

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

Evaluating a bank holding company's exposure to changes in interest rates is an important element of any full-scope inspection and may be the sole topic for specialized or targeted inspections. This evaluation includes assessing both the adequacy of the management process used to control IRR and the organization's 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 a bank holding company's consolidated 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 an organization's IRR that pose the greatest threat to its financial condition. This targeting requires an inspection process built on a well-focused assessment of IRR exposure before the on-site engagement, a clearly defined inspection scope, and a comprehensive program for following up on inspection findings and ongoing monitoring.

The Board, together with the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation, adopted a Joint Agency Policy Statement on Interest-Rate Risk, effective June 26, 1996. (See SR-96-17.) It provides guidance to examiners and bankers on

sound practices for managing interest-rate risk, which will form the basis for ongoing evaluation of the adequacy of interest-rate risk management at supervised institutions.

The policy statement outlines fundamental elements of sound management that have been identified in prior Federal Reserve guidance and discusses the importance of these elements in the context of managing interest-rate risk.<sup>1</sup> Specifically, the guidance emphasizes the need for active board and senior management oversight and a comprehensive risk-management process that effectively identifies, measures, and controls interest-rate risk.

Although the guidance targets interest-rate risk management at commercial banks and Edge Act corporations, the basic principles presented in the policy statement are to be applied to bank holding companies. Bank holding companies should manage and control aggregate risk exposure on a consolidated basis by recognizing legal distinctions and possible obstacles to cash movements among subsidiaries. The assessment of interest-rate risk management made by examiners in accordance with the 1996 Joint Policy Statement will be incorporated into a bank holding company's overall risk-management rating. Bank holding company examiners should refer to section 4090.1 of the *Commercial Bank Examination Manual* for more detailed inspection guidance on the joint policy statement on interest-rate risk.

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1. Guidance to examiners identifying fundamental elements of sound risk management includes SR-96-14 (see section 2124.0), "Risk-Focused Examinations and Inspections"; SR-96-13, "Joint Policy Statement on Interest-Rate Risk"; SR-96-10, "Risk-Focused Fiduciary Examinations"; SR-95-51 (see section 4070.1), "Rating the Adequacy of Risk-Management Processes and Internal Controls at State Member Banks and Bank Holding Companies"; SR-95-22, "Enhanced Framework for Supervising the U.S. Operations of Foreign Banking Organizations"; SR-95-17 (see section 2126.0), "Evaluating the Risk Management and Internal Controls of Securities and Derivatives Contracts Used in Nontrading Activities"; and SR-93-69 (see section 2125.0), "Examining Risk Management and Internal Controls for Trading Activities of Banking Organizations."

This section discusses supervisory policy with regard to structured notes and their increased use by banking organizations. Examiners should be mindful of these instruments, whether they are used in the banking organization's trading, investment, or trust activities. Some of these instruments can expose investors to significant losses as interest rates, foreign-exchange rates, and other market indices change. Consequently, during examinations or inspections, examiners need to ensure that banks and bank holding companies that hold structured notes do so according to their own investment policies and procedures and with a full understanding of the risks and price sensitivity of these instruments under a broad range of market conditions.

Structured notes, many of which are issued by U.S. government agencies, government-sponsored entities, and other organizations with high credit ratings, are debt securities whose cash flows are dependent on one or more indices in ways that create risk characteristics of forwards or options. They tend to have medium-term maturities and reflect a wide variety of cash-flow characteristics that can be tailored to the needs of individual investors.

As such, these notes may offer certain advantages over other financial instruments used to manage market risk. In particular, they may reduce counterparty credit risk, offer operating efficiencies and lower transaction costs, require fewer transactions, and more specifically address an institution's risk exposures. Risk to principal is typically small. Accordingly, when structured notes are analyzed and managed properly, they can be acceptable investments and trading products for banks.

However, structured notes can also have characteristics that cause them to be inappropriate holdings for many banking organizations, including depository institutions. They can have substantial price sensitivity; they can be complex and difficult to evaluate; and they may also reflect high amounts of leverage relative to fixed-income instruments with comparable face values. Their customized features and embedded options may also make them difficult to price and can reduce their liquidity. Consequently, banking organizations considering the purchase of structured notes should determine whether these factors are compatible with their investment horizons and with their overall portfolio strategies.

There are a wide variety of structured notes, with names such as single- or multi-index floaters, inverse floaters, index-amortizing notes,

step-up bonds, and range bonds. These simple, though sometimes cryptic, labels can belie the potential complexity of these notes and their possibly volatile and unpredictable cash flows, which can involve both principal and interest payments. Some notes employ "trigger levels" at which cash flows can change significantly, or caps or floors, which can also substantially affect their price behavior.

The critical factor for examiners to consider is the ability of management to understand the risks inherent in these instruments and to satisfactorily manage the market risks of their institution. Therefore, examiners should evaluate the appropriateness of these securities institution by institution, with a knowledge of management's expertise in evaluating such instruments, the quality of the relevant information systems, and the nature of its overall exposure to market risk. This evaluation may include a review of the stress-test capabilities. Failure of management to adequately understand the dimensions of the risks in these and similar financial products can constitute an unsafe and unsound practice for banking organizations.

When making investment decisions, some banking organizations may focus only on the low credit risk and favorable yields of structured notes and either overlook or underestimate their market and liquidity risks. Consequently, where these notes are material, examiners should discuss their role in the organization's risk-management process and assess management's recognition of their potential volatility.

The risks inherent in such complex instruments and relevant risk-management standards have been addressed in a variety of previously issued supervisory guidance, including SR-letters and supervisory manuals. This guidance includes SR-90-16, standards for investing in asset-backed securities (see section 2128.02); SR-93-69 (see section 2125.0) and SR-95-17 (see section 2126.0), examination guidance for reviewing trading and nontrading activities (SR-95-17 deals with securities and derivative contracts used in nontrading activities); and the *Trading and Capital-Markets Activities Manual*. Although these documents may not specifically cite structured notes, they all help to highlight the following important supervisory and risk-management practices that are relevant to these instruments:

1. the importance of policies, approved by the board of directors, that address the goals and objectives expected to be achieved with such products and that set limits on the amount of funds that may be committed to them
2. the need for management to fully understand the risks these instruments can present, including their potentially reduced liquidity in secondary markets and the price volatility that any embedded options, leveraging, or other characteristics can create
3. the need for adequate information systems and internal controls for managing the risks under changing market conditions
4. the importance of clear lines of authority for making investment decisions and for evaluating and managing the institution's securities activities that involve such instruments

For additional information, see SR-97-21 and SR-91-4. See also sections 3010.3 and 4040.1 of the *Trading and Capital-Markets Activities Manual* for more detailed guidance.

Banking organizations have long been involved with asset-backed securities (ABS), both as investors in such securities and as major participants in the securitization process. In recent years they have stepped up their involvement by increasing their participation in the long-established market for securities backed by residential mortgage loans and by expanding their securitizing activities to other types of assets, including 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 one depository institution to another, there are essentially five benefits that can be derived from those transactions. First, the sale of assets may reduce regulatory costs. The removal of an asset from an institution's books reduces capital requirements and reserve requirements on deposits funding the asset. Second, securitization provides originators with an additional source of funding and liquidity. The process of securitization is basically taking an illiquid asset and converting it into a security with greater marketability. Securitization issues often carry a higher credit rating than that which the institution itself could normally obtain and consequently may provide a cheaper form of funding. Third, securitization may be used to reduce interest-rate risk by improving the depository institution's asset-liability mix. This is especially true if the institution has a large investment in fixed-rate, low-yield assets. Fourth, by removing assets, the institution enhances its return on equity and assets. Finally, the ability to sell these securities worldwide diversifies the institution's funding base, thereby reducing dependence on local economies.

It is appropriate for banking organizations to engage in securitization activities and to invest in ABS, if they do so prudently. Nonetheless, these activities can significantly affect their overall risk exposure. It is therefore of great importance, particularly given the growth and expansion of such activities, for examiners to be fully informed about the fundamentals of the securitization process, the various risks that securitization and investing in ABS can create for banking organizations, and procedures that should be followed in examining banks and inspecting bank holding companies in order to effectively assess their exposure to risk and management of that exposure.

To provide examiners with the information and guidance they need on asset securitization,

the following instructions were developed for System use. The mechanics of securitization and related accounting issues are discussed, and inspection guidelines, objectives, and procedures are provided.<sup>1</sup>

### 2128.02.1 OVERVIEW OF ASSET SECURITIZATION

In recent years, the number of banks and bank holding companies (hereafter referred to as banking organizations) that have issued securities backed by their assets and that have acquired asset-backed securities as investments has increased markedly. The reason for this increase is that securitization activities can yield significant financial and operational benefits for banking organizations.

In its simplest form, asset securitization involves the selling of assets. The process first segregates generally illiquid assets into pools and transforms them into capital-market instruments. The payment of principal and interest on these instruments depends on the cash flows from the assets in the pool that underlies the new securities. The new securities may have denominations, cash flows, and other features that differ from the pooled assets, which make them more attractive to investors.

The federal government encouraged the securitization of residential mortgages. In 1970, the Government National Mortgage Association (Ginnie Mae or GNMA) created the first publicly traded mortgage-backed security. Soon, the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), both government-sponsored agencies, also developed mortgage-backed securities. The guarantees that these government or government-sponsored entities provide, which assure investors of the payment of principal and interest, have greatly facilitated the securitization of mortgage assets.

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1. The Federal Reserve System has developed the following three-volume set that contains educational material on the process of asset securitization and provides examination guidelines (see SR-90-16):

- An Introduction to Asset Securitization
- Accounting Issues Relating to Asset Securitization
- Examination Guidelines for Asset Securitization

2128.02.2 SECURITIZATION PROCESS

The asset-securitization process, as depicted in figure 1, begins with the segregation of loans or leases into pools that are relatively homogeneous with respect to credit, maturity, and interest-rate risks. These pools of assets are then transferred to a trust or other entity known as an issuer because it issues the securities or ownership interests that are acquired by investors. These asset-backed securities 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. A sponsor that provides the assets to be securitized owns or otherwise establishes the issuer.

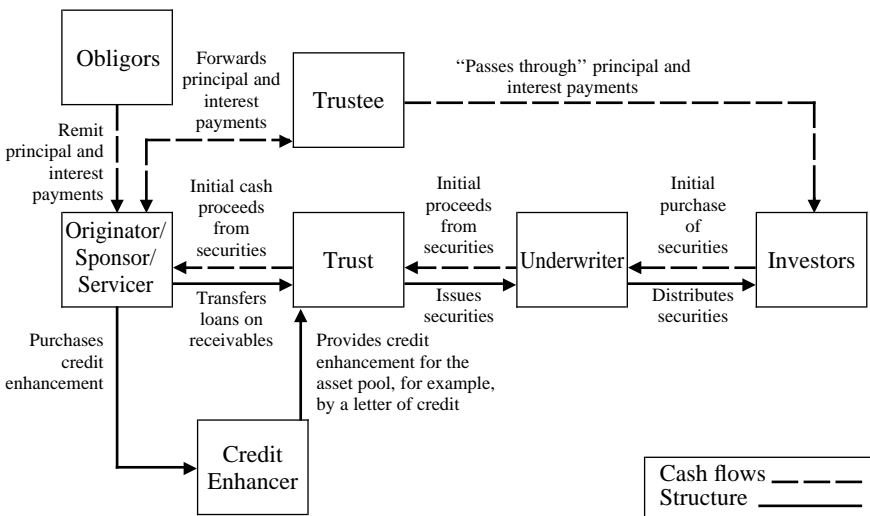
Each issue of asset-backed securities has a servicer responsible for collecting interest and principal payments on the loans or leases in the underlying pool of assets and for transmitting these funds to investors (or a trustee representing them). A trustee monitors the activities of servicers to ensure that they properly fulfill their role.

A guarantor may also be involved to see that investors receive principal and interest payments on a timely basis, even if the servicer does not collect these payments from the obligors. Many issues of mortgage-backed securi-

ties are either directly guaranteed by GNMA, a government agency backed by the full faith and credit of the U.S. government, or are guaranteed by Fannie Mae or FHLMC, 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 asset-backed securities generally depend on some form of credit enhancement provided by the originator or third party to insulate the investor from some or all of any credit losses. Usually, credit enhancement is provided for several multiples of the historical losses experienced on the particular asset backing the security.

One form of credit enhancement is the recourse provision, or guarantee, that requires the originator to cover any losses up to an amount contractually agreed upon. Some asset-backed securities, such as those backed by credit card receivables, typically use a “spread account,” which is actually an escrow account. The funds in this account are derived from a portion of the spread between the interest earned on the assets in the underlying pool and the lower interest paid on securities issued by the trust. The amounts that accumulate in the account are used to cover credit losses in the underlying asset pool up to several multiples

Figure 1  
Pass-through, asset-backed securities: structure and cash flows



of historical losses on the particular asset collateralizing the securities.

Overcollateralization, another form of credit enhancement covering a predetermined amount of potential credit losses, occurs when the value of the underlying assets exceeds the face value of the securities. Also, the senior subordinated security structure provides credit enhancement, generally to the senior class. Under such a structure, at least two classes of asset-backed securities are issued, with the senior class having a priority claim on the cash flows from the underlying pool of assets. Therefore, the subordinated class must absorb credit losses before any are 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. Other forms of credit enhancement include standby letters of credit or surety bonds from third parties.

An investment banking firm or other organization generally serves as an underwriter for asset-backed securities. 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 such 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.

Traditional lending activities are generally funded by deposits or other liabilities, and both the assets and related liabilities are reflected on the balance sheet. Deposit liabilities must generally increase in order to fund additional loans.

In contrast, the securitization process generally does not increase on-balance-sheet liabilities in proportion to the volume of loans or other assets securitized. As discussed more fully below, when banking organizations securitize their assets and these transactions are treated as sales, both the assets and the related asset-backed securities (i.e., liabilities) are removed from the balance sheet. The cash proceeds from the securitization transactions are generally used to originate or acquire additional loans or other assets for securitization and the process is repeated. Thus, for the same volume of loan originations, securitization, in comparison to traditional lending activities, results in lower assets and liabilities.

### 2128.02.3 STRUCTURE OF ASSET-BACKED SECURITIES

Asset securitization involves different kinds of capital-market instruments. These instruments may be structured as “pass-throughs” or “pay-throughs.” Under a pass-through structure, the cash flows from the underlying pool of assets are passed through to investors on a pro rata basis. This type of security is typically a single-class instrument such as a GNMA pass-through. The pay-through structure, with multiple classes, combines the cash flows from the underlying pool of assets and reallocates them to two or more issues of securities that have different cash-flow characteristics and maturities. An example is the collateralized mortgage obligation (CMO), which has a series of bond classes, each with its own specified coupon and stated maturity. In most cases, the assets that make up the CMO collateral pools are pass-through securities. Scheduled principal payments, and any prepayments, from the underlying collateral go first to the earliest maturing class of bonds. This first class of bonds must be retired before the principal cash flows are used to retire the later bond classes. The development of the pay-through structure resulted from the desire to broaden the marketability of these securities to investors who were interested in maturities other than those generally associated with pass-through securities.

Multiple-class asset-backed securities may also be issued as derivative instruments such as “stripped” securities. Investors in each class of a stripped security will receive a different portion of the principal and interest cash flows from the underlying pool of assets. In their purest form, stripped securities may be issued as *interest-only (IO) strips*, for which the investor receives 100 percent of the interest from the underlying pool of assets, and as *principal-only (PO) strips*, for which the investor receives all of the principal.

In addition to these securities, other types of financial instruments may arise as a result of asset securitization. One such instrument is loan-servicing rights that are created when organizations purchase the right to act as servicers for pools of loans. The cost of these purchased servicing rights may be recorded as an intangible asset when certain criteria are met. Another financial instrument, 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 normal servicing fees. Another instrument, asset-backed securities residuals (sometimes referred to as “residuals” or “residual interests”), represents claims on any cash flows that remain after all obligations to investors and any related expenses have been met. Such excess cash flows may arise as a result of over-collateralization or from reinvestment income. Residuals can be retained by sponsors or purchased by investors in the form of securities.

#### 2128.02.4 SUPERVISORY CONSIDERATIONS REGARDING ASSET SECURITIZATION

Although banking organizations clearly benefit from engaging in securitization activities and investing in asset-backed securities, these activities, if not conducted prudently, can increase a banking organization’s overall risk profile. For the most part, the risks that financial institutions encounter in the securitization process are identical to those that they face in traditional lending transactions. These involve credit risk, concentration risk, and interest-rate risk—including prepayment risk, operational risk, liquidity 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.

Investors who invest in asset-backed securities, like investors who invest directly in the underlying assets, will be exposed to credit risk, that is, the risk that obligors will default on principal and interest payments. 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 their 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. Also, because the secondary markets for certain asset-backed securities are thin, investors may encounter greater than anticipated difficulties when seeking to sell their securities. 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, and, therefore, may dramatically affect the risk exposure of investors unless used in a properly structured hedging strategy.

Banking organizations that issue asset-backed securities may be subject to pressures to sell only their best assets, thus reducing the quality of their own loan portfolios. On the other hand, some banking organizations may feel pressures to relax their credit standards because they can sell assets with higher risk than they would normally want to retain for their own portfolios.

Banking organizations that service securitization issues must ensure that their policies, operations, and systems will not permit breakdowns that may lead to defaults. Issuers and servicers may face pressures to provide “moral recourse” by repurchasing securities backed by loans or leases that they have originated that have deteriorated and become nonperforming. Funding risk may also be a problem for issuers when market aberrations do not permit the issuance of asset-backed securities that are in the securitization pipeline.

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 asset-backed securities, 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 transaction secured by assets. Sales treatment results in the assets being removed from the banking organization’s balance sheet, thus reducing total assets relative to earnings and capital, thereby producing higher performance and capital ratios. Treatment of 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.<sup>2</sup>

#### 2128.02.5 POLICY STATEMENT ON INVESTMENT SECURITIES AND END-USER DERIVATIVES ACTIVITIES

On April 23, 1998, the FFIEC issued a State-

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<sup>2</sup> Note, however, that the Federal Reserve’s Regulation D defines what constitutes a reservable liability of a depository institution. Thus, although a given transaction may qualify as an asset sale for call report purposes, it nevertheless could result in a reservable liability under Regulation D.

ment on Investment Securities and End-User Derivatives Activities, effective May 25, 1998. The statement was adopted by the Board of Governors and the other federal financial institutions regulatory agencies. It provides guidance on sound practices for managing the risks of investment activities, focusing on sound risk-management practices that should be used by state member banks and Edge corporations. The basic principles also apply to bank holding companies, which should manage and control risk exposures on a consolidated basis, giving recognition to the legal distinctions and potential obstacles to cash movements among subsidiaries.

The statement's principles set forth risk-management practices that are relevant to most portfolio-management endeavors. The statement places greater emphasis on a risk-focused approach to supervision. Instruments held for end-user reasons are considered, taking into consideration a variety of factors such as management's ability to manage and measure risk within the institution's holdings and the impact of those holdings on aggregate portfolio risk. See section 2126.1 and SR-98-12.<sup>3</sup>

### 2128.02.5.1 Mortgage-Derivative Products

Mortgage-derivative products include instruments such as collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs), stripped mortgage-backed securities (SMBS), and CMO and REMIC residuals. Supervisory concerns about these instruments arise from their extreme sensitivity to interest rates and the resulting price volatility. This price volatility is caused in part by the uncertain cash flows that result from changes in the prepayment rates of the underlying mortgages. Institutions that purchase such high-risk mortgage-derivative securities need to understand and effectively manage the associated risks. The levels of activity in such products should reasonably be related to the institution's capital, capacity to absorb losses, and level of in-house management sophistication and expertise. Appropriate managerial and financial controls need to be in place, and the institution must analyze, monitor, and prudently adjust its holdings of high-risk mortgage securities in an environment of changing price and maturity expectations.

Before an institution takes a position in any high-risk mortgage security, management should conduct an analysis to ensure that the position will reduce the institution's overall interest-rate risk. It should also consider the liquidity and price volatility of these products before their purchase.

CMOs and REMICs were developed in response to investors' concerns about the uncertainty of cash flows associated with the prepayment option of the underlying mortgagor. These securities can be collateralized directly by mortgages, but more often they are collateralized by mortgage-backed securities issued or guaranteed by GNMA, Fannie Mae, or FHLMC and held in trust for investors. The cash flow from the underlying mortgages is segmented and paid in accordance with a predetermined priority to investors holding various tranches. By allocating the principal and interest cash flows from the underlying collateral among the separate CMO tranches, different classes of bonds are created, each with its own stated maturity, estimated average life, coupon rate, and prepayment characteristics. It is essential to understand the coupon rates of the underlying mortgages of the CMO or REMIC in order to assess the prepayment sensitivity of the CMO tranches.

SMBS consist of two classes of securities, with each class receiving a different portion of the monthly interest and principal cash flows from the underlying mortgage-backed securities (MBS). A stripped mortgage-backed security, in its purest form, is converted into an interest-only (IO) strip, in which the investor receives all of the interest cash flows and none of the principal. An investor owning a principal-only (PO) strip receives all of the principal cash flows and none of the interest. IOs and POs have highly volatile price characteristics based, in part, on the prepayment variability of the underlying mortgages. Generally, POs increase in value when interest rates decline, in part because prepayments shorten the maturity of mortgages. In contrast, IOs and residuals tend to increase in value when interest rates rise because prepayments decline, maturities lengthen, and more interest is collected on the underlying mortgages.

When purchasing an IO, PO, or residual, without offsetting hedges, the investor may be speculating on future interest-rate movements and how these movements will affect the prepayment of the underlying collateral. Furthermore, stripped mortgage-backed securities

3. The supervisory policy statement on Investment Securities and End-User Derivatives Activities is in the *Federal Reserve Regulatory Service* at 3-1562.



that do not have a government agency's or a government-sponsored agency's guarantee of principal and interest have an added element of credit risk. The policy statement discusses the appropriateness of these instruments for depository institutions and the prudential measures that a depository institution should take to protect itself from undue risk when investing in them.

Residuals represent claims on any cash flows from a CMO issue or other asset-backed security remaining after the payments to the holders of the other classes have been made and after trust-administration expenses are met. The economic value of a residual is a function of the present value of the anticipated cash flows.

### 2128.02.6 RISK-BASED CAPITAL PROVISIONS AFFECTING ASSET SECURITIZATION

The risk-based capital framework has three main features that will affect the asset-securitization activities of banking organizations. First, the framework assigns risk weights to loans, asset-backed securities, and other assets related to securitization. Second, bank holding companies that transfer assets with recourse to the seller as part of the securitization process will now explicitly be required to hold capital against their off-balance-sheet credit exposures. Third, banking organizations that provide credit enhancement to asset-securitization issues through standby letters of credit or by other means will have to hold capital against the related off-balance-sheet credit exposure.

The risk weights assigned to an asset-backed security depend on the issuer and whether the assets that make up the collateral pool are mortgage-related assets. Asset-backed securities issued by a trust or by a single-purpose corporation and backed by nonmortgage assets are to be assigned a risk weight of 100 percent.

Securities guaranteed by U.S. government agencies and those issued by U.S. government-sponsored agencies are assigned risk weights of 0 and 20 percent, respectively, because of the low degree of credit risk. Accordingly, mortgage pass-through securities guaranteed by GNMA are placed in the risk category of 0 percent. In addition, securities such as participation certificates and CMOs issued by Fannie Mae or FHLMC are assigned a 20 percent risk weight.

