities, and OBS holdings into time bands according to their final maturity (if fixed-rate) or time remaining to their next repricing (if floating). The choice of time bands may vary from bank to bank. When assets and liabilities do not have contractual repricing intervals or maturities, they are assigned to repricing time bands according to the judgment and analysis of the institution's IRR management staff (or those individuals responsible for controlling IRR).

Simple maturity/repricing schedules can be used to generate rough indicators of the IRR sensitivity of both earnings and economic values to changing interest rates. To evaluate earnings exposures, liabilities arrayed in each time band can be subtracted from the assets arrayed in the same time band to yield a dollar amount of maturity/repricing mismatch or gap in each time band. The sign and magnitude of the gaps in various time bands can be used to assess potential earnings volatility arising from changes in market interest rates.

A maturity/repricing schedule can also be used to evaluate the effects of changing rates on an institution's economic value. At the most basic level, mismatches or gaps in long-dated time bands can provide insights into the potential vulnerability of the economic value of relatively noncomplex institutions. Long-term gap calculations along with simple maturity distributions of holdings may be sufficient for relatively noncomplex institutions. On a slightly more advanced yet still simplistic level, estimates of the change in an institution's economic value can be calculated by applying economic-value sensitivity weights to the asset and liability positions slotted in the time bands of a maturity/repricing schedule. The weights can be constructed to represent estimates of the change in value of the instruments maturing or repricing in that time band given a specified interest-rate scenario. When these weights are applied to the institution's assets, liabilities, and OBS positions and subsequently netted, the result can provide a rough approximation of the change in the institution's EVE under the assumed scenario. These measurement techniques can prove especially useful for institutions with small holdings of complex instruments.

Further refinements to simple risk-weighting techniques incorporate the risk of options, the potential for basis risk, and nonparallel shifts in the yield curve by using customized risk weights applied to the specific instruments or instrument types arrayed in the maturity/repricing schedule.

Larger institutions and those with complex risk profiles that entail meaningful basis or option risks may find it difficult to monitor IRR adequately using simple maturity/repricing analyses. Generally, they will need to employ more sophisticated simulation techniques. For assessing the exposure of earnings, simulations that estimate cash flows and resulting earnings streams over a specific period are conducted based on existing holdings and assumed interest-rate scenarios. When these cash flows are simulated over the entire expected lives of the institution's holdings and discounted back to their present values, an estimate of the change in EVE can be calculated.

Static cash-flow simulations of current holdings can be made more dynamic by incorporating more detailed assumptions about the future course of interest rates and the expected changes in a bank's business activity over a specified time horizon. Combining assumptions on future activities and reinvestment strategies with information about current holdings, these simulations can project expected cash flows and estimate dynamic earnings and EVE outcomes. These more sophisticated techniques, such as option-adjusted pricing analysis and Monte Carlo simulation, allow for dynamic interaction of payment streams and interest rates to better capture the effect of embedded or explicit options.

The IRR measurement techniques and associated models should be sufficiently robust to adequately measure the risk profile of the institution's holdings. Depending on the size and sophistication of the institution and its activities, as well as the nature of its holdings, the IRR measurement system should be able to adequately reflect (1) uncertain principal amortization and prepayments; (2) caps and floors on loans and securities, where material; (3) the characteristics of both basic and complex OBS instruments held by the institution; and (4) changing spread relationships necessary to capture basis risk. Moreover, IRR models should provide clear reports that identify major assumptions and allow management to evaluate the reasonableness of and internal consistency among key assumptions.

### *Data Integrity and Assumptions*

The usefulness of IRR measures depends on the integrity of the data on current holdings, validity of the underlying assumptions, and IRR scenarios used to model IRR exposures. Techniques involving sophisticated simulations should be used carefully so that they do not become “black boxes,” producing numbers that appear to be precise, but that may be less accurate when their specific assumptions and parameters are revealed.

The integrity of data on current positions is an important component of the risk-measurement process. Institutions should ensure that current positions are delineated at an appropriate level of aggregation (for example, by instrument type, coupon rate, or repricing characteristic) to ensure that risk measures capture all meaningful types and sources of IRR, including those arising from explicit or embedded options. Management should also ensure that all material positions are represented in IRR measures, that the data used are accurate and meaningful, and that the data adequately reflect all relevant repricing and maturity characteristics. When applicable, data should include information on the contractual coupon rates and cash flows of associated instruments and contracts. Manual adjustments to underlying data should be well documented.

Senior management and risk managers should recognize the key assumptions used in IRR measurement, as well as reevaluate and approve them periodically. Assumptions should also be documented clearly and, ideally, the effect of alternative assumptions should be presented so that their significance can be fully understood. Assumptions used in assessing the interest-rate sensitivity of complex instruments, such as those with embedded options, and instruments with uncertain maturities, such as core deposits, should be subject to rigorous documentation and review, as appropriate to the size and sophistication of the institution. Assumptions about customer behavior and new business should take proper account of historical patterns and be consistent with the interest-rate scenarios used.

### *Nonmaturity Deposits*

An institution’s IRR measurement system should consider the sensitivity of nonmaturity deposits, including demand deposits, NOW accounts, savings deposits, and money market deposit

accounts. Nonmaturity deposits represent a large portion of the industry’s funding base, and a variety of techniques are used to analyze their IRR characteristics. The use of these techniques should be appropriate to the size, sophistication, and complexity of the institution.

In general, treatment of nonmaturity deposits should consider the historical behavior of the institution’s deposits; general conditions in the institution’s markets, including the degree of competition it faces; and anticipated pricing behavior under the scenario investigated. Assumptions should be supported to the fullest extent practicable. Treatment of nonmaturity deposits within the measurement system may, of course, change from time to time based on market and economic conditions. Such changes should be well founded and documented. Treatments used to construct earnings-simulation assessments should be conceptually and empirically consistent with those used to develop EVE assessments of IRR.

### *IRR Scenarios*

IRR exposure estimates, whether linked to earnings or economic value, use some form of forecasts or scenarios of possible changes in market interest rates. Bank management should ensure that IRR is measured over a probable range of potential interest-rate changes, including meaningful stress situations. The scenarios used should be large enough to expose all of the meaningful sources of IRR associated with an institution’s holdings. In developing appropriate scenarios, bank management should consider the current level and term structure of rates and possible changes to that environment, given the historical and expected future volatility of market rates. At a minimum, scenarios should include an instantaneous plus or minus 200-basis-point parallel shift in market rates. Institutions should also consider using multiple scenarios, including the potential effects of changes in the relationships among interest rates (option risk and basis risk) as well as changes in the general level of interest rates and changes in the shape of the yield curve.

The risk-measurement system should support a meaningful evaluation of the effect of stressful market conditions on the institution. Stress testing should be designed to provide information on the kinds of conditions under which the institution’s strategies or positions would be

most vulnerable; thus, testing may be tailored to the risk characteristics of the institution. Possible stress scenarios include abrupt changes in the term structure of interest rates, relationships among key market rates (basis risk), liquidity of key financial markets, or volatility of market rates. In addition, stress scenarios should include the conditions under which key business assumptions and parameters break down. The stress testing of assumptions used for illiquid instruments and instruments with uncertain contractual maturities, such as core deposits, is particularly critical to achieving an understanding of the institution's risk profile. Therefore, stress scenarios may not only include extremes of observed market conditions but also plausible worst-case scenarios. Management and the board of directors should periodically review the results of stress tests and the appropriateness of key underlying assumptions. Stress testing should be supported by appropriate contingency plans.

### *IRR Monitoring and Reporting*

An accurate, informative, and timely management information system is essential for managing IRR exposure, both to inform management and support compliance with board policy. The reporting of risk measures should be regular and clearly compare current exposures with policy limits. In addition, past forecasts or risk estimates should be compared with actual results as one tool to identify any potential shortcomings in modeling techniques.

A bank's senior management and its board or a board committee should receive reports on the bank's IRR profile at least quarterly. More frequent reporting may be appropriate depending on the bank's level of risk and its potential for significant change. While the types of reports prepared for the board and various levels of management will vary based on the institution's IRR profile, reports should, at a minimum, allow senior management and the board or committee to—

- evaluate the level of and trends in the bank's aggregate IRR exposure;
- demonstrate and verify compliance with all policies and limits;
- evaluate the sensitivity and reasonableness of key assumptions;
- assess the results and future implications of major hedging or position-taking initiatives

that have been taken or are being actively considered;

- understand the implications of various stress scenarios, including those involving breakdowns of key assumptions and parameters;
- review IRR policies, procedures, and the adequacy of the IRR measurement systems; and
- determine whether the bank holds sufficient capital for the level of risk being taken.

### **Comprehensive Internal Controls**

An institution's IRR management process should be an extension of its overall structure of internal controls. Banks should have adequate internal controls to ensure the integrity of their interest-rate risk management process. Internal controls consist of procedures, approval processes, reconciliations, reviews, and other mechanisms designed to provide a reasonable assurance that the institution's objectives for interest-rate risk management are achieved. Appropriate internal controls should address all of the various elements of the risk-management process, including adherence to policies and procedures, and the adequacy of risk identification, risk measurement, and risk reporting.

An important element of a bank's internal controls for interest-rate risk is management's comprehensive evaluation and review. Management should ensure that the various components of the bank's interest-rate risk management process are regularly reviewed and evaluated by individuals who are independent of the function they are assigned to review. Although procedures for establishing limits and for operating within them may vary among banks, periodic reviews should be conducted to determine whether the organization complies with its interest-rate risk policies and procedures. Positions that exceed established limits should receive the prompt attention of appropriate management and should be resolved according to approved policies. Periodic reviews of the interest-rate risk management process should also address any significant changes in the types or characteristics of instruments acquired, limits, and internal controls since the last review.

Reviews of the interest-rate risk measurement system should include assessments of the assumptions, parameters, and methodologies used. These reviews should seek to understand,

test, and document the current measurement process, evaluate the system's accuracy, and recommend solutions to any identified weaknesses. The results of this review, along with any recommendations for improvement, should be reported to the board, which should take appropriate, timely action. Since measurement systems may incorporate one or more subsidiary systems or processes, banks should ensure that multiple component systems are well integrated and consistent with each other.

Banks, particularly those with complex risk exposures, are encouraged to have their measurement systems reviewed by *an independent party, whether an internal or external auditor or both*. Reports written by external auditors or other outside parties should be available to relevant supervisory authorities. Any independent reviewer should be sure that the bank's risk-measurement system is sufficient to capture all material elements of interest-rate risk. A reviewer should consider the following factors when making the risk assessment:

- the quantity of interest-rate risk
  - the volume and price sensitivity of various products
  - the vulnerability of earnings and capital under differing rate changes, including yield curve twists
  - the exposure of earnings and economic value to various other forms of interest-rate risk, including basis and optionality risk
- the quality of interest-rate risk management
  - whether the bank's internal measurement system is appropriate to the nature, scope, and complexities of the bank and its activities
  - whether the bank has an independent risk-control unit responsible for the design of the risk-management system
  - whether the board of directors and senior management are actively involved in the risk-control process
  - whether internal policies, controls, and procedures concerning interest-rate risk are well documented and complied with
  - whether the assumptions of the risk-management system are well documented, data are accurately processed, and data aggregation is proper and reliable
  - whether the organization has adequate staffing to conduct a sound risk-management process

The results of reviews, along with any recommendations for improvement, should be reported to the board and acted upon in a timely manner. Institutions with complex risk exposures are encouraged to have their measurement systems reviewed by external auditors or other knowledgeable outside parties to ensure the adequacy and integrity of the systems. Since measurement systems may incorporate one or more subsidiary systems or processes, institutions should ensure that multiple component systems are well integrated and consistent.

The frequency and extent to which an institution should reevaluate its risk-measurement methodologies and models depends, in part, on the specific IRR exposures created by their holdings and activities, the pace and nature of changes in market interest rates, and the extent to which there are new developments in measuring and managing IRR. At a minimum, institutions should review their underlying IRR measurement methodologies and IRR management process annually, and more frequently as market conditions dictate. In many cases, internal evaluations may be supplemented by reviews of external auditors or other qualified outside parties, such as consultants with expertise in IRR management.

## RATING THE ADEQUACY OF IRR MANAGEMENT

Examiners should incorporate their assessment of the adequacy of IRR management into their overall rating of risk management, which is subsequently factored into the management component of an institution's CAMELS rating. Ratings of IRR management can follow the general framework used to rate overall risk management:

- A rating of 1 or strong would indicate that management effectively identifies and controls the IRR posed by the institution's activities, including risks from new products.
- A rating of 2 or satisfactory would indicate that the institution's management of IRR is largely effective, but lacking in some modest degree. It reflects a responsiveness and ability to cope successfully with existing and foreseeable exposures that may arise in carrying out the institution's business plan. While the institution may have some minor risk-management weaknesses, these problems have

been recognized and are being addressed. Generally, risks are being controlled in a manner that does not require additional or more than normal supervisory attention.

- A rating of 3 or fair signifies IRR management practices that are lacking in some important ways and, therefore, are a cause for more than normal supervisory attention. One or more of the four elements of sound IRR management are considered fair and have precluded the institution from fully addressing a significant risk to its operations. Certain risk-management practices need improvement to ensure that management and the board are able to identify, monitor, and control adequately all significant risks to the institution.
- A rating of 4 or marginal represents marginal IRR management practices that generally fail to identify, monitor, and control significant risk exposures in many material respects. Generally, such a situation reflects a lack of adequate guidance and supervision by management and the board. One or more of the four elements of sound risk management are considered marginal and require immediate and concerted corrective action by the board and management.
- A rating of 5 or unsatisfactory indicates a critical absence of effective risk-management practices to identify, monitor, or control significant risk exposures. One or more of the four elements of sound risk management is considered wholly deficient, and management and the board have not demonstrated the capability to address deficiencies. Deficiencies in the institution's risk-management procedures and internal controls require immediate and close supervisory attention.

## QUANTITATIVE LEVEL OF IRR EXPOSURE

Evaluating the quantitative level of IRR involves assessing the effects of both past and potential future changes in interest rates on an institution's financial condition, including the effects on its earnings, capital adequacy, liquidity, and—in some cases—asset quality. This assessment involves a broad analysis of an institution's business mix, balance-sheet composition, OBS holdings, and holdings of interest rate-sensitive instruments. Characteristics of the institution's material holdings should also be investigated to determine (and quantify) how

changes in interest rates might affect their performance. The rigor of the quantitative IRR evaluation process should reflect the size, sophistication, and nature of the institution's holdings.

## Assessment of the Composition of Holdings

An overall evaluation of an institution's holdings and its business mix is an important first step to determine its quantitative level of IRR exposure. The evaluation should focus on identifying (1) major on- and off-balance-sheet positions, (2) concentrations in interest-sensitive instruments, (3) the existence of highly volatile instruments, and (4) significant sources of non-interest income that may be sensitive to changes in interest rates. Identifying major holdings of particular types or classes of assets, liabilities, or off-balance-sheet instruments is particularly pertinent since the interest-rate-sensitivity characteristics of an institution's largest positions or activities will tend to dominate its IRR profile. The composition of assets should be assessed to determine the types of instruments held and the relative proportion of holdings they represent, both with respect to total assets and within appropriate instrument portfolios. Examiners should note any specialization or concentration in particular types of investment securities or lending activities and identify the interest-rate characteristics of the instruments or activities. The assessment should also incorporate an evaluation of funding strategies and the composition of deposits, including core deposits. Trends and changes in the composition of assets, liabilities, and off-balance-sheet holdings should be fully assessed—especially when the institution is experiencing significant growth.

Examiners should identify the interest sensitivity of an institution's major holdings. For many instruments, the stated final maturity, coupon interest payment, and repricing frequency are the primary determinants of interest-rate sensitivity. In general, the shorter the repricing frequency (or maturity for fixed-rate instruments), the greater the impact of a change in interest rates on the earnings of the asset, liability, or OBS instrument employed will be because the cash flows derived, either through repricing or reinvestment, will more quickly reflect market rates. From a value perspective,

the longer the repricing frequency (or maturity for fixed-rate instruments), the more sensitive the value of the instrument will be to changes in market interest rates. Accordingly, basic maturity/ repricing distributions and gap schedules are important first screens to identify the interest sensitivity of major holdings from both an earnings and value standpoint.

Efforts should be made to identify instruments whose value is highly sensitive to rate changes. Even if these instruments may not make up a major portion of an institution's holdings, their rate sensitivity may be large enough to materially affect the institution's aggregate exposure. Highly interest rate-sensitive instruments generally have fixed-rate coupons with long maturities, significant embedded options, or some elements of both. Identifying explicit options and instruments with embedded options is particularly important; these holdings may exhibit significantly volatile price and earnings behavior (because of their asymmetrical cash flows) when interest rates change. The interest-rate sensitivity of exchange-traded options is usually easy to identify because exchange contracts are standardized. On the other hand, the interest-rate sensitivity of over-the-counter derivative instruments and the option provisions embedded in other financial instruments, such as the right to prepay a loan without penalty, may be less readily identifiable. Instruments tied to residential mortgages, such as mortgage pass-through securities, collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs), and various mortgage-derivative products, generally entail some form of embedded optionality. Certain types of CMOs and REMICs constitute high-risk mortgage-derivative products and should be clearly identified. U.S. agency and municipal securities, as well as traditional forms of lending and borrowing arrangements, can often incorporate options into their structures. U.S. agency structured notes and municipal securities with long-dated call provisions are just two examples. Many commercial loans also use caps or floors. Over-the-counter OBS instruments, such as swaps, caps, floors, and collars, can involve highly complex structures and, thus, can be quite volatile in the face of changing interest rates.

An evaluation of an institution's funding sources relative to its assets profile is fundamental to the IRR assessment. Reliance on volatile or complex funding structures can significantly

increase IRR when asset structures are fixed-rate or long-term. Long-term liabilities used to finance shorter-term assets can also increase IRR. The role of nonmaturity or core deposits in an institution's funding base is particularly pertinent to any assessment of IRR. Depending on their composition and the underlying client base, core deposits can provide significant opportunities for institutions to administer and manage the interest rates paid on this funding source. Thus, high levels of stable core deposit funding may provide an institution with significant control over its IRR profile. Examiners should assess the characteristics of an institution's nonmaturity deposit base, including the types of accounts offered, the underlying customer base, and important trends that may influence the rate sensitivity of this funding source.

In general, examiners should evaluate trends and attempt to identify any structural changes in the interest-rate risk profile of an institution's holdings, such as shifts of asset holdings into longer-term instruments or instruments that may have embedded options, changes in funding strategies and core deposit balances, and the use of off-balance-sheet instruments. Significant changes in the composition of an institution's holdings may reduce the usefulness of its historical performance as an indicator of future performance.

Examiners should also identify and assess material sources of interest-sensitive fee income. Loan-servicing income, especially when related to residential mortgages, can be an important and highly volatile element in an institution's earnings profile. Servicing income is linked to the size of the servicing portfolio and, thus, can be greatly affected by the prepayment rate for mortgages in the servicing portfolio. Revenues arising from securitization of other types of loans, including credit card receivables, can also be very sensitive to changes in interest rates.

An analysis of both on- and off-balance-sheet holdings should also consider potential basis risk, that is, whether instruments with adjustable-rate characteristics that reprice in a similar time period will reprice differently than assumed. Basis risk is a particular concern for offsetting positions that reprice in the same time period. Typical examples include assets that reprice with three-month Treasury bills paired against liabilities repricing with three-month LIBOR or prime-based assets paired against other short-term funding sources. Analyzing the repricing

characteristics of major adjustable-rate positions should help to identify these situations.

## EXPOSURE OF EARNINGS TO IRR

When evaluating the potential effects of changing interest rates on an institution's earnings, examiners should assess the key determinants of the net interest margin, the effect that fluctuations in net interest margins can have on overall net income, and the rate sensitivity of noninterest income and expense. Analyzing the historical behavior of the net interest margin, including the yields on major assets, liabilities, and off-balance-sheet positions that make up that margin, can provide useful insights into the relative stability of an institution's earnings. For example, a review of the historical composition of assets and the yields earned on those assets clearly identifies an institution's business mix and revenue-generating strategies, as well as potential vulnerabilities of these revenues to changes in rates. Similarly, an assessment of the rates paid on various types of deposits over time can help identify the institution's funding strategies, how the institution competes for deposits, and the potential vulnerability of its funding base to rate changes.

Understanding the effect of potential fluctuations in net interest income on overall operating performance is also important. At some banks, high overhead costs may require high net interest margins to generate even moderate levels of income. Accordingly, relatively high net interest margins may not necessarily imply a higher tolerance to changes in interest rates. Examiners should fully consider the potential effects of fluctuating net interest margins when they analyze the exposure of net income to changes in interest rates.

Additionally, examiners should assess the contribution of noninterest income to net income, including its interest-rate sensitivity and how it affects the IRR of the institution. Significant sources of rate-insensitive noninterest income provide stability to net income and can mitigate the effect of fluctuations in net interest margins.

A historical review of changes in an institution's earnings—both net income and net interest income—in relation to changes in market rates is an important step in assessing the rate sensitivity of its earnings. When appropriate, this review should assess the institution's

performance during prior periods of volatile rates.

Important tools used to gauge the potential volatility in future earnings include basic maturity and repricing gap calculations and income simulations. Short-term repricing gaps between assets and liabilities in intervals of one year or less can provide useful insights on the exposure of earnings. These can be used to develop rough approximations of the effect of changes in market rates on an institution's profitability. Examiners can develop rough gap estimates using available call report information, as well as the bank's own internally generated gap or other earnings exposure calculations if risk-management and measurement systems are deemed adequate. When available, a bank's own earnings-simulation model provides a particularly valuable source of information: a formal estimate of future earnings (a baseline) and an evaluation of how earnings would change under different rate scenarios. Together with historical earnings patterns, an institution's estimate of the IRR sensitivity of its earnings derived from simulation models is an important indication of the exposure of its near-term earnings stability.

As detailed in the preceding subsection, sound risk-management practices require IRR to be measured over a probable range of potential interest-rate changes. At a minimum, an instantaneous shift in the yield curve of plus or minus 200 basis points should be used to assess the potential impact of rate changes on an institution's earnings.

Examiners should evaluate the exposure of earnings to changes in interest rates relative to the institution's overall level of earnings and the potential length of time such exposure might persist. For example, simulation estimates of a small, temporary decline in earnings, while likely an issue for shareholders and directors, may be less of a supervisory concern if the institution has a sound earnings and capital base. On the other hand, exposures that could offset earnings for a significant period (as some thrifts experienced during the 1980s) and even deplete capital would be a great concern to both management and supervisors. Exposures measured by gap or simulation analysis under the minimum 200 basis point scenario that would result in a significant decline in net interest margins or net income should prompt further investigation of the adequacy and stability of earnings and the adequacy of the institution's risk-management process. Specifically, in institutions exhibiting

significant earnings exposures, examiners should focus on the results of the institution's stress tests to determine the extent to which more significant and stressful rate moves might magnify the erosion in earnings identified in the more modest rate scenario. In addition, examiners should emphasize the need for management to understand the magnitude and nature of the institution's IRR and the adequacy of its limits.

While an erosion in net interest margins or net income of more than 25 percent under a 200 basis point scenario should warrant considerable examiner attention, examiners should take into account the absolute level of an institution's earnings both before and after the estimated IRR shock. For example, a 33 percent decline in earnings for a bank with a strong return on assets (ROA) of 1.50 percent would still leave the bank with an ROA of 1.00 percent. In contrast, the same percentage decline in earnings for a bank with a fair ROA of 0.75 percent results in a marginal ROA of 0.50 percent.

Examiners should ensure that their evaluation of the IRR exposure of earnings is incorporated into the rating of earnings under the CAMELS rating system. Institutions receiving an earnings rating of 1 or 2 would typically have minimal exposure to changing interest rates. However, significant exposure of earnings to changes in interest rates may, in itself, provide sufficient basis for a lower rating.

## Exposure of Capital and Economic Value

As set forth in the capital adequacy guidelines for state member banks, the risk-based capital ratio focuses principally on broad categories of credit risk and does not incorporate other factors, including overall interest-rate exposure and management's ability to monitor and control financial and operating risks. Therefore, the guidelines point out that in addition to evaluating capital ratios, an overall assessment of capital adequacy must take account of "a bank's exposure to declines in the economic value of its capital due to changes in interest rates. For this reason, the final supervisory judgment on a bank's capital adequacy may differ significantly from conclusions that might be drawn solely from the level of its risk-based capital ratio."

Banking organizations with (1) low proportions of assets maturing or repricing beyond five years, (2) relatively few assets with volatile market values (such as high-risk CMOs and structured notes or certain off-balance-sheet derivatives), and (3) large and stable sources of nonmaturity deposits are unlikely to face significant economic-value exposure. Consequently, an evaluation of their economic-value exposure may be limited to reviewing available internal reports showing the asset/liability composition of the institution or the results of internal-gap, earnings-simulation, or economic-value simulation models to confirm that conclusion.

Institutions with (1) fairly significant holdings of assets with longer maturities or repricing frequencies, (2) concentrations in value-sensitive on- and off-balance-sheet instruments, or (3) a weak base of nonmaturity deposits warrant more formal and quantitative evaluations of economic-value exposures. This includes reviewing the results of the bank's own internal reports for measuring changes in economic value, which should address the adequacy of the institution's risk-management process, reliability of risk-measurement assumptions, integrity of the data, and comprehensiveness of any modeling procedures.

For institutions that appear to have a potentially significant level of IRR and that lack a reliable internal economic-value model, examiners should consider alternative means for quantifying economic-value exposure, such as internal-gap measures, off-site monitoring, or surveillance screens that rely on call report data to estimate economic-value exposure. For example, the institution's gap schedules might be used to derive a duration gap by applying duration-based risk weights to the bank's aggregate positions. When alternative means are used to estimate changes in economic value, the relative crudeness of these techniques and lack of detailed data (such as the absence of coupon or off-balance-sheet data) should be taken into account—especially when drawing conclusions about the institution's exposure and capital adequacy.

An evaluation of an institution's capital adequacy should also consider the extent to which past interest-rate moves may have reduced the economic value of capital through the accumulation of net unrealized losses on financial instruments. To the extent that past rate moves have reduced the economic or market value of a bank's claims more than they have reduced the

value of its obligations, the institution's economic value of capital is less than its stated book value.

To evaluate the embedded net loss or gain in an institution's financial structure, fair value data on the securities portfolio can be used as the starting point; this information should be readily available from the call report or bank internal reports. Other major asset categories that might contain material embedded gains or losses include any assets maturing or repricing in more than five years, such as residential, multifamily, or commercial mortgage loans. By comparing a portfolio's weighted average coupon with current market yields, examiners may get an indication of the magnitude of any potential unrealized gains or losses. For companies with hedging strategies that use derivatives, the current positive or negative market value of these positions should be obtained, if available. For banks with material holdings of originated or purchased mortgage-servicing rights, capitalized amounts should be evaluated to ascertain that they are recorded at the lower of cost or fair value and that management has appropriately written down any values that are impaired pursuant to generally accepted accounting rules.

The presence of significant depreciation in securities, loans, or other assets does not necessarily indicate significant embedded net losses; depreciation may be offset by a decline in the market value of a bank's liabilities. For example, stable, low-cost nonmaturity deposits typically become more profitable to banks as rates rise, and they can add significantly to the bank's financial strength. Similarly, below-market-rate deposits, other borrowings, and subordinated debt may also offset unrealized asset losses caused by past rate hikes.

For banks with (1) substantial depreciation in their securities portfolios, (2) low levels of nonmaturity deposits and retail time deposits, or (3) high levels of IRR exposure, unrealized losses can have important implications for the supervisory assessment of capital adequacy. If stressful conditions require the liquidation or restructuring of the securities portfolio, economic losses could be realized and, thereby, reduce the institution's regulatory capitalization. Therefore, for higher-risk institutions, an evaluation of capital adequacy should consider the potential after-tax effect of the liquidation of available-for-sale and held-to-maturity accounts. Estimates of the effect of securities losses on the regulatory capital ratio may be obtained from

surveillance screens that use call report data or from the bank's internal reports.

Examiners should also consider the potential effect of declines and fluctuations in earnings on an institution's capital adequacy. Using the results of internal model simulations or gap reports, examiners should determine whether capital-impairing losses might result from changes in market interest rates. In cases where potential rate changes are estimated to cause declines in margins that actually result in losses, examiners should assess the effect on capital over a two- or three-year earnings horizon.

When capital adequacy is rated in the context of IRR exposure, examiners should consider the effect of changes in market interest rates on the economic value of equity, level of embedded losses in the bank's financial structure, and impact of potential rate changes on the institution's earnings. The IRR of institutions that show material declines in earnings or economic value of capital from a 200 basis point shift should be evaluated fully, especially if that decline would lower an institution's pro forma prompt-corrective-action category. For example, a well-capitalized institution with a 5.5 percent leverage ratio and an estimated change in economic value arising from an appropriate stress scenario amounting to 2.0 percent of assets would have an adjusted leverage ratio of 3.5 percent, causing a pro forma two-tier decline in its prompt-corrective-action category to the undercapitalized category. After considering the level of embedded losses in the balance sheet, the stability of the institution's funding base, its exposure to near-term losses, and the quality of its risk-management process, the examiner may need to give the institution's capital adequacy a relatively low rating. In general, sufficiently adverse effects of market interest-rate shocks or weak management and control procedures can provide a basis for lowering a bank's rating of capital adequacy. Moreover, even less severe exposures could contribute to a lower rating if combined with exposures from asset concentrations, weak operating controls, or other areas of concern.

## EXAMINATION PROCESS FOR IRR

As the primary market risk most banks face, IRR should usually receive consideration in

full-scope exams. It may also be the topic of targeted examinations. To meet examination objectives efficiently and effectively while remaining sensitive to potential burdens imposed on institutions, the examination of IRR should follow a structured, risk-focused approach. Key elements of a risk-focused approach to the examination process for IRR include (1) off-site monitoring and risk assessment of an institution's IRR profile and (2) appropriate planning and scoping of the on-site examination to ensure that it is as efficient and productive as possible. A fundamental tenet of this approach is that supervisory resources are targeted at functions, activities, and holdings that pose the most risk to the safety and soundness of an institution. Accordingly, institutions with low levels of IRR would be expected to receive relatively less supervisory attention than those with more severe IRR exposures.

Many banks have become especially skilled in managing and limiting the exposure of their earnings to changes in interest rates. Accordingly, for most banks and especially for smaller institutions with less complex holdings, the IRR element of the examination may be relatively simple and straightforward. On the other hand, some banks consider IRR an intended consequence of their business strategies and choose to take and manage that risk explicitly—often with complex financial instruments. These banks, along with banks that have a wide array of activities or complex holdings, generally should receive greater supervisory attention.

## Off-Site Risk Assessment

Off-site monitoring and analysis involves developing a preliminary view or “risk assessment” before initiating an on-site examination. Both the level of IRR exposure and quality of IRR management should be assessed to the fullest extent possible during the off-site phase of the examination process. The following information can be helpful in this assessment:

- organizational charts and policies identifying authorities and responsibilities for managing IRR
- IRR policies, procedures, and limits
- asset/liability committee (ALCO) minutes and reports (going back six to twelve months before the examination)

- board of directors reports on IRR exposures
- audit reports (both internal and external)
- position reports, including those for investment securities and off-balance-sheet instruments
- other available internal reports on the bank's risks, including those detailing key assumptions
- reports outlining the key characteristics of concentrations and any material holdings of interest-sensitive instruments
- documentation for the inputs, assumptions, and methodologies used in measuring risk
- Federal Reserve surveillance reports and supervisory screens

The analysis for determining an institution's quantitative IRR exposure can be assessed off-site as much as possible, including assessments of the bank's overall balance-sheet composition and holdings of interest-sensitive instruments. An assessment of the exposure of earnings can be accomplished using supervisory screens, examiner-constructed measures, and internal bank measures obtained from management reports received before the on-site engagement. Similar assessments can be made on the exposure of capital or economic value.

An off-site review of the quality of the risk-management process can significantly improve the efficiency of the on-site engagement. The key to assessing the quality of management is an organized discovery process aimed at determining whether appropriate policies, procedures, limits, reporting systems, and internal controls are in place. This discovery process should, in particular, ascertain whether all the elements of a sound IRR management policy are applied consistently to material concentrations of interest-sensitive instruments. The results and reports of prior examinations provide important information about the adequacy of risk management.

## Scope of On-Site Examination

The off-site risk assessment is an informed hypothesis of both the adequacy of IRR management and the magnitude of the institution's exposure. The scope of the on-site examination of IRR should be designed to confirm or reject that hypothesis and should target specific areas of interest or concern. In this way, on-site examination procedures are tailored to the activities and risk profile of the institution, using

flexible and targeted work-documentation programs. Confirmation of hypotheses on the adequacy of the IRR management process is especially important. In general, if off-site analysis identifies IRR management as adequate, examiners can rely more heavily on the bank's internal IRR measures for assessing quantitative exposures.

The examination scope for assessing IRR should be commensurate with the complexity of the institution and consistent with the off-site risk assessment. For example, only baseline examination procedures would be used for institutions whose off-site risk assessment indicates that they have adequate IRR management processes and low levels of quantitative exposure.

For those and other institutions identified as potentially low risk, the scope of the on-site examination would consist of only those examination procedures necessary to confirm the risk-assessment hypothesis. The adequacy of IRR management could be confirmed through a basic review of the appropriateness of policies, internal reports, and controls and the institution's adherence to them. The integrity and reliability of the information used to assess the quantitative level of risk could be confirmed through limited sampling and testing. In general, if the risk assessment is confirmed by basic examination procedures, the examiner may conclude the IRR examination process.

Institutions assessed to have high levels of IRR exposure and strong IRR management may require more extensive examination scopes to confirm the off-site risk assessment. These procedures may entail more analysis of the institution's IRR measurement system and the IRR characteristics of major holdings. When high quantitative levels of exposure are found, examiners should focus special attention on the sources of this risk and on significant concentrations of interest-sensitive instruments. Institutions assessed to have high exposure and weak risk-management systems would require an

extensive work-documentation program. The institution's internal measures should be relied on cautiously, if at all.

Regardless of the size or complexity of an institution, care must be taken during the on-site phase of the examination to ensure confirmation of the risk assessment and identification of issues that may have escaped off-site analysis. Accordingly, the examination scope should be adjusted as on-site findings dictate.

## CAMELS Ratings

As with other areas of the examination, the evaluation of IRR exposure should be incorporated into an institution's CAMELS rating. Findings on the adequacy of an institution's IRR management process should be reflected in the examiner's rating of risk management—a key component of an institution's management rating. Findings on the quantitative level of IRR exposure should be incorporated into the earnings and capital components of the CAMELS ratings.

An overall assessment of an institution's IRR exposure can be developed by combining assessments of the adequacy of IRR management practices with the evaluation of the quantitative IRR exposure of the institution's earnings and capital base. The assessment of the adequacy of IRR management should provide the primary basis for reaching an overall assessment since it is a leading indicator of potential IRR exposure. Accordingly, overall ratings for IRR sensitivity should be no greater than the rating given to IRR management. Unsafe exposures and management weaknesses should be fully reflected in these ratings. Unsafe exposures and unsound management practices that are not resolved during the on-site examination should be addressed through subsequent follow-up actions by the examiner and other supervisory personnel.

1. To evaluate the policies for interest-rate risk established by the board of directors and senior management, including the limits established for the bank's interest-rate risk profile.
2. To determine if the bank's interest-rate risk profile is within those limits.
3. To evaluate the management of the bank's interest-rate risk, including the adequacy of the methods and assumptions used to measure interest-rate risk.
4. To determine if internal management-reporting systems provide the information necessary for informed interest-rate management decisions and to monitor the results of those decisions.
5. To initiate corrective action when interest-rate management policies, practices, and procedures are deficient in controlling and monitoring interest-rate risk.

These procedures represent a list of processes and activities that may be reviewed during a full-scope examination. The examiner-in-charge will establish the general scope of examination and work with the examination staff to tailor specific areas for review as circumstances warrant. As part of this process, the examiner reviewing a function or product will analyze and evaluate internal audit comments and previous examination workpapers to assist in designing the scope of examination. In addition, after a general review of a particular area to be examined, the examiner should use these procedures, to the extent they are applicable, for further guidance. Ultimately, it is the seasoned judgment of the examiner and the examiner-in-charge as to which procedures are warranted in examining any particular activity.

### REVIEW PRIOR EXCEPTIONS AND DETERMINE SCOPE OF EXAMINATION

1. Obtain descriptions of exceptions noted and assess the adequacy of management's response to the most recent Federal Reserve and state examination reports and the most recent internal and external audit reports.

### OBTAIN INFORMATION

1. Obtain the following information:
  - a. interest-rate risk policy (may be incorporated in the funds management or investment policy) and any other policies related to asset/liability management (such as derivatives)
  - b. board and management committee meeting minutes since the previous examination, including packages presented to the board
  - c. most recent internal interest-rate risk management reports (these may include gap reports and internal-model results, including any stress testing)
  - d. organization chart
  - e. current corporate strategic plan
  - f. detailed listings of off-balance-sheet derivatives used to manage interest-rate risk

- g. copies of reports from external auditors or consultants who have reviewed the validity of various interest-rate risk, options-pricing, and other models used by the institution in managing market-rate risks, if available
- h. other management reports and first-day letter items

### REVIEW POLICIES AND PROCEDURES

1. Review the bank's policies and procedures (written or unwritten) for adequacy. (See item 1 of the internal control questionnaire.)

### ASSESS MANAGEMENT PRACTICES

1. Determine if the function is managed on a bank-only or a consolidated basis.
2. Determine who is responsible for interest-rate risk review (an individual, ALCO, or other group) and whether this composition is appropriate for the function's decision-making structure.
3. Determine who is responsible for implementing strategic decisions (for example, with a flow chart). Ensure that the scope of that function's authority is reasonable.
4. Review the background of individuals responsible for IRR management to determine their level of experience and sophistication (obtain resumes if necessary).
5. Review appropriate committee minutes and board packages since the previous examination and detail significant discussions in workpapers. Note the frequency of board and committee meetings to discuss interest-rate risk.
6. Determine if and how the asset liability management function is included in the institution's overall strategic planning process.

### ASSESS BOARD OF DIRECTORS OVERSIGHT

1. Determine how frequently the IRR policy is reviewed and approved by the board (at least annually).

2. Determine whether the results of the measurement system provide clear and reliable information and whether the results are communicated to the board at least quarterly. Board reports should identify the institution's current position and its relationship to policy limits.
  3. Determine the extent to which exceptions to policies and resulting corrective measures are reported to the board, including the promptness of reporting.
  4. Determine the extent to which the board or a board committee is briefed on underlying assumptions (major assumptions should be approved when established or changed, and at least annually thereafter) and any significant limitations of the measurement system.
  5. Assess the extent that major new products are reviewed and approved by the board or a board committee.
7. Based on the above items, determine the institution's risk profile. (What are the most likely sources of interest-rate risk?) Determine if the profile is consistent with stated interest-rate risk objectives and strategies.
  8. Determine whether changes in the net interest margin are consistent with the interest-rate risk profile developed above.

### EVALUATE THE INSTITUTION'S RISK-MEASUREMENT SYSTEMS AND INTEREST-RATE RISK EXPOSURE

The institution's risk-measurement system and corresponding limits should be consistent with the size and complexity of the institution's on- and off-balance-sheet activities.

### INTEREST-RATE RISK PROFILE OF THE INSTITUTION

1. Identify significant holdings of on- and off-balance-sheet instruments and assess the interest-rate risk characteristics of these items.
2. Note relevant trends of on- and off-balance-sheet instruments identified as significant holdings. Preparing a sources and uses schedule may help determine changes in the levels of interest-sensitive instruments.
3. Determine whether the institution offers or holds products with embedded interest-rate floors and caps (investments, loans, deposits). Evaluate their potential effect on the institution's interest-rate exposure.
4. For those institutions using high-risk mortgage derivative securities to manage interest-rate risk—
  - a. determine whether a significant holding of these securities exists and
  - b. assess management's awareness of the risk characteristics of these instruments.
5. Evaluate the purchases and sales of securities since the previous examination to determine whether the transactions and any overall changes in the portfolio mix are consistent with management's stated interest-rate risk objectives and strategies.
6. Review the UBPR, interim financial statements, and internal management reports for
  1. Review previous examinations and audits of the IRR management system and model.
    - a. Review previous examination workpapers and reports concerning the model to determine which areas may require especially close analysis.
    - b. Review reports and workpapers (if available) from internal and external audits of the model, and, if necessary, discuss the audit process and findings with the institution's audit staff. Depending on the sophistication of the institution's on- and off-balance-sheet activities, a satisfactory audit may not necessarily address each of the items listed below. The scope of the procedures may be adjusted if they have been addressed satisfactorily by an audit or in previous exams. Determine whether the audits accomplished the following:
      - Identified the individual or committee that is responsible for making primary model assumptions, and whether this person or committee regularly reviews and updates these assumptions.
      - Reviewed data integrity. Auditors should verify that critical data were accurately downloaded from computer subsystems or the general ledger.
      - Reviewed the primary model assumptions and evaluated whether these assumptions were reasonable given past activity and current conditions.

- Reviewed whether the assumptions were incorporated into the model as management indicated.
  - Reviewed assumptions concerning how account balances will be replaced as items mature for models that calculate earnings or market values. Assumptions should be reasonable given past patterns of account balances and current conditions.
  - Reviewed methodology for determining cash flows from or market values of off-balance-sheet items, such as futures, forwards, swaps, options, caps, and floors.
  - Reviewed current yields or discount rates for critical account categories. (Determine whether the audit reviewed the interest-rate scenarios used to measure interest-rate risk.)
  - Verified the underlying calculations for the model's output.
  - Verified that summary reports presented to the board of directors and senior management accurately reflect the results of the model.
- c. Determine whether adverse comments in the audit reports have been addressed by the institution's management and whether corrective actions have been implemented.
  - d. Discuss weaknesses in the audit process with senior management.
2. Review management and board of directors oversight of model operation.
    - a. Identify which individual or committee is responsible for making the principal assumptions and parameters used in the model.
    - b. Determine whether this individual or committee reviews the principal assumptions and parameters regularly (at least annually) and updates them as needed. If reviews have taken place, state where this information is documented.
    - c. Determine the extent to which the appropriate board or management committee is briefed on underlying assumptions (major assumptions should be approved when established or changed, and at least annually thereafter) and any significant limitations of the measurement system.
  3. Review the integrity of data inputs.
    - a. Determine how the data on existing financial positions and contracts are entered into the model. Data may be downloaded from computer subsystems or the general ledger or they may be manually entered (or a combination of both).
    - b. Determine who has responsibility for inputting or downloading data into the model. Assess whether appropriate internal controls are in place to ensure data integrity. For example, the institution may have procedures for reconciling data with the general ledger, comparing data with data from previous months, or error checking by an officer or other analyst.
    - c. Check data integrity by comparing data for broad account categories with—
      - the general ledger, and
      - appropriate call report schedules.
    - d. Ensure that data from all relevant non-bank subsidiaries have been included.
    - e. Assess the quality of the institution's financial data. For example, data should allow the model to distinguish maturity and repricing, identify embedded options, include coupon and amortization rates, identify current asset yields or liability costs.
  4. Review selected rate-sensitive items.
    - a. Review how the model incorporates residential mortgages and mortgage-related products, including adjustable-rate mortgages, mortgage pass-throughs, CMOs, and purchased and excess mortgage-servicing rights.
      - Determine whether the level of data aggregation for mortgage-related products is appropriate. Data for pass-throughs, CMOs, and servicing rights should identify the type of security, coupon range, and maturity to capture prepayment risk.
      - Identify the sources of data or assumptions on expected cash flows, including prepayment rates and cash flows on CMOs. Data may be provided by brokerage firms, independent industry information services, or internal estimates.
      - If internal prepayment and cash-flow estimates are used for mortgages and mortgage-related products, note how the estimates are derived and review them for reasonableness.

- If internal prepayment estimates are used, determine who has responsibility for reviewing these assumptions. Determine whether this person or committee reviews prepayment rates regularly (at least quarterly) and updates the prepayment assumptions as needed.
  - For each interest-rate scenario, determine if the model adjusts key assumptions and parameters to account for possible changes in—
    - prepayment rates,
    - amortization rates,
    - cash flows and yields, and
    - prices and discount rates.
  - Determine if the model appropriately incorporates the effects of annual and lifetime caps and floors on adjustable-rate mortgages. In market-value models, determine whether these option values are appropriately reflected.
- b. Determine whether the institution has structured notes or other instruments with similar characteristics.
- Identify the risk characteristics of these instruments, with special attention to embedded call/put provisions, caps and floors, or repricing opportunities.
  - Determine if the interest-rate risk model is capable of accounting for these risks and, if a simplified representation of the risk is used, whether that treatment adequately reflects the risk of the instruments.
- c. Review how the model incorporates non-maturity deposits. Review the repricing or sensitivity assumptions. Review and evaluate the documentation provided.
- d. If the institution has significant levels of noninterest income and expense items that are sensitive to changes in interest rates, determine whether these items are incorporated appropriately in the model. This would include items such as amortization of core deposit intangibles and purchased or excess servicing rights for credit card receivables.
- e. Review how the model incorporates futures, forwards, and swaps.
- For simulation models, review the methodology for determining cash flows of futures, forwards, and swaps under various rate scenarios.
  - For market-value models—
    - determine if the durations of futures and forward contracts reflect the duration of the underlying instrument (durations should be negative for net sold positions) and
    - review the methodology for determining market values of swaps under different interest-rate scenarios. Compare results with prices obtained or calculated from standard industry information services.
- f. Review how the model incorporates options, caps, floors, and collars.
- For simulation models, review the methodology for determining cash flows of options, caps, floors, and collars under various rate scenarios.
  - For market-value models, review the methodology used to obtain prices for options, caps, and floors under different interest-rate scenarios. Compare results with prices obtained or calculated from standard industry information services.
- g. Identify any other instruments or positions that tend to exhibit significant sensitivity, including those with significant embedded options (such as loans with caps or rights of prepayment) and review model treatment of these items for accuracy and rigor.
5. Review other modeling assumptions.
- a. For simulation models that calculate earnings, review the assumptions concerning how account balances change over time, including assumptions about replacement rates for existing business and growth rates for new business. (These items should be reviewed for models that estimate market values in future periods.)
- Determine whether the assumptions are reasonable given current business conditions and the institution's strategic plan.
  - Determine whether assumptions about future business are sensitive to changes in interest rates.
  - If the institution uses historical performance or other studies to determine changes in account balances caused by interest-rate movements, review this documentation for reasonableness.
- b. For market-value models, review the treatment of balances not sensitive to interest-rate changes (building and pre-

- ises, other long-term fixed assets). Identify whether these balances are included in the model and whether the effect is material to the institution's exposure.
6. Review the interest-rate scenarios.
    - a. Determine the interest-rate scenarios used in the internal model to check the interest-rate sensitivity of those scenarios. If there is flexibility concerning the scenarios to be used, determine who is responsible for selecting the scenario.
    - b. Determine whether the institution uses scenarios that encompass a significant rate movement, both increasing and decreasing.
    - c. Review yields/costs for significant account categories for future periods (base case or scenario) for reasonableness. The rates should be consistent with the model's assumptions and with the institution's historical experience and strategic plan.
    - d. For market-value models, indicate how the discount rates in the base case and alternative scenarios are determined.
    - e. For Monte Carlo simulations or other models that develop a probability distribution for future interest rates, determine whether the volatility factors used to generate interest-rate paths and other parameters are reasonable.
  7. Provide an overall evaluation of the internal model.
    - a. Review "variance reports," reports that compare predicted and actual results. Comment on whether the model has made reasonably accurate predictions in earlier periods.
    - b. Evaluate whether the model's structure and capabilities are adequate to
      - accurately assess the risk exposure of the institution and
      - support the institution's risk-management process and serve as a basis for internal limits and authorizations.
    - c. Evaluate whether the model is operated with sufficient discipline to—
      - accurately assess the risk exposure of the institution and
      - support the institution's risk-management process and serve as a basis for internal limits and authorizations.
- If the institution uses a gap report, continue with question 8. Otherwise skip to question 9.*
8. Review the most recent rate-sensitivity report (gap), evaluating whether the report reasonably characterizes the interest-rate risk profile of the institution. Assumptions underlying the reporting system should also be evaluated for reasonableness. This evaluation is particularly critical for categories, on- or off-balance-sheet, in which the institution has significant holdings.
    - a. Review the reasonableness of the assumptions used to slot nonmaturity deposits in time bands.
    - b. Determine whether residential mortgages, pass-through securities, or CMOs are slotted by weighted average life or maturity. (Generally, weighted average life is preferred.)
    - c. If applicable, review the assumptions for the slotting of securities available for sale.
    - d. If the institution has significant holdings of other highly rate-sensitive instruments (such as structured notes), review how these items are incorporated into the measurement system.
    - e. If applicable, review the slotting of the trading account for reasonableness.
    - f. If applicable, evaluate how the report incorporates futures, forwards, and swaps. The data should be entered in the correct time bands using offsetting entries, ensuring that each cash flow has the appropriate sign (positive or negative).
    - g. Ensure all assumptions are well documented, including a discussion of how the assumptions were derived.
    - h. Confirm that management, at least annually, tests, reviews, and updates, as needed, the assumptions for reasonableness.
    - i. Determine if the measurement system used is able to adequately model new products that the institution may be using since the previous examination.
    - j. Determine whether the report accurately measures the interest-rate exposure of the institution.
    - k. Assess management's review and understanding of the assumptions used in the institution's rate-sensitivity report (gap), as well as the system's strengths and weaknesses.

*Highly sensitive instruments, including structured notes, have interest-rate risk characteristics that may not be easily measured in a static gap framework. If the institution has a significant holding of these instruments, gap may not be an appropriate way to measure interest-rate risk.*

9. Review the current interest-sensitivity position for compliance with internal policy limits.
10. Evaluate the institution's overall interest-rate risk exposure. If the institution uses a gap schedule, analyze the institution's gap position. If the institution uses an internal model to measure interest-rate risk—
  - a. indicate whether the model shows significant risks in the following areas:
    - changing level of rates
    - basis or shape risk
    - velocity of rate changes
    - customer reactions;
  - b. for simulation models, determine whether the model indicates a significant level of income at risk as a percentage of current income or capital; and
  - c. for market-value models, determine whether the model indicates significant market value at risk relative to assets or capital.
11. Determine the adequacy of the institution's method of measuring and monitoring interest-rate exposure, given the institution's size and complexity.
12. Review management reports.
  - a. Evaluate whether the reports on interest-rate risk provide an appropriate level of detail given the institution's size and the complexity of its on- and off-balance-sheet activities. Review reports to—
    - senior management and
    - the board of directors or board committees.
  - b. Indicate whether the reports discuss exposure to changes in the following:
    - level of interest rates
    - shape of yield curve and basis risk
    - customer reactions
    - velocity of rate changes
13. Review management's future plans for new systems, improvements to the existing measurement system, and use of vendor products.

## EVALUATE INSTRUMENTS USED IN RISK MANAGEMENT

1. Review the institution's use of various instruments for risk-management purposes (such as derivatives). Assess the extent that policies require the institution to—
  - a. document specific objectives for instruments used in risk management;
  - b. prepare an analysis showing the intended results of each risk-management program before the inception of the program; and
  - c. assess at least quarterly the effectiveness of each risk-management program in achieving its stated objectives.
2. Review the institution's use of derivative products. Determine if the institution has entered into transactions as an end-user to manage interest-rate risk, or is acting in an intermediary or dealer capacity.
3. When the institution has entered into a transaction to reduce its own risk, evaluate the effectiveness of the hedge.
4. Determine whether transactions involving derivatives are accounted for properly and in accordance with the institution's stated policy.
5. Complete the internal control questionnaire on derivative products used in the management of interest-rate risk.

## ASSESS STRESS TESTING AND CONTINGENCY PLANNING

1. Determine if the institution conducts stress testing and what kinds of market stress conditions management has identified that would seriously affect the financial condition of the institution. These conditions may include (1) abrupt and significant shifts in the term structure of interest rates or (2) movements in the relationships among other key rates.
2. Assess management's ability to adjust the institution's interest-rate risk position under—
  - a. normal market conditions and
  - b. under conditions of significant market stress.
3. Determine the extent to which management or the board has considered these risks (normal and significant market stress) and evaluate contingency plans for adjusting the interest-rate risk position should positions approach or exceed established limits.

## VERIFY FINDINGS WITH DEPARTMENT OFFICIALS

1. Verify examination findings with department officials to ensure the accuracy and completeness of conclusions, particularly negative conclusions.

## SUMMARIZE FINDINGS

1. Summarize the institution's overall interest-rate risk exposure.
2. Ensure that the method of measuring interest-rate risk reflects the complexity of the institution's interest-rate risk profile.
3. Assess the extent management and the board of directors understand the level of risk and sources of exposure.
4. Evaluate the appropriateness of policy limits relative to (1) earnings and capital-at-risk, (2) the adequacy of internal controls, and (3) the risk-measurement systems.
5. If the institution has an unacceptable interest-rate risk exposure or an inadequate interest-rate risk management process, discuss findings with the examiner-in-charge.
6. Prepare comments for the workpapers and examination report, as appropriate, concerning the findings of the examination of this section including the following:

- a. scope of the review
- b. adequacy of written policies and procedures, including—
  - the consistency of limits and parameters with the stated objectives of the board of directors;
  - the reasonableness of these limits and parameters given the institution's capital, sophistication and management expertise, and the complexity of its balance sheet;
- c. instances of noncompliance with written policies and procedures;
- d. apparent violations of laws and regulations, indicating those noted at previous examinations;
- e. internal control deficiencies and exceptions, indicating those noted during previous examinations or audits;
- f. other matters of significance; and
- g. corrective actions planned by management.

## ASSEMBLE AND REVIEW WORKPAPERS

1. Ensure that the workpapers adequately document the work performed and conclusions of this assignment.
2. Forward the assembled workpapers to the examiner-in-charge for review and approval.

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MANAGEMENT, POLICIES, AND  
PROCEDURES

1. Has the board of directors, consistent with its duties and responsibilities, adopted written policies and procedures related to interest-rate risk that establish
  - a. the risk-management philosophy and objectives regarding interest-rate risk,
  - b. clear lines of responsibility,
  - c. definition and setting of limits on interest-rate risk exposure,
  - d. specific procedures for reporting and the approvals necessary for exceptions to policies and limits,
  - e. plans or procedures the board and management will implement if interest-rate risk falls outside established limits,
  - f. specific interest-rate risk measurement systems,
  - g. acceptable activities used to manage or adjust the institution's interest-rate risk exposure,
  - h. the individuals or committees who are responsible for interest-rate risk management decisions, and
  - i. a process for evaluating major new products and their interest-rate risk characteristics?
2. Is the bank in compliance with its policies, and is it adhering to its written procedures? If not, are exceptions and deviations—
  - a. approved by appropriate authorities,
  - b. made infrequently, and
  - c. nonetheless consistent with safe and sound banking practices?
3. Does the board review and approve the policy at least annually?
4. Did the board and management review IRR positions and the relationship of these positions to established limits at least quarterly?
5. Were exceptions to policies promptly reported to the board?