However, several types of securities issued by Fannie Mae and FHLMC are excluded from the lower risk weight and slotted in the 100 percent risk category. Residual interests (for example, CMO residuals) and subordinated classes of pass-through securities or CMOs that absorb more than their pro rata share of loss are assigned to the 100 percent risk-weight category. Furthermore, all stripped mortgage-backed securities, including IOs, POs, and similar instruments, are assigned to the 100 percent risk-weight category because of their extreme price volatility and market risk. The treatment of stripped mortgage-backed securities will be reconsidered when a method to measure interest-rate risk is incorporated into the risk-based capital guidelines.

A privately issued, mortgage-backed security that meets the criteria listed below is considered as a direct or indirect holding of the underlying mortgage-related assets and is assigned to the same risk category as those assets (for example, U.S. government agency securities, U.S. government-sponsored agency securities, FHA- and VA-guaranteed mortgages, and conventional mortgages). However, under no circumstances will a privately issued mortgage-backed security be assigned to the 0 percent risk category. Therefore, private issues that are backed by GNMA securities will be assigned to the 20 percent risk category as opposed to the 0 percent category appropriate to the underlying GNMA securities. Following are the criteria that a privately issued mortgage-backed security must meet to be assigned the same risk weight as the underlying assets:

1. The underlying assets are held by an independent trustee, and the trustee has a first-priority, perfected security interest in the underlying assets on behalf of the holders of the security.
2. The holder of the security has an undivided pro rata ownership interest in the underlying mortgage assets, or the trust or single-purpose entity (or conduit) that issues the security has no liabilities unrelated to the issued securities.
3. The cash flow from the underlying assets of the security in all cases fully meets the cash-flow requirements of the security without undue reliance on any reinvestment income.
4. No material reinvestment risk is associated with any funds awaiting distribution to the holders of the security.

Those privately issued mortgage-backed securities that do not meet the above criteria are

to be assigned to the 100 percent risk category.

If the underlying pool of mortgage-related assets is composed of more than one type of asset, then the entire class of mortgage-backed securities is assigned to the category appropriate to the highest risk-weighted asset in the asset pool. For example, if the security is backed by a pool consisting of U.S. government-sponsored agency securities (for example, FHLMC participation certificates) that qualify for a 20 percent risk weight and conventional mortgage loans that qualify for the 50 percent risk category, then it would receive the 50 percent risk weight.

As previously mentioned, bank holding companies report their activities in accordance with generally accepted accounting principles (GAAP), which permits asset-securitization transactions to be treated as sales when certain criteria are met, even when there is recourse to the seller. With the advent of risk-based capital, bank holding companies will be explicitly required to hold capital against the off-balance-sheet credit exposure arising from the contingent liability associated with the recourse provisions. This exposure is considered a direct credit substitute that would be converted at 100 percent to an on-balance-sheet credit-equivalent amount for appropriate risk weighting.

Banking organizations that issue standby letters of credit for asset-backed security issues, as credit enhancements, 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.

## 2128.02.7 UNDERWRITING AND DEALING IN SECURITIES

Member banks may underwrite and deal in obligations of the United States, general obligations of states and political subdivisions, and certain securities issued or guaranteed by government agencies (12 U.S.C. 335 and 12 U.S.C. 24 (Seventh)). Bank holding companies may underwrite and deal in U.S. government and agency and state and municipal securities and other obligations that state member banks are authorized to underwrite and deal in under section 16 of the Glass-Steagall Act (referred to as “eligible-securities”), as authorized by section 225.28(b)(8) of Regulation Y. By Board order, beginning in 1987, certain bank holding com-

pany nonbanking subsidiaries were given the authority to underwrite and deal in “ineligible securities” that member banks may not underwrite and deal in, specifically—

1. municipal revenue bonds, including “public ownership” industrial development bonds (tax-exempt bonds in which the governmental issuer, or the government unit on behalf of which the bonds are issued, is the owner, for federal income tax purposes, of the financed facility—such as airports, mass transportation facilities, and water pollution control facilities);
2. mortgage-related securities (obligations secured by or representing an interest in one-to four-family residential real estate);
3. consumer-receivable-related securities; and
4. “prime quality” commercial paper.

In January 1989, certain bank holding companies having section 20 nonbanking subsidiaries were also approved to underwrite and deal in debt or equity securities (excluding open-end investment companies). The Board, however, required that each applicant establish the necessary managerial and operational infrastructure before receiving Board authorization to commence the expanded underwriting and dealing activity. All bank holding companies having section 20 Board orders are subject to specific conditions (“firewalls”) as stated within their respective Board orders.

On September 21, 1989, the Board approved by order (1989 FRB 751) the ability of bank holding company subsidiaries to underwrite and deal in securities of affiliates, consistent with the former section 20 of the Glass-Steagall Act, if the securities—

1. are rated by an unaffiliated, nationally recognized statistical rating organization or
2. are issued or guaranteed by Fannie Mae, FHLMC, or GNMA, or represent interests in such obligations.

The securitization power of national banks was reaffirmed on February 20, 1990, when the Supreme Court let stand a court of appeals ruling that permits national banks to package and sell mortgage loans as securities. The ruling confirms that they can not only sell but underwrite mortgage-backed securities from mortgage loans that they originate (*Securities Indus-*

*try Association v. Clarke*, 885 F.2d 1034 (2d Cir. 1989), *cert. denied*, 110 S.Ct. 1113).

### 2128.02.8 INSPECTION OBJECTIVES

1. To determine that securitization activities are integrated into the overall strategic objectives of the organization.
2. To determine that sources of credit risk are understood, properly analyzed, and managed, without excessive reliance on credit ratings by outside agencies.
3. To determine that credit, operational, and other risks are recognized and addressed through appropriate policies, procedures, management reports, and other controls.
4. To determine that liquidity and market risks are recognized and that the organization is not excessively dependent on securitization as a substitute for funding or as a source of income.
5. To determine that steps have been taken to minimize the potential for conflicts of interest due to securitization.
6. To determine that possible sources of structural failure in securitization transactions are recognized and that the organization has adopted measures to minimize the impact of such failures if they occur.
7. To determine that the organization is aware of the legal risks and uncertainty regarding various aspects of securitization.
8. To determine that concentrations of exposure in the underlying asset pools, in the asset-backed securities portfolio, or in the structural elements of securitization transactions are avoided.
9. To determine that all sources of risk are evaluated at the inception of each securitization activity and are monitored on an ongoing basis.

### 2128.02.9 INSPECTION PROCEDURES

1. Review the parent company's policies and procedures to ensure that its banking and nonbanking subsidiaries follow prudent standards of credit assessment and approval for all securitization exposure. Procedures should include thorough and independent credit assessment of each loan or pool for which it has assumed credit risk, followed by periodic credit reviews to monitor performance throughout the life of the expo-

sure. If a banking organization invests in asset-backed securities, determine whether there is sole reliance on conclusions of external rating services when evaluating the securities.

2. Determine that rigorous credit standards are applied regardless of the role the organization plays in the securitization process, for example, servicer, credit enhancer, or investor.
3. Determine that major policies and procedures, including internal credit-review and -approval procedures and "in-house" exposure limits, are reviewed periodically and approved by the bank holding company's board of directors.
4. Determine whether adequate procedures for evaluating the organization's internal-control procedures and the financial strength of the other institutions involved in the securitization process are in place.
5. Obtain the documentation outlining the remedies available to provide credit enhancement in the event of a default. Both originators and purchasers of securitized assets should have prospectuses on the issue. Obtaining a copy of the prospectus can be an invaluable source of information. Prospectuses generally contain information on credit enhancement, default provisions, subordination agreements, etc.
6. Ensure that, regardless of the role an institution plays in securitization, the documentation for an asset-backed security clearly specifies the limitations of the institution's legal responsibility to assume losses.
7. Verify whether the banking organization, acting as originator, packager, or underwriter, has written policies addressing the repurchase of assets and other reimbursement to investors in the event that a defaulted package results in losses exceeding any contractual credit enhancement. The repurchase of defaulted assets or pools in contradiction of the underlying agreement in effect sets a standard by which a banking organization could be found legally liable for all "sold" assets. Review and report any situations in which the organization has repurchased or otherwise reimbursed investors for poor-quality assets.
8. Classify adverse credit risk associated with securitization of assets when analyzing the adequacy of an organization's capital or reserve levels. Adverse credit risk should be classified accordingly.
9. Aggregate securitization exposures with all loans, extensions of credit, debt and equity

- securities, legally binding financial guarantees and commitments, and any other investments involving the same obligor when determining compliance with internal credit-exposure limits.
10. Review securitized assets for industrial or geographic concentrations. Excessive exposures to an industry or region among the underlying assets should be noted in the review of the loan portfolio.
  11. Ensure that, in addition to policies limiting direct credit exposure, an institution has developed exposure limits with respect to particular originators, credit enhancers, trustees, and servicers.
  12. Review the policies of the banking organization engaged in underwriting with regard to situations in which it cannot sell underwritten asset-backed securities. Credit review, funding capabilities, and approval limits should allow the institution to purchase and hold unsold securities. All potential credit exposure should be within legal lending limits.
  13. Ensure that internal systems and controls adequately track the performance and condition of internal exposures and adequately monitor the organization's compliance with internal procedures and limits. In addition, adequate audit trails and internal-audit coverage should be provided.
  14. Determine that management information systems provide—
    - a. a listing of all securitizations in which the organization is involved;
    - b. a listing of industry and geographic concentration;
    - c. information on total exposure to specific originators, servicers, credit enhancers, trustees, or underwriters;
    - d. information regarding portfolio aging and performance relative to expectations; and
    - e. periodic and timely information to senior management and directors on the organization's involvement in and credit exposure arising from securitization.
  15. Ensure that internal auditors examine all facets of securitization regularly.
  16. Review policies and procedures for compliance with applicable state lending limits and federal law such as section 5136 of the Revised Code. These requirements must be analyzed to determine whether a particular asset-backed security issue is considered a single investment or a loan to each of the creditors underlying the pool. Collateralized mortgage obligations may be exempt from this limitation if they are issued or guaranteed by an agency or instrumentality of the U.S. government.
  17. Determine whether the underwriting of asset-backed securities of affiliates are—
    - a. rated by an unaffiliated, nationally recognized statistical rating organization or
    - b. issued or guaranteed by Fannie Mae, FHLMC, or GNMA, or represent interests in such obligations.
  18. If the parent organization or any of its banking and nonbanking subsidiaries invests in high-risk mortgage-derivative securities, determine whether management effectively manages the associated risks commensurate with the level of activity.
    - a. Determine whether the level of activity is reasonably related to the level of capital, the organization's ability to absorb losses, and the level of in-house management sophistication and expertise.
    - b. Ascertain whether the appropriate managerial and financial controls are required to be in place, and whether the parent organization analyzes, monitors, and prudently adjusts holdings of such high-risk securities when an environment of changing price and maturity expectations exists. In that regard, determine to what extent the organization considers the liquidity and price volatility of the high-risk mortgage-derivative products before their acquisition.

### 2128.03.1 INTRODUCTION TO CREDIT- SUPPORTED AND ASSET-BACKED COMMERCIAL PAPER

The issuance of commercial paper provides an alternative to bank borrowing for large corporations (nonfinancial and financial) and municipalities. Generally, commercial paper issuers are those with high credit ratings. In recent years, however, some corporations with lower credit ratings have been able to issue commercial paper by obtaining credit enhancements (credit support from a firm with a high credit rating<sup>1</sup>) or other high-quality asset collateral (asset-backed commercial paper) to allow them to enter the market as issuers. An example of credit-supported commercial paper is one supported by a letter of credit (LOC), the terms of which specify that the bank issuing the LOC guarantees that the bank will pay off the commercial paper if the issuer fails to pay off the commercial paper upon maturity.<sup>2</sup> A credit enhancement could also consist of a surety bond from an insurance company.

### 2128.03.2 COMMERCIAL BANK INVOLVEMENT IN CREDIT-ENHANCED AND ASSET-BACKED COMMERCIAL PAPER

A number of commercial banks have become involved in credit-enhanced and asset-backed commercial paper programs. These securitization programs enable banks to help arrange short-term financing support for their customers without having to extend credit directly. This provides borrowers with an alternative source of funding and allows banks to earn fee income for managing the programs. Fees are earned for providing credit and liquidity enhancements to these programs.

It is important to emphasize that involvement in such programs can have potentially significant implications for the organizations' credit and liquidity risk exposure. Therefore, examiners need to be fully informed on the fundamentals of these programs, on the risks associated with these programs, and on the examination and inspection procedures for banking organizations engaged in this activity.

Asset-backed commercial paper programs have been in existence since the early 1980s and have grown substantially over the last few years. These programs use a special-purpose entity (SPE) to acquire receivables generally originated either by corporations or sometimes by the advising bank itself.<sup>3</sup> The SPEs, which are owned by third parties,<sup>4</sup> fund their acquisitions of receivables by issuing commercial paper that is to be repaid from the cash flow of the receivables.

Bank involvement in an asset-backed commercial paper program can range from advising the program to advising and providing all of the required credit and liquidity enhancements in support of the SPE's commercial paper. Typically, the advising bank, or an affiliate, performs a review to determine if the receivables of potential program participants (that is, corporate sellers) are eligible for purchase by the SPE. The scope of the review is similar to that used in structuring credit card or automobile-loan-backed transactions.

Once the bank (or its affiliate) determines that a receivables portfolio has an acceptable credit-risk profile, it approves the purchase of the portfolio at a discounted price by the SPE. The bank or its affiliate may also act as the operating agent for the SPE. This entails structuring the sale of receivable pools to the SPE and then overseeing the performance of the pools on an ongoing basis.

The SPE pays for the receivables by issuing commercial paper in an amount equal to the discounted price paid for the receivables. The difference between the face value of the receivables and the discounted price paid provides, as discussed below, the first level of credit protection for the commercial paper. The individual companies selling their receivables traditionally act as the servicer for receivables sold to an SPE; that is, they are responsible for collecting principal and interest payments from the obli-

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3. To date, the type of receivables that have been included in such programs are trade receivables, installment sales contracts, financing leases, and noncancelable portions of operating leases and credit card receivables.

4. Employees of an investment banking firm or some other third party generally own the equity of the SPE. The advising bank can specifically avoid owning the stock if it does not want to raise the issue of whether it must consolidate the SPE for accounting purposes.

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1. Such paper is usually called "credit-supported commercial paper."

2. Usually referred to as "LOC paper."

gors and passing these funds on to the SPE on a periodic basis. The SPE then distributes the proceeds to the holders of the commercial paper.

Asset-backed commercial paper programs typically have several levels of credit enhancement cushioning the commercial paper purchaser from potential loss. As noted above, the first level of loss protection is provided by the difference between the face value of the receivables purchased and the discounted price paid for them, known as a “holdback” or “overcollateralization.” In some cases, the terms of the sale also give the SPE recourse back to the seller if there are defaults on the receivables. The amount of overcollateralization and recourse varies from pool to pool and depends, in part, upon the quality of the receivables in the pool and the desired credit rating for the paper to be issued. Usually, the level of credit protection provided by overcollateralization is specified in terms of some multiple of historical loss experience for similar assets.

In addition to overcollateralization and recourse, secondary credit enhancements are also customarily provided. Secondary credit enhancements include letters of credit, surety bonds, or other backup facilities that obligate a third party to purchase pools of receivables from the SPE at a specified price. In addition to credit enhancements, the programs generally have liquidity enhancements to ensure that the SPE can meet maturing paper obligations.

The rating agencies typically require an SPE’s commercial paper to have secondary enhancements aggregating 100 percent of the amount outstanding in order to receive the highest credit rating. These enhancements are generally structured in one of two ways. In the first, a commercial bank enters into a single agreement under which it is unconditionally obligated to provide funding for all or any portion of maturing commercial paper that an SPE cannot pay from other sources. The obligation to fund may be triggered by credit losses, a liquidity shortfall, or both. In the second, two separate agreements that jointly cover 100 percent of an SPE’s outstanding commercial paper are established.

The first, typically an irrevocable letter of credit, is primarily intended to absorb credit losses that exceed the first tier of credit enhancement for the commercial paper. The second arrangement is a “liquidity” facility that may or may not provide credit support. This second structure will often have a letter of credit equaling 10 to 15 percent of outstandings, with the

liquidity facility covering the remaining 85 to 90 percent.

### 2128.03.3 RISK-BASED CAPITAL TREATMENT FOR CREDIT-SUPPORTED AND ASSET-BACKED COMMERCIAL PAPER PROGRAMS

Generally, a single funding agreement that has no escape clause, such as a material-adverse-change clause that requires a bank to unconditionally provide funding to repay maturing commercial paper when the need arises because of either credit or liquidity problems should be treated as a direct credit substitute, or guarantee. The risk-based capital guidelines specify that the full amount of such obligations are to be converted to an on-balance-sheet credit-equivalent amount using a 100 percent conversion factor. No part of these arrangements should be considered commitments (either short-term or long-term) for risk-based capital purposes and assigned the conversion factor of a commitment. In the case of enhancements provided by separate facilities, a 100 percent conversion factor should be assigned to a letter of credit or any other form of credit guarantee provided by the bank. The accompanying liquidity facility, on the other hand, should be treated as a commitment and assigned a 50 percent conversion factor if over one year in maturity and a zero percent conversion factor if one year or less in maturity. One of the characteristics of liquidity facilities is that such arrangements generally have some reasonable asset-quality test that must be met before funds are extended to the SPE, to ensure that the bank is not providing credit protection.

### 2128.03.4 BOARD OF DIRECTORS’ POLICIES PERTAINING TO CREDIT-ENHANCED OR ASSET-BACKED COMMERCIAL PAPER

A banking organization (that is, a bank or bank holding company) participating in an asset-backed commercial paper program should ensure that such participation is clearly and logically integrated into its overall strategic objectives. Furthermore, the management should ensure that the risks associated with the various roles that the institution may play in such programs are fully understood and that safeguards are in place to manage these risks properly.

Appropriate policies, procedures, and controls should be established by a banking organi-

zation before it participates in asset-backed commercial paper programs. Significant policies and procedures should be approved and reviewed periodically by the organization's board of directors. These policies and procedures should ensure that the organization follows prudent standards of credit assessment and approval regardless of the role an institution plays in an asset-backed commercial paper program. Such policies and procedures would be applicable to all pools of receivables to be purchased by the SPE as well as the extension of any credit enhancements and liquidity facilities. Procedures should include an initial, thorough credit assessment of each pool for which it had assumed credit risk, followed by periodic credit reviews to monitor performance throughout the life of the exposure. Furthermore, the policies and procedures should outline the credit-approval process and establish "in-house" exposure limits, on a consolidated basis, with respect to particular industries or organizations, that is, companies from which the SPE purchased the receivables as well as the receivable obligors themselves. Controls should include well-developed management information systems and monitoring procedures.

Institutions should analyze the receivables pools underlying the commercial paper as well as the structure of the arrangement. This analysis should include a review of—

1. the characteristics, credit quality, and expected performance of the underlying receivables;
2. the banking organization's ability to meet its obligations under the securitization arrangement; and
3. the ability of the other participants in the arrangement to meet their obligations.

Banking organizations providing credit enhancements and liquidity facilities should conduct a careful analysis of their funding capabilities to ensure that they will be able to meet their obligations under all foreseeable circumstances. The analysis should include a determination of the impact that fulfillment of these obligations would have on their interest-rate risk exposure, asset quality, liquidity position, and capital adequacy.

Examiners should review carefully the asset-backed commercial paper facilities provided by banking organizations to ensure that they are applying, for risk-based capital purposes, the proper conversion factors to their obligations supporting asset-backed commercial paper programs. In addition, examiners should determine

whether the previously discussed policies are operative and that institutions are adequately managing their risk exposure. A discussion of the size, effectiveness, and risks associated with these programs should be included in the confidential section of the examination or inspection report if not appropriate for the open section. See SR-92-11.

### 2128.03.5 INSPECTION OBJECTIVES

1. To determine whether the banking organization (that is, a bank or bank holding company) participating in an asset-backed commercial paper program has included such participation in its overall strategic objectives.
2. To determine whether management fully understands the risks associated with the involvement in such credit enhancement and asset-backed commercial paper programs and whether appropriate safeguards are in place to properly manage those risks.
3. To ascertain that the appropriate policies, procedures, and controls have been established by the banking organization before participating in asset-backed commercial paper programs.
4. To verify whether existing managerial and internal controls include well-developed management information systems and monitoring procedures.
5. To determine whether the banking organization has conducted a careful analysis of its funding capabilities to ensure that it will be able to meet its obligations under all foreseeable circumstances.

### 2128.03.6 INSPECTION PROCEDURES

1. Review the board of directors or executive committee minutes and establish whether the significant policies and procedures for credit-enhanced or asset-backed commercial paper have been approved and reviewed periodically by the organization's board of directors.
  - a. Determine whether the policies are operative and that institutions are adequately managing their risk exposure.
  - b. Determine whether the policies and procedures are applicable to all pools of receivables to be purchased by the SPE as well

- as to the extension of any credit enhancements and liquidity facilities.
2. Determine if the organization follows prudent standards of credit assessment and approval.
    - a. Ascertain whether the procedures include an initial, thorough credit assessment of each pool for which it had assumed credit risk, followed by periodic credit reviews to monitor performance throughout the life of the exposure.
    - b. Determine if the policies and procedures outline the credit-approval process and establish “in-house” exposure limits, on a consolidated basis, with respect to particular industries or organizations, that is, companies from which the SPE purchased the receivables as well as the receivable obligors themselves.
    - c. Determine whether the organization analyzes the receivables pools underlying the commercial paper as well as the structure of the arrangement. Does the analysis include a review of—
      - the characteristics, credit quality, and expected performance of the underlying receivables;
      - the ability of the banking organization to meet its obligations under the securitization arrangement; and
      - the ability of the other participants in the arrangement to meet their obligations?
  3. Review the organization’s funding obligations and commitments, and determine whether there is sufficient liquidity to satisfy those funding requirements. Include a determination of the impact that fulfillment of these obligations would have on their interest-rate risk exposure, asset quality, liquidity position, and capital adequacy.
  4. Review carefully the asset-backed commercial paper facilities to ensure that they are applying, for risk-based capital purposes, the proper conversion factors to their obligations supporting asset-backed commercial paper programs.
  5. Include in the inspection report a discussion of the size, effectiveness, and risks associated with these programs (include in the confidential section of the inspection report if not appropriate for the open section).



Securitization activities present unique and sometimes complex risks that require the attention of senior management and the board of directors. Retained interests from securitization activities, including interest-only strips receivable, arise when a banking organization (BO) keeps an interest in the assets sold to a securitization vehicle that, in turn, issues bonds to investors.<sup>1</sup>

The methods and models BOs use to value retained interests and the difficulties in managing exposure to these volatile assets can raise supervisory concerns. Under generally accepted accounting principles (GAAP), a BO 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 on the present value of future cash flows in excess of the amounts needed to service the bonds and cover credit losses and other fees of the securitization vehicle.<sup>2</sup>

Determinations of fair value should be based on reasonable, conservative assumptions about factors such 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 the absence of such support, the retained interests should not be carried as assets on a BO's books, but 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 supervisory guidance focuses on and incorporates important fundamental concepts of risk-management and risk-focused supervision: active oversight by senior management and the board of directors, the use of effective policies and limits, accurate and independent procedures to measure and assess risk, and the maintenance of strong internal controls.<sup>3</sup> The guidance

stresses sound risk-management, modeling, valuation, and disclosure practices for asset securitization; complements previous supervisory guidance issued on this subject; and supplements existing policy statements and examination-inspection procedures.<sup>4</sup> Emphasis is placed on the expectation that a BO's securitization-related retained interest must be supported by documentation of the interest's fair value, using reasonable, conservative valuation assumptions that can be objectively verified. Retained interests that lack such objectively verifiable support or that fail to meet these supervisory standards will be classified as loss and disallowed for inclusion as assets of the BO for regulatory capital purposes. See SR-99-37 and the more complete text of its referenced interagency guidance on the risk management and valuation of retained interests arising from asset securitization activities.