6. Does one individual exert undue influence over interest-rate risk management activities?

INTERNAL MODELS

1. Has the internal model been audited (by internal or external auditors)?
2. Does one individual control the modeling process or otherwise exert undue influence over the risk-measurement process?
3. Is the model reconciled to source data to ensure data integrity?
4. Are principal assumptions and parameters used in the model reviewed periodically by the board and senior management?
5. Are the workings of and the assumptions used in the internal model adequately documented and available for examiner review?
6. Is the model run on the same scenarios on which the institution's limits are established?
7. Does management compare the historical results of the model with actual backtesting results?

CONCLUSIONS

1. Is the foregoing information an adequate basis for evaluating the systems of internal controls? Are there significant deficiencies in areas not covered in this questionnaire that impair any controls? If so, explain answers briefly, indicate additional internal control questions or elements deemed necessary, and forward recommendations to the supervisory examiner or designee.
2. Based on a composite evaluation, as evidenced by answers to the foregoing questions, are the systems of internal control considered adequate?

# Securitization and Secondary-Market Credit Activities

## Section 3020.1

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In recent years, the secondary-market credit activities of many institutions have increased substantially. As the name implies, secondary-market credit activities involve the transformation of traditionally illiquid loans, leases, and other assets into instruments that can be bought and sold in secondary capital markets. It also involves the isolation of credit risk in various types of derivative instruments. Secondary-market credit activities include asset securitizations, loan syndications, loan sales and participations, and credit derivatives, as well as the provision of credit enhancements and liquidity facilities to these transactions. Secondary-market credit activities can enhance both credit availability and bank profitability, but managing the risks of these activities poses increasing challenges: The risks involved, while not new to banking, may be less obvious and more complex than the risks of traditional lending activities. Some secondary-market credit activities involve credit, liquidity, operational, legal, and reputational risks in concentrations and forms that may not be fully recognized by bank management or adequately incorporated in an institution's risk-management systems. In reviewing these activities, supervisors and examiners should assess whether banking organizations fully understand and adequately manage the full range of the risks involved in secondary-market credit activities.

### ASSET SECURITIZATION

Banking organizations have long been involved in asset-backed securities (ABS), both as investors and as major participants in the securitization process. In recent years, banks have both increased their participation in the long-established residential mortgage-backed securities market and expanded their activities in securitizing other types of assets, such as credit card receivables, automobile loans, boat loans, commercial real estate loans, student loans, nonperforming loans, and lease receivables.

While the objectives of securitization may vary from institution to institution, several benefits can be derived from securitized transactions. First, the sale of assets may reduce regulatory costs by reducing both risk-based capital require-

ments and the reserves held against the deposits used to fund the sold assets. Second, securitization provides originators with an additional source of funding or liquidity since the process of securitization converts an illiquid asset into a security with greater marketability. Securitized issues often require a credit enhancement, which results in a higher credit rating than what would normally be obtainable by the institution itself. Consequently, securitized issues may provide the institution with a cheaper form of funding. Third, securitization may be used to reduce interest-rate risk by improving the institution's asset/liability mix. This is especially true if the institution has a large investment in fixed-rate, low-yield assets. Finally, the ability to sell these securities worldwide diversifies the institution's funding base, which reduces the bank's dependence on local economies.

While securitization activities can enhance both credit availability and bank profitability, the risks of these activities must be known and managed. Asset securitization may involve credit, liquidity, operational, legal, and reputational risks in concentrations and forms that may not be fully recognized by bank management or adequately incorporated in an institution's risk-management systems. Accordingly, banking institutions should ensure that their overall risk-management process explicitly incorporates the full range of the risks involved in their securitization activities.

In reviewing asset securitization activities, examiners should assess whether banking organizations fully understand and adequately manage the full range of the risks involved in their activities. Specifically, supervisors and examiners should determine whether institutions are recognizing the risks of securitization activities by (1) adequately identifying, quantifying, and monitoring these risks; (2) clearly communicating the extent and depth of risks in reports to senior management and the board of directors and in regulatory reports; (3) conducting ongoing stress testing to identify potential losses and liquidity needs under adverse circumstances; and (4) setting adequate minimum internal standards for allowances or liabilities for losses, capital, and contingency funding. Incorporating asset securitization activities into banking organizations' risk-management systems and internal capital-adequacy allocations is particularly

important; current regulatory capital rules may not fully capture the economic substance of the risk exposures arising from many of these activities.

An institution's failure to adequately understand the risks inherent in its secondary-market credit activities and to incorporate risks into its risk-management systems and internal capital allocations may constitute an unsafe and unsound banking practice. Accordingly, for those institutions involved in asset securitization or providing credit enhancements in connection with loan sales and securitization, examiners should assess whether the institutions' systems and processes adequately identify, measure, monitor, and control *all* of the risks involved in the secondary-market credit activities.<sup>1</sup>

## Securitization Process

In its simplest form, asset securitization is the transformation of generally illiquid assets into securities that can be traded in the capital markets. The asset securitization process begins with the segregation of loans or leases into pools that are relatively homogeneous with respect to their cash-flow characteristics and risk profiles, including both credit and market risks. These pools of assets are then transferred to a bankruptcy-remote entity such as a grantor trust or special-purpose corporation that issues securities or ownership interests in the cash flows of the underlying collateral. These ABS may take the form of debt, certificates of beneficial ownership, or other instruments. The issuer is typically protected from bankruptcy by various structural and legal arrangements. Normally, the sponsor that establishes the issuer is the originator or provider of the underlying assets.

Each issue of ABS has a servicer that is responsible for collecting interest and principal payments on the loans or leases in the under-

lying pool of assets and for transmitting these funds to investors (or a trustee representing them). A trustee is responsible for monitoring the activities of the servicer to ensure that it properly fulfills its role. A guarantor may also be involved to ensure that principal and interest payments on the securities will be received by investors on a timely basis, even if the servicer does not collect these payments from the obligors of the underlying assets. Many issues of mortgage-backed securities are either guaranteed directly by the Government National Mortgage Association (GNMA or GinnieMae), which is backed by the full faith and credit of the U.S. government, or by the Federal National Mortgage Association (FNMA or FannieMae), or the Federal Home Loan Mortgage Corporation (FHLMC or FreddieMac), which are government-sponsored agencies that are perceived by the credit markets to have the implicit support of the federal government. Privately issued, mortgage-backed securities and other types of ABS generally depend on some form of credit enhancement provided by the originator or third party to insulate the investor from a portion of or all credit losses. Usually, the amount of the credit enhancement is based on several multiples of the historical losses experienced on the particular asset backing the security.

The structure of an asset-backed security and the terms of the investors' interest in the collateral can vary widely depending on the type of collateral, the desires of investors, and the use of credit enhancements. Often ABS are structured to re-allocate the risks entailed in the underlying collateral (particularly credit risk) into security tranches that match the desires of investors. For example, senior-subordinated security structures give holders of senior tranches greater credit-risk protection (albeit at lower yields) than holders of subordinated tranches. Under this structure, at least two classes of asset-backed securities, a senior class and a junior or subordinated class, are issued in connection with the same pool of collateral. The senior class is structured so that it has a priority claim on the cash flows from the underlying pool of assets. The subordinated class must absorb credit losses on the collateral before losses can be charged to the senior portion. Because the senior class has this priority claim, cash flows from the underlying pool of assets must first satisfy the requirements of the senior class. Only after these requirements have been met will the cash flows be directed to service the subordinated class.

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1. The Federal Reserve System has developed a three-volume set that contains educational material concerning the process of asset securitization and examination guidelines (see SR-90-16). The volumes are (1) *An Introduction to Asset Securitization*, (2) *Accounting Issues Relating to Asset Securitization*, and (3) *Examination Guidelines for Asset Securitization*.

## Credit Enhancements

ABS can use various forms of credit enhancements to transform the risk-return profile of underlying collateral. These include third-party credit enhancements, recourse provisions, over-collateralization, and various covenants and indentures. Third-party credit enhancements include standby letters of credit, collateral or pool insurance, or surety bonds from third parties. Recourse provisions are guarantees that require the originator to cover any losses up to a contractually agreed-on amount. One type of recourse provision, usually seen in securities backed by credit card receivables, is the “spread account.” This account is actually an escrow account, the funds of which are derived from a portion of the spread between the interest earned on the assets in the underlying pool of collateral and the lower interest paid on securities issued by the trust. The amounts that accumulate in this escrow account are used to cover credit losses in the underlying asset pool, up to several multiples of historical losses on the particular asset collateralizing the securities.

Overcollateralization is another form of credit enhancement that covers a predetermined amount of potential credit losses. When the value of the underlying assets exceeds the face value of the securities, the securities are said to be over-collateralized. A similar form of credit enhancement is the cash-collateral account, which is established when a third party deposits cash into a pledged account. The use of cash-collateral accounts, which are considered to be loans, grew as the number of highly rated banks and other credit enhancers declined in the early 1990s. Cash-collateral accounts eliminate “event risk,” or the risk that the credit enhancer will have its credit rating downgraded or that it will not be able to fulfill its financial obligation to absorb losses. Thus, credit protection is provided to the investors of a securitization.

Generally, an investment banking firm or other organization serves as an ABS underwriter. In addition, for asset-backed issues that are publicly offered, a credit rating agency will analyze the policies and operations of the originator and servicer, as well as the structure, underlying pool of assets, expected cash flows, and other attributes of the securities. Before assigning a rating to the issue, the rating agency will also assess the extent of loss protection provided to investors by the credit enhancements associated with the issue.

## Types of Asset-Backed Securities

The many different varieties of asset-backed securities are often customized to the terms and characteristics of the underlying collateral. Most common are securities collateralized by (1) revolving credit lines such as card receivables, (2) closed-end installment loans such as automobile and student loans, and (3) lease receivables. The instrument profiles on asset-backed securities and mortgage-backed securities in this manual (sections 4105.1 and 4110.1, respectively) present specific information on the nature and structure of various types of securitized assets.

In addition to specific ABS, other types of financial instruments may arise as a result of asset securitization, such as loan-servicing rights, excess-servicing-fee receivables, and ABS residuals. Loan-servicing rights are created in one of two ways.<sup>2</sup> Servicing rights can be purchased outright from other institutions or can be created when organizations (1) purchase or originate loans or (2) sell or securitize these loans and retain the right to act as servicers for the pools of loans. The capitalized servicing asset is treated as an identified intangible asset for purposes of regulatory capital. Excess-servicing-fee receivables generally arise when the present value of any additional cash flows from the underlying assets that a servicer expects to receive exceeds standard servicing fees. ABS residuals (sometimes referred to as “residuals” or “residual interests”) represent claims on any cash flows that remain after all obligations to investors and any related expenses have been met. The excess cash flows may arise as a result of overcollateralization or from reinvestment income. Residuals can be retained by sponsors or purchased by investors in the form of securities.

## Securitization of Commercial Paper

Bank involvement in the securitization of commercial paper has increased significantly over time. However, asset-backed commercial paper

2. In May 1995, the Financial Accounting Standards Board issued its Statement of Financial Accounting Standards No. 122 (FAS 122), “Accounting for Mortgage Servicing Rights.” FAS 122 eliminated the accounting distinctions between originated servicing rights, which were not allowed to be recognized on the balance sheet, and purchased servicing rights, which were capitalized as a balance-sheet asset. See section 2120.1, “Accounting.”

programs differ from other methods of securitization. One difference is that more than one type of asset may be included in the receivables pool. Moreover, in certain cases, the cash flow from the receivables pool may not necessarily match the payments to investors because the maturity of the underlying asset pool does not always parallel the maturity of the structure of the commercial paper. Consequently, when the paper matures, it is usually rolled over or funded by another issue. In certain circumstances, a maturing issue of commercial paper cannot be rolled over. To address this problem, many banks have established back-up liquidity facilities. Certain banks have classified these back-up facilities as pure liquidity facilities, despite the credit-enhancement element present in them. As a result, the risks associated with these facilities are incorrectly assessed. In these cases, the back-up liquidity facilities are more similar to direct credit substitutes than to loan commitments.

## RISKS OF ASSET SECURITIZATION

While banking organizations that engage in securitization activities and invest in ABS accrue clear benefits, these activities can potentially increase the overall risk profile of the banking organization. For the most part, the types of risks that financial institutions encounter in the securitization process are identical to those faced in traditional lending transactions, including credit risk, concentration risk, interest-rate risk (including prepayment risk), operational risk, liquidity risk, moral-recourse risk, and funding risk. However, since the securitization process separates the traditional lending function into several limited roles, such as originator, servicer, credit enhancer, trustee, and investor, the types of risks that a bank will encounter will differ depending on the role it assumes.

Senior management and the board of directors should have the requisite knowledge of the effects of securitization on the banking organization's risk profile and should be fully aware of the accounting, legal, and risk-based capital implications of this activity. Banking organizations need to fully and accurately distinguish and measure the risks that are transferred versus those retained, and they must adequately manage the retained portion. Banking organizations engaging in securitization activities must have

appropriate back- and front-office staffing; internal and external accounting and legal support; audit or independent-review coverage; information systems capacity; and oversight mechanisms to execute, record, and administer these transactions.

## Risks to Investors

Investors in ABS will be exposed to varying degrees of credit risk, just as they are in direct investments in the underlying assets. Credit risk is the risk that obligors will default on principal and interest payments. ABS investors are also subject to the risk that the various parties in the securitization structure, for example, the servicer or trustee, will be unable to fulfill its contractual obligations. Moreover, investors may be susceptible to concentrations of risks across various asset-backed security issues through overexposure to an organization performing various roles in the securitization process or as a result of geographic concentrations within the pool of assets providing the cash flows for an individual issue. Since the secondary markets for certain ABS are limited, investors may encounter greater than anticipated difficulties when seeking to sell their securities (liquidity risk). Furthermore, certain derivative instruments, such as stripped asset-backed securities and residuals, may be extremely sensitive to interest rates and exhibit a high degree of price volatility. Therefore, derivative instruments may dramatically affect the risk exposure of investors unless these instruments are used in a properly structured hedging strategy. Examiner guidance in section 3000.1, "Investment Securities and End-User Activities," is directly applicable to ABS held as investments.

## Risks to Issuers and Institutions Providing Credit Enhancements

Banking organizations that issue ABS may be subject to pressures to sell only their best assets, thus reducing the quality of their loan portfolios. On the other hand, some banking organizations may feel pressured to relax their credit standards because they can sell assets with higher risk than they would normally want to retain for their own portfolios. To protect their names in the market, issuers may also face pressures to provide "moral

recourse” by repurchasing securities backed by loans or leases they have originated that have deteriorated and become nonperforming. Funding risk may also be a problem for issuers when market aberrations do not permit asset-backed securities that are in the securitization pipeline to be issued.

### *Credit Risks*

The partial, first-loss recourse obligations an institution retains when selling assets, and the extension of partial credit enhancements (for example, 10 percent letters of credit) in connection with asset securitization, can be sources of concentrated credit risk. Institutions are exposed

to the full amount of expected losses on the protected assets. For instance, the credit risk associated with whole loans or pools of assets that are sold to secondary-market investors can often be concentrated within the partial, first-loss recourse obligations retained by the banking organizations selling and securitizing the assets. In these situations, even though institutions may have reduced their exposure to catastrophic loss on the assets sold, they generally retain the same credit-risk exposure as if they continued to hold the assets on their balance sheets.

In addition to recourse obligations, institutions assume concentrated credit risk through the extension of partial direct-credit substitutes, such as through the purchase (or retention) of subordinated interests in their own asset securitizations or through the extension of letters of credit. For example, banking organizations that sponsor certain asset-backed commercial paper programs, or so-called remote-origination conduits, can be exposed to high degrees of credit risk even though their notional exposure may seem minimal. This type of remote-origination conduit lends directly to corporate customers that are referred to it by the sponsoring banking organization that used to lend directly to these same borrowers. The conduit funds this lending activity by issuing commercial paper that, in turn, the sponsoring banking organization guarantees. The net result is that the sponsoring institution's credit-risk exposure through this guarantee is about the same as it would have been if it had made the loans directly and held them on its books. However, this is an off-balance-sheet transaction, and its associated risks may not be fully reflected in the institution's risk-management system.

Furthermore, banking organizations that extend liquidity facilities to securitized transactions, particularly to asset-backed commercial paper programs, may be exposed to high degrees of credit risk subtly embedded within a facility's provisions. Liquidity facilities are commitments to extend short-term credit to cover temporary shortfalls in cash flow. While all commitments embody some degree of credit risk, certain commitments extended to asset-backed commercial paper programs to provide liquidity may subject the extending institution to the credit risk of the underlying asset pool (often trade receivables) or a specific company using the program for funding. Often the stated purpose of liquidity facilities is to provide funds to the

program to retire maturing commercial paper when a mismatch occurs in the maturities of the underlying receivables and the commercial paper, or when a disruption occurs in the commercial paper market. However, depending on the provisions of the facility—such as whether the facility covers dilution of the underlying receivable pool—credit risk can be shifted from the program's explicit credit enhancements to the liquidity facility.<sup>3</sup> Such provisions may enable certain programs to fund riskier assets and maintain the credit rating on the program's commercial paper without increasing the program's credit-enhancement levels.

The structure of various securitization transactions can also result in an institution's retaining the underlying credit risk in a sold pool of assets. An example of this contingent credit-risk retention includes credit card securitization, in which the securitizing organization explicitly sells the credit card receivables to a master trust but, in substance, retains the majority of the economic risk of loss associated with the assets because of the credit protection provided to investors by the excess yield, spread accounts, and structural provisions of the securitization. Excess yield provides the first level of credit protection that can be drawn on to cover cash shortfalls between (1) the principal and coupon owed to investors and (2) the investors' pro rata share of the master trust's net cash flows. The excess yield is equal to the difference between the overall yield on the underlying credit card portfolio and the master trust's operating expenses.<sup>4</sup> The second level of credit protection is provided by the spread account, which is essentially a reserve initially funded from the excess yield.

In addition, the structural provisions of credit card securitization generally provide credit protection to investors through the triggering of early-amortization events. Such an event usually is triggered when the underlying pool of credit card receivables deteriorates beyond a certain

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3. Dilution essentially occurs when the receivables in the underlying asset pool—before collection—are no longer viable financial obligations of the customer. For example, dilution can arise from returns of consumer goods or unsold merchandise by retailers to manufacturers or distributors.

4. The monthly excess yield is the difference between the overall yield on the underlying credit card portfolio and the master trust's operating expenses. It is calculated by subtracting from the gross portfolio yield the (1) coupon paid to investors, (2) charge-offs for that month, and (3) servicing fee, usually 200 basis points, paid to the banking organization that is sponsoring the securitization.

point and requires that the outstanding credit card securities begin amortizing early to pay off investors before the prior credit enhancements are exhausted. The early amortization accelerates the redemption of principal (paydown) on the security, and the credit card accounts that were assigned to the master credit-card trust return to the securitizing institution more quickly than had originally been anticipated. Thus, the institution is exposed to liquidity pressures and any further credit losses on the returned accounts.

### *Reputational Risks*

The securitization activities of many institutions may expose them to significant reputational risks. Often, banking organizations that sponsor the issuance of asset-backed securities act as a servicer, administrator, or liquidity provider in the securitization transaction. These institutions must be aware of the potential losses and risk exposure associated with reputational risk from securitization activities. The securitization of assets whose performance has deteriorated may result in a negative market reaction that could increase the spreads on an institution's subsequent issuances. To avoid a possible increase in their funding costs, institutions have supported their securitization transactions by improving the performance of the securitized asset pool. This has been accomplished, for example, by selling discounted receivables or adding higher-quality assets to the securitized asset pool. This type of support is commonly referred to as "implicit recourse" (and sometimes as "moral recourse"). Implicit recourse is of supervisory concern because it demonstrates that the securitizing institution is reassuming risk associated with the securitized assets—risk that the institution initially transferred to the marketplace.

Supervisors should be alert for situations in which a banking organization provides implicit recourse to a securitization. Providing implicit recourse can pose a high degree of risk to a banking organization's financial condition and to the integrity of its regulatory and public financial reports. Heightened attention must be paid to situations in which an institution is more likely to provide implicit recourse, such as when securitizations are nearing performance triggers that would result in an early-amortization event. Examiners should review securitization documents to ensure that the selling institution limits any support to the securitization to the terms and

conditions specified in the documents. Examiners should also review a sample of loans or receivables transferred between the seller and the trust to ensure that these transfers were conducted in accordance with the contractual terms of the securitization, particularly when the overall credit quality of the securitized loans or receivables has deteriorated.

Special attention should be paid to revolving securitizations, such as those used for credit card lines and home equity lines of credit, in which receivables generated by the lines are sold into the securitization. Typically, these securitizations provide that, when certain performance criteria hit specified thresholds, no new receivables can be sold into the securitization, and the principal on the bonds issued will begin to pay out. Such an event, known as an early-amortization event, is intended to protect investors from further deterioration in the underlying asset pool. Once an early-amortization event occurs, the banking organization could have difficulties using securitization as a continuing source of funding and, at the same time, have to fund the new receivables generated by the lines of credit on its balance sheet. Thus, banking organizations have an incentive to avoid early amortization by providing implicit support to the securitization.

The Federal Reserve and the other federal banking agencies published Interagency Guidance on Implicit Recourse in Asset Securitization Activities in May 2002 to assist bankers and supervisors in assessing the types of actions that may, or may not, constitute implicit recourse.<sup>4a</sup> As a general matter, the following actions point to a finding of implicit recourse:

- selling assets to a securitization trust or other special-purpose entity (SPE) at a discount from the price specified in the securitization documents, which is typically par value
- purchasing assets from a trust or other SPE at an amount greater than fair value
- exchanging performing assets for nonperforming assets in a trust or other SPE
- funding credit enhancements beyond contractual requirements

### *Liquidity Risks*

The existence of recourse provisions in asset

<sup>4a</sup> See the attachment to SR-02-15, May 23, 2002.

sales, the extension of liquidity facilities to securitization programs, and the early-amortization triggers of certain asset securitization transactions can involve significant liquidity risk to institutions engaged in these secondary-market credit activities. Institutions should ensure that their liquidity contingency plans fully incorporate the potential risk posed by their secondary-market credit activities. When new asset-backed securities are issued, the issuing banking organization should determine their potential effect on its liquidity at the inception of each transaction and throughout the life of the securities to better ascertain its future funding needs.

An institution's contingency plans should consider the need to obtain replacement funding and specify possible alternative funding sources, in the event of the amortization of outstanding asset-backed securities. Replacement funding is particularly important for securitization with revolving receivables, such as credit cards, in which an early amortization of the asset-backed securities could unexpectedly return the outstanding balances of the securitized accounts to the issuing institution's balance sheet. An early amortization of a banking organization's asset-backed securities could impede its ability to fund itself—either through re-issuance or other borrowings—since the institution's reputation with investors and lenders may be adversely affected.

In particular, the inclusion of supervisory-linked covenants in securitization documents has significant implications for an institution's liquidity and is considered to be an unsafe and unsound banking practice.<sup>4b</sup> Examples of supervisory-linked covenants include a downgrade in the institution's CAMELS rating, an enforcement action, or a downgrade in the bank's prompt-corrective-action capital category. An early amortization or transfer of servicing triggered by such events can create or exacerbate liquidity and earnings problems for a banking organization that may lead to further deterioration in its financial condition.

Examiners should consider the potential impact of supervisory-linked covenants when evaluating the overall condition of the banking organization, as well as the specific component ratings of capital, liquidity, and management. Early-amortization triggers should be consid-

ered in the context of the banking organization's overall liquidity position and contingency funding plan. For organizations with limited access to other funding sources or a significant reliance on securitization, the existence of these triggers presents a greater degree of supervisory concern. Banking organization management should be encouraged to amend, modify, or remove these covenants in existing transactions. Any impediments an institution may have to taking such action should be documented in the report of examination.

## Servicer-Specific Risks

Banking organizations that service securitization issues must ensure that their policies, operations, and systems will not permit breakdowns that may lead to defaults. Substantial fee income can be realized by acting as a servicer. An institution already has a fixed investment in its servicing systems; achieving economies of scale relating to that investment is in its best interest. The danger, though, lies in overloading the system's capacity, thereby creating enormous out-of-balance positions and cost overruns. Servicing problems may precipitate a technical default, which in turn could lead to the premature redemption of the security. In addition, expected collection costs could exceed fee income. (For further guidance, see section 2040.3, "Loan Portfolio Management—Examination Procedures," of the *Commercial Bank Examination Manual*.)

## ACCOUNTING ISSUES

Asset securitization transactions are frequently structured to obtain certain accounting treatments, which in turn affect reported measures of profitability and capital adequacy. In transferring assets into a pool to serve as collateral for ABS, a key question is whether the transfer should be treated as a sale of the assets or as a collateralized borrowing, that is, a financing

4b. See SR-02-14, May 23, 2002, and the attached inter-agency guidance.

transaction secured by assets. Treating these transactions as a sale of assets results in their being removed from the banking organization's balance sheet, thus reducing total assets relative to earnings and capital, and thereby producing higher performance and capital ratios. Treating these transactions as financings, however, means that the assets in the pool remain on the balance sheet and are subject to capital requirements and the related liabilities-to-reserve requirements.

## CAPITAL ADEQUACY

As with all risk-bearing activities, institutions should fully support the risk exposures of their securitization activities with adequate capital. Banking organizations should ensure that their capital positions are sufficiently strong to support *all* of the risks associated with these activities on a fully consolidated basis and should maintain adequate capital in all affiliated entities engaged in these activities. The Federal Reserve's risk-based capital guidelines establish *minimum* capital ratios, and those banking organizations exposed to high or above-average degrees of risk are, therefore, expected to operate significantly above the minimum capital standards.

The current regulatory capital rules may not fully incorporate the economic substance of the risk exposures involved in many securitization activities. Therefore, when evaluating capital adequacy, examiners should ensure that banking organizations that sell assets with recourse, that assume or mitigate credit risk through the use of credit derivatives, and that provide direct-credit substitutes and liquidity facilities to securitization programs are accurately identifying and measuring these exposures—and maintaining capital at aggregate levels sufficient to support the associated credit, market, liquidity, reputational, operational, and legal risks.

Examiners should also review the substance of securitization transactions when assessing underlying risk exposures. For example, partial, first-loss direct-credit substitutes that provide credit protection to a securitization transaction can, in substance, involve the same credit risk as the risk involved in holding the entire asset pool on the institution's balance sheet. However, under current rules, regulatory capital is explicitly required only against the amount of the direct-credit substitute, which can be significantly different from the amount of capital that

the institution should maintain against the concentrated credit risk in the guarantee. Supervisors and examiners should ensure that banking organizations have implemented reasonable methods for allocating capital against the economic substance of credit exposures arising from early-amortization events and liquidity facilities associated with securitized transactions. These facilities are usually structured as short-term commitments to avoid a risk-based capital requirement, even though the inherent credit risk may be approaching that of a guarantee.<sup>5</sup>

If, in the supervisor's judgment, an institution's capital level is not sufficient to provide protection against potential losses from such credit exposures, this deficiency should be reflected in the banking organization's CAMELS or BOPEC ratings. Furthermore, supervisors and examiners should discuss the capital deficiency with the institution's management and, if necessary, its board of directors. The institution will be expected to develop and implement a plan for strengthening the organization's overall capital adequacy to levels deemed appropriate given all the risks to which it is exposed.

## RISK-BASED CAPITAL PROVISIONS AFFECTING ASSET SECURITIZATION

### Recourse Obligations, Residual Interests, and Direct-Credit Substitutes

The risk-based capital framework for recourse obligations, residual interests, and direct-credit substitutes resulting from asset securitization was revised effective January 1, 2002.<sup>6</sup> A one-year transition period applies to existing transactions, but banks may elect early adoption of the new rules. All transactions settled on or after January 1, 2002, are subject to the revised rule (the rule).

The rule seeks to treat recourse obligations and direct-credit substitutes more consistently and in a way that is more closely aligned to the

5. For further guidance on distinguishing, for risk-based capital purposes, whether a facility is a short-term commitment or a direct-credit substitute, see SR-92-11, "Asset-Backed Commercial Paper Programs." Essentially, facilities that provide liquidity, but which also provide credit protection to secondary-market investors, are to be treated as direct-credit substitutes for purposes of risk-based capital.