Examiners will review a BO's valuation of retained interests and the concentration of these assets relative to capital. Consistent with existing supervisory authority, BOs may be required, on a case-by-case basis, to hold additional capital commensurate with their risk exposures.<sup>5</sup> An excessive dependence on securitizations for day-to-day core funding can present significant liquidity problems during times of market turbulence or if there are difficulties specific to the BO.

## 2128.06.1 ASSET SECURITIZATION

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. BOs use asset securi-

1. The term "banking organization" (BO) refers to any federally supervised banking organization. This includes federally insured, federally chartered financial institutions that are supervised by a federal bank or savings association supervisory authority, as well as bank holding companies and their nonbank subsidiaries.

2. See Financial Accounting Standards Board (FASB) Statement of Financial Accounting Standard No. 125 (FAS 125), "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities."

3. See SR-96-14, "Risk-Focused Safety-and-Soundness Examinations and Inspections" (section 2124.0 of this manual), and SR-95-51, "Rating the Adequacy of Risk-Management Processes and Internal Controls at State Mem-

ber Banks and Bank Holding Companies" (section 4070.1 of this manual).

4. See SR-97-21, "Risk Management and Capital Adequacy of Exposures Arising from Secondary-Market Credit Activities"; SR-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 SR-96-30, "Risk-Based Capital Treatment for Spread Accounts That Provide Credit Enhancement for Securitized Receivables."

5. For instance, a BO has high concentrations of retained interests relative to its capital or is otherwise at risk from impairment of these assets.

tization to access alternative funding sources, manage concentrations, improve financial-performance ratios, and more efficiently meet customer needs. Assets typically securitized include credit card receivables, automobile receivable paper, commercial and residential first mortgages, commercial loans, home equity loans, and student loans.

Senior management and directors must have the requisite knowledge of the effect of securitization on the BO's risk profile and must be fully aware of the accounting, legal, and risk-based capital nuances of this activity. BOs must fully and accurately distinguish and measure the risks that are transferred versus those retained, and must adequately manage the retained portion. It is essential that BOs 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.

Appropriate valuation and modeling methodologies must be used. They must be able 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." The carrying value, however, of that interest must be fully documented, based on reasonable assumptions, and regularly analyzed for any subsequent impairment in value. The best evidence of fair value is a quoted market price in an active market. When 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>6</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.

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, a BO 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 retained interests represent an excessive concentration of the sponsoring BO's capital, the BO's demise. BO managers and directors need to ensure the following:

1. 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.
2. 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.
3. 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 the BO retains. The findings of such reviews should be reported directly to the board or an appropriate board committee.
4. Accurate and timely risk-based capital calculations are maintained, including recognition and reporting of any recourse obligation resulting from securitization activity.
5. Internal limits are in place to govern the maximum amount of retained interests as a percentage of total equity capital.
6. A realistic liquidity plan is in place for the BO in case of market disruptions.

## 2128.06.2 INDEPENDENT RISK-MANAGEMENT FUNCTION

BOs 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 BO's circumstances. A sound asset securitization policy should include or address, at a minimum—

1. a written and consistently applied accounting methodology;
2. regulatory reporting requirements;
3. valuation methods, including FAS 125 residual value assumptions, and procedures

6. See FAS 125, at para. 43.

- to formally approve changes to those assumptions;
4. a management reporting process; and
  5. 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. 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 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 will help well-managed BOs 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:

1. *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.
2. *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 total managed assets. These reports should segregate specific products and different marketing campaigns.
3. *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.
4. *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 to 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 125 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.
5. *Sensitivity analysis.* A sensitivity analysis measures the effect of changes in default rates, prepayment or payment rates, and dis-

count 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, overcollateralization 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>7</sup> Examiners will review the BO-conducted analysis and the volatility associated with retained interests when assessing the Sensitivity to Market Risk component rating (the “S” in the CAMELS rating system for banks or the “M” for the BHC rating system<sup>8</sup>).

6. *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.

### 2128.06.3 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. BOs are expected to take a logical and

conservative approach when developing securitization assumptions and capitalizing future income flows. It is important that management quantifies the assumptions at least quarterly on a pool-by-pool basis and maintains supporting documentation for all changes to the assumptions as part of the valuation. 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.

To determine the value of the retained interest at inception, and make appropriate adjustments going forward, the BO must implement a reasonable modeling process to comply with FAS 125. Management is expected 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 that 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 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 using 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 and from the modeling process. The audit scope should include procedures to ensure that the modeling process and validation mechanisms are both appropriate for the BO’s circumstances and executed consistent with its asset securitization policy.

7. The Joint Agency Policy Statement on Interest-Rate Risk (see SR-96-13 and section 2127.0) advises institutions with a high level of exposure to interest-rate risk relative to capital that they will be directed to take corrective action.

8. See sections 4070.0 and 4070.1.

#### 2128.06.4 USE OF OUTSIDE PARTIES

Third parties are often engaged to provide professional guidance and support regarding a BO's securitization activities, transactions, and valuation of retained interests. The use of outside resources does not relieve directors of their oversight responsibility, or relieve senior management of its responsibilities to provide supervision, monitoring, and oversight of securitization activities, particularly the management of the risks associated with retained interests. Management is expected to have the experience, knowledge, and abilities to discharge its duties and understand the nature and extent of the risks retained interests present, and to have 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.

#### 2128.06.5 INTERNAL CONTROLS

Effective internal controls are essential to a BO'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 BO'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, and assist in their timely detection. 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.

Operational and managerial standards have been established for internal control and information systems.<sup>9</sup> A system of internal controls should be maintained that is appropriate to the BO's size and the nature, scope, and risk of its activities.<sup>10</sup>

9. See the safety-and-soundness standards for national banks at 12 CFR 30 (OCC), and for savings associations at 12 CFR 570 (OTS).

10. BOs that are subject to the requirements of FDIC regulation 12 CFR 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

#### 2128.06.6 AUDIT FUNCTION OR INTERNAL REVIEW

A BO's board of directors is responsible for ensuring 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 should include compliance with securitization policies, operating and accounting procedures (FAS 125), deal covenants, and the accuracy of MIS and regulatory reports. The audit function also should confirm that the BO's regulatory reporting process is designed and managed 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 that balances reconcile to internal records.

#### 2128.06.7 REGULATORY REPORTING OF RETAINED INTERESTS

The securitization and subsequent removal of assets from a BO's balance sheet requires additional reporting as part of the regulatory reporting process. Common regulatory reporting errors stemming from securitization activities may include—

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

A BO's directors and senior management are responsible for the accuracy of its regulatory

reporting. This assessment implicitly includes the internal controls over financial information that is included in regulatory reports.

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.

### 2128.06.8 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 BO's asset securitization activities should be disclosed. The information 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 BO. Well-informed investors, depositors, creditors, and other counterparties can provide a BO with strong incentives for maintaining sound risk-management systems and internal controls. Adequate disclosure allows market participants to better understand the BO's financial condition and apply market discipline, creating incentives to reduce inappropriate risk taking or inadequate risk-management practices. Examples of sound disclosures include—

1. accounting policies for measuring retained interests, including a discussion of the impact of key assumptions on the recorded value;
2. the process and methodology used to adjust the value of retained interests for changes in key assumptions;
3. risk characteristics, both quantitative and qualitative, of the underlying securitized assets;
4. the 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
5. sensitivity analyses or stress testing conducted by the BO, showing the effect of changes in key assumptions on the fair value of retained interests.

### 2128.06.9 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 its claim on the assets.<sup>11</sup> In addition to broad contractual language that may require the seller to support a securitization, recourse can arise from retained interests, retained subordinated security interests, the funding of cash-collateral accounts, or other forms of credit enhancements that place a BO's earnings and capital at risk. These enhancements should generally be *aggregated* to determine the extent of a BO's support of securitized assets. Although an asset securitization qualifies for 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>12</sup> Risk-based capital standards provide that the dollar amount of risk-based capital required for assets transferred with recourse should not exceed the maximum dollar amount for which a BO is contractually liable. The low-level-recourse treatment applies to transactions accounted for as sales under GAAP in which a BO 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 BO holds capital on approximately a dollar-for-dollar basis up to the amount of the aggregate credit enhancements.

If a BO 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

11. See the risk-based capital treatment for sales with recourse at 12 CFR 3, appendix A, section (3)(b)(1)(iii) (OCC), and 12 CFR 567.6(a)(2)(i)(c) (OTS). For a further explanation of recourse, see the glossary of the call report instructions, "Sales of Assets for Risk-Based Capital Purposes."

12. See 60 *Fed. Reg.* 17986, April 10, 1995 (OCC); 60 *Fed. Reg.* 8177, February 13, 1995 (FRB); and 60 *Fed. Reg.* 15858, March 28, 1995 (FDIC). The OTS low-level-recourse rule is found at 12 CFR 567.6(a)(2)(i)(c).

BO must hold risk-based capital against the securitized assets as if those assets had not been sold. Retained interests that lack objectively verifiable support or that fail to meet the supervisory standards set forth in this section will be classified as loss and disallowed as assets of the BO for regulatory capital purposes.

#### 2128.06.10 CONCENTRATION LIMITS IMPOSED 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. BOs 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 it had not sold the assets (under the existing risk-based capital guidelines, capital is not required for the amount over 8 percent of the securitized assets). Serious problems can arise for those BOs 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 an example, a BO could sell \$100 in subprime home equity loans and book a retained interest of \$20 using liberal “gain on sale” assumptions. Under the current capital rules, the BO 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 (8 percent of \$100 = \$8). However, the institution is still exposed to substantially all 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 sponsor 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 a BO’s access to the capital markets; damage its reputation in the marketplace; and, in some cases, threaten its solvency. A BO’s board of directors and management is expected 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 lessen the incentives for a BO’s personnel to

engage in activities designed to generate near-term “paper profits” that may be at the expense of its long-term financial position and reputation.

#### 2128.06.11 INSPECTION OBJECTIVES

1. To determine whether the BO’s retained interests from asset securitization are properly documented, valued, and accounted for.
2. To verify that the amount of those retained interests not supported by adequate documentation has been charged off and that the involved assets are not used for risk-based calculation purposes.
3. To ascertain the existence of sound risk modeling, management information systems (MIS), and disclosure practices for asset securitization.
4. To obtain assurances that the board of directors and management oversee sound policies and internal controls concerning the recording and valuation of retained interests derived from asset securitization activities.
5. To determine if liquidity problems may arise as the result of an overdependence on asset securitization activities for day-to-day core funding.
6. To determine that sufficient capital is held commensurate with the risk exposures arising from recourse obligations generated by asset securitizations.
7. To determine whether there is an independent audit function that is capable of evaluating retained interests involving asset securitization activities.

#### 2128.06.12 INSPECTION PROCEDURES

1. Determine the existence of independent risk-management processes and MIS, and whether they are being used to monitor securitization-pool performance on an aggregate and individual transaction level.
2. Review the MIS reports and determine whether the reports provide—
  - a. securitization summaries for each transaction;
  - b. performance reports by portfolio and specific product type;
  - c. vintage analysis for each pool using monthly data;

- d. static-pool cash-collection analysis;
  - e. sensitivity analysis; and
  - f. a statement of covenant compliance.
3. Review the BO's valuation assumptions and modeling methodologies, and determine if they are conservative and being used to establish, evaluate, and adjust the carrying value of retained interests on a regular and timely basis.
  4. Determine if 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 that the BO retains.
  5. Review the risk-based capital calculations, and determine if they include recognition and reporting of any recourse obligation resulting from securitization activities.
  6. Ascertain that internal limits govern the amount of retained interests held as a percentage of total equity capital.
  7. Establish that an adequate liquidity contingency plan is in place and that it will be used in the event of market disruptions. Determine further whether liquidity problems may arise as the result of an overdependence on asset securitization activities for day-to-day core funding.
  8. Determine whether consistent, conservative accounting practices are in place that satisfy the reporting requirements of regulatory supervisors, GAAP reporting requirements, and valuation assumptions and methods. Ascertain that adequate disclosures of asset securitization activities are made commensurate with the volume of securitizations and the complexities of the BO.
  9. Establish that risk-exposure limits and requirements exist and are adhered to on an aggregate and individual transaction basis.



Subprime lending presents unique and significantly greater risk to banking organizations (BOs) associated with the activity,<sup>1</sup> raising issues about how well they are prepared to manage and control those risks. Subprime-lending institutions need strong risk-management practices and internal controls, as well as board-approved policies and procedures that appropriately identify, measure, monitor, and control all associated risks. BOs considering or engaging in this type of lending should recognize the additional risks inherent in this activity and determine if these risks are acceptable and controllable, given their organization's financial condition, asset size, level of capital support, and staff size.

In response to concerns about subprime lending, the statement "Interagency Guidance on Subprime Lending," was issued on March 1, 1999.<sup>2</sup> The statement's objective is to increase awareness among examiners and financial institutions of some of the pitfalls and hazards of this type of lending and to provide general supervisory guidance on the topic. See SR-99-06. The statement is directed to insured depository institutions and their subsidiaries, which includes state member banks. As such, the guidance applies only indirectly to bank holding companies with regard to their supervision of insured depository institutions. Bank holding companies should also consider the statement's guidance as they supervise the lending activities of their nonbanking subsidiaries. Bank holding company examiners should consider this guidance in conjunction with the loan-administration and lending-standards inspection guidance in section 2010.2, and the guidance for asset securitization in section 2128.02. The text of the statement follows. (Section numbers have been added for reference, and the footnotes have been renumbered. Some wording has been slightly altered to make the policy appropriate for this manual, as indicated by ellipses or brackets.)

### 2128.08.1 INTERAGENCY GUIDANCE ON SUBPRIME LENDING

Insured depository institutions have traditionally avoided lending to customers with poor credit histories because of the higher risk of

default and resulting loan losses. However, in recent years a number of lenders<sup>3</sup> have extended their risk-selection standards to attract lower-credit-quality accounts, often referred to as subprime loans. Moreover, recent turmoil in the equity and asset-backed securities market has caused some nonbank subprime specialists to exit the market, thus creating increased opportunities for financial institutions to enter, or expand their participation in, the subprime-lending business.

The term "subprime lending" is defined for this statement as extending credit to borrowers who exhibit characteristics indicating a significantly higher risk of default than traditional bank lending customers.<sup>4</sup> Risk of default may be measured by traditional credit-risk measures (credit/repayment history, debt-to-income levels, etc.) or by alternative measures such as credit scores. Subprime borrowers represent a broad spectrum of debtors ranging from those who have exhibited repayment problems due to an adverse event, such as job loss or medical emergency, to those who persistently mismanage their finances and debt obligations. Subprime lending does not include loans to borrowers who have had minor, temporary credit difficulties but are now current. This guidance applies to direct extensions of credit; the purchase of subprime loans from other lenders, including delinquent or credit-impaired loans purchased at a discount; the purchase of subprime automobile or other financing "paper" from lenders or dealers; and the purchase of loan companies that originate subprime loans.

Due to their higher risk, subprime loans command higher interest rates and loan fees than those offered to standard-risk borrowers. These loans can be profitable, provided the price charged by the lender is sufficient to cover higher loan-loss rates and overhead costs related to underwriting, servicing, and collecting the loans. Moreover, the ability to securitize and sell subprime portfolios at a profit while retaining the servicing rights has made subprime lending attractive to a larger number of institutions, further increasing the number of subprime lend-

3. The terms "lenders," "financial institutions," and "institutions," . . . refer to insured depository institutions and their subsidiaries.

4. For purposes of this statement, loans to customers who are not subprime borrowers are referred to as "prime."

1. The term "banking organizations" refers to bank holding companies and their banking and nonbanking subsidiaries.

2. The statement was adopted and issued by the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision.

ers and loans. . . . [A] number of financial institutions have experienced losses attributable to ill-advised or poorly structured subprime-lending programs. This has brought greater supervisory attention to subprime lending and the ability of insured depository institutions to manage the unique risks associated with this activity.

Institutions should recognize the additional risks inherent in subprime lending and determine if these risks are acceptable and controllable given the institution's staff, financial condition, size, and level of capital support. Institutions that engage in subprime lending in any significant way should have board-approved policies and procedures, as well as internal controls that identify, measure, monitor, and control these additional risks. Institutions that engage in a small volume of subprime lending should have systems in place commensurate with their level of risk. Institutions that began a subprime-lending program prior to the issuance of this guidance should carefully consider whether their program meets the following guidelines and should implement corrective measures for any area that falls short of these minimum standards. If the risks associated with this activity are not properly controlled, the agencies consider subprime lending a high-risk activity that is unsafe and unsound.

## 2128.08.2 CAPITALIZATION

[S]ubprime-lending activities can present a greater-than-normal risk for financial institutions and the deposit insurance funds; therefore, the level of capital institutions need to support this activity should be commensurate with the additional risks incurred. The amount of additional capital necessary will vary according to the volume and type of subprime activities pursued and the adequacy of the institution's risk-management program. Institutions should determine how much additional capital they need to offset the additional risk taken in their subprime-lending activities and document the methodology used to determine this amount. The agencies will evaluate an institution's overall capital adequacy on a case-by-case basis through on-site examinations and off-site monitoring procedures considering, among other factors, the institution's own analysis of the capital needed to support subprime lending. Institutions determined to have insufficient capital must correct

the deficiency within a reasonable time frame or be subject to supervisory action. In light of the higher risks associated with this type of lending, . . . higher minimum-capital requirements [may be imposed] on institutions engaging in subprime lending.

## 2128.08.3 RISK MANAGEMENT

The following items are essential components of a well-structured risk-management program for subprime lenders:

1. *Planning and strategy.* Prior to engaging in subprime lending, the board and management should ensure that proposed activities are consistent with the institution's overall business strategy and risk tolerances, and that all involved parties have properly acknowledged and addressed critical business risk issues. These issues include the costs associated with attracting and retaining qualified personnel, investments in the technology necessary to manage a more complex portfolio, a clear solicitation and origination strategy that allows for after-the-fact assessment of underwriting performance, and the establishment of appropriate feedback and control systems. The risk-assessment process should extend beyond credit risk and appropriately incorporate operating, compliance, and legal risks. Finally, the planning process should set clear objectives for performance, including the identification and segmentation of target markets and/or customers, and performance expectations and benchmarks for each segment and the portfolio as a whole. Institutions establishing a subprime-lending program should proceed slowly and cautiously into this activity to minimize the impact of unforeseen personnel, technology, or internal-control problems and to determine if favorable initial profitability estimates are realistic and sustainable.
2. *Staff expertise.* Subprime lending requires specialized knowledge and skills that many financial institutions may not possess. Marketing, account-origination, and collections strategies and techniques often differ from those employed for prime credit; thus it may not be sufficient to have the same lending staff responsible for both subprime loans and other loans. Additionally, servicing and collecting subprime loans can be very labor intensive. If necessary, the institution should implement programs to train staff. The board should ensure that staff possesses sufficient

expertise to appropriately manage the risks in subprime lending and that staffing levels are adequate for the planned volume of subprime activity. Seasoning of staff and loans should be taken into account as performance is assessed over time.

3. *Lending policy.* A subprime-lending policy should be appropriate to the size and complexity of the institution's operations and should clearly state the goals of the subprime-lending program. While not exhaustive, the following lending standards should be addressed in any subprime-lending policy:

- a. types of products offered as well as those that are not authorized
- b. portfolio targets and limits for each credit grade or class
- c. lending and investment authority clearly stated for individual officers, supervisors, and loan committees
- d. a framework for pricing decisions and profitability analysis that considers all costs associated with the loan, including origination costs, administrative/servicing costs, expected charge-offs, and capital
- e. collateral evaluation and appraisal standards
- f. well-defined and specific underwriting parameters (i.e., acceptable loan term, debt-to-income ratios, loan-to-collateral-value ratios for each credit grade, and minimum acceptable credit score) that are consistent with any applicable supervisory guidelines<sup>5</sup>
- g. procedures for separate tracking and monitoring of loans approved as exceptions to stated policy guidelines
- h. credit-file documentation requirements such as applications, offering sheets, loan and collateral documents, financial statements, credit reports, and credit memoranda to support the loan decision
- i. correspondent/broker/dealer approval process, including measures to ensure that loans originated through this process meet the institution's lending standards

If the institution elects to use credit scoring (including applications scoring) for approv-

als or pricing, the scoring model should be based on a development population that captures the behavioral and credit characteristics of the subprime population targeted for the products offered. Because of the significant variance in characteristics between the subprime and prime populations, institutions should not rely on models developed solely for products offered to prime borrowers. Further, the model should be reviewed frequently and updated as necessary to ensure that assumptions remain valid.

4. *Purchase evaluation.* Institutions that purchase subprime loans from other lenders or dealers must give due consideration to the cost of servicing these assets and the loan losses that may be experienced as they evaluate expected profits. For instance, some lenders who sell subprime loans charge borrowers high up-front fees, which are usually financed into the loan. This provides incentive for originators to produce a high volume of loans with little emphasis on quality, to the detriment of a potential purchaser. Further, subprime loans, especially those purchased from outside the institution's lending area, are at special risk for fraud or misrepresentation (i.e., the quality of the loan may be less than the loan documents indicate).

Institutions should perform a thorough due-diligence review prior to committing to purchase subprime loans. Institutions should not accept loans from originators that do not meet their underwriting criteria, and should regularly review loans offered to ensure that loans purchased continue to meet those criteria. Deterioration in the quality of purchased loans or in the portfolio's actual performance versus expectations requires a thorough reevaluation of the lenders or dealers who originated or sold the loans, as well as a reevaluation of the institution's criteria for underwriting loans and selecting dealers and lenders. Any such deterioration may also highlight the need to modify or terminate the correspondent relationship or make adjustments to underwriting and dealer/lender selection criteria.

5. *Loan-administration procedures.* After the loan is made or purchased, loan-administration procedures should provide for the diligent monitoring of loan performance and establish sound collection efforts. To minimize loan losses, successful subprime lenders have historically employed stronger

5. Extensions of credit secured by real estate, whether subprime or otherwise, are subject to the Interagency Guidelines for Real Estate Lending Policies, which establish supervisory loan-to-value (LTV) limits on various types of real estate loans and impose limits on an institution's aggregate investment in loans that exceed the supervisory LTV limits. See 12 C.F.R. 34, subpart D (OCC); 12 C.F.R. 208, appendix C (FRB); 12 C.F.R. 365 (FDIC); and 12 C.F.R. 560.100–101 (OTS) for further information.

collection efforts such as calling delinquent borrowers frequently, investing in technology (e.g., using automatic dialing for follow-up telephone calls on delinquent accounts), assigning more experienced collection personnel to seriously delinquent accounts, moving quickly to foreclose or repossess collateral, and allowing few loan extensions. This aspect of subprime lending is very labor intensive but critical to the program's success. To a large extent, the cost of such efforts can represent a tradeoff relative to future loss expectations when an institution analyzes the profitability of subprime lending and assesses its appetite to expand or continue this line of business.

Subprime loan-administration procedures should be in writing and at a minimum should detail—

- a. billing and statement procedures;
  - b. collection procedures;
  - c. content, format, and frequency of management reports;
  - d. asset-classification criteria;
  - e. methodology to evaluate the adequacy of the allowance for loan and lease losses (ALLL);
  - f. criteria for allowing loan extensions, deferrals, and re-agings;
  - g. foreclosure and repossession policies and procedures; and
  - h. loss-recognition policies and procedures.
6. *Loan review and monitoring.* Once loans are booked, institutions must perform an ongoing analysis of subprime loans, not only on an aggregate basis but also for subportfolios. Institutions should have information systems in place to segment and stratify their portfolio (e.g., by originator, loan-to-value, debt-to-income ratios, credit scores) and produce reports for management to evaluate the performance of subprime loans. The review process should focus on whether performance meets expectations. Institutions then need to consider the source and characteristics of loans that do not meet expectations and make changes in their underwriting policies and loan-administration procedures to restore performance to acceptable levels.

When evaluating actual performance against expectations, it is particularly important that management review credit scoring, pricing, and ALLL adequacy models. Models driven by the volume and severity of historical losses experienced during an eco-

nomie expansion may have little relevance in an economic slowdown, particularly in the subprime market. Management should ensure that models used to estimate credit losses or to set pricing allow for fluctuations in the economic cycle and are adjusted to account for other unexpected events.

7. *Consumer protection.* Institutions that originate or purchase subprime loans must take special care to avoid violating fair lending and consumer protection laws and regulations. Higher fees and interest rates combined with compensation incentives can foster predatory pricing or discriminatory “steering” of borrowers to subprime products for reasons other than the borrower's underlying creditworthiness. An adequate compliance-management program must identify, monitor, and control the consumer protection hazards associated with subprime lending.

Subprime mortgage lending may trigger the special protections of the Home Ownership and Equity Protection Act of 1994, subtitle B of title I of the Riegle Community Development and Regulatory Improvement Act of 1994. This act amended the Truth in Lending Act to provide certain consumer protections in transactions involving a class of nonpurchase, closed-end home mortgage loans. Institutions engaging in this type of lending must also be thoroughly familiar with the obligations set forth in Regulation Z (12 C.F.R. 226.32), Regulation X, and the Real Estate Settlement Procedures Act (RESPA) (12 U.S.C. 2601) and adopt policies and implement practices that ensure compliance.

The Equal Credit Opportunity Act makes it unlawful for a creditor to discriminate against an applicant on a prohibited basis regarding any aspect of a credit transaction. Similarly, the Fair Housing Act prohibits discrimination in connection with residential real estate related transactions. Loan officers and brokers must treat all similarly situated applicants equally and without regard to any prohibited basis characteristic (e.g., race, sex, age, etc.). This is especially important with respect to how loan officers or brokers assist customers in preparing their applications or otherwise help them to qualify for loan approval.

8. *Securitization and sale.* Some subprime lenders have increased their loan-production and -servicing income by securitizing and selling the loans they originate in the asset-backed securities market. Strong demand from

investors and favorable accounting rules often allow securitization pools to be sold at a gain, providing further incentive for lenders to expand their subprime-lending program. However, the securitization of subprime loans carries inherent risks, including interim credit risk and liquidity risk, that are potentially greater than those for securitizing prime loans. Accounting for the sale of subprime pools requires assumptions that can be difficult to quantify, and erroneous assumptions could lead to the significant overstatement of an institution's assets. Moreover, the practice of providing support and substituting performing loans for nonperforming loans to maintain the desired level of performance on securitized pools has the effect of masking credit-quality problems.

[T]urmoil in the financial markets [can illustrate] the volatility of the secondary market for subprime loans and the significant liquidity risk incurred when originating a large volume of loans intended for securitization and sale. Investors can quickly lose their appetite for risk in an economic downturn or when financial markets become volatile. As a result, institutions that have originated, but have not yet sold, pools of subprime loans may be forced to sell the pools at deep discounts. If an institution lacks adequate personnel, risk-management procedures, or capital support to hold subprime loans originally intended for sale, these loans may strain an institution's liquidity, asset quality, earnings, and capital. Consequently, institutions actively involved in the securitization and sale of subprime loans should develop a contingency plan that addresses back-up purchasers of the securities or the attendant servicing functions, alternate funding sources, and measures for raising additional capital.

Institutions should refer to Statement of Financial Accounting Standards No. 125 (FAS 125), "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities," for guidance on accounting for these transactions. If a securitization transaction meets FAS 125 sale or servicing criteria, the seller must recognize any gain or loss on the sale of the pool immediately and carry any retained interests in the assets sold (including servicing rights/obligations and interest-only strips) at fair value. Management should ensure that the key assumptions used to value these retained interests are reasonable and well supported, both for the initial valuation and for subsequent quarterly revaluations. In particular,

management should consider the appropriate discount rates, credit-loss rates, and prepayment rates associated with subprime pools when valuing these assets. Since the relative importance of each assumption varies with the underlying characteristics of the product types, management should segment securitized assets by specific pool, as well as predominant risk and cash-flow characteristics, when making the underlying valuation assumptions. In all cases, however, institutions should take a conservative approach when developing securitization assumptions and capitalizing expected future income from subprime lending pools. Institutions should also consult with their auditors as necessary to ensure their accounting for securitizations is accurate.

9. *Reevaluation.* Institutions should periodically evaluate whether the subprime-lending program has met profitability, risk, and performance goals. Whenever the program falls short of original objectives, an analysis should be performed to determine the cause and the program should be modified appropriately. If the program falls far short of the institution's expectations, management should consider terminating it. Questions that management and the board need to ask may include:
  - a. Have cost and profit projections been met?
  - b. Have projected loss estimates been accurate?
  - c. Has the institution been called upon to provide support to enhance the quality and performance of loan pools it has securitized?
  - d. Were the risks inherent in subprime lending properly identified, measured, monitored, and controlled?
  - e. Has the program met the credit needs of the community that it was designed to address?

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*(Issued jointly by the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision March 1, 1999.)*

#### 2128.08.4 INSPECTION OBJECTIVES

1. To assess and evaluate the extent of subprime-lending activities and whether management has adequately planned for this activity.
2. To determine whether the BO has the financial capacity, including capital adequacy, to conduct the high-risk activity of subprime lending.
3. To establish whether management has committed the necessary resources with regard to technology and skilled personnel to manage the subprime-lending program.
4. To ascertain whether management has established adequate subprime-lending standards and is maintaining proper controls over the subprime-lending program.
5. To determine if the BO has contingency plans for subprime lending and if they are adequate for volatile financial markets and during economic downturns.
6. To review and evaluate the performance of the subprime-lending program, including its profitability, delinquency, and loss experience.

#### 2128.08.5 INSPECTION PROCEDURES

1. Determine whether the subprime-lending activities are consistent with the banking organization's overall business strategy and risk tolerances, and that all critical business risks have been identified and considered.
2. Assess whether the BO has the financial capacity, including capital adequacy, to conduct the high-risk activity of subprime lending safely without any undue concentrations of credit.
3. Ascertain if management has committed the necessary resources in terms of technology and skilled personnel to manage and control the risks associated with the volume and complexity of the subprime-lending program.
4. Determine if management has established adequate lending standards that are appropriate for the size and complexity of the

- BO's operations and is maintaining proper controls over the program. See subsection 2128.08.3 for the lending standards that should be included in the subprime-loan program. See also section 2010.2 with regard to loan administration and lending standards.
5. Determine whether the BO's contingency plans are adequate to address the issues of (1) alternative funding sources, (2) back-up purchasers of the securities or the attendant servicing functions, and (3) methods of raising additional capital during an economic downturn or when financial markets become volatile.
  6. Review and evaluate loan-administration and loan-monitoring procedures for subprime loans originated or purchased, including—
    - a. collection, repossession, and disclosure procedures;
    - b. management of the level and effective use of skilled staffing and advanced technology;
    - c. the adequacy of the allowance for loan and lease losses; and
    - d. the adequacy and accuracy of models used to estimate credit losses or to set pricing, making certain that the models account for economic cycles and other unexpected events.
  7. Review securitization transactions for compliance with FAS 125 and this guidance, including whether the BO has provided any support to maintain the credit quality of loans pools it has securitized.
  8. Analyze the performance of the program, including profitability, delinquency, and loss experience.
  9. Consider management's response to adverse performance trends, such as higher-than-expected prepayments, delinquencies, charge-offs, customer complaints, and expenses.
  10. Determine if the BO's subprime-lending program effectively manages the credit, market, liquidity, reputational, operational, and legal risks associated with subprime-lending operations.

Banking organizations must establish and maintain sound risk-management policies and procedures and effective internal controls over their use of credit derivatives. Credit derivatives are off-balance-sheet financial instruments that are used to assume or lay off credit risk on loans and other assets, some only to a limited extent. They 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>1</sup> This arrangement allows the guarantor party to assume the credit risk associated with the reference asset without directly purchasing it. Unlike traditional guarantee arrangements, credit-derivative transactions often are documented using master agreements developed by the International Swaps and Derivatives Association (ISDA) that are similar to those governing swaps or options. Since credit derivatives are privately negotiated financial contracts, they expose the user to credit risk as well as liquidity risk (thin secondary market for credit derivatives), operational risk (instruments used for speculation rather than hedging), counterparty risk (default), and legal risk (the contracts may be deemed illegal).

Banking organizations use credit-derivative instruments either as end-users, purchasing credit protection from or providing credit protection to third parties, or as dealers intermediating such protection. Credit derivatives are used to manage overall credit-risk exposure. A banking organization may use credit derivatives 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, using credit derivatives to transfer the credit risk to a third party.

Banking organizations may also use credit derivatives to diversify their portfolios by assuming the associated credit exposures and revenue returns to different borrowers or industries without actually purchasing the underlying

assets. Nonbank companies may serve as counterparties to credit-derivative transactions with banks to gain access to the commercial bank loan market. Such entities may not lend or may not have the facilities or staff to adequately administer a loan portfolio.

Under some credit-derivative arrangements, a beneficiary may pay a fee to the guarantor in exchange for a guarantee against any loss that may occur, usually in excess of a prespecified amount, if the reference asset defaults (a “credit-default swap”). Alternatively, 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”).

Credit derivatives and their market are likely to take on various forms, such as the market 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. See SR-96-17.

### 2129.0.1 SUPERVISORY AND EXAMINER 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 may be as exposed to the credit risk of the reference asset as it would be 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>2</sup> This treatment would apply, for example, in determining a banking organization’s overall credit exposure to a borrower for purposes of evaluating concentrations of credit. The overall exposure should include exposure it assumes

1. For purposes of this supervisory guidance, when 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 banking organization may actually own an ABC Company loan. The use of the term “guarantor” does not necessarily refer to a guarantor involving a suretyship contract. The transferred risk can be in a primary liability of the acquiring party that assumes the credit risk.

2. 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.

by acting as a guarantor in a credit-derivative transaction where the borrower is the obligor of the reference asset.

Banking organizations providing credit protection through a credit derivative should hold capital and reserves against their exposure to the reference asset.<sup>3</sup> 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 notional amount of the contract in determining the amount of reference exposure subject to a capital charge.

In some cases (for example, 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 banking organizations 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 on the terms of the transaction. For example, some credit derivatives are structured so that a payout only occurs when a predefined event of default or a downgrade below a prespecified credit rating occurs.<sup>4</sup> Others may require a payment only when a defined default event occurs *and* a predetermined materiality (or loss) threshold is exceeded. Default payments themselves may be based on an average of dealer prices for the reference asset during some period of time after

default using a prespecified 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. For the derivative contract to be considered as providing effective credit protection, the examiner must review the arrangement and be satisfied that the reference asset is an appropriate proxy for the loan or other asset, whose credit exposure the banking organization intends to offset. To determine this, 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.

A banking organization's management should not enter into credit-derivative transactions unless it 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 entity-by-entity basis, taking into account management's expertise in evaluating the instruments used; the adequacy of relevant policies, including position limits; and the quality of the banking organization's relevant information systems and internal controls.<sup>5</sup>

3. For guidance on risk-based capital treatment of credit derivatives, see section 4060.3.5.3.9.

4. It may also be necessary to review the credit documentation of the primary obligor to determine the degree of transferred risk.

5. For further guidance on examining the risk-management practices of banking organizations, including guidance on derivatives, that examiners may find helpful in reviewing an organization's management of its credit-derivative activity, see sections 2125.0, 2126.0, 2128.0, and 4070.1. See also the *Commercial Bank Examination Manual* and the *Trading and Capital-Markets Activities Manual*.



2129.0.2 TYPES OF CREDIT DERIVATIVES

The most widely used types of credit derivatives are credit-default swaps and total-rate-of-return (TROR) swaps.<sup>6</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.

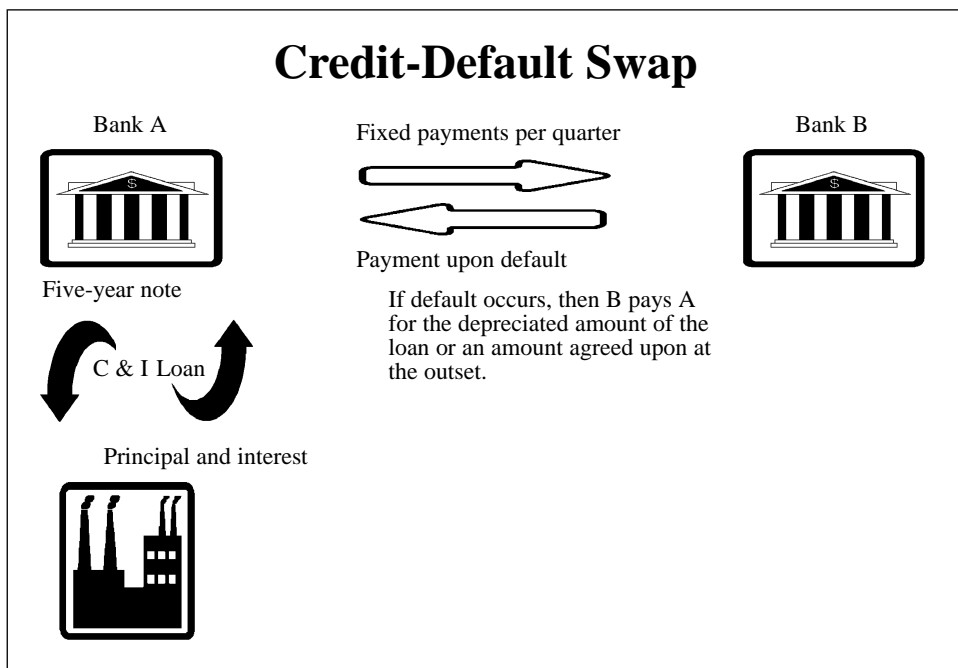
6. Another less common form of credit derivative is the *credit-linked note*, which is an obligation that is based on a reference asset. Credit-linked notes are similar to structured notes with embedded credit derivatives. If there is a credit event, the repayment of the bond's principal is based on the price of the reference asset. A credit-linked note may be a combination of a regular bond and a credit option. The note can promise to make periodic interest payments and a large lump-sum payment when the bond matures. The credit option on the note may allow the issuer to reduce the note's payments if a primary financial indicator or variable deteriorates. When reviewing these transactions, examiners should consider the purchasing banking organization's exposure to the underlying reference asset as well as the exposure to the issuing entity.

2129.0.2.1 Credit-Default Swaps

The purpose of a credit-default swap is to provide protection against credit losses associated with a default on a specified reference asset. The swap purchaser (the beneficiary) "swaps" the credit risk with the provider of the swap (the guarantor). The transaction is very similar to a guarantee or financial standby letter of credit.

In a credit-default swap, illustrated in figure 1, the beneficiary (Bank A) agrees to pay to the guarantor (Bank B) a quarterly or annual fee, typically amounting to a certain number of basis points on the par value of the reference asset. 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. The guarantor may not be obliged to

Figure 1  
Credit-Default Swap Cash-Flow Diagram



make any payments to the beneficiary until a preestablished amount of loss has been exceeded in conjunction with a default event (called a materiality threshold).

The swap is terminated if the reference asset defaults before the maturity of the swap. The amount owed by the guarantor is the difference between the reference asset's 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, such as a percentage of the notional value of the reference asset.

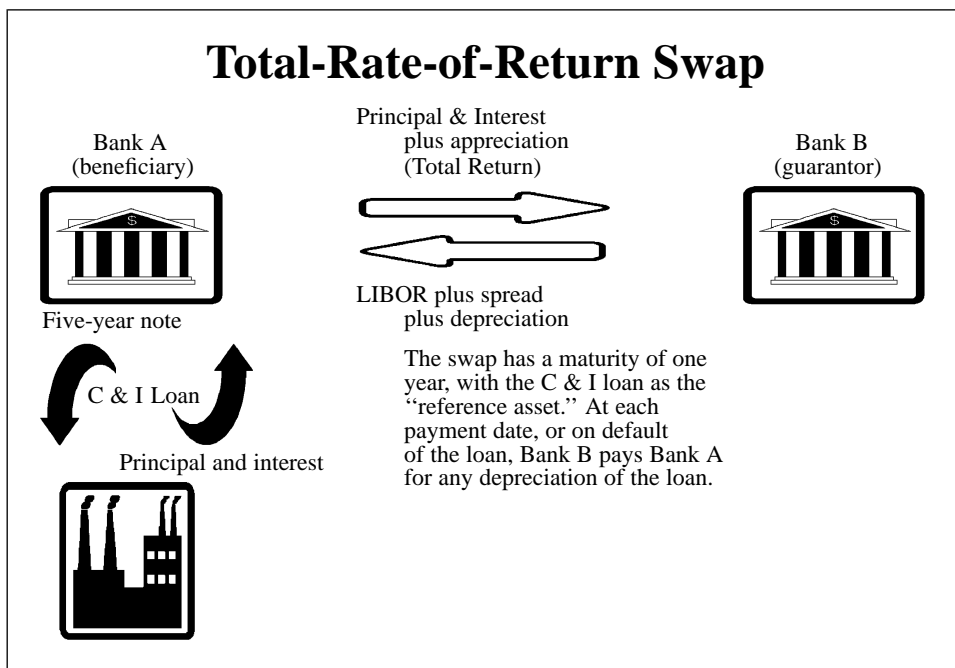
### 2129.0.2.2 Total-Rate-of-Return Swaps

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 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>7</sup> Since it bears the risks and rewards of ownership over the term of the swap, the guarantor in a TROR swap could be viewed as having synthetic ownership of the reference asset.

At each payment-exchange date (including when the swap matures) or on default, at which-point the swap may terminate, any depreciation

7. The reference asset is often a floating-rate instrument, for example, 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.

Figure 2  
Total-Rate-of-Return Swap Cash-Flow Diagram



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>8</sup> The dealer price is generally determined either by referring to a market quotation source or by polling a group of dealers, and the price reflects changes in the credit profile of the reference obligor and reference asset.

If the dealer price is less than the notional amount of the contract (the hypothetical original price of the reference asset), 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>9</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.

TROR swaps allow banking organizations to diversify credit risk and at the same time maintain confidentiality of their client’s financial records since the borrowing entity’s financial records are held by the originating lender. When the loans are sold, the records are transferred to the new acquiring lender. TROR swaps generally involve fewer administrative costs than those involved in a loan-sales transaction. Risk diversification can thus be achieved at a reduced cost.

## 2129.0.3 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),<sup>10</sup> and transactions involving affiliates. Examples of how credit derivatives that effectively transfer credit risk could affect supervisory procedures are discussed below.

8. Depending on contract terms, a TROR swap may not terminate on 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.

9. 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.

10. See sections 2010.7 and 2065.2.

### 2129.0.3.1 Credit Exposure

For internal purposes of managing credit risk, banking organizations are encouraged to develop policies to determine how credit-derivative activity will be used to manage credit exposures. For example, a banking organization’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.

### 2129.0.3.2 Concentrations of Credit

Concentrations of credit may be defined as—

- loans collateralized by a common security;
- loans to one borrower or related group of borrowers;
- loans that depend on a particular agricultural commodity;
- aggregate loans to major employers, their employees, and their major suppliers;
- loans within industry groups;
- out-of-territory loans;
- the aggregate amount of paper purchased from any one source; or
- those loans that often have been included in other homogeneous risk groupings.

Credit concentrations, by their nature, depend on common key factors, and when weaknesses develop, they have an adverse impact on each individual loan making up the concentration.<sup>11</sup> Generally, examiners should not consider a banking organization’s asset concentration to a particular borrower reduced because of the existence of a nongovernment guarantee on one of the borrower’s loans since the underlying concentration to the borrower still exists. However, examiners should consider how the banking organization manages the concentration, which could include the use of nongovernmental guarantees. Asset concentrations are to be listed in the confidential “Administrative and Other Matters” page D of the inspection report to highlight that the ultimate risk to the banking organization stems from these concentrations,

11. See sections 2010.2, 2010.7, and 2065.2.

although the associated credit risk may be mitigated by the existence of nongovernmental guarantees.

Any nongovernment 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 the concentration risk of the underlying borrower. Similarly, a guarantor banking organization's exposure to all reference assets will be included in its overall credit exposure to the reference obligor.

### 2129.0.3.3 Classification of Assets

The criteria used to classify assets are primarily based on their degree of risk and the likelihood of repayment, as well as on the potential effect of the assets on the bank's safety and soundness.<sup>12</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>13</sup>

The protection that a credit derivative from a financially responsible guarantor provides on an underlying asset may be sufficient to preclude classification of the underlying asset or reduce the severity of classification. Sufficiency *depends on the extent of credit protection that is provided*. To be considered a guarantee for purposes of determining the classification of assets, a credit derivative must transfer the credit risk 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 (the credit-derivative contract) must be legally enforceable; and the guarantee must provide support for repayment of the indebted-

ness, in whole or in part, during the remaining term of the underlying asset.

However, credit derivatives tend to have a shorter maturity than the underlying asset being protected. Furthermore, it is uncertain whether the credit derivative will be renewed once it matures. Thus, when determining whether to classify an underlying asset protected by a credit derivative, examiners need to consider the *term* of the credit derivative in relation to the maturity of the protected underlying asset, the probability that the protected underlying asset will default while the guarantee is in force, and whether the credit risk has actually been transferred. 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 these situations of maturity mismatch, the examiner's presumption may be against a diminution of the severity of the underlying asset's classification.

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 on 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>14</sup>

### 2129.0.3.4 Transactions Involving Affiliates

Credit-derivative transactions can involve two or more legal entities (affiliates) within the same banking organization. Thus, transactions between or involving affiliates raise important supervisory issues, especially whether such arrangements are effective guarantees of affiliate obligations or transfers of assets and their related credit exposure between affiliates. Banking organizations should carefully consider existing supervisory guidance on interaffiliate

12. Loans that exhibit potential weaknesses are categorized as "substandard," while those with well-defined weaknesses and a distinct possibility of loss are either "doubtful" or "loss."

13. See section 5010.10 of this manual and section 2060.1 of the *Commercial Bank Examination Manual*.

14. 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.

transactions before entering into credit-derivative arrangements involving affiliates, particularly when substantially the same objectives could be met using traditional guarantee instruments.