6. 66 *Fed. Reg.* 59614 (November 29, 2001).

credit-risk profile of these instruments. The rule emphasizes the economic substance of a transaction over its form, and allows regulators to recharacterize transactions or change the capital treatment to reflect the exposure's actual risk profile and to prevent regulatory arbitrage or evasion of the capital requirements.

### *Coverage of the Rule*

The rule applies to banks, their holding companies, and thrift institutions. It covers recourse obligations, residual interests, direct-credit substitutes, and asset-backed and mortgage-backed securities held in both the banking and trading books (to the extent that the institution is not subject to the market-risk rule).

The rule defines "recourse" as an arrangement in which a banking organization retains, in form or substance, the credit risk in connection with an asset sale in accordance with GAAP, if the credit risk exceeds the pro rata share of the banking organization's claim on the assets. If the banking organization has no claim on a transferred asset, then the retention of any credit risk is also recourse. The purchase of credit enhancements for a securitization, in which the banking organization is completely removed from any credit risk, will not, in most instances, constitute recourse.

Residual interests are on-balance-sheet assets that represent an interest (including a beneficial interest) created by a transfer that qualifies as a sale of financial assets under GAAP. This transfer exposes the banking organization to any credit risk that exceeds a pro rata share of the organization's claim on the asset. Examples of residual interests include credit-enhancing interest-only (I/O) strips, spread accounts, cash-collateral accounts, retained subordinated interests, and other assets that function as credit enhancements. Interests retained in a transaction accounted for as a financing under GAAP are not included within the definition of residual interests. In addition, the rule excludes seller's interest (common to revolving transactions) from the definition of residual interest if the seller's interest does not act as a credit enhancement and is exposed to only a pro-rated share of loss.

Credit-enhancing I/O strips are on-balance-sheet assets that, in form or substance, represent the contractual right to receive some or all of the interest due on transferred assets, and that expose

the banking organization to credit risk that exceeds its pro rata claim on the underlying assets. This type of residual interest is created when assets are transferred in a securitization transaction that qualifies for sale treatment under GAAP, and it typically results in the recognition of a gain-on-sale on the seller's income statement. Generally, credit-enhancing I/O strips are held on the balance sheet at the present value of expected future net cash flows, adjusted for expected prepayments and losses and discounted at an appropriate market interest rate. Regulators will look to the economic substance of these residual assets and reserve the right to identify other cash flows or similar spread-related assets as credit-enhancing I/O strips on a case-by-case basis. Credit-enhancing I/O strips include both purchased and retained interest-only strips that serve in a credit-enhancing capacity.

Direct-credit substitutes are arrangements in which a banking organization assumes, in form or in substance, credit risk associated with an on- or off-balance-sheet asset or exposure that it did not previously own (third-party asset), and the risk assumed by the banking organization exceeds the pro rata share of its interest in the third-party asset. This definition includes guarantees, letters of credit, purchased subordinated interests, agreements to cover credit losses that arise from purchased loan-servicing rights, credit derivatives, and lines of credit that provide credit enhancement. For direct-credit substitutes that take the form of syndications in which each bank is obligated only for its pro rata share of the risk and there is no recourse to the originating bank, each bank includes only its pro rata share of the assets supported by the direct-credit substitute in its risk-based capital calculation.

Representations and warranties that function as credit enhancements to protect asset purchasers or investors from credit risk are treated as recourse or direct-credit substitutes. However, early-default clauses that permit the return of 50 percent of risk-weighted one- to four-family residential mortgage loans for a maximum period of 120 days are excluded from the definition of recourse or direct-credit substitutes. Also excluded from coverage are premium-refund clauses on loans guaranteed by U.S. government agencies or U.S. government-sponsored enterprises (for example, one- to four-family residential mortgages) that provide for a maximum 120-day put period. Warranties that cover losses due to fraud or incomplete documentation are

also excluded from the definition of recourse or direct-credit substitutes.

The rule provides a limited exemption from the definition of recourse or direct-credit substitute for clean-up calls when the remaining balance of the loans is equal to or less than 10 percent of the original pool balance. This allows for the timely maturity of the related securities to accommodate transaction efficiency or administrative cost savings.

The definitions of recourse and direct-credit substitute include loan-servicing arrangements if the banking organization, as servicer, is responsible for credit losses on the serviced loans. However, the definitions do not apply to cash advances servicers make to ensure an uninterrupted flow of payments to investors or the timely collection of residential mortgage loans, provided that the servicer is entitled to reimbursement of these amounts and the right to reimbursement is not subordinated to other claims. The banking organization is required to make an independent credit assessment of the likelihood of repayment, and the maximum possible amount of any nonreimbursed advances must be “insignificant.”

### *Ratings-Based Approach*

The rule imposes a multilevel, ratings-based approach to assessing capital requirements on asset-backed securities, mortgage-backed securities, recourse obligations, direct-credit substitutes, and residual interests (other than credit-

enhancing I/O strips) based on their relative exposure to credit risk. The approach generally uses credit ratings from the ratings agencies.<sup>7</sup> The capital requirement is computed by multiplying the face amount of the position by the appropriate risk weight as determined from table 1.

Different rules apply to traded and untraded positions under the ratings-based approach.<sup>8</sup> Traded positions need to be rated by only one rating agency. A position is “traded” if, at the time of rating by the external credit agency, there is a reasonable expectation that in the near future either (1) the position may be sold to unaffiliated investors relying on the rating or (2) an unaffiliated third party relying on the rating may enter into a transaction involving the position. If multiple ratings have been received on a position, the lowest rating must be used.

Rated, but untraded, positions are eligible for the ratings-based approach if the ratings are (1) provided by more than one rating agency; (2) as provided by each rating agency from which a rating is received, one category below

7. Ratings agencies are those organizations recognized by the Division of Market Regulation of the SEC as nationally recognized statistical rating organizations for various purposes, including the SEC’s uniform net capital requirements for brokers and dealers.

8. Traded positions are those that are retained, assumed, or issued in connection with an asset securitization and that are externally rated. There must be a reasonable expectation that, in the near future, unaffiliated third parties will rely on the rating.

Table 1—Rating Categories

	<i>Examples</i>	<i>Risk weight</i>
<i>Long-term rating category</i>		
Highest or second-highest investment grade	AAA or AA	20%
Third-highest investment grade	A	50%
Lowest investment grade	BBB	100%
One category below investment grade	BB	200%
More than one category below investment grade or unrated	B or unrated	Not eligible for ratings-based approach
<i>Short-term rating category</i>		
Highest investment grade	A-1, P-1	20%
Second-highest investment grade	A-2, P-2	50%
Lowest investment grade	A-3, P-3	100%
Below investment grade	Not prime	Not eligible for ratings-based approach

investment grade or better, for long-term positions, or investment grade or better, for short-term positions; (3) publicly available; and (4) based on the same criteria used to rate traded positions. Again, the lowest rating will determine the applicable risk weight.

An unrated position that is senior or preferred in all respects (including collateralization and maturity) to a rated and traded subordinated position may be treated as if it has the same rating assigned to the subordinated position. Before using this approach, the banking organization must demonstrate to its supervisor's satisfaction that such treatment is appropriate.

A banking organization may use a program or computer rating obtained from a rating agency for unrated direct-credit substitutes or recourse obligations (but not residual interests) in certain structured-finance programs.<sup>9</sup> Before using this approach, a banking organization must demonstrate to its primary regulator that the rating generally meets the standards used by the rating agency for rating similarly traded positions. In addition, the banking organization must demonstrate that it is reasonable and consistent with the rule to rely on the ratings assigned under the structured-finance program. Risk weights derived in this manner may not be lower than 100 percent.

*Interests ineligible for the ratings-based approach.* Banking organizations that hold recourse obligations and direct-credit substitutes (other than residual interests) that do not qualify for the ratings-based approach must hold capital against the amount of the position plus all more senior positions, subject to the low-level-recourse rule.<sup>10</sup> This is referred to as "gross-up treatment." The grossed-up amount is placed in a risk-weight category by reference to the obligor, or, if applicable, the guarantor or nature of the collateral. The grossed-up amount is multiplied

by the risk weight and 8 percent, but is never greater than the full capital charge that would apply if the assets were held on the balance sheet.

Residual interests that are not eligible for the ratings-based approach require dollar-for-dollar treatment; that is, for every dollar of residual interest, one dollar of capital must be held. A banking organization is permitted to net from the capital requirement any deferred tax liability held on its balance sheet that is directly associated with the residual interests.

A special concentration limit of 25 percent of tier 1 capital applies to retained and purchased credit-enhancing I/O strips. The gross dollar amount (before netting any deferred tax liability) of credit-enhancing I/O strips that exceeds 25 percent of tier 1 capital must be deducted from tier 1 capital. The deduction may be made net of any related deferred tax liabilities. This concentration limit affects both leverage and risk-based capital ratios.

*Permissible uses of banking organizations' internal risk ratings.* The rule provides limited opportunities for banking organizations to use their internal risk-rating systems to assign risk-based capital charges to a narrow range of exposures. A banking organization with a qualifying internal risk-rating system may use its internal rating system to apply the ratings-based approach to its unrated direct-credit substitutes extended to asset-backed commercial paper programs. The risk weight assigned under this approach may not be less than 100 percent.

A qualifying internal risk-rating system is one that is approved by the organization's primary regulator (that is, the applicable Reserve Bank and the Board, for Federal Reserve-supervised entities) before use. In general, a qualifying system is an integral part of an effective risk-management system that explicitly incorporates the full range of risks from securitization activities. The system must (1) be capable of linking ratings to measurable outcomes; (2) separately consider the risk associated with the underlying loans and borrowers and the risks associated with specific positions in the securitization transaction; (3) identify gradations of risk among "pass" assets; and (4) classify assets into risk grades using clear, explicit factors. The banking organization must have an independent review function to assign or review credit-risk ratings, periodically verify ratings, track ratings performance over time, and make adjustments when

9. Structured-finance programs are programs in which receivable interests and asset-backed securities issued by multiple participants are purchased by a special-purpose entity that repackages these exposures into securities that can be sold to investors.

10. The low-level-recourse rule provides that if the maximum contractual exposure to loss in connection with a recourse obligation or direct-credit substitute is less than the risk-based capital requirement for the assets, the risk-based capital requirement is limited to the maximum contractual exposure, less any recourse liability account established in accordance with GAAP. The low-level-recourse rule does not apply when a banking organization provides credit enhancement beyond any contractual obligation to support the assets it has sold.

warranted. Ratings assumptions must be consistent with, or more conservative than, those applied by the rating agencies.

## Small-Business Obligations

Another divergence from the general risk-based capital treatment for assets sold with recourse concerns small-business obligations. Qualifying institutions that transfer small-business obligations with recourse are required, for risk-based capital purposes, to maintain capital only against the amount of recourse retained, provided two conditions are met. First, the transactions must be treated as a sale under GAAP, and second, the transferring institutions must establish, pursuant to GAAP, a noncapital reserve sufficient to meet the reasonably estimated liability under their recourse arrangements.

Banking organizations will be considered qualifying if, pursuant to the Board's prompt-corrective-action regulation (12 CFR 208.30), they are well capitalized or, by order of the Board, adequately capitalized. To qualify, an institution must be determined to be well capitalized or adequately capitalized without taking into account the preferential capital treatment for any previous transfers of small-business obligations with recourse. The total outstanding amount of recourse retained by a qualifying banking organization on transfers of small-business obligations receiving the preferential capital treatment cannot exceed 15 percent of the institution's total risk-based capital.

## Standby Letters of Credit

Banking organizations that issue standby letters of credit as credit enhancements for ABS issues must hold capital against these contingent liabilities under the risk-based capital guidelines. According to the guidelines, financial standby letters of credit are direct-credit substitutes, which are converted in their entirety to credit-equivalent amounts. The credit-equivalent amounts are then risk-weighted according to the type of counterparty or, if relevant, to any guarantee or collateral.

## SOUND RISK-MANAGEMENT PRACTICES

Examiners should verify that an institution

incorporates the risks involved in its securitization activities into its overall risk-management process. The process should entail (1) inclusion of risk exposures in reports to the institution's senior management and board to ensure proper management oversight; (2) adoption of appropriate policies, procedures, and guidelines to manage the risks involved; (3) appropriate measurement and monitoring of risks; and (4) assurance of appropriate internal controls to verify the integrity of the management process with respect to these activities. The formality and sophistication of an institution's risk-management system should be commensurate with the nature and volume of its securitization activities. Institutions with significant activities in this area are expected to have more elaborate and formal approaches to manage the risk of their secondary-market credit activities.

## Board and Senior Management Oversight

Both the board of directors and senior management are responsible for ensuring that they fully understand the degree to which the organization is exposed to the credit, market, liquidity, operational, legal, and reputational risks involved in the institution's securitization activities. They are also responsible for ensuring that the formality and sophistication of the techniques used to manage these risks are commensurate with the level of the organization's activities. The board should approve all significant policies relating to risk management of securitization activities and should ensure that risk exposures are fully incorporated in board reports and risk-management reviews.

## Policies and Procedures

Senior management is responsible for ensuring that the risks arising from securitization activities are adequately managed on both a short-term and long-run basis. Management should ensure that there are adequate policies and procedures in place for incorporating the risk of these activities into the overall risk-management process of the institution. Policies should ensure that the economic substance of the risk exposures generated by these activities is fully recognized and appropriately managed. In addition, banking organizations involved in securitization

activities should have appropriate policies, procedures, and controls for underwriting asset-backed securities; funding the possible return of revolving receivables (for example, credit card receivables and home equity lines); and establishing limits on exposures to individual institutions, types of collateral, and geographic and industrial concentrations. Policies should specify a consistently applied accounting methodology and valuation methods, including FAS 140 residual-value assumptions and the procedures to change those assumptions.

## Risk Measurement and Monitoring

An institution's management information and risk-measurement systems should fully incorporate the risks involved in its securitization activities. Banking organizations must be able to identify credit exposures from all securitization activities and to measure, quantify, and control those exposures on a fully consolidated basis. The economic substance of the credit exposures of securitization activities should be fully incorporated into the institution's efforts to quantify its credit risk, including efforts to establish more formal grading of credits to allow for statistical estimation of loss-probability distributions. Securitization activities should also be included in any aggregations of credit risk by borrower, industry, or economic sector.

An institution's information systems should identify and segregate those credit exposures arising from the institution's loan-sale and securitization activities. These exposures include the sold portions of participations and syndications; exposures arising from the extension of credit-enhancement and liquidity facilities; the effects of an early-amortization event; and the investment in asset-backed securities. Management reports should provide the board and senior management with timely and sufficient information to monitor the institution's exposure limits and overall risk profile.

## Stress Testing

The use of stress testing, including combinations of market events that could affect a banking organization's credit exposures and securitization activities, is another important element of risk management. Stress testing involves identifying possible events or changes in market

behavior that could have unfavorable effects on the institution and then assessing the organization's ability to withstand them. Stress testing should consider not only the probability of adverse events, but also likely worst-case scenarios. Analysis should be on a consolidated basis and consider, for instance, the effect of higher than expected levels of delinquencies and defaults, as well as the consequences of early-amortization events for credit card securities, that could raise concerns about the institution's capital adequacy and its liquidity and funding capabilities. Stress-test analyses should also include contingency plans for possible management actions in certain situations.

## Valuation of Retained Interests

Retained interests from securitization activities, including interest-only strips receivable, arise when a banking organization keeps an interest in the assets sold to a securitization vehicle that, in turn, issues bonds to investors. The methods and models that banking organizations use to value retained interests, as well as the difficulties in managing exposure to these volatile assets, can raise supervisory concerns. SR-99-37 and its reference interagency guidance (included in the "Selected Federal Reserve SR-Letters" at the end of this section) address the risk management and valuation of retained interests arising from asset-securitization activities.

Appropriate valuation and modeling methodologies should be used in valuing retained interests. The carrying value of a retained interest should be fully documented, based on reasonable assumptions, and regularly analyzed for any impairment in value. When quoted market prices are not available, accounting rules allow fair value to be estimated. An estimate must be based on the "best information available in the circumstances" and supported by reasonable and current assumptions. If a best estimate of fair value is not practicable, the asset is to be recorded at zero in financial and regulatory reports.

## Internal Controls

One of management's most important responsibilities is establishing and maintaining an effective system of internal controls. Among other things, internal controls should enforce the offi-

cial lines of authority and the appropriate separation of duties in managing the institution's risks. These internal controls must be suitable for the type and level of risks at the institution, given the nature and scope of its activities. Moreover, internal controls should ensure that financial reporting is reliable (in published financial reports and regulatory reports), including the reporting of adequate allowances or liabilities for expected losses.

The internal-control and risk-management function should also ensure that appropriate management information systems (MIS) exist to monitor securitization activities. Reporting and documentation methods must support the initial valuation of retained interests and ongoing impairment analyses of these assets. Pool-performance information will help well-managed banking organizations ensure, on a qualitative basis, that a sufficient amount of economic capital is being held to cover the various risks inherent in securitization transactions. The absence of quality MIS will hinder management's ability to monitor specific pool performance and securitization activities.

At a minimum, MIS reports should address the following:

- *Securitization summaries for each transaction.* The summary should include relevant transaction terms such as collateral type, facility amount, maturity, credit-enhancement and subordination features, financial covenants (termination events and spread-account capture "triggers"), right of repurchase, and counterparty exposures. Management should ensure that the summaries for each transaction are distributed to all personnel associated with securitization activities.
- *Performance reports by portfolio and specific product type.* Performance factors include gross portfolio yield, default rates and loss severity, delinquencies, prepayments or payments, and excess spread amounts. The reports should reflect the performance of assets, both on an individual-pool basis and for total managed assets. These reports should segregate specific products and different marketing campaigns.
- *Vintage analysis for each pool using monthly data.* Vintage analysis will help management understand historical performance trends and their implications for future default rates, prepayments, and delinquencies, and therefore retained interest values. Management can use these reports to compare historical performance trends with underwriting standards, including the use of a validated credit-scoring model, to ensure loan pricing is consistent with risk levels. Vintage analysis also helps in the comparison of deal performance at periodic intervals and validates retained-interest valuation assumptions.
- *Static-pool cash-collection analysis.* A static-pool cash-collection analysis involves reviewing monthly cash receipts relative to the principal balance of the pool to determine the cash yield on the portfolio, comparing the cash yield with the accrual yield, and tracking monthly changes. Management should compare monthly the timing and amount of cash flows received from the trust with those projected as part of the FAS 140 retained-interest valuation analysis. Some master-trust structures allow excess cash flow to be shared between series or pools. For revolving-asset trusts with this master-trust structure, management should perform a cash-collection analysis for each master-trust structure. These analyses are essential in assessing the actual performance of the portfolio in terms of default and prepayment rates. If cash receipts are less than those assumed in the original valuation of the retained interest, this analysis will provide management and the board with an early warning of possible problems with collections or extension practices and impairment of the retained interest.
- *Sensitivity analysis.* A sensitivity analysis measures the effect of changes in default rates, prepayment or payment rates, and discount rates to assist management in establishing and validating the carrying value of the retained interest. Stress tests should be performed at least quarterly. Analyses should consider potential adverse trends and determine "best," "probable," and "worst-case" scenarios for each event. Other factors that need to be considered are the impact of increased defaults on collections staffing, the timing of cash flows, spread-account capture triggers, over-collateralization triggers, and early-amortization triggers. An increase in defaults can result in higher than expected costs and a delay in cash flows, thus decreasing the value of the retained interests. Management should periodically quantify and document the potential impact to both earnings and capital, and report the results to the board of directors. Management should incorporate this analysis

into their overall interest-rate risk measurement system.<sup>11</sup>

- *Statement of covenant compliance.* Ongoing compliance with deal-performance triggers as defined by the pooling and servicing agreements should be affirmed at least monthly. Performance triggers include early amortization, spread capture, changes to overcollateralization requirements, and events that would result in servicer removal.

- the ability of the other participants in the arrangement to meet their obligations.

Analysis of the underlying assets should be conducted independently by each participant in the process, giving consideration to yield, maturity, credit risk, prepayment risk, and the accessibility of collateral in cases of default. An originator should further consider the impact of securitization on the remaining asset portfolio and on the adequacy of loan-loss reserves and overall capital.

The financial position and operational capacity should be adequate to meet obligations to other parties in a securitization arrangement, even under adverse scenarios. Accordingly, a banking organization should ensure that the pricing of services is adequate to cover costs over the term of the obligation, as well as to compensate for associated risks. Furthermore, the organization should have contingency plans to transfer responsibilities to another institution if those responsibilities can no longer be fulfilled.

## EXAMINATION GUIDELINES

A banking organization may be involved in asset securitization in many ways: originating the assets to be pooled, packaging the assets for securitization, servicing the pooled assets, acting as trustee for the pool, providing credit enhancements, underwriting or placing the ABS, or investing in the securities. Individual securitization arrangements often possess unique features, and the risks addressed in this abbreviated version of the examiner guidelines do not apply to all securitization arrangements.<sup>12</sup> Arrangements may also entail risks not summarized here. Examiners should judge a banking organization's exposure to securitization with reference to (1) the specific structures in which the organization is involved and (2) the degree to which the organization has identified exposures and implemented policies and controls to manage them. Examiners may tailor the scope of their examinations if the banking organization's involvement in securitization is immaterial relative to its size and financial strength.

Examiners should determine if a banking organization involved in the issuance of ABS as originator, packager, servicer, credit enhancer, underwriter, or trustee has adequately analyzed the assets underlying the asset-backed security and the structure of its transactions, including—

- the characteristics and expected performance of the underlying assets,
- the banking organization's ability to meet its obligations under the securitization arrangement, and

11. The Joint Agency Policy Statement on Interest-Rate Risk (see SR-96-13) advises institutions with a high level of exposure to interest-rate risk relative to capital that they will be directed to take corrective action.

12. A complete version of the Examination Guidelines for Asset Securitization is attached to SR-90-16.

## SELECTED FEDERAL RESERVE SR-LETTERS



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 02-22  
December 4, 2002

TO THE OFFICER IN CHARGE OF SUPERVISION  
AND APPROPRIATE SUPERVISORY AND EXAMINATION STAFF  
AT EACH FEDERAL RESERVE BANK AND TO EACH BANKING  
ORGANIZATION SUPERVISED BY THE FEDERAL RESERVE

SUBJECT: Interagency Advisory on Accounting for Accrued Interest Receivable  
Related to Credit Card Securitizations

The Federal Reserve Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision today issued the attached "Interagency Advisory on the Accounting Treatment of Accrued Interest Receivable Related to Credit Card Securitizations." The purpose of the guidance is to clarify the appropriate accounting treatment for financial institutions that securitize credit card receivables and record an asset commonly referred to as accrued interest receivable (AIR). The agencies consulted with the staffs of the Securities and Exchange Commission and Financial Accounting Standards Board in developing this guidance.

The guidance clarifies that, when the institution's (seller's) right to the AIR is subordinated as a result of a securitization, the seller generally should include the AIR as a subordinated retained interest in accounting for the sale of credit card receivables and in computing the gain or loss on sale. Consistent with generally accepted accounting principles (GAAP), this means that the value of the AIR, at the date of transfer, must be adjusted based on its relative fair (market) value. This adjustment will typically result in the carrying amount of the AIR being lower than its book (face) value prior to securitization. In addition, the AIR should be reported in "Other Assets" in regulatory reports and not as a loan receivable.<sup>1</sup> If an institution has not followed this accounting approach in the past, it should adopt it in the next regulatory report that it files (i.e., as of December 31, 2002) and in all subsequent periods.

<sup>1</sup> For information and guidance on the regulatory capital treatment of accrued interest receivable, see SR-letter 02-12 "Regulatory Capital Treatment of Accrued Interest Receivables Related to Credit Card Securitizations," dated May 17, 2002.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

While the interagency guidance applies to banks and savings associations, it should also be followed by bank holding companies that file GAAP-based regulatory reports. Accordingly, bank holding companies should look to this guidance for purposes of preparing FR Y-9C Reports.<sup>2</sup>

Reserve Banks are instructed to distribute this SR-letter and attached guidance to all state member banks and bank holding companies in their districts, as well as to their examination staffs. Questions pertaining to this letter and the interagency advisory should be directed to Charles Holm, Assistant Director, (202) 452-3502, Gregory Eller, Project Manager, (202) 452-5277, or Dennis Hild, Senior Financial Analyst, (202) 452-3622.

Richard Spillenkothen  
Director

Attachment

Cross-Reference: SR-letter 02-12

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<sup>2</sup> On the FR Y-9C, the AIR should be reported in Schedule HC-F, item 5, and in Schedule HC-S, item 2.b, column C (if reported as a stand-alone asset), in December 31, 2002, reports.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

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Office of the Comptroller of the Currency  
Board of Governors of the Federal Reserve System  
Federal Deposit Insurance Corporation  
Office of Thrift Supervision

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INTERAGENCY ADVISORY ON THE ACCOUNTING TREATMENT OF ACCRUED  
INTEREST RECEIVABLE RELATED TO CREDIT CARD SECURITIZATIONS

PURPOSE

The Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (Board), the Federal Deposit Insurance Corporation (FDIC), and the Office of Thrift Supervision (OTS) (collectively, the agencies) are issuing this advisory to clarify the appropriate accounting treatment for banks and thrift institutions (institutions) that securitize credit card receivables and record an asset commonly referred to as accrued interest receivable (AIR).<sup>1</sup> The guidance contained in this issuance is consistent with generally accepted accounting principles (GAAP) as specified in Financial Accounting Standards Board Statement No. 140, “Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities” (FAS 140), and is applicable to institutions preparing regulatory reports filed with the federal banking agencies.<sup>2</sup> The agencies consulted with the staffs of the Financial Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC) in developing this guidance.

The AIR asset represents the transferor’s (seller’s) subordinated retained interest in cash flows that are initially allocated to the investors’ portion of a credit card securitization. Prior to the securitization transaction, the transferor directly owns a pool of credit card receivables, including the right to receive all of the accrued fees and finance charges on those receivables. However, through the securitization process, the seller’s right to the cash flows from the collection of the accrued fees and finance charges generally is subordinated to the rights of the other beneficial interest holders.

This guidance clarifies that, when the seller’s right to the AIR cash flows is subordinated as a result of a credit card securitization, the seller generally should include the AIR as one of the financial components in the initial accounting for the sale of credit card receivables in a securitization and in computing the gain or loss on sale. As a result, after a securitization, the allocated carrying amount of the AIR will typically be lower than its face amount. Consistent with the agencies’ May 17, 2002, regulatory capital guidance, the seller should treat this asset as a subordinated retained interest (beneficial interest). In addition, an institution should account for the AIR separately from loans, and report it in “Other Assets” in the institution’s regulatory reports.

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<sup>1</sup> For information and guidance on the regulatory capital treatment of the AIR asset, see the “Interagency Advisory on the Regulatory Capital Treatment of Accrued Interest Receivable Related to Credit Card Securitizations,” dated May 17, 2002.

<sup>2</sup> These regulatory reports include the bank Consolidated Reports of Condition and Income (call report) and the Thrift Financial Report (TFR).

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

Institutions should ensure that they are following the accounting guidance described in this advisory. If an institution has not followed this accounting approach in the past, it should adopt it in the next regulatory report that it files and in all subsequent reports. Institutions that have been properly accounting for the AIR are expected to continue to do so.

**BACKGROUND****Creation of the Accrued Interest Receivable Asset**

In a typical credit card securitization, an institution transfers a pool of receivables and the right to receive the future collections of principal, finance charges, and fees on the receivables to a trust. If a securitization transaction qualifies as a sale under FAS 140, the selling institution removes the receivables that were sold from its reported assets and continues to carry any retained interests in the transferred receivables on its balance sheet.

Many credit card securitizers recognize accrued fee and finance charge income on the investors' portion of the transferred credit card receivables (the AIR) as a receivable due from customers, even though the right to receive this income, if and when collected, has been transferred to the trust. An AIR asset reflecting the amount due from the trust is typically reported throughout the life of the securitization because the seller continually transfers new receivables to the trust to replace receivables held by the trust that have been repaid or written off.

**Subordination of the Accrued Interest Receivable Asset**

The accounting for the securitization of credit card receivables depends upon the terms and requirements of the specific securitization structure. Although some terms and requirements of individual structures vary, most credit card securitizations provide similar credit enhancements to investors and should be accounted for in a similar manner.<sup>3</sup> Typically, the seller transfers receivables

<sup>3</sup> The legal documentation and structure of the securitization transaction set forth the specific rights to trust assets and cash flows purchased by the investor and retained by the transferor. In some securitizations, the investor maintains a pro rata share of all trust assets, whether principal, finance charges, or fees. In other securitizations, the transferor does not legally sell the accrued fees and finance charges to the trust, but is obligated to remit cash collections of these fees and finance charges to the trust. In either case, the trust will generally have a senior claim on the accrued interest receivable. However, the structure of the transaction may affect how the retained interests (including subordinated retained interests) are measured for accounting (and regulatory capital) purposes. Accordingly, the legal opinion that an institution obtains in connection with recording the

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

to the trust consisting of loan principal (credit card purchases and cash advances) as well as accrued fees and finance charges. The AIR typically consists of the seller's retained interest in the investor's portion of (1) the accrued fees and finance charges that have been billed to customer accounts, but have not yet been collected ("billed but uncollected") and (2) the right to finance charges that have been accrued on cardholder accounts, but have not yet been billed ("accrued but unbilled").

While the selling institution retains a right to the excess cash flows generated from the fees and finance charges collected on the transferred receivables, the transferor generally subordinates its right to these cash flows to the investors in the securitization. The seller's right to the excess cash flows related to the AIR asset is similar to other subordinated residual interests in securitized assets in that the AIR serves as a credit enhancement to protect third-party investors in the securitization from credit losses.<sup>4</sup> If and when cash payments on the accrued fees and finance charges are collected, they flow through the trust, where they are available to satisfy more senior obligations before any excess amount is remitted to the seller. Only after trust expenses (such as servicing fees, investor-certificate interest, and investor-principal charge-offs) have been paid will the trustee distribute any excess fee and finance charge cash flow back to the seller. Since investors are paid from these cash collections before the selling institution receives the amount of AIR that is due, the seller may or may not realize the full amount of its AIR asset.

#### APPROPRIATE ACCOUNTING TREATMENT FOR ACCRUED INTEREST RECEIVABLE

##### Accounting at Inception of the Securitization Transaction

Generally, if a securitization transaction meets the criteria for sale treatment and the AIR is subordinated either because the asset has been isolated from

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securitization as a sale should also address whether the rights to the AIR cash flows have been legally isolated from the transferor, even in the event of the transferor's bankruptcy or other receivership.

An institution with a securitization structure that differs from the fact pattern described in this guidance should ensure its accounting approach is consistent with GAAP. Such institutions may contact their appropriate federal banking agency for further guidance, if appropriate.

<sup>4</sup> Examples of other retained interests in securitized assets include an interest-only strip and a cash collateral or "spread" account.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

the transferor (see paragraph 9(a) of FAS 140) or because of the operation of the cash flow distribution (or “waterfall”) through the securitization trust, the total AIR (both the “billed and uncollected” and “accrued and unbilled”) should be considered to be one of the components of the sale transaction. Thus, when accounting for a credit card securitization, institutions should allocate the previous carrying amount of the AIR (net of any related allowance for uncollectible amounts) and the other transferred assets between the assets that are sold and the retained interests, based on their relative fair values at the date of transfer. As a result, after a securitization, the allocated carrying amount of the AIR will typically be lower than its face amount.

#### Subsequent Accounting

After securitization, the AIR asset should be accounted for at its allocated cost basis (as discussed above). In addition, institutions should treat the AIR as a retained (subordinated) beneficial interest. Accordingly, it should be reported in “Other Assets” in regulatory reports<sup>5</sup> and not as a loan receivable.<sup>6</sup>

In addition, because the AIR is a retained beneficial interest, institutions should follow the guidance provided in FASB Emerging Issues Task Force Issue No. 99-20, “Recognition of Interest Income and Impairment on Purchased and Retained Beneficial Interests in Securitized Financial Assets” (EITF 99-20), in subsequent accounting. EITF 99-20 specifies the accounting approach that an institution should follow to evaluate a retained beneficial interest for impairment and how to account for any impairment that occurs.

#### Relationship Between the Accrued Interest Receivable and the Interest-Only Strip Asset

In assessing whether the AIR is appropriately measured for regulatory reporting purposes, institutions should carefully consider the accounting treatment

<sup>5</sup> In the call report, the carrying value of the AIR asset should be reported in Schedule RC-F, item 5, and in Schedule RC-S, item 2.b, column C (if reported as a stand-alone asset). In the TFR, the AIR should be reported in Schedule SC, line SC 690, and Schedule SI, line SI 404.

<sup>6</sup> In addition to the regulatory reporting requirements described in the above footnote, the agencies note that for financial statements prepared in accordance with GAAP, the AIR asset would be subject to the disclosure requirements pertaining to retained interests in securitized financial assets that are specified in paragraphs 17(f) and 17(g) of FAS 140.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

for the interest-only strip asset. The interest-only strip and the AIR are closely related. Both represent the seller's subordinated beneficial interest in excess cash flows from the trust. Despite their close relationship, these cash flows have different risk characteristics. The AIR represents the right to receive the cash flows from fees and finance charges that have already accrued on cardholders' accounts. The interest-only strip, on the other hand, represents an estimate of cash flows from fees and finance charges that will accrue on cardholders' accounts in the future. Because the interest-only strip cash flows can be contractually prepaid or settled in such a way that the seller would not recover substantially all of its investment, the interest-only strip must be accounted for at fair value like a trading or available-for-sale security in accordance with paragraph 14 of FAS 140. In contrast, the AIR cannot be contractually prepaid or otherwise settled in such a way that the owner would not recover substantially all of its recorded investment.

Institutions should consider the close relationship between these assets and ensure that the amount of assets recognized for the right to receive excess cash flows from securitizations, in total, is not overstated. In addition, institutions should describe the accounting treatment for the AIR and the interest-only strip in their accounting policies and related disclosures and be able to demonstrate that their accounting approach is consistent with GAAP. Examiners will review this documentation when evaluating an institution's accounting for securitization activities.

**ADDITIONAL INFORMATION**

For further information on the appropriate risk-based capital treatment for the AIR asset, please contact Thomas G. Rees, deputy chief accountant at the OCC, at (202) 874-5411; Robert F. Storch, accounting section chief at the FDIC, at (202) 898-8906; Charles H. Holm, assistant director, at the Board, at (202) 452-3502; Timothy J. Stier, chief accountant, at the OTS, at (202) 906-5699.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 02-12  
May 17, 2002

TO THE OFFICER IN CHARGE OF SUPERVISION  
AND APPROPRIATE SUPERVISORY AND EXAMINATION  
STAFF AT EACH FEDERAL RESERVE BANK AND  
TO BANKING ORGANIZATIONS SUPERVISED  
BY THE FEDERAL RESERVE

SUBJECT: Regulatory Capital Treatment of Accrued Interest Receivables Related to  
Credit Card Securitizations

The federal banking agencies have identified inconsistencies across financial institutions in the regulatory capital treatment of accrued interest receivables (AIRs) related to credit card securitizations. The agencies have worked together and developed guidance that clarifies the appropriate risk-based capital treatment for banking organizations that securitize credit card receivables and record on-balance-sheet assets commonly referred to as AIRs. The interagency guidance is attached.

As further detailed in the attached guidance, when a banking organization transfers a pool of credit card receivables to a trust, it typically also transfers to the trust the right to receive interest and fee income from those receivables. Some institutions continue to accrue interest and fee income on the investors' portion of the transferred credit card receivables on their balance sheets, reporting the right to these future cash flows as an AIR asset. Any accrued amounts the banking organization collects, however, generally must be transferred to the trust upon collection. Because the banking organization passes all cash flows related to the AIR to the trust, where they are available to satisfy more senior obligations before excess amounts are returned to the seller, the AIR constitutes a residual interest in the securitized assets. The AIR serves as a credit enhancement to protect third-party investors in the securitization from credit losses and meets the definition of a "residual interest" under the banking agencies' rules on the capital treatment of recourse arrangements issued in November 2001, which are specifically referenced in footnote 3 of the attachment. Under those rules, an institution must hold "dollar-for-dollar" capital against residual interests even if that amount exceeds the full equivalent risk-based capital charge on the transferred assets.

**SELECTED FEDERAL RESERVE SR-LETTERS—Continued**

The banking agencies expect banking organizations to reflect the aforementioned treatment in their regulatory reports by no later than December 31, 2002. Institutions that have been properly reflecting the AIR asset as a credit enhancement for risk-based capital purposes are expected to continue to do so. Notwithstanding these expectations, the banking agencies highlight in their guidance that there may be circumstances where a banking organization may have to treat the AIR asset in the way described by the guidance at an earlier date due to supervisory concerns or other factors.

This letter and the attached guidance should be distributed to state member banks, bank holding companies, and foreign banks with U.S. offices supervised by the Federal Reserve, especially those that engage in credit card securitization activities. Questions pertaining to this letter should be directed to Tom Boemio, Senior Supervisory Financial Analyst, (202) 452-2982 or Anna Lee Hewko, Senior Financial Analyst, (202) 530-6260.

Richard Spillenkothen  
Director

Attachment

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

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Office of the Comptroller of the Currency  
Board of Governors of the Federal Reserve System  
Federal Deposit Insurance Corporation  
Office of Thrift Supervision

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INTERAGENCY ADVISORY ON THE REGULATORY CAPITAL TREATMENT OF  
ACCRUED INTEREST RECEIVABLE RELATED TO CREDIT CARD SECURITIZATIONS

PURPOSE

The Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (Board), the Federal Deposit Insurance Corporation (FDIC), and the Office of Thrift Supervision (OTS) (collectively, the agencies) are issuing this advisory to clarify the appropriate risk-based capital treatment for banking organizations (institutions) that securitize credit card receivables and record an on-balance-sheet asset commonly referred to as an accrued interest receivable.<sup>1</sup>

In general, the AIR asset represents a subordinated retained interest in cash flows that are initially allocated to the investors' portion of a credit card securitization. The AIR is subject to higher capital requirements under the agencies' capital standards than many institutions are currently applying to this asset. The agencies expect institutions to hold capital for AIR assets consistent with the agencies' positions articulated in this advisory by no later than December 31, 2002, unless supervisory concerns warrant an institution's earlier application of this advisory. Institutions that have been properly reflecting the AIR as a credit enhancement for risk-based capital purposes are expected to continue to do so.

CREATION OF ACCRUED INTEREST RECEIVABLE

In a typical credit card securitization, an institution transfers to a trust a pool of receivables, as well as the rights to receive future payments of principal and interest. If a securitization transaction qualifies as a sale under Financial Accounting Standards Board Statement No. 140, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities" (FAS 140), the selling institution removes the receivables that were sold from its reported assets and continues to carry any retained interests in the transferred receivables on its balance sheet. Institutions should ensure that their accounting for securitization transactions, including the reporting of any related AIR, is in accordance with generally accepted accounting principles.

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<sup>1</sup> The accrued interest receivable represents fees and finance charges that have been accrued on receivables that the institution has securitized and sold to other investors. For example, in credit card securitizations, this accrued interest receivable asset may include both finance charges billed but not yet collected and finance charges accrued but not yet billed on the securitized receivables.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

The agencies have found that many institutions continue to accrue fee and finance charge income on the investors' portion of the transferred credit card receivables even though the right to receive this income, if and when collected, has been transferred to the trust. These institutions report the rights to these accrued fees and finance charges as an asset commonly referred to as an accrued interest receivable.<sup>2</sup> However, any of the accrued fees and finance charges that the institution collects generally must be transferred to the trust and will be used first by the trustee for the benefit of third-party investors. Only after trust expenses (such as servicing fees, investor-certificate interest, and investor-principal charge-offs) have been paid will the trustee distribute any excess fee and finance-charge cash flow back to the seller, at which point the seller may or may not realize the full amount of its AIR asset.

## SUBORDINATION OF THE ACCRUED INTEREST RECEIVABLE

While the selling institution retains a right to the excess cash flows generated from the fees and finance charges collected on the transferred receivables, the institution generally subordinates its right to these cash flows to the investors in the securitization. The seller's right to the excess cash flows related to the AIR asset is similar to other residual interests in securitized assets in that it serves as a credit enhancement to protect third-party investors in the securitization from credit losses. If and when cash payments on the accrued fees and finance charges are collected, they flow through the trust, where they are available to satisfy more senior obligations before any excess amount is remitted to the seller. Since investors are paid from these cash collections before the selling institution receives the amount due on its AIR, the AIR is available to absorb losses before more senior security holders.

## APPROPRIATE REGULATORY CAPITAL TREATMENT FOR ACCRUED INTEREST RECEIVABLE

Because the AIR asset as described represents a subordinated retained interest in the transferred assets, it meets the definition of a recourse exposure for risk-based capital purposes.<sup>3</sup> Recourse exposures such as the AIR asset

<sup>2</sup> Some institutions may categorize part or all of this receivable as a loan, a "due from trust" account, a retained interest in the trust, or as part of an interest-only strip receivable.

<sup>3</sup> This is true for the risk-based capital standards in effect prior to January 1, 2002. See 12 CFR 3, appendix A, section 3(b)(1)(iii), note 14 (OCC); 12 CFR 208 and 225, appendix A, section III.D.1.g (Board); 12 CFR 325, appendix A, section II.D.1 (FDIC); and 12 CFR 567.6(a)(2)(i)(C) (OTS). This is also true for the risk-based capital standards in effect after December 31, 2001. See 12 CFR 3, appendix A, section 4(a)(11) (2002) (OCC); 12 CFR 208 and 225, section III.B.3.a.x (2002) (Board); 12 CFR 325, appendix A, section II.B.5(a)(11) (2002) (FDIC); and 12 CFR 567.6(b) (2002) (OTS).

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

require risk-based capital against the full, risk-weighted amount of the assets transferred with recourse, subject to the low-level-recourse rule.<sup>4</sup> Further, under the final rule the agencies published in November 2001, the AIR asset also meets the definition of a “residual interest,” which requires “dollar-for-dollar” capital even if that amount exceeds the full equivalent risk-based capital charge on the transferred assets.<sup>5</sup> Thus, the agencies expect institutions to hold risk-based capital in an amount consistent with the subordinated nature of the AIR asset and to reflect this treatment in their regulatory reports by no later than December 31, 2002. However, where supervisory concerns exist with respect to an institution’s risk profile, the institution’s primary federal supervisory agency may require it to treat the AIR asset in accordance with this advisory at an earlier date. Institutions that have been properly reflecting the AIR as a credit enhancement for risk-based capital purposes are expected to continue to do so.

## ADDITIONAL INFORMATION

For further information on the appropriate risk-based capital treatment for the AIR asset, please contact Amrit Sekhon at (202) 874-5211, risk expert, Capital Policy Division, at the OCC; Robert F. Storch at (202) 898-8906, accounting section chief, or Stephen G. Pfeifer at (202) 898-8904, examination specialist, Division of Supervision, at the FDIC; Tom Boemio at (202) 452-2982, senior supervisory financial analyst, Supervisory and Risk Policy, at the Board; Michael D. Solomon at (202) 906-5654, senior program manager, Capital Policy, at the OTS.

<sup>4</sup> The low-level-recourse rule limits the maximum risk-based capital requirement to the lesser of a banking organization’s maximum contractual exposure or the full capital charge against the outstanding amount of assets transferred with recourse.

<sup>5</sup> For a complete description of the appropriate capital treatment for recourse, residual interests, and credit-enhancing interest-only strips, see, “Recourse, Direct Credit Substitutes, and Residual Interests in Asset Securitizations,” 66 *Fed. Reg.* 59614 (November 29, 2001).

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 99-37 (SUP)  
December 13, 1999

TO THE OFFICER IN CHARGE OF SUPERVISION  
AND APPROPRIATE SUPERVISORY AND EXAMINATION STAFF  
AT EACH FEDERAL RESERVE BANK AND TO CERTAIN BANKING  
ORGANIZATIONS SUPERVISED BY THE FEDERAL RESERVE

SUBJECT: Risk Management and Valuation of Retained Interest Arising  
from Securitization Activities

Significant weaknesses in the asset securitization practices of some banking organizations have raised concerns about the general level of understanding and controls in institutions that engage in such activities. Securitization activities present unique and sometimes complex risks that require the attention of senior management and the board of directors. The purpose of this SR letter is to underscore the importance of sound risk management practices in all aspects of asset securitization. This letter and the attached guidance, developed jointly by the federal banking agencies, should be distributed to state member banks, bank holding companies, and foreign banking organizations supervised by the Federal Reserve that engage in securitization activities.

Retained interests, including interest-only strips receivable, arise when a selling institution keeps an interest in assets sold to a securitization vehicle that, in turn, issues bonds to investors. Supervisors are concerned about the methods and models banking organizations use to value these interests and the difficulties in managing exposure to these volatile assets. Under generally accepted accounting principles (GAAP), a banking organization recognizes an immediate gain (or loss) on the sale of assets by recording its retained interest at fair value. The valuation of the retained interest is based upon the present value of future cash flows in excess of amounts needed to service the bonds and cover credit losses and other fees of the securitization vehicle.<sup>1</sup> Determination of fair value should be based on reasonable, conservative assumptions about such factors as discount rates, projected credit losses, and prepayment rates. Bank supervisors expect retained interests to be supported by verifiable documentation of fair value in accordance with GAAP. In

<sup>1</sup> See Financial Accounting Standard No. 125, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities."\*

\* FAS 140 has superseded FAS 125.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

the absence of such support, the retained interests should not be carried as assets on an institution's books, but instead should be charged off. Other supervisory concerns include failure to recognize and hold sufficient capital against recourse obligations generated by securitizations, and the absence of an adequate independent audit function.

The concepts underlying the attached guidance are not new. They reflect the long-standing supervisory principles that i) a banking organization should have in place risk management systems and controls that are adequate in relation to the nature and volume of its risks, and ii) asset values that cannot be supported should be written off. The guidance incorporates fundamental concepts of risk-focused supervision: active oversight by an institution's senior management and board of directors, effective policies and limits, accurate and independent procedures to measure and assess risk, and strong internal controls.<sup>2</sup> Bank supervisors are particularly concerned about institutions that are relatively new users of securitization techniques and institutions whose senior management and directors are not fully aware of the risks, as well as the accounting, legal, and risk-based capital nuances, of this activity. The interagency guidance discusses sound risk management, modeling, valuation, and disclosure practices for asset securitization, and complements previous supervisory guidance on this subject.<sup>3</sup>

The federal banking agencies will continue to study supervisory issues relating to securitization, including the valuation of retained interests, and may in the future make adjustments to their regulatory capital requirements to reflect the riskiness, volatility, and uncertainty in the value of retained interests. Questions pertaining to this letter should be directed to Tom Boemio, Senior Supervisory Financial Analyst, (202) 452-2982, or Anna Lee Hewko, Financial Analyst, (202) 530-6260.

Richard Spillenkothen  
Director

Attachment

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<sup>2</sup> See SR letters 96-14, "Risk-focused Safety and Soundness Examinations and Inspections," and 95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies."

<sup>3</sup> See SR letters 97-21, "Risk Management and Capital Adequacy of Exposures Arising from Secondary Market Credit Activities," 96-40, "Interim Guidance for Purposes of Applying FAS 125 for Regulatory Reporting in 1997 and for the Treatment of Servicing Assets for Regulatory Capital;" and 96-30, "Risk-Based Capital Treatment for Spread Accounts that Provide Credit Enhancement for Securitized Receivables."

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

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Office of the Comptroller of the Currency  
Federal Deposit Insurance Corporation  
Board of Governors of the Federal Reserve System  
Office of Thrift Supervision

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## INTERAGENCY GUIDANCE ON ASSET SECURITIZATION ACTIVITIES

## BACKGROUND AND PURPOSE

Recent examinations have disclosed significant weaknesses in the asset securitization practices of some insured depository institutions. These weaknesses raise concerns about the general level of understanding and controls among institutions that engage in such activities. The most frequently encountered problems stem from: (1) the failure to recognize and hold sufficient capital against explicit and implicit recourse obligations that frequently accompany securitizations, (2) the excessive or inadequately supported valuation of “retained interests,”<sup>1</sup> (3) the liquidity risk associated with over reliance on asset securitization as a funding source, and (4) the absence of adequate independent risk management and audit functions.

The Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Board of Governors of the Federal Reserve System, and the Office of Thrift Supervision, hereafter referred to as “the Agencies,” are jointly issuing this statement to remind financial institution managers and examiners of the importance of fundamental risk management practices governing asset securitization activities. This guidance supplements existing policy statements and examination procedures issued by the Agencies and emphasizes the specific expectation that any securitization-related retained interest claimed by a financial institution will be supported by documentation of the interest’s fair value, utilizing reasonable, conservative valuation assumptions that can be objectively verified. Retained interests that lack such objectively verifiable support or that fail to meet the supervisory standards set forth in this document will be classified as loss and disallowed as assets of the institution for regulatory capital purposes.

The Agencies are reviewing institutions’ valuation of retained interests and the concentration of these assets relative to capital. Consistent with existing supervisory authority, the Agencies may, on a case-by-case basis, require institutions that have high concentrations of these assets relative to their capital, or are otherwise at risk from impairment of these assets, to hold additional capital commensurate with their risk exposures. Furthermore, given the risks presented

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<sup>1</sup> In securitizations, a seller typically retains one or more interests in the assets sold. *Retained interests* represent the right to cash flows and other assets not used to extinguish bondholder obligations and pay credit losses, servicing fees and other trust related fees. For the purpose of this statement, *retained interests* include over-collateralization, spread accounts, cash collateral accounts, and interest only strips (IO strips). Although servicing assets and liabilities also represent a retained interest of the seller, they are currently determined based on different criteria and have different accounting and risk-based capital requirements. See applicable comments in Statement of Financial Accounting Standard No. 125, “Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities” (FAS 125), for additional information about these interests and associated accounting requirements.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

by these activities, the Agencies are actively considering the establishment of regulatory restrictions that would limit or eliminate the amount of certain retained interests that may be recognized in determining the adequacy of regulatory capital. An excessive dependence on securitizations for day-to-day core funding can also present significant liquidity problems—either during times of market turbulence or if there are difficulties specific to the institution itself. As applicable, the Agencies will provide further guidance on the liquidity risk associated with over reliance on asset securitizations as a funding source and implicit recourse obligations.

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## DESCRIPTION OF ACTIVITY

Asset securitization typically involves the transfer of on-balance sheet assets to a third party or trust. In turn the third party or trust issues certificates or notes to investors. The cash flow from the transferred assets supports repayment of the certificates or notes. For several years, large financial institutions, and a growing number of regional and community institutions, have been using asset securitization to access alternative funding sources, manage concentrations, improve financial performance ratios, and more efficiently meet customer needs. In many cases, the discipline imposed by investors who buy assets at their fair value has sharpened selling institutions' credit risk selection, underwriting, and pricing practices. Assets typically securitized by institutions include credit card receivables, automobile receivable paper, commercial and residential first mortgages, commercial loans, home equity loans, and student loans.

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\* Page numbers have been updated for this format.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

While the Agencies continue to view the use of securitization as an efficient means of financial intermediation, we are concerned about events and trends uncovered at recent examinations. Of particular concern are institutions that are relatively new users of securitization techniques and institutions whose senior management and directors do not have the requisite knowledge of the effect of securitization on the risk profile of the institution or are not fully aware of the accounting, legal and risk-based capital nuances of this activity. Similarly, the Agencies are concerned that some institutions have not fully and accurately distinguished and measured the risks that have been transferred versus those retained, and accordingly are not adequately managing the retained portion. It is essential that institutions engaging in securitization activities have appropriate front and back office staffing, internal and external accounting and legal support, audit or independent review coverage, information systems capacity, and oversight mechanisms to execute, record, and administer these transactions correctly.

Additionally, we are concerned about the use of inappropriate valuation and modeling methodologies to determine the initial and ongoing value of retained interests. Accounting rules provide a method to recognize an immediate gain (or loss) on the sale through booking a “retained interest;” however, the carrying value of that interest must be fully documented, based on reasonable assumptions, and regularly analyzed for any subsequent value impairment. The best evidence of fair value is a quoted market price in an active market. In circumstances where quoted market prices are not available, accounting rules allow fair value to be estimated. This estimate must be based on the “best information available in the circumstances.”<sup>2</sup> An estimate of fair value must be supported by reasonable and current assumptions. If a best estimate of fair value is not practicable, the asset is to be recorded at zero in financial and regulatory reports.

History shows that unforeseen market events that affect the discount rate or performance of receivables supporting a retained interest can swiftly and dramatically alter its value. Without appropriate internal controls and independent oversight, an institution that securitizes assets may inappropriately generate “paper profits” or mask actual losses through flawed loss assumptions, inaccurate prepayment rates, and inappropriate discount rates. Liberal and unsubstantiated assumptions can result in material inaccuracies in financial statements, substantial write-downs of retained interests, and, if interests

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<sup>2</sup> FAS 125, at par.43

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

represent an excessive concentration of the institution's capital, the demise of the sponsoring institution.

Recent examinations point to the need for institution managers and directors to ensure that:

- Independent risk management processes are in place to monitor securitization pool performance on an aggregate and individual transaction level. An effective risk management function includes appropriate information systems to monitor securitization activities.
- Conservative valuation assumptions and modeling methodologies are used to establish, evaluate and adjust the carrying value of retained interests on a regular and timely basis.
- Audit or internal review staffs periodically review data integrity, model algorithms, key underlying assumptions, and the appropriateness of the valuation and modeling process for the securitized assets retained by the institution. The findings of such reviews should be reported directly to the board or an appropriate board committee.
- Accurate and timely risk-based capital calculations are maintained, including recognition and reporting of any recourse obligation resulting from securitization activity.
- Internal limits are in place to govern the maximum amount of retained interests as a percentage of total equity capital.
- The institution has a realistic liquidity plan in place in case of market disruptions.

The following sections provide additional guidance relating to these and other critical areas of concern. Institutions that lack effective risk management programs or that maintain exposures in retained interests that warrant supervisory concern may be subject to more frequent supervisory review, more stringent capital requirements, or other supervisory action.

#### INDEPENDENT RISK MANAGEMENT FUNCTION

Institutions engaged in securitizations should have an independent risk management function commensurate with the complexity and volume of their securitizations and their overall risk exposures. The risk management function should ensure that securitization policies and operating procedures, including clearly articulated risk limits, are in place and appropriate for the institution's circumstances. A sound asset securitization policy should include or address, at a minimum:

- A written and consistently applied accounting methodology;
- Regulatory reporting requirements;

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

- Valuation methods, including FAS 125 residual value assumptions, and procedures to formally approve changes to those assumptions;
- Management reporting process; and
- Exposure limits and requirements for both aggregate and individual transaction monitoring.

It is essential that the risk management function monitor origination, collection, and default management practices. This includes regular evaluations of the quality of underwriting, soundness of the appraisal process, effectiveness of collections activities, ability of the default management staff to resolve severely delinquent loans in a timely and efficient manner, and the appropriateness of loss recognition practices. Because the securitization of assets can result in the current recognition of anticipated income, the risk management function should pay particular attention to the types, volumes, and risks of assets being originated, transferred and serviced. Both senior management and the risk management staff must be alert to any pressures on line managers to originate abnormally large volumes or higher risk assets in order to sustain ongoing income needs. Such pressures can lead to a compromise of credit underwriting standards. This may accelerate credit losses in future periods, impair the value of retained interests and potentially lead to funding problems.