#### 2129.0.4 INSPECTION OBJECTIVES

1. To determine if the banking organization is providing credit protection through a credit derivative.

2. To ascertain whether the banking organization has and maintains sound risk-management policies and procedures and effective internal controls over the use of credit derivatives.

3. To review and evaluate existing risk involving credit-derivative arrangements.

4. To ascertain whether adequate capital and reserves are held against exposures to reference assets, including whether risk-based capital computations have accounted for any additional risk resulting from derivative arrangements.

#### 2129.0.5 INSPECTION PROCEDURES

1. Consider credit risk associated with reference assets as primary risks. Determine whether the credit-risk exposure is treated as if it was a letter of credit or other off-balance-sheet guarantee.

2. Review the organization's credit exposure to the guarantor, as well as to the reference asset. Determine if the asset is actually owned by the beneficiary.

3. Ascertain whether the amount of credit protection a beneficiary receives when entering into a credit derivative is sufficient to warrant treatment of the derivative as a guarantee for regulatory capital and other supervisory purposes.

4. Review credit-derivative transactions in which the reference asset is not identical to the asset actually owned by the beneficiary banking organization.

a. Ascertain if the reference asset is an appropriate proxy for loans or other assets

whose credit exposure the banking organization intends to offset.

b. Consider whether the reference asset and owned asset have the same obligor and seniority in bankruptcy and whether both contain mutual cross-default provisions.

5. Determine whether management has the ability to understand and manage the credit and other risks associated with credit derivatives in a safe and sound manner. Consider management's expertise in evaluating the instruments; the adequacy of relevant policies, including position limits; and the quality of the banking organization's relevant management information systems and internal controls.

6. Evaluate the management of a banking organization's asset concentration to a particular borrower, which could include the use of non-governmental guarantees on one or more of the borrower's loans. List the asset concentrations in the confidential "Administrative and Other Matters" page D of the inspection report.

7. Review the quality of loans and the overall financial condition of the borrower; the borrower's credit history; any secondary sources of repayment, such as financially responsible guarantors; and other factors.

8. When determining whether to classify an underlying asset protected by a credit derivative, compare the *term* of the credit derivative in relation to the maturity of the protected underlying asset, the probability that the protected underlying asset will default while the guarantee is in force, and whether the credit risk has actually been transferred.

9. For guarantor banking organizations, 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.

a. Evaluate a credit derivative in which a banking organization provides credit protection based on the overall financial condition and resources of the reference obligor; the obligor's credit history; and any secondary sources of repayment, such as collateral.

b. If the reference asset is classified, classify the exposure from providing credit protection through a credit derivative.

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<sup>1</sup> 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, surveys of senior lending officers, and discussions with trade and advisory groups. They 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 found it necessary to make complex credit decisions within a much shorter time frame 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 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 section identifies some of the important risks involved in several of the more common types of secondary-market credit activities. Guidance is provided on sound practices along

with special considerations supervisors should take into account in assessing the risk-management systems for these activities. A banking institution's failure to understand adequately the risks inherent in secondary-market credit activities and the failure to incorporate for such risk within its risk-management systems and internal capital allocations may constitute an unsafe and unsound banking practice.

A fundamental principle is advanced in this guidance: Banking institutions should explicitly incorporate the full range of risks of their secondary-market credit activities into their overall risk-management systems.<sup>2</sup> 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. This guidance builds on, supports, and is fully consistent with existing guidance on risk management issued by the Federal Reserve.<sup>3</sup>

2. 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. For 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 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 the issuance, underwriting, and servicing of asset-backed securities; the provision of credit or liquidity enhancements to securitized transactions; and investment in asset-backed securities.

3. For a more detailed discussion of risk management, see SR-95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies"; SR-95-17, "Evaluating the Risk Management and Internal Controls of Securities and Derivative Contracts Used in Nontrading Activities"; SR-93-69, "Risk Management and Internal Controls for Trading Activities of Banking Organizations"; and SR-90-16, "Implementation of

1. The term "supervisors" is intended to refer to Federal Reserve System staff.

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. Such 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.

Certain credit and liquidity enhancements that banking organizations provide to facilitate various secondary-market credit activities can make the evaluation of their risks less straightforward than the risks involved in traditional on-balance-sheet banking activities. 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>4</sup>

The transactions involving such enhancements tend to be complex and may expose the institutions extending them to hidden obligations that may not become evident until the transactions have deteriorated. 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.

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. See SR-97-21.

#### 2129.05.1 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

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Examination Guidelines for the Review of Asset Securitization Activities."

4. Examiners should also review SR-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, that is, 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 Standards No. 125, "Accounting for Transfers and Servicing of Financial Assets and Extinguishment of Liabilities," and the instructions to the Reports of Income and Condition.

reduction in credit risk. Transactions that can give rise to 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.

### 2129.05.1.1 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 (1) the degree of risk associated with the activity and (2) the potential for unexpected economic developments to adversely affect 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 on 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.

### 2129.05.1.2 Credit Derivatives

Credit derivatives are generally off-balance-sheet financial instruments<sup>5</sup> that are used by banking organizations to assume or mitigate the credit risk of loans and other assets.<sup>6</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

5. Credit-linked notes are on-balance-sheet instruments.

6. See SR-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-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.

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 in which banking organizations are mitigating the credit risk of their assets, supervisors and examiners should carefully review those situations in which 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 organization intends to offset.

### 2129.05.1.3 Recourse Obligations, Direct Credit Substitutes, and Liquidity Facilities

#### 2129.05.1.3.1 Recourse Obligations

Partial, first-loss recourse obligations retained when selling assets, and the extension of partial credit enhancements (for example, 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.

#### 2129.05.1.3.2 Direct Credit Substitutes

Institutions also assume concentrated credit risk through the extension of partial direct credit substitutes, such as the purchase of subordinated interests and 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 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, this credit extension is an off-balance-sheet transaction, and the associated risks may not be fully reflected in the institution's risk-management system.

### 2129.05.1.3.3 *Liquidity Facilities*

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 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 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>7</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.

### 2129.05.1.4 Asset Securitization Structures

The structure of various securitization transactions can result in an institution's retaining the

7. 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.

underlying credit risk in a sold pool of assets. An example of this contingent credit-risk retention is credit card securitizations 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. This is 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>8</sup> The second level of credit protection is provided by the spread account, which is essentially a reserve funded initially from the excess yield.

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 (pay down) 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.

### 2129.05.2 REPUTATIONAL RISKS

The secondary-market credit activities of many institutions may 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 inadequacies in the loan's underwriting, even though partici-

8. 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.

pants are responsible for conducting an independent due-diligence evaluation of each 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 possibility 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 exposes the lead organization to possible litigation, as well as increased operational and credit risk. One way to mitigate reputational risk in syndications is for banking organizations to know their customers<sup>9</sup> 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.

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

### 2129.05.3 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 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 to better ascertain its future funding needs.

An institution's contingency plans should consider 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. 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.

### 2129.05.4 INCORPORATING THE RISKS OF SECONDARY-MARKET CREDIT ACTIVITIES INTO RISK MANAGEMENT

Supervisors should verify that an institution incorporates the risks involved in its secondary-market credit activities in its overall risk-management system. 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

9. See the know-your-customer rules in Regulation H (12 C.F.R. 208), Regulation K (12 C.F.R. 211), and Regulation Y (12 C.F.R. 225).

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.

#### 2129.05.4.1 Board of Directors and Senior Management Responsibilities

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 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 (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. 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.

#### 2129.05.4.2 Management Information and Risk-Measurement Systems

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.

#### 2129.05.4.3 System of Internal Controls

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), includ-

ing adequate allowances or liabilities for expected losses.

### 2129.05.5 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 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.

### 2129.05.6 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 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 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 to avoid a risk-based capital requirement, even though the inherent credit risk may be approaching that of a guarantee.<sup>10</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.

### 2129.05.7 INSPECTION OBJECTIVES

1. To determine whether there are risk-management systems and whether they accu-

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10. 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.

- rately identify all the risk exposures stemming from secondary-market activities.
2. To evaluate secondary-market credit activities and to determine if there has been a lowering of credit standards that could deteriorate the institution's financial condition during less favorable business and economic conditions.
  3. To establish whether the institution's management system performs stress testing to evaluate the risk exposures of secondary-market credit activities under various scenarios and their potential effect on the institution's liquidity, earnings, and capital adequacy.
  4. To review the substance of the institution's secondary-market transactions when assessing underlying risk exposures.
  5. To ascertain whether liquidity contingency plans exist and to determine whether they fully incorporate the potential risk posed by secondary-market credit activities, including the need to obtain replacement funding.
  6. To determine whether the board of directors is fully informed of the risks involved in secondary-market activities and whether they approve policies, controls, and procedures to control exposures arising from credit, liquidity, operational, legal, reputational, and other risks.
  7. To determine whether the institution has a sufficiently strong capital position to support *all* the risk associated with secondary-market credit activities and that it has a capital plan for strengthening its overall capital adequacy position.
  8. To ascertain whether there is an effective system of internal controls—focused on lines of authority and the separation of duties—to monitor and contain the risks associated with secondary-market activities.
- c. presenting to the board of directors, for their approval, all significant policies relating to the risk management of secondary-market activities and the conditions under which a loan syndication can be purchased;
  - d. determining whether management is conducting ongoing stress testing to identify potential losses and liquidity needs under adverse and “worst-case” scenarios; and
  - e. making certain that senior management is setting adequate minimum internal standards for allowances or liabilities for losses, capital, and contingency funding.
2. Assess whether the institution's systems and processes adequately identify, measure, monitor, and control all of the risks involved in the institution's secondary-market credit activities.
  3. Determine whether the various risks associated with secondary-market activities are incorporated into contingency plans, including replacement funding plans and identified alternative funding sources, to lessen the impact of those risks.
  4. Establish whether there is an adequate and effective system of internal controls that enforces official lines of authority and the appropriate separation of duties in managing the risks associated with secondary-market activities.
  5. Review loan-syndication contract agreements, underwriting documentation, and relevant correspondence with loan syndication contractual parties to establish whether—
    - a. the bank holding company's management has performed adequate credit investigations and evaluations of the syndicate loans, the syndicate participants, and the extent of the BHC's credit-risk exposures, and has complied with the Federal Reserve's know-your-customer rules (see footnote 9);
    - b. the syndication customers are in a position to conduct their own investigations and evaluation of the credit risks involved in the transaction; and
    - c. undue reliance is placed on the lead underwriter, the participants, or on their commercial-loan credit ratings.
  6. For credit derivatives—
    - a. analyze the credit risk associated with the reference asset, the general market risk, and the counterparty risk; and
    - b. determine, for those reference assets that are not identical assets actually owned, whether the reference asset is an appropriate proxy for the loan or other assets

### 2129.05.8 INSPECTION PROCEDURES

1. Determine whether the institution's senior management is recognizing the risk involved in secondary-market credit activities by—
  - a. determining if there is adequate identifying, quantifying, and monitoring of risk;
  - b. clearly communicating the extent and depth of those risks in discussions, presentations, and inspection reports that are delivered to the board of directors and senior officials of the institution;

whose credit exposure is to be offset.

7. Review the substance of secondary-market transactions when evaluating and analyzing underlying risk exposures.
8. Evaluate and determine that there are reasonable methods for internally allocating capital against the economic substance of credit exposures that arise from amortization events and liquidity facilities associated with securitized transactions.
9. Incorporate the evaluation of potential risks and losses from credit exposures, including management deficiencies, into the institution's supervisory ratings.

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<sup>1</sup> 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, surveys of senior lending officers, and discussions with trade and advisory groups. They 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 found it necessary to make complex credit decisions within a much shorter time frame 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 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 section identifies some of the important risks involved in several of the more common types of secondary-market credit activities. Guidance is provided on sound practices along

with special considerations supervisors should take into account in assessing the risk-management systems for these activities. A banking institution's failure to understand adequately the risks inherent in secondary-market credit activities and the failure to incorporate for such risk within its risk-management systems and internal capital allocations may constitute an unsafe and unsound banking practice.

A fundamental principle is advanced in this guidance: Banking institutions should explicitly incorporate the full range of risks of their secondary-market credit activities into their overall risk-management systems.<sup>2</sup> 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. This guidance builds on, supports, and is fully consistent with existing guidance on risk management issued by the Federal Reserve.<sup>3</sup>

2. 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. For 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 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 the issuance, underwriting, and servicing of asset-backed securities; the provision of credit or liquidity enhancements to securitized transactions; and investment in asset-backed securities.

3. For a more detailed discussion of risk management, see SR-95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies"; SR-95-17, "Evaluating the Risk Management and Internal Controls of Securities and Derivative Contracts Used in Nontrading Activities"; SR-93-69, "Risk Management and Internal Controls for Trading Activities of Banking Organizations"; and SR-90-16, "Implementation of

1. The term "supervisors" is intended to refer to Federal Reserve System staff.

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. Such 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.

Certain credit and liquidity enhancements that banking organizations provide to facilitate various secondary-market credit activities can make the evaluation of their risks less straightforward than the risks involved in traditional on-balance-sheet banking activities. 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>4</sup>

The transactions involving such enhancements tend to be complex and may expose the institutions extending them to hidden obligations that may not become evident until the transactions have deteriorated. 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.

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. See SR-97-21.

#### 2129.05.1 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

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Examination Guidelines for the Review of Asset Securitization Activities."

4. Examiners should also review SR-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, that is, 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 Standards No. 125, "Accounting for Transfers and Servicing of Financial Assets and Extinguishment of Liabilities," and the instructions to the Reports of Income and Condition.



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### 2130.0.1 INTRODUCTION

Effective March 1, 1983, the Board issued an amended bank holding company policy statement entitled “Futures, Forward and Options on U.S. Government and Agency Securities and Money Market Instruments.” Bank holding companies are now required to furnish written notification to their District Federal Reserve Banks within 10 days after financial contract activities are begun by the parent or a nonbank subsidiary. The policy is consistent with the joint policy statement previously issued by the three federal bank regulators with regard to banks participating in financial contracts, and reflects the Board’s judgment that bank holding companies, as sources of strength for their subsidiary banks, should not take speculative positions in such activities.

If a bank holding company or nonbank subsidiary is taking or intends to take positions in financial contracts, that company’s board of directors should approve written policies and establish appropriate limitations to ensure that the activity is conducted in a safe and sound manner. Also, appropriate internal control and audit procedures should be in place to monitor the activity. The following discussion and inspection procedures apply to futures contract activity generally, but are intended to focus specifically on financial futures contracts. For a discussion of currency futures and options and the examination procedures for those instruments, see sections F and G in the Merchant and Investment Bank Examination Manual.

Information, instructions, and inspection procedures have been provided for verifying compliance with the Board’s policy statement. It is intended that the policy statement will ensure that contract activities are conducted in accordance with safe and sound banking practices. The task of evaluating BHC contract activities is the responsibility of System examiners. The following information and inspection procedures are intended to serve as a guide for Federal Reserve Bank staff in that effort.

### 2130.0.2 DEFINITIONS

**Basis**—Basis is defined as the difference between the futures contract price and the cash market price of the same underlying security, money market instrument, or commodity.

**Call Option**—A contract that gives the buyer (holder) the right, but not the obligation to buy

(call), a specified quantity of an underlying security, money market instrument or commodity at or before the stated expiration of the contract. At expiration, if the value of the option increases, the holder will exercise the option or close it at a profit. If the value of the option does not increase, the holder would probably let the option expire (or close it out at a profit) and, consequently, will lose the cost (premium paid) of (for) the option. Alternatively, the option may be sold prior to expiration.

**Clearing Corporation**—A corporation organized to function as the clearing house for an exchange. The clearing house registers, monitors, matches and guarantees trades on a futures market, and carries out financial settlement of futures transactions. The clearing house acts as the central counterparty to all trades executed on the exchange. It substitutes as a seller to all buyers and as a buyer to all sellers. In addition, the clearing corporation serves to insure that all contracts will be honored in the event of a counterparty default.

**Clearing Member**—A member firm of the clearing house or corporation. Membership in clearing associations or corporations is restricted to members of the respective commodity exchanges, but not all exchange members are clearing house members. All trades of a non-clearing member must be registered with, and eventually settled through, a clearing member.

**Commodities Futures Trading Commission**—The CFTC is a federal regulatory agency charged with regulation of futures trading in all commodities. It has broad regulatory authority over futures trading. It must approve all future contracts traded on U.S. commodity exchanges, ensure that the exchanges enforce their own rules (which it must review and approve), and direct an exchange to take any action needed to maintain orderly markets whenever it believes that an “emergency” exists.

**Contract Activities**—This term is used in this manual to refer to banking organization participation in the futures, forward, standby contract, or options markets to purchase and sell U.S. government and agency securities or money market instruments, foreign currencies and other financial instruments.

**Convergence**—The process by which the futures market price and the cash market price of a financial instrument or commodity converge as the futures contract approaches expiration.

*Covered Call Options*—This term refers to the issuance or sale of a call option where the option seller owns the underlying deliverable security or financial instrument.

*Cross Hedging*—The process of hedging a “cash” or derivative instrument position with another cash or derivative instrument that has significantly different characteristics. For example, an investor who wants to hedge the sales price of long-term corporate bonds might hedge by establishing a short position in a treasury bond or treasury bond futures contract, but since the corporate bonds cannot be delivered to satisfy the contract, the hedge would be a cross hedge. To be successful, the price movements of the hedged instrument must be highly correlated to that of the position being hedged.

*Difference Check*—A difference check is sent by the party which recognizes a loss when a forward contract is closed out by the execution of an offsetting forward contract pursuant to a pair-off clause. In essence, the difference check represents a net cash settlement on offsetting transactions between the same two parties and replaces a physical delivery and redelivery of the underlying securities pursuant to offsetting contracts.

*Financial Contract*—This term is used in the manual to refer to financial futures, forward, standby contracts, and options to purchase and sell U.S. government and agency securities, money market instruments, foreign currency futures and other financial instruments.

*Firm Forward Contract*—This term is used to describe a forward contract under which delivery of a security is mandatory. See “Standby Contract” for a discussion of optional delivery forward contracts.

*Forward Contracts*—Over-the-counter contracts for forward placement or delayed delivery of securities in which one party agrees to purchase and another to sell a specified security at a specified price for future delivery. Contracts specifying settlement in excess of 30 days following trade date shall be deemed to be forward contracts. Forward contracts are usually non-standardized and are not traded on organized exchanges, generally have no required margin payments, and can only be terminated by agreement of both parties to the transaction. The term also applies to derivative contracts such as swaps, caps, and collars.

*Futures Contracts*—Standardized contracts traded on organized commodity exchanges to purchase or sell a specified financial instrument

or commodity on a future date at a specified price. While futures contracts traditionally specified a deliverable instrument, newer contracts have been developed that are based on various indexes. Futures contracts based on indexes settle in cash and never result in delivery of an underlying instrument; some traditional contracts that formerly specified delivery of an underlying instrument have been redesigned to specify cash settlement. New financial futures contracts are continually being proposed and adopted for trading on various exchanges.

*Futures Commission Merchant (FCM)*—An FCM functions like a broker in securities. An FCM must register with the Commodities Futures Trading Commission (CFTC) in order to be eligible to solicit or accept orders to buy or sell futures contracts. The services provided by an FCM include a communications system for transmittal of orders, and may include research services, trading strategy suggestions, trade execution, and recordkeeping services.

*Financial Futures Contracts*—Standardized contracts traded on organized exchanges to purchase or sell a specified security, money market instrument, or foreign currency on a future date at a specified price on a specified date. Futures contracts on GNMA mortgage-backed securities and Treasury bills were the first interest rate futures contracts. Other financial futures contracts have been developed, including contracts on Eurodollars, currencies, and Euro-Rate differentials. It is anticipated that new and similar financial futures contracts will continue to be proposed and adopted for trading on various exchanges.

*Futures Exchange*—Under the Commodities Exchange Act (CEA), a “board of trade” designated by the Commodity Futures Trading Commission as a contract market. Trading occurs on the floor of the exchange and is conducted by open auction in designated trading areas.

*GNMA or Ginnie Mae*—Either term is used to refer to the Government National Mortgage Association. Ginnie Mae is a government corporation within the U.S. Department of Housing and Urban Development. In creating GNMA, Congress authorized it to grant a full faith and credit guaranty of the U.S. government to mortgage-backed securities issued by private sector organizations.

*Hedge*—The process of entering transactions that will protect against loss through compensatory price movement. A hedge transaction is one which reduces the organization’s overall level of risk.

*Initial Futures Margin*—In the futures market, a deposit held by an FCM on behalf of a

client against which daily gains and losses on futures positions are added or subtracted. A futures margin represents a good-faith deposit or performance bond to guarantee a participant's performance of contractual obligations.

**Interest Rate Cap**—A multi-period interest rate option for which the buyer pays the seller a fee to receive, at predetermined future times, the excess, if any, of a specified floating interest rate index above a specified fixed per annum rate (cap or strike rate). Caps can be sold separately or may be packaged with an interest rate swap.

**Interest Rate Collar**—the combination, in single contract, of a simultaneous sale of a cap and the purchase of a floor, or, a purchase of a cap and sale of a floor. The buyer of the collar is a buyer of a cap and the seller of a floor. By selling the floor, the collar buyer gives up the possibility of benefiting from a decline in interest rates below the strike rate in the floor component. On the other hand, the fee earned in selling the floor lowers the cost of protection against interest rate reversal.

**Interest Rate Floor**—is the reverse of an interest rate cap. The buyer pays a premium to obtain protection against a decline in interest rates below a specified level.

**Long Contract**—A financial contract to buy securities or money market instruments at a specified price on a specific future date.

**Long Hedge**—The long hedge, also called the *anticipatory hedge* is the process by which a market participant protects a cash or risk position by buying a futures or forward contract, i.e. taking a long financial contract position.

**Maintenance Margin**—Maintenance margin is the minimum level to which an equity position can decline as a result of a price decline before additional margin is required. In other words, it is the minimum margin which a customer must keep on deposit with a member at all times. Each futures contract has specified maintenance margin levels. A margin call is issued when a customer's initial margin balance falls below the maintenance margin level specified by the exchange. Maintenance margin must be satisfied by the deposit of cash or agreed upon cash equivalents. The amount of cash required is that amount which is sufficient to restore the account balance to the initial margin level.

**Mandatory Delivery**—See "Firm Forward Contract."

**Mark-to-market**—The process by which the carrying value (market value or fair value) of a financial instrument is revalued, and which is recognized as the generally accepted accounting principle for determining profit or loss on secu-

rities positions in proprietary trading and investment accounts. Futures positions are typically marked-to-market at the end of each trading session.

**Naked Call Option**—Refers to the issuance or sale of a call option where the option seller does not own the underlying deliverable security or instrument.

**Open Interest**—Refers to the number of futures contracts outstanding for a given delivery month in an individual futures contracts. The mechanics of futures trading require that for every open long futures contract there is an open short futures contract. For example, an open interest of 10,000 futures contracts means that there are 10,000 long contract holders and 10,000 short contract holders.

**Options Contracts**—Option contracts require that the buyer of the option pay the seller (or writer) of the option a premium for the right, but not the obligation, to exercise an option to buy (call option) or sell (put option) the instrument underlying the option at a stated price (strike or exercise price) on a stated date (European style option) or at any time before or on the stated expiration date (American style option). There are also exchange traded options contracts: (1) put and call options on futures contracts that are traded on commodities exchanges; and (2) put and call options that specify delivery of securities or money market instruments (or that are cash settled) that are traded on securities exchanges. The key economic distinction between options on futures and options on securities, is that the party who exercises an option on a futures contract receives a long or short futures position rather than accepting or making delivery of the underlying security or financial instrument.