The risk management function should also ensure that appropriate management information systems (MIS) exist to monitor securitization activities. Reporting and documentation methods must support the initial valuation of retained interests and ongoing impairment analyses of these assets. Pool performance information has helped well-managed institutions to ensure, on a qualitative basis, that a sufficient amount of economic capital is being held to cover the various risks inherent in securitization transactions. The absence of quality MIS hinders management's ability to monitor specific pool performance and securitization activities more broadly. At a minimum, MIS reports should address the following:

*Securitization summaries for each transaction* - The summary should include relevant transaction terms such as collateral type, facility amount, maturity, credit enhancement and subordination features, financial covenants (termination events and spread account capture "triggers"), right of repurchase, and counterparty exposures. Management should ensure that the summaries are distributed to all personnel associated with securitization activities.

*Performance reports by portfolio and specific product type* - Performance factors include gross portfolio yield, default rates and loss severity, delinquencies, prepayments or payments, and excess spread amounts. The reports should reflect performance of assets, both on an individual pool basis and total managed assets. These reports should segregate specific products and different marketing campaigns.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

*Vintage analysis for each pool using monthly data* - Vintage analysis helps management understand historical performance trends and their implications for future default rates, prepayments, and delinquencies, and therefore retained interest values. Management can use these reports to compare historical performance trends to underwriting standards, including the use of a validated credit scoring model, to ensure loan pricing is consistent with risk levels. Vintage analysis also helps in the comparison of deal performance at periodic intervals and validates retained interest valuation assumptions.

*Static pool cash collection analysis* - This analysis entails reviewing monthly cash receipts relative to the principal balance of the pool to determine the cash yield on the portfolio, comparing the cash yield to the accrual yield, and tracking monthly changes. Management should compare the timing and amount of cash flows received from the trust with those projected as part of the FAS 125 retained interest valuation analysis on a monthly basis. Some master trust structures allow excess cash flow to be shared between series or pools. For revolving asset trusts with this master trust structure, management should perform a cash collection analysis for each master trust structure. These analyses are essential in assessing the actual performance of the portfolio in terms of default and prepayment rates. If cash receipts are less than those assumed in the original valuation of the retained interest, this analysis will provide management and the board with an early warning of possible problems with collections or extension practices, and impairment of the retained interest.

*Sensitivity analysis* - Measuring the effect of changes in default rates, prepayment or payment rates, and discount rates will assist management in establishing and validating the carrying value of the retained interest. Stress tests should be performed at least quarterly. Analyses should consider potential adverse trends and determine “best,” “probable,” and “worst case” scenarios for each event. Other factors to consider are the impact of increased defaults on collections staffing, the timing of cash flows, “spread account” capture triggers, over-collateralization triggers, and early amortization triggers. An increase in defaults can result in higher than expected costs and a delay in cash flows, decreasing the value of the retained interests. Management should periodically quantify and document the potential impact to both earnings and capital, and report the results to the board of directors. Management should incorporate this analysis into their overall interest rate risk measurement system.<sup>3</sup> Examiners will review the analysis conducted by the institution and the volatility associated with retained interests when assessing the Sensitivity to Market Risk component rating.

*Statement of covenant compliance* - Ongoing compliance with deal performance triggers as defined by the pooling and servicing agreements should be affirmed at least monthly. Performance triggers include early amortization, spread capture, changes to overcollateralization requirements, and events that would result in servicer removal.

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<sup>3</sup> Under the Joint Agency Policy Statement on the Interest Rate Risk, institutions with a high level of exposure to interest rate risk relative to capital will be directed to take corrective action. Savings associations can find OTS guidance on interest rate risk in Thrift Bulletin 13a - Management of Interest Rate Risk, Investment Securities, and Derivative Activities.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

## VALUATION AND MODELING PROCESSES

The method and key assumptions used to value the retained interests and servicing assets or liabilities must be reasonable and fully documented. The key assumptions in all valuation analyses include prepayment or payment rates, default rates, loss severity factors, and discount rates. The Agencies expect institutions to take a logical and conservative approach when developing securitization assumptions and capitalizing future income flows. It is important that management quantifies the assumptions on a pool-by-pool basis and maintains supporting documentation for all changes to the assumptions as part of the valuation process, which should be done no less than quarterly. Policies should define the acceptable reasons for changing assumptions and require appropriate management approval.

An exception to this pool-by-pool valuation analysis may be applied to revolving asset trusts if the master trust structure allows excess cash flows to be shared between series. In a master trust, each certificate of each series represents an undivided interest in all of the receivables in the trust. Therefore, valuations are appropriate at the master trust level.

In order to determine the value of the retained interest at inception, and make appropriate adjustments going forward, the institution must implement a reasonable modeling process to comply with FAS 125. The Agencies expect management to employ reasonable and conservative valuation assumptions and projections, and to maintain verifiable objective documentation of the fair value of the retained interest. Senior management is responsible for ensuring the valuation model accurately reflects the cash flows according to the terms of the securitization's structure. For example, the model should account for any cash collateral or overcollateralization triggers, trust fees, and insurance payments if appropriate. The board and management are accountable for the "model builders" possessing the necessary expertise and technical proficiency to perform the modeling process. Senior management should ensure that internal controls are in place to provide for the ongoing integrity of MIS associated with securitization activities.

As part of the modeling process, the risk management function should ensure that periodic validations are performed in order to reduce vulnerability to model risk. Validation of the model includes testing the internal logic, ensuring empirical support for the model assumptions, and back-testing the models with actual cash flows on a pool-by-pool basis. The validation process should be documented to support conclusions. Senior management should ensure the validation process is independent from line management as well as the modeling process. The audit scope should include procedures to ensure that the modeling process and validation mechanisms are both appropriate for the institution's circumstances and executed consistent with the institution's asset securitization policy.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

## USE OF OUTSIDE PARTIES

Third parties are often engaged to provide professional guidance and support regarding an institution's securitization activities, transactions, and valuing of retained interests. The use of outside resources does not relieve directors of their oversight responsibility, or senior management of its responsibilities to provide supervision, monitoring, and oversight of securitization activities, and the management of the risks associated with retained interests in particular. Management is expected to have the experience, knowledge, and abilities to discharge its duties and understand the nature and extent of the risks presented by retained interests and the policies and procedures necessary to implement an effective risk management system to control such risks. Management must have a full understanding of the valuation techniques employed, including the basis and reasonableness of underlying assumptions and projections.

## INTERNAL CONTROLS

Effective internal controls are essential to an institution's management of the risks associated with securitization. When properly designed and consistently enforced, a sound system of internal controls will help management safeguard the institution's resources, ensure that financial information and reports are reliable, and comply with contractual obligations, including securitization covenants. It will also reduce the possibility of significant errors and irregularities, as well as assist in their timely detection when they do occur. Internal controls typically: (1) limit authorities, (2) safeguard access to and use of records, (3) separate and rotate duties, and (4) ensure both regular and unscheduled reviews, including testing.

The Agencies have established operational and managerial standards for internal control and information systems.<sup>4</sup> An institution should maintain a system of internal controls appropriate to its size and the nature, scope, and risk of its activities. Institutions that are subject to the requirements of FDIC regulation 12 CFR Part 363 should include an assessment of the effectiveness of internal controls over their asset securitization activities as part of management's report on the overall effectiveness of the system of internal controls over financial reporting. This assessment implicitly includes the internal controls over financial information that is included in regulatory reports.

## AUDIT FUNCTION OR INTERNAL REVIEW

It is the responsibility of an institution's board of directors to ensure that its audit staff or independent review function is competent regarding securitization activities. The audit function should perform periodic reviews of securitization activities, including transaction testing and verification, and report all findings to the board or appropriate board committee. The audit function also may be useful to senior management in identifying and measuring risk related to securitization activities. Principal audit targets

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<sup>4</sup> Safety and Soundness Standards 12 CFR Part 30 (OCC), 12 CFR Part 570 (OTS).

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

should include compliance with securitization policies, operating and accounting procedures (FAS 125), and deal covenants, and accuracy of MIS and regulatory reports. The audit function should also confirm that the institution's regulatory reporting process is designed and managed in such a way to facilitate timely and accurate report filing. Furthermore, when a third party services loans, the auditors should perform an independent verification of the existence of the loans to ensure balances reconcile to internal records.

## REGULATORY REPORTING

The securitization and subsequent removal of assets from an institution's balance sheet requires additional reporting as part of the regulatory reporting process. Common regulatory reporting errors stemming from securitization activities include:

- Failure to include off-balance sheet assets subject to recourse treatment when calculating risk-based capital ratios;
- Failure to recognize retained interests and retained subordinate security interests as a form of credit enhancement;
- Failure to report loans sold with recourse in the appropriate section of the regulatory report; and
- Over-valuing retained interests.

An institution's directors and senior management are responsible for the accuracy of its regulatory reports. Because of the complexities associated with securitization accounting and risk-based capital treatment, attention should be directed to ensuring that personnel who prepare these reports maintain current knowledge of reporting rules and associated interpretations. This often will require ongoing support by qualified accounting and legal personnel.

Institutions that file the Report of Condition and Income (Call Report) should pay particular attention to the following schedules on the Call Report when institutions are involved in securitization activities: *Schedule RC-F: Other Assets*; *Schedule RC-L: Off Balance Sheet Items*; and *Schedule RC-R: Regulatory Capital*. Institutions that file the Thrift Financial Report (TFR) should pay particular attention to the following TFR schedules: *Schedule CC: Consolidated Commitments and Contingencies*, *Schedule CCR: Consolidated Capital Requirement*, and *Schedule CMR: Consolidated Maturity and Rate*.

Under current regulatory report instructions, when an institution's supervisory agency's interpretation of how generally accepted accounting principles (GAAP) should be applied to a specified event or transaction differs from the institution's interpretation, the supervisory agency may require the institution to reflect the event or transaction in its regulatory reports in accordance with the agency's interpretation and amend previously submitted reports.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

## MARKET DISCIPLINE AND DISCLOSURES

Transparency through public disclosure is crucial to effective market discipline and can reinforce supervisory efforts to promote high standards in risk management. Timely and adequate information on the institution's asset securitization activities should be disclosed. The information contained in the disclosures should be comprehensive; however, the amount of disclosure that is appropriate will depend on the volume of securitizations and complexity of the institution. Well-informed investors, depositors, creditors and other bank counterparties can provide a bank with strong incentives to maintain sound risk management systems and internal controls. Adequate disclosure allows market participants to better understand the financial condition of the institution and apply market discipline, creating incentives to reduce inappropriate risk taking or inadequate risk management practices. Examples of sound disclosures include:

- Accounting policies for measuring retained interests, including a discussion of the impact of key assumptions on the recorded value;
- Process and methodology used to adjust the value of retained interests for changes in key assumptions;
- Risk characteristics, both quantitative and qualitative, of the underlying securitized assets;
- Role of retained interests as credit enhancements to special purpose entities and other securitization vehicles, including a discussion of techniques used for measuring credit risk; and
- Sensitivity analyses or stress testing conducted by the institution showing the effect of changes in key assumptions on the fair value of retained interests.

## RISK-BASED CAPITAL FOR RECOURSE AND LOW LEVEL RECOURSE TRANSACTIONS

For regulatory purposes, recourse is generally defined as an arrangement in which an institution retains the risk of credit loss in connection with an asset transfer, if the risk of credit loss exceeds a pro rata share of the institution's claim on the assets.<sup>5</sup> In addition to broad contractual language that may require the selling institution to support a securitization, recourse can also arise from retained interests, retained subordinated security interests, the funding of cash collateral accounts, or other forms of credit enhancements that place an institution's earnings and capital at risk.

These enhancements should generally be aggregated to determine the extent of an institution's support of securitized assets. Although an asset securitization qualifies for

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<sup>5</sup> The risk-based capital treatment for sales with recourse can be found at 12 CFR Part 3 Appendix A, Section (3)(b)(1)(iii) {OCC}, 12 CFR Part 567.6(a)(2)(i)(c) {OTS}. For a further explanation of recourse see the glossary entry "Sales of Assets for Risk-Based Capital Purposes" in the instructions for the Call Report.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

sales treatment under GAAP, the underlying assets may still be subject to regulatory risk-based capital requirements. Assets sold with recourse should generally be risk-weighted as if they had not been sold.

Securitization transactions involving recourse may be eligible for “low level recourse” treatment.<sup>6</sup> The Agencies’ risk-based capital standards provide that the dollar amount of riskbased capital required for assets transferred with recourse should not exceed the maximum dollar amount for which an institution is contractually liable. The “low level recourse” treatment applies to transactions accounted for as sales under GAAP in which an institution contractually limits its recourse exposure to less than the full risk-based capital requirements for the assets transferred. Under the low level recourse principle, the institution holds capital on approximately a dollar-for-dollar basis up to the amount of the aggregate credit enhancements.

Low level recourse transactions should be reported in Schedule RC-R of the Call Report or Schedule CCR of the TFR using either the “direct reduction method” or the “gross-up method” in accordance with the regulatory report instructions.

If an institution does not contractually limit the maximum amount of its recourse obligation, or if the amount of credit enhancement is greater than the risk-based capital requirement that would exist if the assets were not sold, the low level recourse treatment does not apply. Instead, the institution must hold risk-based capital against the securitized assets as if those assets had not been sold.

Finally, as noted earlier, retained interests that lack objectively verifiable support or that fail to meet the supervisory standards set forth in this document will be classified as loss and disallowed as assets of the institution for regulatory capital purposes.

#### INSTITUTION IMPOSED CONCENTRATION LIMITS ON RETAINED INTERESTS

The creation of a retained interest (the debit) typically also results in an offsetting “gain on sale” (the credit) and thus generation of an asset. Institutions that securitize high yielding assets with long durations may create a retained interest asset value that exceeds the risk-based capital charge that would be in place if the institution had not sold the assets (under the existing riskbased capital guidelines, capital is not required for the amount over eight percent of the securitized assets). Serious problems can arise for institutions that distribute contrived earnings only later to be faced with a downward valuation and charge-off of part or all of the retained interests.

As a basic example, an institution could sell \$100 in subprime home equity loans and book a retained interest of \$20 using liberal “gain on sale” assumptions. Under the cur-

<sup>6</sup> The banking agencies’ low level recourse treatment is described in the Federal Register in the following locations: 60 Fed. Reg. 17986 (April 10, 1995) (OCC); 60 Fed. Reg. 8177 (February 13, 1995)(FRB); 60 Fed. Reg. 15858 (March 28, 1995)(FDIC). OTS has had a low level recourse rule in 12 CFR Part 567.6(a)(2)(i)(c) since 1989. A brief explanation is also contained in the instructions for regulatory reporting in section RC-R for the Call Report or schedule CCR for the TFR.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

rent capital rules, the institution is required to hold approximately \$8 in capital. This \$8 is the current capital requirement if the loans were never removed from the balance sheet (eight percent of \$100 = \$8). However, the institution is still exposed to substantially all of the credit risk, plus the additional risk to earnings and capital from the volatility of the retained interest. If the value of the retained interest decreases to \$10 due to inaccurate assumptions or changes in market conditions, the \$8 in capital is insufficient to cover the entire loss.

Normally, the sponsoring institution will eventually receive any excess cash flow remaining from securitizations after investor interests have been met. However, recent experience has shown that retained interests are vulnerable to sudden and sizeable write-downs that can hinder an institution's access to the capital markets, damage its reputation in the market place, and in some cases, threaten its solvency. Accordingly, the Agencies expect an institution's board of directors and management to develop and implement policies that limit the amount of retained interests that may be carried as a percentage of total equity capital, based on the results of their valuation and modeling processes. Well constructed internal limits also serve to lessen the incentive of institution personnel to engage in activities designed to generate near term "paper profits" that may be at the expense of the institution's long term financial position and reputation.

**SUMMARY**

Asset securitization has proven to be an effective means for institutions to access new and diverse funding sources, manage concentrations, improve financial performance ratios, and effectively serve borrowing customers. However, securitization activities also present unique and sometimes complex risks that require board and senior management attention. Specifically, the initial and ongoing valuation of retained interests associated with securitization, and the limitation of exposure to the volatility represented by these assets, warrant immediate attention by management.

Moreover, as mentioned earlier in this statement, the Agencies are studying various issues relating to securitization practices, including whether restrictions should be imposed that would limit or eliminate the amount of retained interests that qualify as regulatory capital. In the interim, the Agencies will review affected institutions on a case-by-case basis and may require, in appropriate circumstances, that institutions hold additional capital commensurate with their risk exposure. In addition, the Agencies will study, and issue further guidance on, institutions' exposure to implicit recourse obligations and the liquidity risk associated with over reliance on asset securitization as a funding source.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 97-21 (SUP)  
July 11, 1997

TO THE OFFICER IN CHARGE OF SUPERVISION  
AT EACH FEDERAL RESERVE BANK

SUBJECT: Risk Management and Capital Adequacy of Exposures Arising from  
Secondary Market Credit Activities

Introduction and Overview

In recent years, some banking organizations have substantially increased their secondary market credit activities such as loan syndications, loan sales and participations, credit derivatives, and asset securitizations, as well as the provision of credit enhancements and liquidity facilities to such transactions. These activities can enhance both credit availability and bank profitability, but managing the risks of these activities poses increasing challenges. This is because the risks involved, while not new to banking, may be less obvious and more complex than the risks of traditional lending activities. Some secondary market credit activities involve credit, liquidity, operational, legal, and reputational risks in concentrations and forms that may not be fully recognized by bank management or adequately incorporated in an institution's risk management systems. In reviewing these activities, supervisors and examiners should assess whether banking organizations fully understand and adequately manage the full range of the risks involved in secondary market credit activities.

The heightened need for management attention to these risks is underscored by reports from examiners, senior lending officer surveys, and discussions with trade and advisory groups that have indicated that competitive conditions over the past few years have encouraged an easing of credit terms and conditions in both commercial and consumer lending. In addition, indications are that some potential participants in loan syndications have felt it necessary to make complex credit decisions within a much shorter timeframe than has been customary. Although the recent easing may not be imprudent, the incentives and pressures to lower credit standards have increased as competition has intensified and borrowers have experienced generally favorable business and economic conditions. Supervisors and bank management alike should remain alert to the possibility that loan performance could deteriorate if certain

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

sectors of the economy experience problems. The recent rise in consumer bankruptcies, credit card delinquencies, and credit charge-offs illustrates this concern. These types of developments could have significant implications for the risks associated with secondary market credit activities.

This letter identifies some of the important risks involved in several of the more common types of secondary market credit activities. It also provides guidance on sound practices and discusses special considerations supervisors should take into account in assessing the risk management systems for these activities. A copy of this letter should be sent to each state member bank, bank holding company, Edge corporation, and U.S. branch or agency of a foreign bank. A suggest transmittal letter is attached.

A fundamental principle advanced by this guidance is that banking institutions should explicitly incorporate the full range of risks of their secondary market credit activities into their overall risk management systems. In particular, supervisors and examiners should determine whether institutions are recognizing the risks of secondary market credit activities by: 1) adequately identifying, quantifying, and monitoring these risks; 2) clearly communicating the extent and depth of these risks in reports to senior management and the board of directors and in regulatory reports; 3) conducting ongoing stress testing to identify potential losses and liquidity needs under adverse circumstances; and 4) setting adequate minimum internal standards for allowances or liabilities for losses, capital, and contingency funding. Incorporating secondary market credit activities into banking organizations' risk management systems and internal capital adequacy allocations is particularly important since the current regulatory capital rules do not fully capture the economic substance of the risk exposures arising from many of these activities.

Failure to understand adequately the risks inherent in secondary market credit activities and to incorporate them into risk management systems and internal capital allocations may constitute an unsafe and unsound banking practice.

#### Scope

This guidance applies to the secondary market credit activities conducted by state member banks, bank holding companies, Edge corporations and U.S. branches and agencies of foreign banks.<sup>1</sup> For purposes of this guidance, secondary market credit activities include, but are not limited to, loan syndications, loan participations, loan sales and purchases, credit derivatives, asset securitization, and

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<sup>1</sup> This guidance applies to U.S. branches and agencies of foreign banks with recognition that appropriate adaptations may be necessary to reflect that: 1) those offices are an integral part of a foreign bank, which should be managing its risks on a consolidated basis and recognizing possible obstacles to cash movements among branches, and 2) the foreign bank is subject to overall supervision by its home country authorities.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

both implied and direct credit enhancements that may support these or the related activities of the institution, its affiliates, or third parties. Asset securitization activities refer to issuance, underwriting, and servicing of asset-backed securities; provision of credit or liquidity enhancements to securitized transactions; and investment in asset-backed securities. This guidance builds on, supports, and is fully consistent with existing guidance on risk management issued by the Federal Reserve.<sup>2</sup>

#### Background

Improvements in technology, greater standardization of lending products, and the use of credit enhancements have helped to increase dramatically the volume of loan syndications, loan sales, loan participations, asset securitizations, and credit guarantees undertaken by commercial banks, affiliates of bank holding companies, and some U.S. branches and agencies of foreign banks. In addition, the advent of credit derivatives permits banking organizations to trade credit risk, manage it in isolation from other types of risk, and maintain credit relationships while transferring the associated credit risk. These developments have improved the availability of credit to businesses and consumers, allowed management to better tailor the mix of credit risk within loan and securities portfolios, and helped to improve overall bank profitability.

At the same time, however, certain credit and liquidity enhancements that banking organizations provide to facilitate various secondary market credit activities may make the evaluation of the risks of these activities less straightforward than the risks involved in traditional banking activities in which assets are held in their entirety on the balance sheet of the originating institution. These enhancements, or guarantees, generally manifest themselves as recourse provisions, securitization structures that entail credit-linked early amortization and collateral replacement events, and direct credit substitutes such as letters of credit and subordinated interests that, in effect, provide credit support to secondary market instruments and transactions.<sup>3</sup>

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<sup>2</sup>For a more detailed discussion of risk management, refer to SR letter 95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies;" SR letter 95-17, "Evaluating the Risk Management and Internal Controls of Securities and Derivative Contracts Used in Nontrading Activities;" SR letter 93-69, "Risk Management and Internal Controls for Trading Activities of Banking Organizations;" and SR letter 90-16, "Implementation of Examination Guidelines for the Review of Asset Securitization Activities."

<sup>3</sup>Examiners should also review SR letter 96-30, "Risk-Based Capital Treatment for Spread Accounts that Provide Credit Enhancement for Securitized Receivables." In addition, banking organizations have retained the risk of loss, i.e., recourse, on sales and securitizations of assets when, in accordance with generally accepted accounting principles, they record on their balance sheets interest-only strip receivables or other assets that serve as credit enhancements. For more information, see Statement of Financial Accounting Standard No. 125, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities"\* and the instructions to the Reports of Income and Condition.

\* FAS 140 has superseded FAS 125.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

The transactions that such enhancements are associated with tend to be complex and may expose institutions extending the enhancements to hidden obligations that may not become evident until the transactions deteriorate. In substance, such activities move the credit risk off the balance sheet by shifting risks associated with traditional on-balance-sheet assets into off-balance-sheet contingent liabilities. Given the potential complexity and, in some cases, the indirect nature of these enhancements, the actual credit risk exposure can be difficult to assess, especially in the context of traditional credit risk limit, measurement, and reporting systems.

Moreover, many secondary market credit activities involve new and compounded dimensions of reputational, liquidity, operational and legal risks that are not readily identifiable and may be difficult to control. For example, recourse provisions and certain asset-backed security structures can give rise to significant reputational and liquidity risk exposures and ongoing management of underlying collateral in securitization transactions can expose an institution to unique operating and legal risks.

Accordingly, for those institutions involved in providing credit enhancements in connection with loan sales and securitizations, and those involved in credit derivatives and loan syndications, supervisors and examiners should assess whether the institutions' systems and processes adequately identify, measure, monitor, and control all of the risks involved in the secondary market credit activities. In particular, the risk management systems employed should include the identification, measurement, and monitoring of these risks as well as an appropriate methodology for the internal allocation of capital and reserves. The stress testing conducted within the risk measurement element of the management system should fully incorporate the risk exposures of these activities under various scenarios to identify their potential effect on an institution's liquidity, earnings, and capital adequacy. Moreover, management reports should adequately communicate to senior management and the board of directors the risks associated with these activities and the contingency plans that are in place to deal with adverse conditions.

#### Credit Risks in Secondary Market Credit Activities

Institutions should be aware that the credit risk involved in many secondary market credit activities may not always be obvious. For certain types of loan sales and securitization transactions, a banking organization may actually be exposed to essentially the same credit risk as in traditional lending activities, even though a particular transaction may, superficially, appear to have isolated the institution from any risk exposure. In such cases, removal of an asset from the balance sheet may not result in a commensurate reduction in credit risk. Transactions that can give rise to

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

such instances include loan sales with recourse, credit derivatives, direct credit substitutes, such as letters of credit, and liquidity facilities extended to securitization programs, as well as certain asset securitization structures, such as the structure typically used to securitize credit card receivables.

*Loan Syndications* - Recently, the underwriting standards of some syndications have been relaxed through the easing or elimination of certain covenants or the use of interest-only arrangements. Bank management should continually review syndication underwriting standards and pricing practices to ensure that they remain consistent over time with the degree of risk associated with the activity and the potential for unexpected economic developments to affect adversely borrower creditworthiness.

In some cases, potential participants in loan syndications have felt it necessary to make decisions to commit to the syndication within a shorter period of time than is customary. Supervisors and examiners should determine whether syndicate participants are performing their own independent credit analysis of the syndicated credit and make sure they are not placing undue reliance on the analysis of the lead underwriter or commercial loan credit ratings. Banking organizations should not feel pressured to make an irrevocable commitment to participate in a syndication until such an analysis is complete.

*Credit Derivatives* - Credit derivatives are off-balance sheet financial instruments that are used by banking organizations to assume or mitigate the credit risk of loans and other assets.<sup>4</sup> Banking organizations are increasingly employing these instruments either as end-users, purchasing credit protection from--or providing credit protection to--third parties, or as dealers intermediating such protection. In reviewing credit derivatives, supervisors should consider the credit risk associated with the reference asset, as well as general market risk and the risk of the counterparty to the contract.

With respect to credit derivative transactions where banking organizations are mitigating their assets' credit risk, supervisors and examiners should carefully review those situations where the reference assets are not identical to the assets actually owned by the institutions. Supervisors should consider whether the reference asset is an appropriate proxy for the loan or other asset whose credit exposure the banking organizations intend to offset.

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<sup>4</sup>See SR letter 96-17, "Supervisory Guidance for Credit Derivatives," for a discussion of supervisory issues regarding credit derivatives, including the risk-based capital treatment of credit derivatives held in the banking book. SR letter 97-18, "Application of Market Risk Capital Requirements to Credit Derivatives," provides guidance on the risk-based capital treatment of credit derivatives held in the trading book.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

*Recourse Obligations and Direct Credit Substitutes* - Partial, first loss recourse obligations retained when selling assets, and the extension of partial credit enhancements (e.g., 10 percent letters of credit) can be a source of concentrated credit risk by exposing institutions to the full amount of expected losses on the protected assets. For instance, the credit risk associated with whole loans or pools of assets that are sold to secondary market investors can often be concentrated within the partial, first loss recourse obligations retained by banking organizations selling and securitizing the assets. In these situations, even though institutions may have reduced their exposure to catastrophic loss on the assets sold, they generally retain the same credit risk exposure as if they continued to hold the assets on their balance sheets.

In addition to recourse obligations, institutions assume concentrated credit risk through the extension of partial direct credit substitutes such as through the purchase of subordinated interests and extension of letters of credit. For example, banking organizations that sponsor certain asset-backed commercial paper programs, or so-called "remote origination" conduits, can be exposed to high degrees of credit risk even though it may seem that their notional exposure is minimal. Such a remote origination conduit lends directly to corporate customers referred to it by the sponsoring banking organization that used to lend directly to these same borrowers. The conduit funds this lending activity by issuing commercial paper that, in turn, is guaranteed by the sponsoring banking organization. The net result is that the sponsoring institution has much the same credit risk exposure through this guarantee as if it had made the loans directly and held them on its books. However, such credit extension is an off-balance-sheet transaction and the associated risks may not be fully reflected in the institution's risk management system.

Furthermore, banking organizations that extend liquidity facilities to securitized transactions, particularly asset-backed commercial paper programs, may be exposed to high degrees of credit risk which may be subtly embedded within the facilities' provisions. Liquidity facilities are commitments to extend short-term credit to cover temporary shortfalls in cash flow. While all commitments embody some degree of credit risk, certain commitments extended to asset-backed commercial paper programs in order to provide liquidity may subject the extending institution to the credit risk of the underlying asset pool, often trade receivables, or of a specific company using the program for funding. Often the stated purpose of such liquidity facilities is to provide funds to the program to retire maturing commercial paper when a mismatch occurs in the maturities of the underlying receivables and the commercial paper, or when a disruption occurs in the commercial paper market. However, depending upon the provisions of the facility--such as whether the facility covers dilution of the underlying receivable pool--credit risk can be shifted from the program's explicit credit

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

enhancements to the liquidity facility.<sup>5</sup> Such provisions may enable certain programs to fund riskier assets and yet maintain the credit rating on the program's commercial paper without increasing the program's credit enhancement levels.

*Asset Securitization Structures* - The structure of various securitization transactions can also result in an institution retaining the underlying credit risk in a sold pool of assets. Examples of this contingent credit risk retention include credit card securitizations where the securitizing organization explicitly sells the credit card receivables to a master trust, but, in substance, retains the majority of the economic risk of loss associated with the assets because of the credit protection provided to investors by the excess yield, spread accounts, and structural provisions of the securitization. Excess yield provides the first level of credit protection that can be drawn upon to cover cash shortfalls between the principal and coupon owed to investors and the investors' pro rata share of the master trust's net cash flows. The excess yield is equal to the difference between the overall yield on the underlying credit card portfolio and the master trust's operating expenses.<sup>6</sup> The second level of credit protection is provided by the spread account, which is essentially a reserve funded initially from the excess yield.

In addition, the structural provisions of credit card securitizations generally provide credit protection to investors through the triggering of early amortization events. Such an event usually is triggered when the underlying pool of credit card receivables deteriorates beyond a certain point and requires that the outstanding credit card securities begin amortizing early in order to pay off investors before the prior credit enhancements are exhausted. As the early amortization accelerates the redemption of principal (paydown) on the security, the credit card accounts that were assigned to the master credit card trust return to the securitizing institution more quickly than had originally been anticipated, thus, exposing the institution to liquidity pressures and any further credit losses on the returned accounts.

#### Reputational Risks

The secondary market credit activities of many institutions may also expose them to significant reputational risks. Loan syndication underwriting may present significant reputational risk exposure to lead underwriters because syndicate participants may seek to hold the lead underwriter responsible for actual or perceived

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<sup>5</sup> Dilution essentially occurs when the receivables in the underlying asset pool--prior to collection--are no longer viable financial obligations of the customer. For example, dilution can arise from returns of consumer goods or unsold merchandise by retailers to manufacturers or distributors.

<sup>6</sup> The monthly excess yield is the difference between the overall yield on the underlying credit card portfolio and the master trust's operating expenses. It is calculated by subtracting from the gross portfolio yield the (1) coupon paid to investors, (2) charge-offs for that month, and (3) servicing fee, usually 200 basis points paid to the banking organization sponsoring the securitization.

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inadequacies in the loan's underwriting even though participants are responsible for conducting an independent due diligence evaluation of the credit. Such risk may be compounded by the rapid growth of new investors in this market, usually nonbanks that may not have previously endured a downturn in the loan market.

There is the potential that pressure may be brought to bear on the lead participant to repurchase portions of the syndication if the credit deteriorates in order to protect its reputation in the market even though the syndication was sold without recourse. In addition, the deterioration of the syndicated credit also exposes the lead organization to possible litigation, as well as increased operational and credit risk. One way to mitigate reputational risk with respect to syndications is for banking organizations to know their customers and to determine whether syndication customers are in a position to conduct their own evaluation of the credit risks involved in the transaction.

Asset securitization programs also can be a source of increasing reputational risk. Often, banking organizations sponsoring the issuance of asset-backed securities act as servicer, administrator, or liquidity provider in the securitization transaction. It is imperative that these institutions are aware of the potential losses and risk exposure associated with reputational risk. The securitization of assets whose performance has deteriorated may result in a negative market reaction that could increase the spreads on an institution's subsequent issuances. In order to avoid a possible increase in their funding costs, institutions have supported their securitization transactions by improving the performance of the securitized asset pool. This has been accomplished, for example, by selling discounted receivables or adding higher quality assets to the securitized asset pool. Thus, an institution's voluntary support of its securitization in order to protect its reputation can adversely affect the sponsoring/issuing organization's earnings and capital.

These and other methods of improving the credit quality of securitized asset pools have been used recently by banking organizations providing voluntary support to their securitizations, especially for credit card master trusts. Such actions generally are taken to avoid either a rating downgrade or an early amortization of the outstanding asset-backed securities.

#### Liquidity Risks

The existence of recourse provisions in asset sales, the extension of liquidity facilities to securitization programs, and the early amortization triggers of certain asset securitization transactions can involve significant liquidity risk to institutions engaged in these secondary market credit activities. Institutions should ensure that their liquidity contingency plans fully incorporate the potential risk posed by their secondary market credit activities. With the issuance of new asset-backed

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

securities, the issuing banking organization should determine the potential effect on its liquidity at the inception of each transaction and throughout the life of the securities in order to better ascertain its future funding needs.

An institution's contingency plans should take into consideration the need to obtain replacement funding, and specify the possible alternative funding sources, in the event of the amortization of outstanding asset-backed securities. This is particularly important for securitizations with revolving receivables, such as credit cards, where an early amortization of the asset-backed securities could unexpectedly return the outstanding balances of the securitized accounts to the issuing institution's balance sheet. It should be recognized that an early amortization of a banking organization's asset-backed securities could impede its ability to fund itself--either through re-issuance or other borrowings--since the institution's reputation with investors and lenders may be adversely affected.

Incorporating the Risks of Secondary Market Credit Activities  
Into Risk Management

Supervisors should verify that an institution incorporates in its overall risk management system the risks involved in its secondary market credit activities. The system should entail: 1) inclusion of risk exposures in reports to the institution's senior management and board to ensure proper management oversight; 2) adoption of appropriate policies, procedures, and guidelines to manage the risks involved; 3) appropriate measurement and monitoring of risks; and 4) assurance of appropriate internal controls to verify the integrity of the management process with respect to these activities. The formality and sophistication with which the risks of these activities are incorporated into an institution's risk management system should be commensurate with the nature and volume of its secondary market credit activities. Institutions with significant activities in this area are expected to have more elaborate and formal approaches to manage the risk of their secondary market credit activities.

Both the board of directors and senior management are responsible for ensuring that they fully understand the degree to which the organization is exposed to the credit, market, liquidity, operational, legal, and reputational risks involved in the institution's secondary market credit activities. They are also responsible for ensuring that the formality and sophistication of the techniques used to manage these risks are commensurate with the level of the organization's activities. The board should approve all significant policies relating to the management of risk arising from secondary market credit activities and should ensure that the risk exposures are fully incorporated in board reports and risk management reviews.

Senior management is responsible for ensuring that the risks arising from secondary market credit activities are adequately managed on both a short-term and

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

long-run basis. Management should ensure that there are adequate policies and procedures in place for incorporating the risk of these activities into the overall risk management process of the institution. Such policies should ensure that the economic substance of the risk exposures generated by these activities is fully recognized and appropriately managed. In addition, banking organizations involved in securitization activities should have appropriate policies, procedures, and controls with respect to underwriting asset-backed securities; funding the possible return of revolving receivables (e.g., credit card receivables and home equity lines); and establishing limits on exposures to individual institutions, types of collateral, and geographic and industrial concentrations. Lead banking organizations in loan syndications should have policies and procedures in place that address whether or in what situations portions of syndications may be repurchased. Furthermore, banking organizations participating in a loan syndication should not place undue reliance on the credit analysis performed by the lead organization. Rather, the participant should have clearly defined policies and procedures to ensure that it performs its own due diligence in analyzing the risks inherent in the transaction.

An institution's management information and risk measurement systems should fully incorporate the risks involved in its secondary market credit activities. Banking organizations must be able to identify credit exposures from all secondary market credit activities, and be able to measure, quantify, and control those exposures on a fully consolidated basis. The economic substance of the credit exposures of secondary market credit activities should be fully incorporated into the institution's efforts to quantify its credit risk, including efforts to establish more formal grading of credits to allow for statistical estimation of loss probability distributions. Secondary market credit activities should also be included in any aggregations of credit risk by borrower, industry, or economic sector.

It is particularly important that an institution's information systems can identify and segregate those credit exposures arising from the institution's loan sale and securitization activities. Such exposures include the sold portions of participations and syndications; exposures arising from the extension of credit enhancement and liquidity facilities; the effects of an early amortization event; and the investment in asset-backed securities. The management reports should provide the board and senior management with timely and sufficient information to monitor the institution's exposure limits and overall risk profile.

#### Stress Testing

The use of stress testing, including combinations of market events that could affect a banking organization's credit exposures and securitization activities, is another important element of risk management. Such testing involves identifying possible events or changes in market behavior that could have unfavorable effects on

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

the institution and assessing the organization's ability to withstand them. Stress testing should not only consider the probability of adverse events, but also likely "worst case" scenarios. Such an analysis should be done on a consolidated basis and consider, for instance, the effect of higher than expected levels of delinquencies and defaults as well as the consequences of early amortization events with respect to credit card securities that could raise concerns regarding the institution's capital adequacy and its liquidity and funding capabilities. Stress test analyses should also include contingency plans regarding the actions management might take given certain situations.

One of management's most important responsibilities is establishing and maintaining an effective system of internal controls that, among other things, enforces the official lines of authority and the appropriate separation of duties in managing the risks of the institution. These internal controls must be suitable for the type and level of risks given the nature and scope of the institution's activities. Moreover, these internal controls should provide reasonable assurance of reliable financial reporting (in published financial reports and regulatory reports), including adequate allowances or liabilities for expected losses.

#### Capital Adequacy

As with all risk-bearing activities, institutions should fully support the risk exposures of their secondary market credit activities with adequate capital. Banking organizations should ensure that their capital positions are sufficiently strong to support all of the risks associated with these activities on a fully consolidated basis and should maintain adequate capital in all affiliated entities engaged in these activities. The Federal Reserve's risk-based capital guidelines establish *minimum* capital ratios, and those banking organizations exposed to a high or above average degrees of risk are, therefore, expected to operate significantly above the minimum capital standards.

The current regulatory capital rules do not fully incorporate the economic substance of the risk exposures involved in many secondary market credit activities. Therefore, when evaluating capital adequacy, supervisors should ensure that banking organizations that sell assets with recourse, assume or mitigate credit risk through the use of credit derivatives, and provide direct credit substitutes and liquidity facilities to securitization programs, are accurately identifying and measuring these exposures and maintaining capital at aggregate levels sufficient to support the associated credit, market, liquidity, reputational, operational, and legal risks.

Supervisors and examiners should review the substance of secondary market transactions when assessing underlying risk exposures. For example, partial, first loss direct credit substitutes providing credit protection to a securitization transaction can, in substance, involve much the same credit risk as that involved in holding the entire asset pool on the institution's balance sheet. However, under current

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

rules, regulatory capital is explicitly required only against the amount of the direct credit substitute, which can be significantly different from the amount of capital that the institution should maintain against the concentrated credit risk in the guarantee. Supervisors and examiners should ensure that banking organizations have implemented reasonable methods for allocating capital against the economic substance of credit exposures arising from early amortization events and liquidity facilities associated with securitized transactions since such facilities are usually structured as short-term commitments in order to avoid a risk-based capital requirement, even though the inherent credit risk may be approaching that of a guarantee.<sup>7</sup>

If, in the supervisor's judgment, an institution's capital level is not sufficient to provide protection against potential losses from such credit exposures, this deficiency should be reflected in the banking organization's CAMELS or BOPEC ratings. Furthermore, supervisors and examiners should discuss the capital deficiency with the institution's management and, if necessary, its board of directors. Such an institution will be expected to develop and implement a plan for strengthening the organization's overall capital adequacy to levels deemed appropriate given all the risks to which it is exposed.

Please forward this letter to each state member bank, bank holding company, Edge corporation and U.S. branch or agency of a foreign bank located in your District--a suggested transmittal letter is attached. If you have any questions, please contact Roger Cole, Deputy Associate Director (202/452-2618), Tom Boemio, Supervisory Financial Analyst, (202/452-2982) or Jim Embersit, Manager, (202/452-5249).

Richard Spillenkothen  
Director

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<sup>7</sup>For further guidance on distinguishing, for risk-based capital purposes, whether a facility is a short-term commitment or a direct credit substitute, refer to SR letter 92-11, "Asset-Backed Commercial Paper Programs." Essentially, facilities that provide liquidity, but which also provide credit protection to secondary market investors, are to be treated as direct credit substitutes for purposes of risk-based capital.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 97-18 (GEN)  
June 13, 1997

TO THE OFFICER IN CHARGE OF SUPERVISION  
AT EACH FEDERAL RESERVE BANK

SUBJECT: Application of Market Risk Capital Requirements to Credit Derivatives

In December 1995, the Basle Supervisors Committee approved an amendment to the Basle Accord that sets forth capital requirements for exposure to general market risk for all positions held in an institution's trading account and for foreign exchange and commodity positions wherever located, as well as for specific risk of debt and equity positions held in the trading account.<sup>1</sup> In addition, this amendment requires capital to cover counterparty credit exposure associated with over-the-counter (OTC) derivative positions in accordance with the credit risk capital requirements set forth in the Basle Accord and implemented in the Federal Reserve's risk-based capital guidelines (12 CFR Parts 208 and 225, Appendix A). The requirements of the U.S. rules implementing the market risk amendment, contained in 12 CFR Parts 208 and 225, Appendix E,<sup>2</sup> were effective on an optional basis beginning January 1, 1997, with mandatory compliance for certain banking organizations with significant market risk exposure required as of January 1, 1998.<sup>3</sup>

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<sup>1</sup> General market risk refers to changes in the market value of on-balance sheet assets and liabilities, and off-balance sheet items resulting from broad market movements, such as changes in the general level of interest rates, equity prices, foreign exchange rates, and commodity prices. Specific risk refers to changes in the market value of individual positions due to factors other than broad market movements and includes such risks as the credit risk of an instrument's issuer.

<sup>2</sup> See "Risk-Based Capital Standards: Market Risk," 61 *Federal Register* 47,358 (1996).

<sup>3</sup> The market risk amendment applies to banking organizations whose trading activity (on a worldwide, consolidated basis) equals 1) 10 percent or more of total assets or 2) \$1 billion or more. Trading activity means the gross sum of trading assets and liabilities as reported in the bank's most recent quarterly Consolidated Report of Condition and Income (Call Report). Banking supervisors may require an institution to comply with the market risk capital requirements if deemed necessary for safety and soundness purposes. An institution that does not meet the applicability criteria may, subject to supervisory approval, comply voluntarily with the amendment.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

This SR letter provides guidance on how credit derivatives held in the trading account should be treated under the market risk capital requirements by state member banks and bank holding companies. Specifically, the SR letter defines the risks to which credit derivative transactions are exposed and sets forth the risk-based capital requirements for each type of risk. In addition, the SR letter supplements SR letter 96-17 (GEN), dated August 12, 1996, which provides a detailed discussion of the more prevalent credit derivative structures,<sup>4</sup> and provides guidance on a number of supervisory issues pertaining to the use of credit derivatives, including the appropriate risk-based capital treatment for credit derivatives held in the banking book. The risk-based capital guidance set forth in SR letter 96-17 will continue to apply to credit derivatives held in the trading book of banks that have not implemented the market risk capital rule.

Credit derivatives are financial instruments used to assume or mitigate the credit risk of loans and other assets through off-balance sheet transactions. Banking organizations may employ these off-balance sheet instruments either as end-users, purchasing credit protection or acquiring credit exposure from third parties, or as dealers intermediating such activity. End-user banking organizations may use credit derivatives to reduce credit concentrations, improve portfolio diversification, or manage overall credit risk exposure. Although the market for these instruments is relatively small, banking organizations are entering into credit derivative transactions with increasing frequency.

U.S. banking supervisors, together with banking supervisors abroad, have been assessing the use and development of credit derivatives, as well as risk management practices and risk modeling at major banks for some time. U.S. and international supervisors intend to continue studying credit derivatives in the marketplace, which may result in additional or revised guidance on regulatory issues, including the appropriate banking book and trading book capital treatment.

#### Definitions

Credit derivative transactions held in the trading account are exposed to counterparty credit risk and general market risk. In addition, they are exposed to the specific risk of the underlying reference asset. This specific risk is the same as that associated with a cash position in a loan or bond. Table 1 defines each of the three risks as they relate to derivatives.

This SR letter describes the three risk elements of credit derivatives against which banking organizations should hold risk-based capital, based upon three defined types of positions. These three position types are 1) open positions, 2) matched positions, and 3) offsetting positions. Matched positions encompass long and short positions in

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<sup>4</sup>These include total rate of return swaps, credit default swaps and credit-linked notes.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

### Definitions

- Counterparty Credit Risk - The risk arising from the possibility that the counterparty may default on amounts owed on a derivative transactions.
- General Market Risk - The risk arising from changes in the reference asset's value due to broad market movements such as changes in the general level of interest rates.
- Specific Risk - The risk arising from changes in the reference asset's value due to factors other than broad market movements, including changes in the reference asset's credit risk.

Table 1

*identical* credit derivative structures over *identical* maturities referencing *identical* assets.<sup>5</sup> Offsetting positions encompass long and short credit derivative positions in reference assets of the same obligor with the same level of seniority in bankruptcy. Offsetting positions include positions that would otherwise be matched except that the long and short credit derivative positions have different maturities or one leg is a total return product and the other is purely a default product (i.e., credit default swap). Positions that do not qualify as matched or offsetting are open positions. Table 2 identifies which of the three risk elements is present for each of the three defined position types.

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<sup>5</sup>Position structures are matched only if both legs are either total rate of return products or credit default products. Matching treatment also requires that default definitions include the same credit events, and that materiality thresholds and other relevant contract terms in the matched positions are not substantially different. For purposes of this letter, cash instruments are considered total return products. Hence, a long position in a bond and a short total return swap of identical maturity referencing that bond is a matched position. If the maturities do not match, or if the swap is a credit default swap, the position is offsetting (as long as the reference asset has the same obligor and level of seniority as the bond).

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

Table 2

Credit Derivatives Market Risk Capital Framework			
	Counterparty Credit Risk	General Market Risk	Specific Risk
Open Position	Y	Y	Y
Matched Position	Y	N	N
Offsetting Position	Y	Y (Some)	Y (Some)

Y - Risk is present; capital charge is indicated.

N - Risk is not present; no capital charge is indicated.

In summarizing Table 2, it is clear that all credit derivative positions create exposures to counterparties and, thus, have counterparty risk.<sup>6</sup> In the case of matched positions, counterparty risk is the only risk present. The matched nature of the position eliminates the general market and specific risk of the reference asset. Both open and offsetting positions have all three risk elements, but general market and specific risk are present to a significantly lesser degree in offsetting positions than in open positions.

#### Market Risk Capital Approach for Credit Derivatives in the Trading Account

##### General Market Risk

Beginning January 1, 1998, a banking organization subject to the market risk amendment must use internal models to measure its daily value-at-risk (VAR) for covered positions located in its trading account and for foreign exchange and commodity positions

<sup>6</sup>An exception involves written options where the seller receives the premium at origination. In such instances, risk-based capital is not required since there is no counterparty risk to the banking organization writing the option.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

wherever located.<sup>7</sup> General market risk capital charges for credit derivatives are to be calculated using internal models in the same manner as for cash market debt instruments.

#### Specific Risk

As set out in the market risk capital rule, if a banking organization can demonstrate to the Federal Reserve that its internal model measures the specific risk of its debt and equity positions in the trading account, and this measure is included in its VAR-based capital charge, then the bank may reduce or eliminate its specific risk capital charges, subject to the minimum specific risk charges prescribed in the amendment.<sup>8</sup> This SR letter applies the same treatment to credit derivatives. The Federal Reserve intends to continue discussions with the banking industry on the measurement and management of specific risk.

Alternatively, standard specific risk charges for credit derivatives may be calculated using the specific risk weighting factors that apply to the referenced asset. As set forth in the market risk amendment, matched positions do not incur specific risk charges. For offsetting positions, standard specific risk charges are to be applied only against the largest leg of the offsetting credit derivative and cash positions.<sup>9</sup> That is, standard specific risk charges are not to be applied to each leg separately. Open positions attract the same standard specific risk charges that a cash position in the reference asset would incur.

#### Counterparty Risk

Counterparty risk is calculated by summing the mark-to-market value of the credit derivative and an "add-on" factor representing potential future credit exposure. Under the Basle Accord and the Federal Reserve's risk-based capital guidelines, the add-on factor is a specified percentage of notional amount, depending on the type and maturity of the derivative transaction. In order to calculate a capital charge for counterparty risk for credit derivatives, an appropriate add-on factor is needed. However, the current matrix of add-on factors in the Basle Accord and the Federal Reserve's guidelines does not include a specific factor for credit or other derivatives for which the underlying transaction is a debt instrument.

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<sup>7</sup> An institution's VAR is the estimate of the maximum amount that the value of covered positions could decline during a fixed holding period within a stated confidence level. Covered positions encompass all positions in a banking organization's trading account, as well as all foreign exchange and commodity positions, whether or not in the trading account. Positions include on-balance-sheet assets and liabilities and off-balance sheet items. See 12 CFR Parts 208 and 225, Appendix E.

<sup>8</sup> The amount of capital held to cover specific risk must be equal to at least 50 percent of the specific risk charge that would result from the standardized calculation.

<sup>9</sup> Exposure is measured by notional amount for credit derivatives or by market value for cash instruments.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

Based on an analysis of typical debt instruments underlying credit derivative transactions, the Federal Reserve has determined that the following add-on factors will apply to credit derivative transactions. The equity add-on factors are to be used when the reference asset is an investment grade instrument (or its bank-internal equivalent), or where the reference asset is unrated but well-secured by high-quality collateral. The commodity add-on factor is to be used when the reference asset is either below investment grade (or its bank-internal equivalent) or is unrated and unsecured.

If you have questions on the supervisory or capital issues related to credit derivatives, please contact Roger Cole, Deputy Associate Director (202/452-2618), Norah Barger, Manager (202/452-2402), or Tom Boemio, Supervisory Financial Analyst (202/452-2982).

Richard Spillenkothen  
Director

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D.C. 20551

DIVISION OF BANKING  
SUPERVISION AND REGULATION

SR 96-17 (GEN)  
August 12, 1996

TO THE OFFICER IN CHARGE OF SUPERVISION  
AT EACH FEDERAL RESERVE BANK

SUBJECT: Supervisory Guidance for Credit Derivatives

Overview

In recent months, examiners have encountered credit derivative transactions at several dealer and end-user banking organizations. Credit derivatives are financial instruments used to assume or lay off credit risk on loans and other assets, sometimes to only a limited extent. Banking organizations are increasingly employing these off-balance sheet instruments either as end-users, purchasing credit protection from -- or providing credit protection to -- third parties, or as dealers intermediating such protection. Banking organizations use credit derivatives to reduce credit concentrations and manage overall credit risk exposure. Although the market for these instruments is still quite small, banking organizations are entering into credit derivative transactions with increasing frequency. Questions have been raised about how credit derivatives should be treated in light of existing supervisory capital and reporting rules and prudential guidance.

This SR letter provides guidance on supervisory issues pertaining to the use of credit derivatives for such purposes as risk management, yield enhancement, reduction of credit concentrations, or diversification of overall risk. It is essential that banks, bank holding companies, and U.S. branches and agencies of foreign banks that use credit derivatives establish sound risk management policies and procedures and effective internal controls. Federal Reserve staff will continue to review credit derivatives as their use and structure evolve in the marketplace.

The analytical techniques used to manage credit derivatives may provide new insights into credit risk and its management. For this reason, U.S. banking supervisors, as well as banking supervisors abroad, intend to continue assessing the use and development of credit derivatives in the marketplace. Discussions with the other U.S. and international banking supervisors may result in

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

revised or additional guidance on the appropriate supervisory treatment of credit derivatives. This is particularly true with respect to the treatment of dealer banking organizations' positions in credit derivatives and how such transactions, if held in banks' trading books, would be treated as market-risk instruments for capital purposes once the proposed market risk capital rules become effective.<sup>1</sup>

#### Background

Credit derivatives are off-balance sheet arrangements that allow one party (the "beneficiary") to transfer the credit risk of a "reference asset," which it often actually owns, to another party (the "guarantor").<sup>2</sup> This arrangement allows the guarantor to assume the credit risk associated with the reference asset without directly purchasing it. Unlike traditional guarantee arrangements, credit derivatives transactions often are documented using master agreements developed by the International Swaps and Derivatives Association (ISDA) similar to those governing swaps or options.

Under some credit derivative arrangements, the beneficiary may pay the total return on a reference asset, including any appreciation in the asset's price, to a guarantor in exchange for a spread over funding costs plus any depreciation in the value of the reference asset (a "total rate-of-return swap"). Alternatively, a beneficiary may pay a fee to the guarantor in exchange for a guarantee against any loss that may occur if the reference asset defaults (a "credit default swap"). These

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<sup>1</sup> Once the proposed market risk capital rules are effective, credit derivatives that are held in a bank's trading book would be subject to those rules. These rules are scheduled to be effective by January 1, 1998, although supervisors will have the discretion to permit institutions to adopt the rules early. Under the market risk rules for derivatives, the risk of the reference asset generally is included in the calculation of general market risk and specific risk. In addition, capital is required to cover the counterparty credit exposure on the transaction. The assumptions that were used in the development of the specific risk factors included in the proposed market risk capital rules and the potential future exposure conversion factors under the credit risk capital rules, however, did not take into account credit derivatives and may need to be reviewed if the market risk capital treatment is applied to these instruments.

<sup>2</sup> For purposes of this supervisory letter, where the beneficiary owns the reference asset it will be referred to as the "underlying" asset. However, in some cases, the reference asset and the underlying asset are not the same. For example, the credit derivative contract may reference the performance of an ABC Company bond, while the beneficiary bank may actually own an ABC Company loan.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

two structures are the most prevalent types of credit derivatives and are described in greater detail in the Appendix.<sup>3</sup>

The credit derivative market has been evolving rapidly, and credit derivative structures are likely to take on new forms. For example, very recently a market has developed for put options on specific corporate bonds or loans. While the payoffs of these puts are expressed in terms of a strike price, rather than a default event, if the strike price is sufficiently high, credit risk effectively could be transferred from the buyer of the put to the writer of the put.