**Pair-Off Clause**—A pair-off clause specifies that if the same two parties to a forward contract trade should subsequently execute an offsetting trade (e.g. a long contract against an outstanding short contract), settlement can be effected by one party sending the other party a difference check rather than having physical delivery and redelivery of securities.

**Par Cap**—This term refers to a provision in the contract of sale for Ginnie Mae mortgage-backed securities which restricts delivery only to pools which bear an interest rate sufficiently high so that the securities would trade at or below par when computed based on the agreed to yield.

**Put Option**—An option contract which gives

the holder the right, but not the obligation, to sell (put) a specified quantity of a financial instrument (money market) or commodity at a specified price on or before the stated expiration date of the contract. If price of the underlying instrument occurs, the purchaser will exercise or sell the option. If a decline in price of the underlying instrument does not occur, the option purchaser will let it expire and will lose only the cost (premium paid) of (for) the option.

*Round Turn*—Commissions for executing futures transactions are charged on a round turn basis. A round turn constitutes opening a futures position and closing it out with an offsetting contract, i.e. executing a short contract and closing out the position with a long contract or vice-versa.

*Short Contract*—A financial contract to sell securities or money market instruments at a specified price on a specified future date.

*Short Hedge*—The process by which a customer protects a cash or risk position by selling a futures or forward contract, i.e. taking a short financial contract position. The purpose of the short hedge is to lock in a selling price.

*Standby Contract*—Optional delivery forward contracts on U.S. government and agency securities arranged between securities dealers and customers that do not involve trading on organized exchanges. The buyer of a standby contract (put option) acquires, upon paying a fee, the right to sell securities to the other party at a stated price at a future time. The seller of a standby (the issuer) receives the fee, and must stand ready to buy the securities at the other party's option. See the fuller discussion of Standby Contracts under 2130.0.3.1.2)

*TBA (To Be Announced) Trading*—TBA is the abbreviation used in trading Ginnie Mae securities for forward delivery when the pool number of securities bought or sold is “to be announced” at a later date.

*Variation Margin*—is when, in very volatile markets, additional funds are required to be deposited to bring the account back to its initial margin level, while trading is in progress. Variation margin requires that the needed funds be deposited within the hour, or when reasonably possible. If the customer does not satisfy the variation or maintenance margin call(s), the futures position is closed. Unlike initial margin, variation margin must be in cash. Also refer to “Maintenance Margin”.

*Weighted Hedge*—a hedge that is used to compensate for a greater decline in the dollar

value of a cash bond as compared to a price decline of an accessible T-bond futures contract.

*Yield Maintenance Contract*—This is a forward contract written with terms which maintain the yield at a fixed rate until the delivery date. Such a contract permits the holder of a short forward contract to deliver a different coupon security at a comparable yield.

### 2130.0.3 FINANCIAL CONTRACT TRANSACTIONS

Futures, forward and options contracts are merely other tools for use in asset–liability management. These contracts are neither inherently a panacea nor a speculative vehicle for use by banks and bank holding companies. Rather, the benefit or harm resulting from engaging in financial contract activities results from the manner in which contracts are used. Proper utilization of financial contracts can reduce the risks of interest or exchange rate fluctuations. On the other hand, financial contracts can serve as leverage vehicles for speculation on rate movements.

#### 2130.0.3.1 Markets and Contract Trading

Forward contract (OTC) trading of Government National Mortgage Association (“GNMA”) or “Ginnie Mae” Mortgage-Backed Securities preceded exchange trading of GNMA futures contracts in 1975.

##### 2130.0.3.1.1 Forward Contracts

Forward contracts are executed solely in an over-the-counter market. The party executing a contract to acquire securities on a specified future date is deemed to have a “long” forward contract; and the party agreeing to deliver securities on a future date is described as a party holding a “short” forward contract. Each contract is unique in that its terms are arrived at after negotiation between the parties.

For purposes of illustrating a forward contract, assume that SMC Corporation is an originator of government guaranteed mortgages and issuer of GNMA securities. SMC Corporation has a proven ability to manage and predict the volume of its loan originations over a time horizon of three to four months. To assure a profit or prevent a loss on current loan originations, SMC Corporation may enter binding over-the-counter commitments to deliver 75% of its

mortgage production which will be converted into GNMA securities three months in the future. If SMC agrees to sell \$3 million of GNMA securities (11% coupon) to the WP Securities Firm at par in three months, SMC Corporation is considered to have entered a “short” (commitment to sell) forward contract. Conversely, WP has entered a “long” (commitment to buy) forward contract. The two parties to the transaction are both now obligated to honor the terms of the contract in three months, unless the contract is terminated by mutual agreement.

It should be noted that executing a “short” forward contract is not the same as executing the short sale of a security. Generally, a short sale of a security is understood to represent the speculative sale of a security which is not owned by the seller. The short seller either purchases the security prior to settlement date or borrows the security to make delivery; however, a “short” forward contract merely connotes the side of the contract required to make delivery on a future date. Short forward contracts should not be considered inherently speculative, but must be considered in light of the facts surrounding the contract.

Forward trading can be done on a mandatory delivery (sometimes referred to as “firm forward” contracts) basis or on an optional delivery basis (“standby” contract). With respect to a “mandatory” trade, the contract can also be written with a “pair-off” clause. A pair-off clause specifies that if the same two parties to a trade should subsequently execute an off-setting trade (e.g., the banking organization executes a long contract against an outstanding short contract), settlement can be effected by one party sending the other party a “difference check” rather than having a physical delivery and redelivery of securities.

When a forward contract is executed by a dealer, a confirmation letter or contract is sent to the other party to the transaction. The contract will disclose pertinent data about the trade, such as the size of the trade, coupon rate, the date upon which final delivery instructions will be issued, and the yield at which the trade was effected. In addition, the contract letter will specify whether it is permissible for the “short” side of the trade to deliver a different coupon security at a comparable yield (“yield maintenance contract”) if the coupon specified in the contract is not available for delivery. Contracts which prohibit the delivery of securities requiring a premium over par are considered to have a “par cap.” The initial contract letter generally does not specify which specific securities (e.g.,

GNMA mortgage-backed securities identified by a pool number) will be delivered. Instead, such contracts generally identify the deliverable securities as having been traded on a “TBA” basis (“to be announced”). Prior to settlement, the dealer holding the short contract will send a final confirmation to the other party specifying the actual securities to be delivered, accrued interest, dollar price, settlement date, coupon rate, and the method of payment.

Forward contracts are not typically marked-to-market. Both parties in a forward contract are exposed to credit risk, since either party can default on its obligation.

#### *2130.0.3.1.2 Standby Contracts*

Standby contracts are “put options” that trade over-the-counter, with initial and final confirmation procedures that are quite similar to those on forward transactions. Standby contracts were developed to allow GNMA issuers to hedge their production of securities, especially in instances where mortgage bankers have extended loan commitments in connection with the construction of new subdivisions. When a mortgage banker agrees to finance a subdivision with conventional and government guaranteed mortgages it is difficult to predict the actual number of FHA and VA guaranteed loans which will be originated. Hence, it is risky for a GNMA issuer to enter mandatory forward contracts to deliver the entire estimated amount of loans eligible to be pooled as GNMA securities. By entering an option contract and paying a fee for the option to “put” securities to another party, a GNMA issuer or securities dealer obtains downside market protection, but remains free to obtain the benefits of market appreciation since it can “walk away” from the option contract. In addition to the flexibility of walking away and selling securities at the prevailing market price when GNMA prices are rising, a GNMA issuer avoids the potential risk of purchasing mortgages or GNMA securities to cover short forward contracts in the event that production of GNMA securities falls below anticipated levels.

When a securities dealer sells a standby contract granting a GNMA issuer the right “to put” securities to it, the dealer, in turn, will attempt to purchase a matching standby contract from an investor because the dealer does not want to shoulder all of the downside market risk. There

is also potential for securities firms to deal in standby contracts having no relationship to the issuance of GNMA securities.

Some illustrations of standby contracts follow. They are intended to illustrate the mechanics of a standby contract when a banking organization has sold or issued a standby contract granting the contra party the option to “put” GNMA securities to the banking organization.

*Assumptions*

1. Fee paid to banking organization = 1% of contract value
2. Contract delivery price = 98
3. Coupon = 12%

*Situation 1*

On contract exercise date: Market Price = 100. Therefore, the dealer would sell securities at market rather than put them to the bank.

<i>Dealer</i>		<i>Banking organization</i>	
Sale price	100	Purchase price	N/A
Fee paid	<u>(1)</u>	Fee Received	<u>1</u>
	99		1
<i>Result:</i> Dealer sacrificed 1% to insure sale price.		<i>Result:</i> Banking organization earned 1% fee for “standing by.”	

*Situation 2*

On contract exercise date: Market price = 95.

Therefore, dealer would deliver securities pursuant to the standby contract.

<i>Dealer</i>		<i>Banking organization</i>	
Sale price	98	Purchase price	98
Market price	<u>95</u>	Market price	<u>95</u>
Contract gain	3	Contract loss	(3)
Fee paid	<u>(1)</u>	Fee received	<u>1</u>
Actual gain	2	Actual loss	(2)
<i>Result:</i> Dealer paid 1% fee to avoid 3 point market loss.		<i>Result:</i> Banking organization received 1% fee to compensate for purchasing securities 3 points above market.	

*2130.0.3.1.3 Futures Contracts*

Futures Contract transactions involve three types of participants: customers—the buyers or sellers of contracts, brokers, and a futures exchange. As in the forward markets, a buyer (party committed to take delivery of securities specified in the futures contract) of a futures contract has a “long” contract and the seller (party committed to deliver the underlying securities)

has a “short” contract. If a customer desires to purchase (sell) a futures contract, the broker—possibly a member of a clearing house of an exchange—will take the order to the exchange floor and purchase (sell) a contract sold (bought) by another customer (through another broker).<sup>1</sup> All futures transactions are made

1. Brokers in commodities are required to register as futures commission merchants (“FCMs”) with the Commodities Futures Trading Commission (“CFTC”) in order to be eligible to solicit or accept orders to buy or sell futures contracts.

through and carried on the books of clearing house member brokers, who are treated by the exchange as their own customers. Hence, there are always an equal number of long and short contracts outstanding, referred to as the “open interest,” since the auction process requires a buyer and seller for every contract.

All futures contracts are obligations of an exchange’s clearing association or corporation, i.e. the clearing association is on the opposite side of each long and short contract; and all transactions are guaranteed within the resources of the exchange’s clearing association (on most futures exchanges a small fee is collected on each transaction and placed into an insurance fund). Should an FCM default on a futures contract, the association pays the costs of completing the contract.

#### 2130.0.4 MARGIN REQUIREMENTS

In order to insure the integrity of futures markets, the clearing house requires that member brokers (clearing house members) deposit initial margin in connection with new futures positions carried for the firm, other brokers or FCMs for whom the clearing house member clears transactions, and public customers. The clearing house members in turn require their customers—whether they are other FCMs or public customers—to deposit margin.<sup>2</sup> The FCMs generally require that public customers meet initial margin requirements by depositing cash, pledging government securities, or obtaining irrevocable standby letters of credit from substantial commercial banking organizations. Daily maintenance margin or variation margin calls (deposits of cash required to keep a certain minimum balance in the margin account) based upon each day’s closing futures prices are calculated pursuant to rules of the various futures exchanges, and clearing house members are required to meet daily variation margin calls on positions carried for customers and the firm. In turn, the

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2. In general, the futures exchanges set different initial margin requirements based upon the types of activity engaged in by the customer. Margin requirements are higher for customer contracts characterized as “speculative” than for those contracts deemed to be “hedge” positions. The commodities industry traditionally defines someone with a business need for using the futures market as a hedger; others are defined as speculators. Therefore, in instances where there are different initial hedge and speculative margin requirements, it is assumed that banking organizations will only be required to meet margin required for hedgers.

FCMs require customers to reimburse them for posting additional margin.

Once a customer has executed a futures contract to make or accept delivery of securities in the future it is obligated to fulfill the terms of the contract. A futures contract cannot be resold over-the-counter because futures contracts are not transferable. However, a customer may terminate its obligation under a futures contract either by making or accepting delivery of the securities as specified by the contract, or by executing an offsetting futures contract (long contract to cancel a short contract or vice-versa) with the same broker to cancel the original contract on the same exchange. The overwhelming majority of futures contracts are closed out by the execution of an offsetting contract prior to expiration.

The key to understanding futures transactions is the fact that futures contract prices on U.S. government and agency securities move in the same manner as bond prices; e.g. rising interest rates result in falling futures prices and falling interest rates result in rising futures prices. Hence, the purchase of a futures contract (“long” futures contract) at a price of 98 will result in a loss if future market participants perceive rising interest rates in the month of contract expiration and act accordingly; then the offsetting of a futures contract (executing a “short” futures contract) would have to be at a lower price; e.g. 96. As in the case of any commercial transaction, the participant has a loss if the sale price is lower than the purchase price, or a gain if the sale price is higher than the purchase price.

##### 2130.0.4.1 Variation Margin Calls

Variation margin calls for each contract and expiration month are based upon the closing futures exchange price. If there is a change from the previous day’s closing prices, the long contract holders will be required to post additional margin which will be passed through via the clearing house process to short contract holders or vice-versa. Subsequent to the computation of variation margin calls, the clearing house member brokers are required to post variation margin on behalf of the clearing firm and its customer accounts prior to commencement of the next day’s trading. Then, the clearing brokers call their FCM and public customers requesting more margin to bring the accounts up to the

required maintenance margin level.<sup>3</sup> Of course, if a futures position has a gain at the end of the day, the clearing firm receives a deposit in its margin account. The firm, in turn, increases the margin account balances of customers holding contracts with gains.

For illustrative purposes, we will again assume that a customer purchased a futures contract (long contract, face value \$100,000) at a price of 98. If the next closing futures price is 97, the customer will have suffered a one point margin loss (if the customer chose to offset the long contract with a short contract, the transaction would be closed out at a one point loss). Conversely, the party with a short contract executed at 98 would receive a one point margin payment to his account.

Assuming that the initial margin requirement is \$1,500 and the variation margin requirement is \$1,000, the following summarizes the steps followed in administering a customer's (long position) margin account in connection with the previously described transaction.

<i>Transaction</i>	<i>Margin Account Balance</i>
1. Deposit initial margin	\$1,500
2. Purchase \$100,000 contract @ 98	500
3. Day 1—Closing futures price 97 (Reduction of \$1,000 in margin account to reimburse broker for posting margin with clearing corporation).	
4. FCM calls customer to request \$1,000 to bring account up to required initial margin level.	
5. Reimbursement to FCM of \$1,000	1,500

It is important to note that once the margin account balance falls below the variation margin level, the customer is required to deposit additional funds to replenish the account balance to

3. It should be noted that public customers generally have more time to meet maintenance margin calls than do FCMs. However, if a customer fails to meet a variation margin call within three days, the FCM must take a charge against its net capital if it fails to close out the customer's contract (17 C.F.R. 1.17(c)(5)(viii)).

the initial margin level. If there is a drop in the value of the contract which places the margin account balance below the initial margin level but above the variation margin level, the customer is not required to deposit additional margin monies. Alternatively, if there is a positive flow of margin monies the customer is free to withdraw any amount which exceeds the initial margin requirement.

The entire marking-to-the-market process is repeated at the close of the next business day using a comparison of the previous day's closing price (97) to the current closing price. (The preceding example is simplified because it implies that the customer deposits promptly the required margin. In reality, margin is not always deposited so quickly.)

In summary, futures trading is a "zero sum game" because of the equal number of long and short contracts outstanding, and the variation margin payments reflect this fact, i.e. for every long contract holder posting variation margin, there is a short contract holder receiving margin.

## 2130.0.5 THE DELIVERY PROCESS

Futures contracts are defined as "standardized contracts traded on organized exchanges to purchase or sell a specified financial instrument or physical commodity on a future date at a specified price." Even when a participant keeps a contract open for delivery, the "specified price" (which corresponds to a specified yield) is actually obtained through a combination of past futures market gains or losses (incurred through the daily mark to market process) and the current futures market price. For invoicing purposes, the actual delivery price is based upon a closing futures market "settlement price" on a date designated by the exchange. In addition, the final calculation of a delivery price on a bond contract will typically involve an adjustment reflecting the fact that the coupon issue to be delivered against the contract grade (8 percent) futures contract is not an 8 percent bond. For example, when current U.S. treasury bond coupons are 12 percent it is highly unlikely that a party with a short futures position would deliver a bond with an 8 percent coupon.

## 2130.0.6 MECHANICS AND OPERATION OF FUTURES EXCHANGES

Certain technical factors should be noted with



respect to futures markets. First, futures markets are not totally free markets. Rules of the exchanges put artificial constraints—daily price movement limits—upon the amount of daily market movement allowed in given types of futures contracts. For example, government securities prices in the cash market will move as far as the market participants deem necessary to reflect the “market” for those securities, while the futures market specifying delivery of the underlying security will be constrained from having the same potential unlimited market movement. There have been instances where persons desiring to close out a futures contract by executing an offsetting contract have been unable to do so for one or more days until the exchange’s daily trading limits allowed futures prices to “ratchet” up or down to the level that reflected the true “market” price as perceived by hedgers, speculators, and arbitragers.

Although the preceding illustrates the basic nature of futures price movements, do not assume that futures and cash market prices always move in the same direction at the same velocity. Futures prices by definition predict future events, e.g., a market participant can buy a futures contract to take delivery of a three month Treasury bill two years in the future.<sup>4</sup> In such an instance, the holder of a long T-bill futures contract agrees to the future purchase of a government security which has not yet been issued. There is no reason to assume that a contract with a distant maturity will move in the same manner as the cash market for a three month Treasury bill. In addition, there is a relationship between the cash market price of an existing security and the price of that security in the futures market which is called the basis. The basis can vary significantly over the life of a given futures contract. In the contract delivery month, the futures market price will converge towards the cash market price (the basis approaches zero), adjusted for technical factors that reflect the costs of processing and delivering securities. If the futures market price did not converge towards the cash market price in the delivery month, the arbitragers would take offsetting futures and cash market positions to arbitrage away any profitable discrepancies between the two markets.

### 2130.0.7 COMPARISON OF FUTURES, FORWARD, AND STANDBY CONTRACTS

Excluding the fact that futures contracts are traded on organized exchanges, there are many similarities between contracts. Conceptually, the contracts are interchangeable; each type of contract can be utilized for hedging, speculating, or arbitrage strategies, but none of the contracts are transferable to third parties. While engaging in contract activities allows the participants to either assume or shift the risks of interest rate changes associated with the security deliverable under the contract, such contracts fail to provide the other benefits of owning the underlying security. Specifically, financial contracts do not pay interest, do not have a U.S. government guaranty of payment of principal at maturity, and cannot be pledged to secure public deposits or be used as collateral for repurchase agreements. The forward markets are perceived to be delivery markets wherein there is a high percentage of delivery of the underlying security.

As in the case of other futures markets, the financial futures markets were not designed to be delivery markets. Nevertheless, there have been a number of instances when a relatively high percentage of financial futures contracts have resulted in delivery. Some persons suggest tax reasons and the deliverable supply of securities as two factors that have contributed to the much higher delivery of securities than delivery of physical commodities. It is, of course, also easier and cheaper to make delivery of securities rather than railroad carloads of grain.

Trading units on futures exchanges are standardized. The standardized trading unit in a physical commodity which may be a railroad car of grain; the typical trading unit in a government or agency security futures contract may be \$100,000 or \$1 million par principal at a coupon rate (on coupon issues) fixed by the exchange. On the other hand, forward and standby contracts are not traded in standardized units with given contract maturity months. Instead, forward and standby contracts are custom made to suit the needs of the two parties to the transaction.

While all contract holders are involved with market risks, the holders of forward and standby contracts are especially prone to credit risk. Unlike futures contracts where the mechanics of exchange trading provide for the futures exchange clearing association to guaranty perfor-

4. All financial futures contracts have a number of contract expiration months extending into the future. As the near term contract expires, a contract with a more distant expiration date is added.

mance of each contract, forward and standby contracts are only as good as the entity on the other side of the contract. Anyone who reads the financial press should be aware that prior to the passage of the Government Securities Act of 1986, there were a number of defaults involving forward and standby contracts. In an effort to bring increased integrity into the unregulated forward contract markets, there has been a trend by some of the major securities dealers to require the posting of margin in connection with forward contract trading. There are no uniform margin requirements governing all aspects of forward contract trading, nor is there a uniform application of margin requirements by dealers requiring "house" margin (or internal margin requirements established and enforced by individual securities dealers). GNMA has established limited margin requirements (24 C.F.R. 390.52), as described below.

## 2130.0.8 OPTION CONTRACTS

Subsequent to the Board's initial adoption of a policy statement governing futures, forward, and standby contracts, trading of interest rate options began on organized futures and securities exchanges. Proponents of exchange traded options argue that such instruments are attractive to users because they permit the user to obtain down side price risk protection, yet benefit from favorable price movement. In contrast, futures and forward contracts allow the user to lock in a specific price, but the user must forgo future participation if the market should experience an upward price movement. Furthermore, the purchaser of an option pays a one time premium for this protection and is spared the contingent liabilities associated with futures margin calls.

An option is a contract that gives the buyer, or holder, the right, but not the obligation, to buy or sell a specified financial instrument at a fixed price, called the exercise or strike price, before or at a certain future date. Some options, however do not provide for the delivery of the underlying financial instrument and, instead, are cash settled. Moreover, in some cases, the underlying financial instrument is an index. Options that can be exercised before or at the expiration date are referred to as American options; if an option can be exercised only on the expiration date, it is termed a European option.

There are two basic types of options: calls and puts. The *call option* is any option which obligates the writer to deliver to the buyer at a set price (exercise or strike price) within a specified time limit the underlying financial instrument. When the market price of the underlying instrument is above the exercise (strike) price of the call, the call option is "in-the-money." Conversely, when the market price of the underlying financial instrument is below the exercise (strike) price of the call option, the call is "out-of-the-money." When the market price of the underlying instrument is equal to the strike price, the option is "at-the-money." At expiration, the buyer will exercise the option if it is "in-the-money" or let it expire unexercised if it is out-of-the-money. An out-of-the-money call option has no value at expiration, since buyers will not purchase the underlying instrument at a price above the current market price. Prior to expiration, the value of an "in-the-money" call option is at least equal to the market value of the underlying instrument minus the strike price. The ownership of a call provides significant leverage, but raises the breakeven price relative to ownership of the underlying instrument. Holding the call limits the amount of potential loss and offers unlimited potential for gains.

A *put option* gives the buyer the right, but not the obligation, to *sell* the underlying instrument at a specified price (exercise or strike price), before or at expiration. When the market price of the underlying instrument is below the strike price of the put option, the put is "in-the-money," and a put option is out-of-the-money when the market price of the underlying financial instrument is above the strike price of the put option. Ownership of a put option offers leveraged profitability if the market value of the underlying instrument declines.

Some portfolio managers commonly employ "covered" call writing strategies to gain fee income from options written on securities held in the portfolio. If an option position is covered, the seller owns the underlying financial instrument or commodity or has a futures position. For example, an option position would be "covered" if a seller owns cash market U.S. Treasury bonds or holds a long position on a Treasury bond futures contract. Writing "covered calls" has only limited potential for gain. Writing "covered calls" is not a proper strategy for a market that could rise or fall by substantial amounts. It is generally used in a flat market environment.

Referring to the above example, if a seller holds neither the cash market U.S. Treasury Bonds or was not long on the Treasury bond

futures contract, the writer would have an uncovered or “naked” position. In such instances, margin would be required (by the exchange, if an exchange traded option—not the case for an OTC option) since the seller would be obligated to satisfy the terms of the option contract if the option buyer exercises the contract. The risk potential for loss in writing “naked calls” (calls against which there are no securities held in portfolio) is great since the party required to deliver must purchase the required securities at current market prices. Naked “covered call” writing is generally viewed to be speculative since the risks are theoretically unlimited, particularly if it is done solely to generate fee income.

Options are purchased and traded either on organized exchanges or in the over-the-counter (OTC) market. Option contracts follow three-month expiration cycles (example: March/June/September/December). The option contracts expire on the Saturday following the third Friday in the expiration month. Thus, options are considered as “wasting assets” because they have a limited life since they expire on a certain day, even though it may be weeks, months, or years from now. The expiration date is the last day the option can be exercised. After that date the option is worthless.

*Option premium valuation.* The price (value) of an option premium is determined competitively by open outcry auction on the trading floor of the exchange. The premium value is affected by the inflow of buy and sell orders reaching the exchange floor. The buyer of the option pays the premium in cash to the seller of the option which is credited to the seller’s account. Several factors affect the value of an option premium, as discussed below. The option premium consists of two parts, “intrinsic value” and “time value.” *The intrinsic value* is the gross profit that would be realized upon immediate exercise of the option. Stated another way, it is the amount by which the option is in-the-money. It is the higher of: the value of an option if it is exercised today; or zero. For “in-the-money” *call* options, it is the difference between the price of the underlying financial instrument, and the exercise (strike) price of the option. For “in-the-money” *put* options, it is the difference of the exercise (strike) price of the put option and the price of the underlying financial instrument. The intrinsic value is zero for “at-the-money” or “out-of-the-money” options. The *time value* derives from the chance that an option will gain intrinsic value in the future or that its intrinsic value will increase before maturity of the contract. Time value is determined by

subtracting intrinsic value from the option premium. For example,

$$\text{Time value} = \text{Option premium} - \text{Intrinsic values}$$

$$\text{Time value} = 5 - 10/64 \quad - 4.00$$

$$\text{Time value} = 1.15384$$

The option premium is affected by several other factors. One factor involves the comparison of the underlying futures price versus the strike price of the option. An option’s price is increased the more that it is in-the-money. A second factor is volatility. Volatile prices of the underlying financial instrument can help stimulate demand for the options, thus increasing the premium. A third factor that affects the premium of an option is the time until expiration. Option premiums are subject to greater price fluctuations because the underlying value of the futures contract changes more with a longer time period. Other factors that affect the option premium are the strike rate(s) and the domestic and foreign (if applicable) interest rates.

An exchange-traded option is often referred to as a “standardized” option, reflecting the fact that the terms of the contract are uniform with respect to the underlying instrument, amounts, exercise prices, and expiration dates. OTC options are characterized by terms and conditions which are unique to each transaction. Large financial institutions are often dealers in customized interest rate or foreign exchange options. For example, a banking organization might write a “cap,” or series of put option on pounds sterling to protect the dollar value of a sterling denominated receivable due in one year. In this case, an option can be tailored to fit the exact needs of the buyer.

Like futures contracts, contract performance on exchange-traded options is guaranteed by the clearing corporation which interposes itself as a central counterparty to all transactions. It substitutes itself as a seller to all buyers and as a buyer to all sellers. Standardization combined with the clearing corporation’s guarantee facilitates trading and helps to insure liquidity in the market. The buyer or seller of an exchange-traded option may always close out an open position by entering into an offsetting transaction, with the same strike price and expiration date, and for the same amount. Indeed, most exchange-traded options are liquidated prior to maturity with an offsetting transaction, rather than by exercising

the option in order to buy or sell the underlying instrument.

Buyers of exchange-traded options are not required to post funds to a margin account because their risk is limited to the premium paid for the option. However, writers (sellers) of options are required to maintain margin accounts because they face substantial amounts of risk. The amount of the margin varies depending upon the volatility in the price of the option. As the option moves closer and closer to being in-the-money, the writer is required to deposit more and more into his margin account, in order to guarantee his performance should the option eventually be exercised.

Options on futures contracts provide the holder with the right to purchase (call) or sell (put) a specified futures contract at the option's strike price. The difference between the strike price on the option and the quote on the futures contract represents the intrinsic value of the option. Options on futures contracts differ from traditional options in one key way: the party who exercises an option on a futures contract receives a long or short futures position (depending on whether he is exercising a call or put option) rather than accepting or making delivery of the underlying security or financial instrument. When the holder of a call option on a futures contract exercises the option and the futures contract is delivered, the option writer must pay the option holder the difference between the futures contract's current value and the strike price of the exercised call. The buyer takes on a long position, and the writer a short position in the futures contract. When a futures put option is exercised, the holder takes on a short futures position, and the writer a long position. The writer of the put pays the holder the difference between the current price of the futures contract and the strike price of the put option. The resultant futures position, like any other futures position, is subject to a daily marked-to-market valuation. In order to liquidate the futures position, both the buyer and the seller must undertake offsetting futures transactions.

## 2130.0.8.1 Other Option Contracts

### *2130.0.8.1.1 Stock Index Options*

A stock index option is a call or a put that is based on a stock market index such as the S & P

500. As opposed to a regular call or put option on equity securities where there must be a sale and delivery of shares of stock, there is no delivery of the underlying instrument when an index option is exercised. Rather, settlement is in cash.

### *2130.0.8.1.2 Foreign Currency Options*

The right to buy (call) or sell (put) a quantity of a foreign currency for a specified amount of the domestic currency is a foreign currency option. The size of the contract is standard for each currency. The contracts are quoted in cents per unit of foreign currency. As an example, one call option for the British pound is 12,500 pounds.

## 2130.0.8.2 Caps, Floors, and Collars

Caps, floors, and collars provide risk protection against floating interest rates. The market for these products is an outgrowth of the OTC market in fixed income (bond) options.

An interest rate cap contract pays the buyer cash if the short term interest index rises above the strike rate in the contract in exchange for a fee. In combination with a floating rate obligation, it effectively sets a maximum level on interest rate payments. If market rates are below the cap rate, no payments are made under the cap agreement. Thus, the buyer of a cap is able to place a ceiling on his floating rate borrowing costs without having to forego potential gains from any decline in market rates.

Cap agreements typically range in maturity from 6 months to as long as 12 years, with reset dates or frequencies that are usually monthly, quarterly, or semiannual. The London Interbank Offered Rate (LIBOR) is the most widely used reference rate for caps, floors, and collars. Other indexes used as reference rates are commercial paper rates, the prime interest rate, Treasury bill rates, and certain tax-exempt rates. Cap fees depend upon the cap level, the maturity of the agreement, the volatility of the index used as the reference rate, and market conditions. The higher the cap rate, the lower the premium. The fee is usually paid up front, but can be amortized.

An interest rate floor agreement is used to protect the overall desired rate of return associated with a floating-rate asset. In accordance with the agreement, the seller receives a fee for

the floor agreement from the holder of the underlying asset. When interest rates fall, the holder of the floor contract is protected by the agreement, which specifies the fixed per annum rate (floor rate) that will be retained on those assets, at specified times during the life of the agreement, even though floating interest rates may decline further.

An interest rate collar is a variation of a cap-only agreement. Under this arrangement the seller of the collar, for a fee, agrees to limit the buyer's floating rate of interest within one agreement by a simultaneous sale of a cap and purchase of a floor, or purchase of a cap and sale of a floor. When the reference rate is above the cap rate the seller makes payments to the buyer sufficient to return the buyer's floating rate interest cost to the cap rate. Conversely, the buyer makes payments to the collar provider to bring its rate back to the floor whenever the reference rate falls below the floor rate. In effect, under a collar agreement the buyer is selling a string of call options (the floor) back to the provider of the cap. The premium received from selling the floor reduces the overall cost of the cap to the buyer of the collar. Thus, the premium for a floor/ceiling, or collar, agreement, is lower than for a cap-only agreement with the cap at the same level. This is because the floor sold to the provider of the collar has a certain value, which is passed along to the buyer in the form of a lower premium.

The disadvantage to collars, of course, is that they limit the buyer's ability to profit from declines in market rates below the specified floor. Clearly, one's interest rate expectations play an important role in determining whether or not to use a collar agreement. It should also be noted that collar agreements involve credit risk on both sides of the agreement, similar to the credit risk considerations found in interest rate swap agreements. The buyer of the collar is exposed to the risk that the provider may default on payments due under the cap agreement; and the provider of the collar is exposed to the risk that the buyer may default on payments due under the floor agreement.

### 2130.0.9 REGULATORY FRAMEWORK

GNMA has adopted limited margin requirements. Specifically, the GNMA margin requirements (12 C.F.R. 390.52) require marking-to-market and the posting of maintenance

margin.<sup>5</sup> However, the GNMA margin requirements exclude the majority of GNMA forward contracts and only pertain to contracts involving GNMA issuers with other parties.<sup>6</sup>

The Commodities Futures Trading Commission ("CFTC") is the agency authorized by Congress to supervise the trading of "commodities," including financial futures. Exchanges which trade commodities must register with the CFTC. In addition, the various futures exchanges must receive CFTC approval before they can begin trading a new futures instrument. Brokers and dealers who execute futures contracts for customers must register as Futures Commission Merchants ("FCM") with the CFTC. There are also CFTC registration requirements pertaining to firms engaging in commodities activities similar to an investment advisor or mutual fund in the securities markets. Finally, the surveillance activities of the various futures exchange examiners are subject to oversight by the CFTC.

With the exception of reporting requirements concerning persons or entities with large futures positions, the CFTC's jurisdiction generally does not extend to financial institutions. Rather, the federal and state banking agencies, state insurance commissions, and the Office of Thrift Supervision are responsible for supervising regulated entities' future activities, if permitted, under statute or regulation.

### 2130.0.10 EXAMPLES OF CONTRACT STRATEGIES

For purposes of reporting large positions to the CFTC a market participant defines its future activities as "speculative" or as "hedging." Basically, CFTC rules consider a participant to be a hedger if certain facets of such person's business can be hedged in the futures markets; persons who do not have a business need for participating are deemed to be speculators. It is anticipated that bank holding companies characterize their contract activities as "hedging", or possibly as arbitrage between various markets.

5. Initial margin requirements necessitate the pledging of something of value prior to initiation of a transaction. Depositing maintenance margin refers to pledging something of value in reaction to market movements; e.g. depositing cash representing the difference between a forward contract price and its current market value.

6. See SR-625 dated July 23, 1980.

Examiners must scrutinize contract positions for purposes of evaluating risk.

The Board policy statement concerning bank holding companies<sup>7</sup> states:

“. . . the Board believes that any positions that bank holding companies or their nonbank subsidiaries take in financial contracts should reduce risk exposure, that is, not be speculative.” It should be noted, however, that a more liberal interpretation of the policy statement has been permitted for dealer subsidiaries. For example, in a government securities dealer subsidiary, it is permissible to use related financial contracts as a substitute trading instrument for cash market instruments. Thus, the use of financial contracts is not limited solely to reducing the risk of dealing activities.

Some examples of contract strategies are provided which reduce risk when viewed in isolation. A definition of a financial hedge is:

“to enter transactions that will protect against loss through a compensatory price movement.”

In looking at a hedge transaction in isolation, there should be certain elements present to make a hedge workable:

1. The interest rate futures or forward contract utilized should have a high positive correlation (prices that tend to move in the same direction with similar magnitude) with the cash position being hedged. In other words, the futures or forward position taken should be structured so that an upward price movement in the contract offsets a downward price movement in the cash or risk position being hedged, and vice versa.

2. The type (e.g. T-bill, T-bond, etc.) and size of the contract position<sup>8</sup> taken should have a proportionate relationship to the cash or risk position being hedged, so that futures gains

(losses) will approximately offset any losses (gains) on the hedged position.

3. The contract position taken should have a life which is equal to or greater than the end of the period during which the hedge will be outstanding. For example, if interest rate protection was deemed necessary for a six-month time span, it would not ordinarily be wise to enter a contract expiring in three months.

### 2130.0.10.1 The Mortgage Banking Price Hedge

Assume that a mortgage banking subsidiary agrees in June to originate mortgages at a fixed yield in the following October. Unless the loan originator has a forward commitment to sell the loans to a permanent investor(s), it is exposed to a decline in the principal value of mortgages due to a rise in interest rates between the commitment date and ultimate sale of the loans. An example of a traditional “short hedge” would be the sale of futures contracts in an attempt to reduce the risk of price fluctuation and insure a profitable sale of the loans. However, in following this strategy the mortgage originator also chooses to forfeit its ability to reap a profit if interest rates should fall.

If interest rates increased, the loss on the sale of mortgages or a pool of mortgage-backed securities will probably be largely offset by a gain on the futures transaction; see example below. If interest rates fall, the mortgage originator would gain on the resale of mortgages but lose on the futures market transaction. Hence, in a true hedge, the hedger’s earnings are relatively unaffected by a change in market interest rates in either direction.

Generally accepted accounting principles applicable to mortgage activity require that mortgages held for resale be periodically revalued to the lower of cost or market (Financial Accounting Standards Board Statement No. 65, “Accounting for Certain Mortgage Banking Activities”). Unrealized gains and losses on outstanding futures contracts are matched against related mortgages or mortgage commitments when the inventory is revalued to the lower of cost or market; i.e. the lower of cost or market valuation is based upon a net figure including unrealized related futures gains and losses.

### 2130.0.10.2 Basis

Basis is the difference between the cash (spot) price of a security (or commodity) and its futures price. In other words:

7. The Board’s policy statement on engaging in futures, forwards, and option contracts.

8. Futures market participants engage in a practice, sometimes known as “factorweighting” or “overhedging,” to determine the appropriate number of futures contracts necessary to have the proper amount of compensatory price movement against a hedged cash or risk position. For example, it would require 10 mortgaged-backed futures contracts (8% coupon, \$100,000 face value) to hedge an inventory of \$1,000,000 mortgage-backed (8% coupon) securities. Alternatively, 14 mortgage-backed futures contracts would be required to hedge a \$1 million inventory of mortgage-backed securities with a 13½% coupon. Overhedging or factor weighting is necessary in hedging securities with higher coupons than those specified in futures contracts (currently 8% on bond futures) because higher coupon securities move more in price for a given change in yield than lower coupons.

$$\text{Basis} = \text{Spot price} - \text{Future price}$$

For short-term and intermediate futures contracts, the futures price is the quoted futures price times an appropriate conversion factor. For short-term futures contracts the quoted futures price is 100 less the annualized futures interest rate. The invoice price must be determined using yield-to-price conventions for the financial instrument involved.

Basis may be expressed in terms of prices. Due to the complexities involved in determining the futures price, it is thus better to redefine price basis using actual futures delivery prices rather than quoted futures prices. Thus, the price basis for fixed income securities should be redefined as:

$$\begin{aligned} \text{Price Basis} &= \text{Spot price} \\ &\quad - \text{Futures delivery price.} \end{aligned}$$

Basis may also be expressed in terms of interest rates. The *rate basis* is defined as:

$$\text{Rate basis} = \text{Spot rate} - \text{Futures rate}$$

The spot rate refers to the current rate on the instrument that can be held and delivered on the contract. The futures rate represents the interest rate that corresponds to the futures delivery price of the deliverable instrument.

The rate basis is useful in analyzing hedges of short-term instruments since it nets out all effects resulting from aging. For example, if a one year T-bill has a rate of 9 percent with a price of 85, and a 3-month T-bill has a rate of 9 percent and a price of 94, the price basis would be  $-9$ . If a cash security ages, it does not necessarily mean that a change in the rate basis has taken place.

### 2130.0.10.3 Trading Account Short Hedge

Another example of a short hedge pertains to securities dealers that maintain bond trading accounts. While bonds are held “long” (actually owned by the dealer) in trading accounts, dealers are subject to two risks. First, there is the risk that the cost can change regardless of whether the funds are generated through repurchase agreement financing or the dealer’s other funding sources. When there is an inverted yield curve (short-term interest rates are higher than long-term rates), trading portfolio bonds in inventory yield less than the cost of funds required to carry them. Second, there is the risk that bond market interest rates will rise, thus forcing the dollar price of bonds down.

#### 2130.0.10.3.1 Example 1: A Perfect Short Hedge<sup>1</sup>

<i>Month</i>	<i>Cash Market</i>	<i>Futures Market</i>
June	Mortgage department makes commitment to a builder to originate \$1 million of mortgages (based on current GNMA 8’s cash price) at 98-28 <sup>3</sup> / <sub>32</sub> for \$988,750	Sells 10 December mortgage-backed futures at 96-8 <sup>3</sup> / <sub>32</sub> for \$962,500 to yield 8.59 percent
October	Mortgage department originates then <i>sells</i> \$1 million of pooled mortgages to investors at a price of 95-20 <sup>3</sup> / <sub>32</sub> , for \$956,250	Buys 10 December mortgage-backed futures at 93, for \$930,000 to yield 8.95 percent
	Loss: \$32,500	Gain: \$32,500

1. The effects of margin and brokerage costs on the transaction are not considered. It should be noted that “perfect hedges” generally do not occur.

The following example pertains to a bond trading account. Assume that the dealer purchases Treasury bonds on October 4 and simultaneously sells a similar amount of Treasury bond futures contracts. The illustration ignores com-

mission charges and uses futures contracts maturing in March 19x9 because the dealer’s

technical analysis discovered an advantage in using the March 19x9, rather than the previous December contract as a hedge. (At that time the

previous December contract was the next available contract still trading.)

<i>Cash Market</i>		<i>Futures Market</i>	
10/04/1998	Purchase \$5MM T-bonds maturing Aug. 2005, 8% coupon at 87- <sup>10</sup> / <sub>32</sub> : Principal = \$4,365,625	Sell \$5MM T-bonds futures contracts expiring Mar. 1999 at 86- <sup>21</sup> / <sub>32</sub> : Contract value = \$4,332,813	
10/23/1998	Sell \$5MM T-bonds at 79.0:  Principal = 3,950,000 Cash loss = (\$415,625)	Buy \$5MM T-bond futures Mar. 1999 at 79- <sup>1</sup> / <sub>32</sub> : Contract value = 3,951,563 Futures gain = \$381,250	

Although the hedge did not prevent the dealer's trading account from losing money, it limited the loss to \$34,375 instead of \$415,625.

It is worth noting that the preceding example also illustrates some of the dangers of using interest rate futures contracts. Although the futures market proved useful to the trading department, a futures contract could have serious consequences for a dealer using an alleged "long hedge to lock-in an attractive yield."

#### 2130.0.10.4 Long Hedge

In certain areas of the country, financial institutions desiring to hold public deposits are required to bid competitively for deposits. The case discussed below pertains to a situation where the competitive bids must be tendered one calendar quarter in advance of receiving the deposit. In this example, the asset side of the balance sheet is not discussed since it is assumed that a banking organization paying the prevailing one-year C.D. interest rate can utilize the funds at a profitable spread.

In this type of situation the bidding institutions are generally vulnerable to falling interest rates; one can safely assume that an institution selected to hold public deposits would not be dismayed to learn subsequently that interest rates had risen and it had locked-in a funding source at or below market rates. However, the funds will not be received for another 3 months. Thus, there is the possibility that interest rates could drop in the interim, leaving a reduced or possibly negative net interest margin when the funds are deposited.

There are a number of approaches available to attempt to ensure that future time deposits can be obtained without paying higher than market interest rates. One method is forecasting the appropriate interest rate to be paid on a given time deposit three months in the future. However, forecasting has become increasingly difficult to do with accuracy in the recent periods of fluctuating interest rates. An alternative approach would be to quote the current C.D. rate (adjusted slightly for competitive factors) with an intent to hedge in the futures market if the banking organization's interest rate bid is accepted. Upon receiving notification that its deposit bid has been accepted, the institution can then purchase an appropriate number of futures contracts to insure a profitable investment spread three months hence when it actually receives the deposit.

The following example on June 1, 19x0; the facts are as follows:

Size of public deposits offered	\$10 million
Date of deposit	September 2, 19x0
Term	1 year
Current C.D. rate	8 <sup>1</sup> / <sub>4</sub> %

For purposes of this illustration, assume that a bid was submitted to pay 8<sup>1</sup>/<sub>4</sub>% for one year on \$10 million. The bids were due June 1 and notification was given June 2 of the intention to provide the funds on September 2; and the banking organization decided to purchase futures contracts on June 2.

A Treasury bill futures contract, expiring in 3 months, is selected as the hedging vehicle because it reflects price movement of an instrument with a comparable maturity to one-year



C.D., and there was no C.D. futures contract trading. For purposes of this illustration, it is assumed that the contract offers sufficient liquidity to enable the banking organization to readily offset its open futures position when necessary. Using the bill contract is an example of “cross hedging” which is defined as the buying or selling of an interest rate futures contract to protect the value of a cash position of a similar,

but not identical, instrument. This type of hedging is a measured risk since the outcome of such a transaction is a function of the price correlation of the instruments being hedged. At any given moment it is conceivable that a negative correlation could exist between two unlike instruments despite the presence of a strong correlation over an extended time period.

<i>Date</i>	<i>C.D. Rate</i>	<i>Transactions</i>	<i>T-bill</i>	<i>Futures</i> <sup>1</sup>
June 2, 19x0	8.25%	Purchase 40 Contracts	91.84	8.16%
Sept. 2, 19x0	11.00%	Sell 40 Contracts	90.05	9.95%

1. The size of the trading unit is based upon U.S. T-bills having a face value at maturity of \$250,000 ( $40 \times 250M = 10MM$ ). Prices are quoted in terms of an index representing

the difference between the actual T-bill yield and 100.00. Every one basis point movement on a contract is equal to \$25.00 per contract.

#### 2130.0.10.4.1 Evaluation of the Hedge

Total interest (not compounded) to be paid (8¼%)	\$ 825,000
Alternative C.D. interest (not compounded) at current rate (11%)	<u>1,100,000</u>
Difference	275,000
Futures trading loss*	<u>(179,000)</u>
Net difference	<u><u>\$ 96,000</u></u>

\*Computation—Purchase price 91.84  
Sale price 90.05  
1.79 or 179 basis points  
( $179 \times \$25.00 \times 40 \text{ contracts} = \$179,000$ )

In retrospect, it would have been better if the banking organization would not have hedged. By agreeing to an interest rate on June 2, it obtained deposits on September 2 and will pay approximately \$275,000 less in interest payments to the municipality than is required on an ordinary C.D.(s) issued on September 2. The \$179,000 futures trading loss, of course, reduced the windfall interest income due the banking organization. A net interest income spread of approximately \$96,000, instead of a \$275,000, demonstrates two principles: 1) cross hedging can cause unexpected results; and 2) it is quite difficult to find perfect hedges in the real world. The hedge was structured so that a cash gain was offset by a futures loss—incorporating the offsetting principles of a hedge transaction. If the general level of interest rates had fallen, a futures gain should have occurred to offset the higher (relative to prevailing market rates) cost of funds obtained on September 2.