#### Overview of Guidance

In reviewing credit derivatives, examiners should consider the credit risk associated with the reference asset as the primary risk, as they do for loan participations or guarantees. A banking organization providing credit protection through a credit derivative can become as exposed to the credit risk of the reference asset as it would if the asset were on its own balance sheet. Thus, for supervisory purposes, the exposure generally should be treated as if it were a letter of credit or other off-balance sheet guarantee.<sup>4</sup> This treatment would apply, for example, in determining an institution's overall credit exposure to a borrower for purposes of evaluating concentrations of credit. The institution's overall exposure should include exposure it assumes by acting as a guarantor in a credit derivative transaction where the borrower is the obligor of the reference asset.<sup>5</sup>

In addition, banking organizations providing credit protection through a credit derivative should hold capital and reserves against their exposure to the reference asset. This broad principle holds for all credit derivatives, except for credit derivative contracts that incorporate periodic payments for depreciation or appreciation, including most total rate of return swaps. For these transactions, the guarantor can deduct the amount of depreciation paid to the beneficiary from the

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<sup>3</sup>The Appendix provides a detailed discussion on the mechanics and cash flows of the two most prevalent types of credit derivatives; guidance on how credit derivatives are to be treated for purposes of regulatory capital and other supervisory purposes, such as credit exposure, asset classification, allowance for loan and lease losses, and transactions involving affiliates; and guidance on the appropriate accounting and regulatory reporting treatment for credit derivatives.

<sup>4</sup>Credit derivatives that are based on a broad based index, such as the Lehman Brothers Bond Index or the S&P 500 stock index, could be treated for capital and other supervisory purposes as a derivative contract. This determination should be made on a case-by-case basis.

<sup>5</sup>Legal lending limits are established by the individual states for state-chartered banks and by the Office of the Comptroller of the Currency (OCC) for national banks. The determination of whether credit derivatives are guarantees to be included in the legal lending limits are the purview of the state banking regulators and the OCC.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

notional amount of the contract in determining the amount of reference exposure subject to a capital charge.

In some cases, such as total rate of return swaps, the guarantor also is exposed to the credit risk of the counterparty, which for derivative contracts generally is measured as the replacement cost of the credit derivative transaction plus an add-on for the potential future exposure of the derivative to market price changes. For banks acting as dealers that have matching offsetting positions, the counterparty risk stemming from credit derivative transactions could be the principal risk to which the dealer banks are exposed.

In reviewing a credit derivative entered into by a beneficiary banking organization the examiner should review the organization's credit exposure to the guarantor, as well as to the reference asset -- if the asset is actually owned by the beneficiary. The degree to which a credit derivative, unlike most other credit guarantee arrangements, transfers the credit risk of an underlying asset from the beneficiary to the guarantor may be uncertain or limited. The degree of risk transference depends upon the terms of the transaction. For example, some credit derivatives are structured so that a payout only occurs when a pre-defined event of default or a downgrade below a pre-specified credit rating occurs. Others may require a payment only when a defined default event occurs and a pre-determined materiality (or loss) threshold is exceeded. Default payments themselves may be based upon an average of dealer prices for the reference asset during some period of time after default using a pre-specified sampling procedure or may be specified in advance as a set percentage of the notional amount of the reference asset. Finally, the term of many credit derivative transactions is shorter than the maturity of the underlying asset and, thus, provides only temporary credit protection to the beneficiary.

Examiners must ascertain whether the amount of credit protection a beneficiary receives by entering into a credit derivative is sufficient to warrant treatment of the derivative as a guarantee for regulatory capital and other supervisory purposes. Those arrangements that provide virtually complete credit protection to the underlying asset will be considered effective guarantees for purposes of asset classification and risk-based capital calculations. On the other hand, if the amount of credit risk transferred by the beneficiary is severely limited or uncertain, then the limited credit protection provided by the derivative should not be taken into account for these purposes.

In this regard, examiners should carefully review credit derivative transactions in which the reference asset is not identical to the asset actually owned by the beneficiary banking organization. In order to determine that the derivative contract provides effective credit protection, the examiner must be satisfied that the reference asset is an appropriate proxy for the loan or other asset

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

whose credit exposure the banking organization intends to offset. In making this determination, examiners should consider, among other factors, whether the reference asset and owned asset have the same obligor and seniority in bankruptcy and whether both contain mutual cross-default provisions.

The supervisory and regulatory treatment that is currently outlined will continue to be reviewed to ensure the appropriate treatment for credit derivatives transactions. Such a review will take into consideration the potential offsetting of credit exposures within the portfolio and how the proposed market risk capital rules would be applied to credit derivative transactions once they become effective.

An institution should not enter into credit derivative transactions unless its management has the ability to understand and manage the credit and other risks associated with these instruments in a safe and sound manner. Accordingly, examiners should determine the appropriateness of these instruments on an institution-by-institution basis. Such a determination should take into account management's expertise in evaluating such instruments; the adequacy of relevant policies, including position limits; and the quality of the institution's relevant information systems and internal controls.<sup>6</sup>

If you have any questions on the supervisory or capital issues related to credit derivatives, please contact Norah Barger, Manager (202/452-2402), or Tom Boemio, Supervisory Financial Analyst (202/452-2982). Questions concerning the accounting treatment for these products may be addressed to Charles Holm, Project Manager (202/452-3502), or Greg Eller, Supervisory Financial Analyst (202/452-5277).

Richard Spillenkothen  
Director

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<sup>6</sup>Further guidance on examining the risk management practices of banking organizations, including guidance on derivatives, which examiners may find helpful in reviewing an organization's management of its credit derivative activity, is contained in the Commercial Bank Examination Manual; Bank Holding Company Supervision Manual; Trading Activities Manual; SR Letter 93-69 (12/20/93), "Examining Risk Management and Internal Controls for Trading Activities of Banking Organizations;" SR Letter 94-45 (8/5/94), "Supervisory Policies Relating to Structured Notes;" SR Letter 95-17 (3/28/95), "Evaluating the Risk Management and Internal Controls of Securities and Derivatives Contracts Used in Nontrading Activities;" and SR Letter 95-51 (11/14/95), "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies."

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

## Appendix

Supervisory and Accounting Guidance  
Relating to Credit DerivativesI. Description of Credit Derivatives

The most widely used types of credit derivatives to date are credit default swaps and total rate-of-return (TROR) swaps.<sup>1</sup> While the timing and structure of the cash flows associated with credit default and TROR swaps differ, the economic substance of both arrangements is that they seek to transfer the credit risk on the asset(s) referenced in the transaction.

The use of credit derivatives may allow a banking organization to mitigate its concentration to a particular borrower or industry without severing the customer relationship. In addition, organizations that are approaching established in-house limits on counterparty credit exposure could continue to originate loans to a particular industry and use credit derivatives to transfer the credit risk to a third party. Furthermore, institutions may use credit derivatives to diversify their portfolios by assuming credit exposures to different borrowers or industries without actually purchasing the underlying assets. Nonbank institutions may serve as counterparties to credit derivative transactions with banks in order to gain access to the commercial bank loan market. These institutions either do not lend or do not have the ability to administer a loan portfolio.

Credit Default Swaps

The purpose of a credit default swap, as its name suggests, is to provide protection against credit losses associated with a default on a specified reference asset. The swap purchaser, i.e., the beneficiary, "swaps" the credit risk with the provider of the swap, i.e., the guarantor. While the transaction is called a "swap," it is very similar to a guarantee or financial standby letter of credit.

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<sup>1</sup>Another less common form of credit derivative is the credit linked note which is an obligation that is based on a reference asset. Credit linked notes are similar to structured notes with embedded credit derivatives. The payment of interest and principal are influenced by credit indicators rather than market price factors. If there is a credit event, the repayment of the bond's principal is based on the price of the reference asset. When reviewing these transactions, examiners should consider the purchasing bank's exposure to the underlying reference asset as well as the exposure to the issuing entity.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

In a credit default swap, illustrated in Figure 1, the beneficiary (Bank A) agrees to pay to the guarantor (Bank B) a fee typically amounting to a certain number of basis points on the par value of the reference asset either quarterly or annually. In return, the guarantor agrees to pay the beneficiary an agreed upon, market-based, post-default amount or a predetermined fixed percentage of the value of the reference asset if there is a default. The guarantor makes no payment until there is a default. A default is strictly defined in the contract to include, for example, bankruptcy, insolvency, or payment default, and the event of default itself must be publicly verifiable. In some instances, the guarantor is not obliged to make any payments to the beneficiary until a pre-established amount of loss has been exceeded in conjunction with a default event; this is often referred to as a materiality threshold.

The swap is terminated if the reference asset defaults prior to the maturity of the swap. The amount owed by the guarantor is the difference between the reference asset's

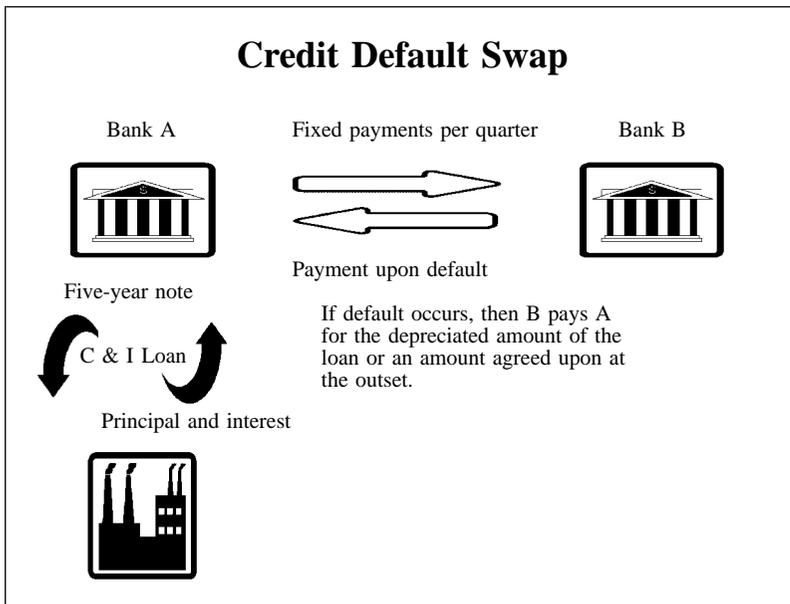


Figure 1 Credit Default Swap Cash Flow Diagram.

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initial principal (or notional) amount and the actual market value of the defaulted, reference asset. The methodology for establishing the post-default market value of the reference asset should be set out in the contract. Often, the market value of the defaulted reference asset may be determined by sampling dealer quotes. The guarantor may have the option to purchase the defaulted, underlying asset and pursue a workout with the borrower directly, an action it may take if it believes that the "true" value of the reference asset is higher than that determined by the swap pricing mechanism. Alternatively, the swap may call for a fixed payment in the event of default, for example, 15 percent of the notional value of the reference asset.

Total Rate-of-Return Swap

In a total rate-of-return (TROR) swap, illustrated in Figure 2, the beneficiary (Bank A) agrees to pay the guarantor (Bank B) the "total return" on the reference

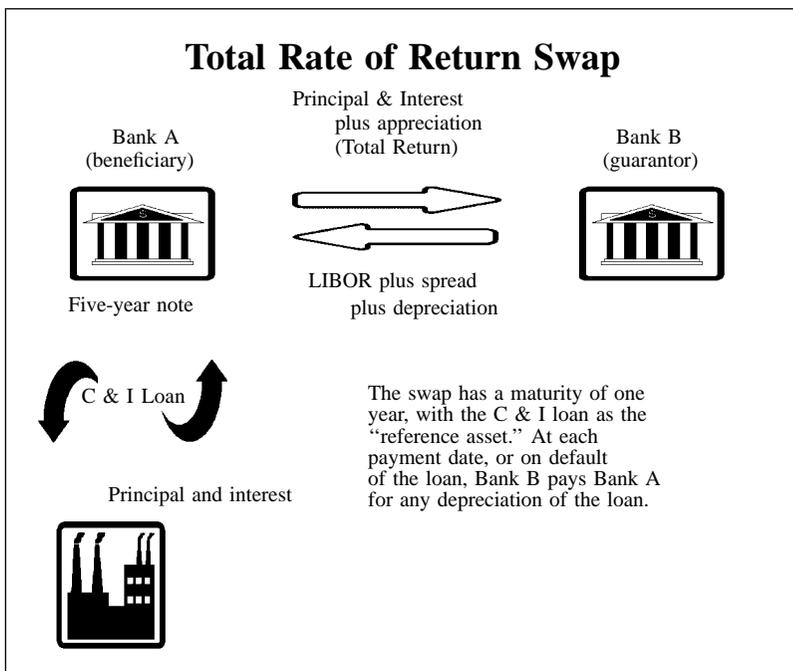


Figure 2 Total Return Swap Cash Flow Diagram

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

asset, which consists of all contractual payments, as well as any appreciation in the market value of the reference asset. To complete the swap arrangement, the guarantor agrees to pay LIBOR plus a spread and any depreciation to the beneficiary.<sup>2</sup> The guarantor in a TROR swap could be viewed as having synthetic ownership of the reference asset since it bears the risks and rewards of ownership over the term of the swap.

At each payment exchange date (including when the swap matures) -- or upon default, at which point the swap may terminate -- any depreciation or appreciation in the amortized value of the reference asset is calculated as the difference between the notional principal balance of the reference asset and the "dealer price."<sup>3</sup> The dealer price is generally determined either by referring to a market quotation source or by polling a group of dealers and reflects changes in the credit profile of the reference obligor and reference asset.

If the dealer price is less than the notional amount (i.e., the hypothetical original price of the reference asset) of the contract, then the guarantor must pay the difference to the beneficiary, absorbing any loss caused by a decline in the credit quality of the reference asset.<sup>4</sup> Thus, a TROR swap differs from a standard direct credit substitute in that the guarantor is guaranteeing not only against default of the reference obligor, but also against a deterioration in that obligor's credit quality, which can occur even if there is no default.

## II. Supervisory Issues Relating to Credit Derivatives Risk-Based Capital Treatment

For purposes of risk-based capital, credit derivatives generally are to be treated as off-balance sheet direct credit substitutes. The notional amount of the contract should be converted at 100 percent to determine the credit equivalent amount to be included in risk weighted assets of the guarantor.<sup>5</sup> A banking organization providing a

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<sup>2</sup>The reference asset is often a floating rate instrument, e.g., a prime-based loan. Thus, if both sides of a TROR swap are based on floating rates, interest rate risk is effectively eliminated with the exception of some basis risk.

<sup>3</sup>Depending upon contract terms, a TROR swap may not terminate upon default of the reference asset. Instead, payments would continue to be made on subsequent payment dates based on the reference asset's post-default prices until the swap's contractual maturity.

<sup>4</sup>As in a credit default swap, the guarantor may have the option of purchasing the underlying asset from the beneficiary at the dealer price and trying to collect from the borrower directly.

<sup>5</sup>Guarantor banks which have made cash payments representing depreciation on reference assets may deduct such payments from the notional amount when computing credit equivalent amounts for capital purposes. For example, if a guarantor bank makes a depreciation payment of \$10 on a \$100 notional total rate-of-return swap, the credit equivalent amount would be \$90.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

guarantee through a credit derivative transaction should assign its credit exposure to the risk category appropriate to the obligor of the reference asset or any collateral. On the other hand, a banking organization that owns the underlying asset upon which effective credit protection has been acquired through a credit derivative may under certain circumstances assign the unamortized portion of the underlying asset to the risk category appropriate to the guarantor, e.g., the 20 percent risk category if the guarantor is a bank.

Whether the credit derivative is considered an eligible guarantee for purposes of risk-based capital depends upon the degree of credit protection actually provided. As explained earlier, the amount of credit protection actually provided by a credit derivative may be limited depending upon the terms of the arrangement. In this regard, for example, a relatively restrictive definition of a default event or a materiality threshold that requires a comparably high percentage of loss to occur before the guarantor is obliged to pay could effectively limit the amount of credit risk actually transferred in the transaction. If the terms of the credit derivative arrangement significantly limit the degree of risk transference, then the beneficiary bank cannot reduce the risk weight of the "protected" asset to that of the guarantor bank. On the other hand, even if the transfer of credit risk is limited, a banking organization providing limited credit protection through a credit derivative should hold appropriate capital against the underlying exposure while it is exposed to the credit risk of the reference asset.

Banking organizations providing a guarantee through a credit derivative may mitigate the credit risk associated with the transaction by entering into an offsetting credit derivative with another counterparty, a so-called "back-to-back" position. Organizations that have entered into such a position may treat the first credit derivative as guaranteed by the offsetting transaction for risk-based capital purposes. Accordingly, the notional amount of the first credit derivative may be assigned to the risk category appropriate to the counterparty providing credit protection through the offsetting credit derivative arrangement, e.g., the 20 percent risk category if the counterparty is an OECD bank.

In some instances, the reference asset in the credit derivative transaction may not be identical to the underlying asset for which the beneficiary has acquired credit protection. For example, a credit derivative used to offset the credit exposure of a loan to a corporate customer may use a publicly-traded corporate bond of the customer as the reference asset, whose credit quality serves as a proxy for the on-balance sheet loan. In such a case, the underlying asset will still generally be considered guaranteed for capital purposes as long as both the underlying asset and the reference asset are obligations of the same legal entity and have the same level of seniority in bankruptcy. In addition, banking organizations offsetting credit exposure in this manner would be obligated to demonstrate to examiners that there is a high degree of correlation between the two instruments; the reference instrument is a reasonable and sufficiently liquid proxy for the underlying asset so that the instruments can be reasonably expected to behave in a similar manner in the event of default; and, at a minimum, the reference asset and underlying asset are subject to mutual cross-default provisions. A banking organization that uses

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

a credit derivative, which is based on a reference asset that differs from the protected underlying asset, must document the credit derivative being used to offset credit risk and must link it directly to the asset or assets whose credit risk the transaction is designed to offset. The documentation and the effectiveness of the credit derivative transaction are subject to examiner review. Banking organizations providing credit protection through such arrangements must hold capital against the risk exposures that are assumed.

Some credit derivative transactions provide credit protection for a group or basket of reference assets and call for the guarantor to absorb losses on only the first asset in the group that defaults. Once the first asset in the group defaults, the credit protection for the remaining assets covered by the credit derivative ceases. If examiners determine that the credit risk for the basket of assets has effectively been transferred to the guarantor and the beneficiary banking organization owns all of the reference assets included in the basket, then the beneficiary may assign the asset with the smallest dollar amount in the group -- if less than or equal to the notional amount of the credit derivative -- to the risk category appropriate to the guarantor. Conversely, a banking organization extending credit protection through a credit derivative on a basket of assets must assign the contract's notional amount of credit exposure to the highest risk category appropriate to the assets in the basket.

#### Other Supervisory Issues

The decision to treat credit derivatives as guarantees could have significant supervisory implications for the way examiners treat concentration risk, classified assets, the adequacy of the allowance for loan and lease losses (ALLL), and transactions involving affiliates. Examples of how credit derivatives that effectively transfer credit risk could affect supervisory procedures are discussed below.

#### Credit Exposure

For internal credit risk management purposes, banks are encouraged to develop policies to determine how credit derivative activity will be used to manage credit exposures. For example, a bank's internal credit policies may set forth situations in which it is appropriate to reduce credit exposure to an underlying obligor through credit derivative transactions. Such policies need to address when credit exposure is effectively reduced and how all credit exposures will be monitored, including those resulting from credit derivative activities.

For supervisory purposes, a concentration of credit generally exists when a bank's loans and other exposures -- e.g., fed funds sold, securities, and letters of credit -- to a single obligor, geographic area, or industry exceed 25 percent of the bank's Tier 1 capital and ALLL.<sup>6</sup> Examiners will not consider a bank's asset concentration to a particular

<sup>6</sup>See Section 2050.1 of the Commercial Bank Examination Manual.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

borrower reduced because of the existence of a non-government guarantee on one of the borrower's loans because the underlying concentration to the borrower still exists. However, examiners should consider how the bank manages the concentration, which could include the use of non-governmental guarantees. Asset concentrations are to be listed in the examination report to highlight that the ultimate risk to the bank stems from these concentrations, although the associated credit risk may be mitigated by the existence of non-governmental guarantees.

Any non-government guarantee will be included with other exposures to the guarantor to determine if there is an asset concentration with respect to the guarantor. Thus, the use of credit derivatives will increase the beneficiary's concentration exposure to the guarantor without reducing concentration risk of the underlying borrower. Similarly, a guarantor bank's exposure to all reference assets will be included in its overall credit exposure to the reference obligor.

#### Classification

The criteria used to classify assets are primarily based upon the degree of risk and the likelihood of repayment as well as on the assets' potential effect on the bank's safety and soundness.<sup>7</sup> When evaluating the quality of a loan, examiners should review the overall financial condition of the borrower; the borrower's credit history; any secondary sources of repayment, such as guarantees; and other factors. The primary focus in the review of a loan's quality is the original source of payment. The assessment of the credit quality of a troubled loan, however, should take into account support provided by a "financially responsible guarantor."<sup>8</sup>

The protection provided on an underlying asset by a credit derivative from a financially responsible guarantor may be sufficient to preclude classification of the underlying asset, or reduce the severity of classification. Sufficiency depends upon the extent of credit protection that is provided. In order for a credit derivative to be considered a guarantee for purposes of determining the classification of assets, the credit risk must be transferred from the beneficiary to the financially responsible guarantor; the financially responsible guarantor must have both the financial capacity and willingness to provide support for the credit; the guarantee (i.e., the credit derivative contract) must be legally enforceable; and the guarantee must provide support for repayment of the indebtedness, in whole or in part, during the remaining term of the underlying asset.

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<sup>7</sup> Loans that exhibit potential weaknesses are categorized as "special mention," while those with well-defined weaknesses and a distinct possibility of loss are assigned to the general category of "classified." The classified category is divided into the more specific subcategories of "substandard," "doubtful," and "loss." The amount of classified loans as a percent of capital is the standard measure of the overall quality of a bank's loan portfolio.

<sup>8</sup> See Section 2060.1 of the Commercial Bank Examination Manual.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

However, credit derivatives tend to have a shorter maturity than the underlying asset being protected. Furthermore, there is uncertainty as to whether the credit derivative will be renewed once it matures. Thus, examiners need to consider the term of the credit derivative relative to the maturity of the protected underlying asset, the probability that the protected underlying asset will default while the guarantee is in force, as well as whether the credit risk has actually been transferred, when determining whether to classify an underlying asset protected by a credit derivative. In general, the beneficiary banking organization continues to be exposed to the credit risk of the classified underlying asset when the maturity of the credit derivative is shorter than the underlying asset. Thus, in situations of a maturity mismatch, the presumption may be against a diminution of the severity of the classification of the underlying asset.

For guarantor banking organizations, examiners should review the credit quality of individual reference assets in derivative contracts in the same manner as other credit instruments, such as standby letters of credit. Thus, examiners should evaluate a credit derivative, in which a banking organization provides credit protection, based upon the overall financial condition and resources of the reference obligor; the obligor's credit history; and any secondary sources of repayment, such as collateral. As a rule, exposure from providing credit protection through a credit derivative should be classified if the reference asset is classified.<sup>9</sup>

#### Allowance for Loan and Lease Losses

In accordance with the Interagency Policy Statement on the Allowance for Loan and Lease Losses (ALLL), institutions must maintain an ALLL at a level that is adequate to absorb estimated credit losses associated with the loan and lease portfolio. Federal Reserve staff continues to review accounting issues related to credit derivatives and reserving practices and may issue additional guidance upon completion of this review or when more definitive guidance is provided by accounting authorities. Likewise, consideration will be given to improving disclosures in regulatory reports to improve the transparency of credit derivatives and their effects on the credit quality of the loan portfolio, particularly if the market for credit derivatives grows significantly.

#### Transactions Involving Affiliates

Although examiners have not seen credit derivative transactions involving two or more legal entities within the same banking organization, the possibility of such transactions exists. Transactions between or involving affiliates raise important

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<sup>9</sup> A guarantor banking organization providing credit protection through the use of a credit derivative on a classified asset of a beneficiary bank may preclude classification of its derivative contract by laying off the risk exposure to another financially responsible guarantor. This could be accomplished through the use of a second offsetting credit derivative transaction.

## SELECTED FEDERAL RESERVE SR-LETTERS—Continued

supervisory issues, especially whether such arrangements are effective guarantees of affiliate obligations, or transfers of assets and their related credit exposure between affiliates. Thus, banking organizations should carefully consider existing supervisory guidance on interaffiliate transactions before entering into credit derivative arrangements involving affiliates, particularly when substantially the same objectives could be met using traditional guarantee instruments.

### III. Accounting and Regulatory Reporting Treatment for Credit Derivatives

The instructions to the bank and bank holding company regulatory reports do not contain explicit accounting guidance on credit derivatives at this time. Furthermore, there is no authoritative accounting guidance under GAAP that directly applies to credit derivatives. Accordingly, as a matter of sound practice, banking organizations entering into credit derivative transactions should have a written accounting policy that has been approved by senior management for credit derivatives and any asset (e.g., a loan or security) for which protection has been purchased. Banking organizations are strongly encouraged to consult with their outside accountants to ensure appropriate accounting practices in this area.

Pending any authoritative guidance from the accounting profession, banking organizations should report credit derivatives in the commercial bank Reports of Condition and Income ("Call Reports") in accordance with the following instructions.<sup>10</sup> Beneficiary banking organizations that purchase credit protection on an asset through a credit derivative should continue to report the amount and nature of the underlying asset for regulatory reporting purposes, without regard to the credit derivative transaction. That is, all underlying assets should be reported in the category appropriate for that transaction and obligor. Furthermore, the underlying asset should be reported as past due or nonaccrual, as appropriate, in Schedule RC-N in the Call Report, regardless of the existence of an associated credit derivative transaction.

The notional amount of all credit derivatives entered into by beneficiary banking organizations should be reported in Schedule RC-L, item 13, "All other

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<sup>10</sup>The accounting principles for the Call Reports are generally based on GAAP, and effective March 1997 will be consistent with GAAP. When supervisory concerns arise with respect to the lack of authoritative guidance under GAAP, the banking agencies may issue reporting guidance that is more specific than, but within the range of, GAAP. As indicated in the Call Report instructions, institutions should promptly seek a specific ruling from their primary federal bank supervisory agency when reporting events and transactions are not covered by the instructions.

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off-balance-sheet assets," of the Call Report.<sup>11</sup> Furthermore, institutions may report the amount of credit derivatives that provide effective protection for their past due and nonaccrual assets in "Optional Narrative Statement Concerning the Amounts Reported in the Reports of Condition and Income" or in item 9 of Schedule RI-E, "Other explanations" of the Call Reports.<sup>12</sup>

In Schedule RC-R, the carrying value of all specifically identified underlying assets that are effectively guaranteed through credit derivative transactions may be assigned to the risk category of the guarantor or obligor, whichever is lower.

Both at inception and each reporting period thereafter, banking organizations that extend credit protection through credit derivatives (guarantors) should report in the Call Report the notional amount of the credit derivatives in Schedule RC-L, item 12, "All other off-balance sheet liabilities," and Schedule RC-R, "credit equivalent amounts of off-balance sheet items," in the appropriate risk category. In addition, all liabilities for expected losses arising from these contracts should be reflected in financial statements promptly. For regulatory reporting purposes, the notional value of credit derivative transactions should not be reported as interest rate, foreign exchange, commodity, or equity derivative transactions. Institutions that have been reporting credit derivatives as such derivative transactions in the Call Report do not have to restate past reports.

In Schedule RC-R, the guarantor bank must report the carrying value of reference assets whose credit risk has been assumed in the risk category of the reference asset obligor or any guarantor, whichever is lower. For example, a bank that assumes the credit risk of a corporate bond would assign the exposure to the 100 percent risk category. However, if the bank laid off the corporate bond's credit risk by purchasing a credit derivative from another bank, the exposure would instead be assigned to the 20 percent risk category.

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<sup>11</sup> For credit derivatives where the apparent notional amount differs from the effective notional amount, banking organizations must use the effective notional amount. For example, the effective notional amount of a credit derivative that is based on a \$100 million bond, the value of which changes \$2 for every \$1 change in the value of the bond, is \$200 million.

<sup>12</sup> Consideration may be given to capturing new information related to credit derivatives and other guarantee arrangements in specific line items in regulatory reports. The amount of past due and nonaccrual assets that are wholly or partially guaranteed by the U.S. Government is currently collected in regulatory reports.