#### 2130.0.10.5 Using Options to Create an Interest Rate Floor

Assume that on September 28th it is decided to rollover a \$1,000,000 investment in 13-week Treasury bills on November 28, which also happens to be the expiration date for call options on the December Treasury bill futures contract. The banking organization, concerned that interest rates will fall between September 28 and the rollover date, wishes to hedge the rollover of its investment. The portfolio manager can set a minimum yield on the rollover investment by either buying a Treasury bill future call option, or by buying a Treasury bill futures contract. Further assume that the December Treasury bill futures contract can be bought for a price of 93.70 which implies a discount yield of 6.30 percent. Treasury bill futures call options with a strike price of 93.75, implying a discount yield of 6.25 percent, sell for a premium of 20 basis points, or \$600 (20 basis points  $\times$  \$25/basis point = \$500).

If the banking organization could actually buy a Treasury bill futures contract that expired on exactly November 28, then there would be a perfect hedge since the rate of return on the bills would be explicitly fixed by the futures hedging strategy. However, the closest maturing Treasury bill futures contract expires in December, several weeks after the rollover date for the banking organization's investment. Uncertainty over the actual discount yield of the Treasury bills on the rollover date and the yield produced

by the hedge is known as “basis risk,” the risk that the yield on the hedge may differ from the expected yield on the hedged item. For purposes of this example, assume that the yield on the futures contract equals the actual discount yield on the 13-week Treasury bills at the rollover date. Thus, the futures hedge in this example will provide an effective discount yield of 6.30 percent on the rollover of the 13-week Treasury bill investment.

Assume that rates fall after September 28 and that the discount yield on Treasury bill futures contracts declines from 6.30 percent to 6.00 percent at the November 28 expiration date of the December Treasury bill futures options contract. The option to buy the Treasury bill futures will be exercised since the strike price of 93.75 is below the market price of 94.00 for the underlying futures contract, yielding a profit of 25 basis points or \$625 (25 basis points  $\times$  \$25/basis point). The profit must be offset by the 20 basis point cost of the option, which reduces the net profit to 5 basis points. The effective hedged discount yield is 6.05 percent (6.00 percent on the 13-week Treasury bills—assuming no basis risk—plus the 5 basis point profit from the hedge). The option hedge produces a yield that is 5 basis points higher than the unhedged yield, but 25 basis points lower than the 6.30 percent yield that would have resulted from hedging with futures.

Although the option hedge resulted in a lower effective yield than the futures hedge, it set an absolute floor on the investment. This is because any decline in the discount yield of the Treasury bills below 6.05 percent would be offset dollar for dollar by the additional profits from the hedge. The real advantage of the option hedge is that, although it establishes a floor that is lower than the rate fixed by the futures hedge, it allows the hedger to participate in any increase in interest rates above the cost of the call premium. For example, if interest rates increased such that the price on the December Treasury bill futures contract on November 28 falls to 93.00, implying a discount yield of 7.00 percent, the option would expire unexercised since the strike price is above the price of the underlying futures contract. Again, assuming that the spot price for the 13-week Treasury bills is equal to the futures price, the effective discount yield is 6.80 percent (7.00 percent minus the 20 basis point call option premium), 50 basis points higher than the yield that would have been provided by the futures hedge.

### 2130.0.10.6 Hedging a Borrowing with an Interest Rate Cap

In order to limit a borrower’s interest rate risk, sophisticated banking institutions may offer cap agreements as part of a loan package to their clients. While such an arrangement provides some comfort that the borrower’s ability to repay will not be jeopardized by a sharp increase in interest rates, it obviously transfers that interest rate risk back to the lender. Nevertheless, many banking institutions feel they are better able to manage that risk than are some of their clients. Cap agreements have also been utilized to cap the rate on issued liabilities. For example, an institution might be able to issue medium-term floating rate notes at 3-month LIBOR plus an eighth of a percent. Alternatively, that institution could issue a capped floating rate note at 3-month LIBOR plus three-eighths of a percent. By subsequently selling the cap separately back into the market the institution could, achieve sub-LIBOR funding, depending on the proceeds from the sale of the cap.

A cap agreement is typically specified by following terms: notional principal amount; maturity; underlying index, frequency of reset, strike level. As an illustration, a cap agreement might have the following terms:

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Notional Principal Amount	\$10,000,000
Maturity	2 Years
Underlying Index	3-month LIBOR
Rate Fixing	quarterly
Payment	quarterly, in arrears, on an actual/360-day basis
Cap Level	9%
Up Front Fee	1.11% of par (\$111,000)

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Under the terms of this agreement, if at any of the quarterly rate fixing dates 3-month LIBOR exceeds the cap level then the seller of the cap would pay the buyer an amount equal to the difference between the two rates. For example, if at a reset date LIBOR was set at 10 percent, the payment would be:

$$\begin{aligned}
 &10\%(90/360 \times \$10,000,000) \\
 &- \\
 &9\%(90/360 \times \$10,000,000) \\
 &= \\
 &\$25,000
 \end{aligned}$$

Thus, the writer of the cap would pay the buyer \$25,000. If 3-month LIBOR for the quarter were set at or below the cap level of 9 percent, no payment would be made.

### 2130.0.11 ASSET-LIABILITY MANAGEMENT

Financial contracts can be used as a tool in an overall asset-liability management strategy. In order to use financial contracts in this context, a BHC or nonbank subsidiary must first identify where interest-rate exposure lies as indicated by mismatches between asset and liability structures. In those instances where the BHC or nonbank subsidiary has variable-rate assets and variable-rate liabilities with comparable maturities, there is, in theory, no need to hedge with financial contracts since that portion of the asset-liability structure is already hedged. The same holds true for fixed-rate assets and liabilities (yielding a positive interest-rate margin) of comparable maturities. Once a BHC or nonbank subsidiary has identified the undesired mismatches in assets and liabilities, financial contracts can be used to hedge against the identifiable mismatch—for example, long positions in contracts can be used as a hedge against funding interest-sensitive assets with fixed-rate sources of funds, and short positions in contracts can be used as a hedge against funding fixed-rate assets with interest-sensitive liabilities.

BHCs or nonbank subsidiaries that choose to employ financial contracts as a tool in their general asset-liability management program and properly use financial contracts are striving towards worthwhile goals. The discipline of identifying mismatches between assets and liabilities tends to focus the practitioner's attention on the entire balance sheet. Examiners should be aware that marketing efforts on behalf of the futures exchanges have attempted to focus upon just one side of the balance sheet by "pairing" a futures contract with an asset or a liability. In considering financial-contract activities, examiners need to remember that financial-contract activities must be evaluated in light of both sides of a balance sheet.

One final point should be made with respect to "hedging" based upon pairing a futures contract against a portfolio security. Since this type of "hedging" can be done while considering only the asset side of the balance sheet, it is possible that such a strategy could increase interest-rate risk rather than reduce it. For example, assume (unrealistically) that there is a perfect balance between variable-rate assets and liabilities, and the firm is evaluating fixed-rate assets and liabilities. Management determines that there is a perfect balance between fixed-rate assets and liabilities and then isolates the last fixed-rate asset and liability. Make the further assumption that the organization holds a six-month note yielding 12 percent which is financed by funds maturing in six months which costs the organization 10.5 percent. By executing a short futures contract "paired" against the six-month note, the organization would move from an overall "hedged" position to an "unhedged" position. In other words, the futures contract would move the organization from an overall neutral position and expose the organization to interest-rate risk.

It should be evident why it is more productive to consider the "big picture" in inspections rather than focusing upon individual or "paired" (futures against each position) transactions. The most meaningful approach is to evaluate hedging strategies and open financial contract positions in light of its business needs, operations, and asset-liability mix.

### 2130.0.12 INSPECTION OBJECTIVES

1. To determine the purpose of financial-contract positions. Any positions that bank holding companies or their nonbank subsidiaries (except certain authorized dealer subsidiaries) take in financial contracts should reduce risk exposure, that is, not be speculative.
2. To determine whether prudent written policies, appropriate limitations, and internal controls and audit programs have been established and whether management information systems are sufficiently adequate to monitor risks associated with contracts involving futures, forwards, and options (including caps, floors, and collars).
3. To determine whether policy objectives concerning the relationship of subsidiary banking organizations and the parent bank hold-

ing company specify that each banking organization in a holding company system must be treated as a separate entity.

4. To determine reporting compliance in accordance with the Board's bank holding company policy statements. See section 2130.0.17 for the appropriate cites.

### 2130.0.13 INSPECTION PROCEDURES

*The term "banking organization" is used generally to refer to a bank holding company, the parent company, or nonbank subsidiary.*

1. Determine if the banking organization's financial-contract activities are related to the basic business of banking.

Consider whether the financial-contract activities are closely related to the basic business of banking; that is, taking deposits, making and funding loans, providing services to customers, and operating at a profit for shareholders without taking undue risks. Taking financial-contract positions solely to profit upon interest-rate forecasts is considered to be an unsafe and unsound practice. Profitability of contract activities is not the criterion for evaluating such activities. It is quite probable that a bona fide hedge strategy could result in a contract loss which would be offset by increased interest earnings or a higher price for an asset sold, for example, a pool of mortgages. Criticize contracts placed solely to profit upon interest-rate movements. Verify that contract activities are conducted in accordance with the Board's policy statement. Where contract positions are of excessive size and could jeopardize the financial health of the entity under examination, the gains or losses realized because of financial-contract activities should be criticized.

2. Ascertain whether policy objectives highlight the circumstances under which financial contracts should be used.

Determine whether management and operating personnel have received sufficient guidance. Carefully constructed policy objectives should be formulated with the knowledge that although proper utilization of financial contracts limits loss potential, such utilization also limits potentials for gains. Policy objectives should be formulated to limit required resources (margin monies, commis-

sions, and personnel to execute, monitor, and audit contract activities). A well-constructed policy should be designed to preclude various operating areas of a banking organization from taking offsetting financial contract positions. Finally, there should be established benchmarks for determining whether financial contracts are meeting desired objectives.

3. Determine if policy objectives concerning the relationship of subsidiary banking organizations and the parent bank holding company comply with the Board's directives.

Each banking organization in a holding company system must be treated as a separate entity. The policy statement accommodates centralized holding companies in that the holding companies are free to provide guidance to subsidiary banking organizations and execute contracts as agent on behalf of the banking organization, provided that each banking organization maintains responsibility for financial contract transactions executed on its behalf. Accordingly, a holding company that has centralized management could, and perhaps should, consider the interest-rate exposure of its subsidiary banks on a consolidated basis in determining whether future contracts can usefully be employed to reduce that exposure, but any future contracts that are executed must be recorded on the books and records of a subsidiary bank that will directly benefit from such contracts.

The question concerning the relationship of a subsidiary bank to its holding company may also lead one to consider the relationship of a subsidiary bank with its correspondent bank or broker. One might also query to what extent may less sophisticated institutions rely upon brokers and/or correspondent banking organizations for advice in this area?

Less sophisticated institutions can place only limited reliance on others for advice in this area. The bank holding company policy statement<sup>9</sup> emphasizes that responsibility for financial-contract activities rests solely with management. Additional information on securities transactions and the selections of securities dealers can be found in section 2126.1.

4. Ascertain whether policy objectives and/or position limits require prudence on the part of authorized personnel entering into these new activities. If discretion is left to senior

9. The Board's policy statement on engaging in futures, forwards, and option contracts.

managers, determine whether management has issued instructions to ensure that the level of financial-contract activity is prudent relative to the capabilities of persons authorized to execute and monitor contracts.

A new activity such as financial contracts should, as a general rule, be entered slowly. In developing expertise, management should mandate a low level of activity until persons authorized to execute contracts gain sufficient expertise or until new personnel are employed that have sufficient training and experience to engage in financial-contract activities on a larger scale. Senior management must develop the expertise to understand and evaluate techniques and strategies employed to ensure that an experienced professional does not engage in improper or imprudent activities.

5. If a banking organization uses financial contracts as part of its overall asset-liability management strategy, determine whether the organization developed an adequate system for evaluating its interest-rate risk.

Without a system for identifying and measuring interest-rate risk, it is impossible to engage in hedging activity in an informed and meaningful manner. Failure to identify the mismatches in the organization's asset-liability mix would make it difficult to select the proper number and types of financial contracts—for example, bond or bill financial contracts—to provide an appropriate amount of interest-rate-risk protection. Evaluate whether the organization's interest-rate-risk measurement techniques appear reasonable to determine whether the financial contracts employed were successful in providing the proper amount of futures gains (losses) to cover the hedged risk position.

6. Determine if the recordkeeping system is sufficiently detailed to permit personnel to document and describe in detail how financial-contract positions taken have contributed to the attainment of the banking organization's stated objectives.

There is no universal, adequate recordkeeping system for this purpose. Examiners must evaluate each individual system relative to the organization's stated objectives and activities. If the recordkeeping system cannot be used to illustrate how financial contracts contributed to the attainment of the banking organization's stated objectives, the recordkeeping system is inadequate. BHCs with inadequate recordkeeping systems should be instructed to make appropriate modifications.

7. Ascertain whether the banking organization's board of directors has established written limitations with respect to financial-contract positions.

NOTE: The bank holding company policy statement requires that the board of directors establish written policies and position limitations in connection with financial-contract activities. If a committee has been delegated similar responsibilities within the organization, and a committee makes the decision, its recommendation should be ratified by the board of directors.

8. If there is the potential to exceed the above limitations in certain instances, determine whether there are firm, written procedures in place concerning the authorizations necessary to exceed limits.
9. Determine whether the board of directors, a duly authorized committee thereof, or internal auditors review at least monthly financial-contract positions to ascertain conformance with limitations. (See item (b) of the bank holding company policy statement.)
10. Determine if the banking organization maintains general-ledger memorandum accounts or commitment registers to adequately identify and control all financial-contract commitments to make or take delivery of securities or money market instruments.
11. Determine if the banking organization issues or writes option contracts expiring in excess of 150 days which give the other party to the contract the option to deliver securities to it.

Examiners should review the facts surrounding standby contracts issued by holding companies. Examiners should also review accounting entries connected with bank holding company standby contracts to determine whether standbys were issued to earn fee income "up front" and exploit the lack of generally accepted accounting principles.

12. Determine whether financial-contract positions are properly disclosed in notes to the statements of financial condition and income and that the contract positions have been properly reported on FR Y-9C, Schedule HC-F, "Off-Balance-Sheet Items."
13. Determine whether the banking organization has implemented a system for monitoring credit-risk exposure associated with

various customers and dealers with whom operating personnel are authorized to transact business.

All financial-contract trading involves market risks. However, forward and OTC options trading, as well as swap activities, also involve credit risk. The key concern is whether the contra party to a transaction will be ready, willing, and able to perform on contract settlement and payment dates. While maintaining control over credit-risk exposure should ensure that a financial organization will not enter excessive (relative to the financial condition of the contra party) forward or standby contracts, monitoring such exposure may not prevent default in all instances.

14. Ascertain whether the banking organization has implemented internal controls and internal audit programs to ensure adherence to written policies and prevent unauthorized trading and other abuses.
15. Determine if the Reserve Bank was notified at the inception of bank holding company futures, forward, and option activities as required by paragraph (f) of the holding company policy statement (*Federal Reserve Regulatory Service* 4–830).
16. Determine if the personnel engaged in financial-contract activities have sufficient knowledge and understanding of the markets to perform those functions.

### 2130.0.13.1 Evaluating the Risks of Contract Activities

Evaluating the organization's stated objectives and their effects on overall risk is a difficult task involving legitimate cause for concern because of the high degree of leverage involved in contract activities. Although there is an emerging trend towards dealers requiring margin on forward trades, forward contract transactions generally have not required margin deposits, and thus, grant users unlimited leverage. Although the amount of margin required for futures trades is extremely small (for example, \$1,500 initial margin to take a \$1 million futures position), the rules of the exchanges do require a daily mark to market and a requirement that members of the futures exchanges meet maintenance margin calls on behalf of their customers. Customers, of course, are generally required to promptly reimburse brokers for margin posted on their behalf. Nevertheless, engaging in contract activities

requires market participants to assume the market risks of either owning securities or "shorting" securities. Issuing (or selling) standby contracts granting the other party to the contract the option to deliver securities is a practice which results in the issuer functioning as an insurer against downside market risk for the other party; in essence, the party receiving the standby fee assumes all of the interest-rate risks of security ownership, but receives none of the benefits.

### 2130.0.13.2 Reviewing Financial-Contract Positions

The preceding questions were designed to focus the examiner's attention on a bank holding company's stated objectives for engaging in financial contract activities and the manner in which such activities are conducted. It is also vital to review position records with respect to financial contracts or, if necessary, prepare a schedule grouping similar contracts by maturity. Once the various positions have been scheduled it will be possible to evaluate the risk of contract positions relative to the organization under inspection.

### 2130.0.13.3 Factors to Consider in Evaluating Overall Risk

To determine whether contract positions are reasonable, an examiner must evaluate positions in light of certain key factors: the size of the organization, its capital structure, its business needs, and its capacity to fulfill its obligations. For example, open contracts to purchase \$7 million of GNMA securities would be viewed differently in a BHC with \$24 million of assets than in a BHC with \$1 billion of assets.

There is no guaranty that financial contract prices and cash market prices will move in the same direction at the same velocity; however, contract prices and cash market prices ultimately move towards price convergence in the delivery month. Keeping this fact in mind, the risk evaluating process can be simplified by thinking of the securities underlying the various contracts as a frame of reference. For example, if a BHC holds "long" futures contracts on \$10 million (par value) of Treasury bonds the examiner should first evaluate the effect (excluding tangible benefits of ownership, e.g., interest income, pledging, etc.) on the organization of holding \$10 million of bonds in its portfolio and the resultant appreciation or depreciation if interest rates rise or fall by a given amount. A "short" contract of \$10 million Treasury bonds would be evaluated as if the banking

organization had executed a short sale for \$10 million. In addition, the examiner would have to consider the positive or negative flow of funds received or disbursed as margin to reflect daily contract gains and losses. While commissions on futures contracts are not a major factor in hedging transactions, they also should be considered in this evaluation. Typically, commissions are charged on a “round turn” basis—meaning that commissions are charged based upon an assumption that each futures contract will be offset prior to maturity. Since each contract will have to be offset, or securities bought or delivered, it should be determined whether funds will be available to offset contracts or fund delivery. In the case of certain short contracts, a determination must be made as to whether deliverable securities are held or committed for purchase by the banking organization.

#### 2130.0.13.4 Contract Liquidity

In addition to looking at the “big picture,” examiners should consider a position in a given contract maturity month relative to the volume of contracts outstanding. For example, in futures trading there is generally a greater open interest in the next contract maturity month and perhaps the following one or two contract maturity months. As one moves away from the near term contracts, there is generally less trading and less “open interest” in the more distant contracts. “Open interest” or the amount of contracts outstanding is reported in financial newspapers and other publications. Generally, the contracts with the largest open interest and daily trading volume are considered to be the most liquid.

To illustrate the concept discussed above, one should consider the following example. A “red flag” should be apparent if a contract review discloses that the organization has taken a sizeable position in a contract expiring in two years. When the examiner checks financial newspapers and other publications, he or she may discover that the BHC’s position represents 20 percent of the open interest in that contract. Such a situation would clearly be unsafe and unsound because the relatively huge position coupled with the typically less liquid conditions in distant contracts makes it highly unlikely that the BHC could quickly close out its position if necessary. In addition, one should also question why the distant maturity was chosen since there is no immediate reason to expect a close correlation to the cash market for the underlying security.

With respect to forward contracts, there is an active forward market for GNMA securities specifying delivery of the underlying securities up to four or five months in the future. If a banking organization is executing contracts for more distant maturities, management should be queried as to why it is necessary to trade outside the normal trading cycle.

#### 2130.0.13.5 Relationship to Banking Activities

In evaluating contract activities, examiners should verify that contract strategies are carried to fruition in connection with their relationship to overall objectives. Examiners may find it useful to recommend additional recordkeeping in borderline cases when they encounter situations where financial-contract positions are closed out frequently during the hedge period, but not frequently enough to be considered trading rather than hedging activities. Examiners should suggest proper documentation with regard to financial contracts executed and any additional recordkeeping as needed. Specifically, users could be requested to establish written criteria specifying what circumstances will trigger the closing of such contracts. Then users would be judged by how well they adhered to the criteria as well as whether the plan reduced risk. Hopefully, such recordkeeping would give users the latitude to close out a financial-contract position working against them (as determined by some prearranged benchmark), yet still require sufficient discipline to prevent users from selectively executing financial contracts merely to profit upon interest-rate forecasts.

The preceding discussion should reinforce the fact that the actual utilization of financial contracts is not a clear-cut issue in terms of hedging versus speculation. However, certain key concepts should be kept in mind. First, a decision to hedge with futures or forward contracts involves making a decision that one is content to lock in an effective cost of funds, a sale price of a specific asset, etc. However, the decision to hedge which gives downside protection also means forfeiting the benefits which would result from a favorable market movement. Thus, in evaluating hedge strategies, the organization should be judged as to whether it maintained hedge positions long enough to accomplish its objectives.

Caution should be employed in performing the analysis of financial contracts used to obtain targeted effective interest rates. Examiners should not evaluate transactions solely on a “paired” basis, that is, looking at paired cash market and financial-contract positions and forgetting about financial-contract positions relative to the organization’s entire balance sheet, nor should examiners fail to review the overall nature of financial-contract activities. For example, individual opening and closing of financial contracts could appear reasonable, but the aggregate activities may be indicative of an organization that is in reality operating a futures trading account solely to profit on interest-rate expectations.

#### 2130.0.13.6 Parties Executing or Taking the Contra Side of a Financial Contract

In addition to monitoring contra-party credit risk, serious efforts should be made to ensure that the banking organization carefully scrutinizes the selection of brokers and dealers. In the case of futures contracts, the Commodity Exchange Act requires that an entity functioning as a futures commission merchant be registered with the CFTC. However, not every FCM may be a member of a commodities exchange. Members of an exchange are given additional supervision by the exchange, while nonmembers are subject to audit by the National Futures Association. In selecting any broker or dealer, an organization should give careful consideration to its reputation, financial viability, and length of time in business. If an organization intends to deal with a newly established FCM or broker-dealer, special efforts should be made to verify the reputation and integrity of its principals. (For additional discussion, see *Federal Reserve Regulatory Service* 3–1562). Although such measures cannot ensure that problems will not subsequently develop with an FCM or broker-dealer, some careful forethought can tend to ensure that relationships will not be developed with persons or firms who had serious problems in the past.

#### 2130.0.14 ACCOUNTING FOR FUTURES CONTRACTS

All futures contracts, except for foreign-currency futures contracts, shall be reported in

the Consolidated Financial Statements for Bank Holding Companies in accordance with Financial Accounting Standards Board (FASB) Statement No. 80, “Accounting for Futures Contracts.” Foreign-currency futures contracts shall be reported in accordance with the guidance in FASB Statement No. 52, “Foreign Currency Translation.”

#### 2130.0.14.1 Performance Bonds under Futures Contracts

When the reporting banking organization, as either buyer or seller of futures contracts, has posted a performance bond in the form of a margin account deposited with a broker or exchange, the current balance (as of the report date) of that margin account shall be reported in Other Assets. The balance in the margin account includes the following:

1. the original margin deposit, plus (less)
2. any additions (deductions) as a result of daily fluctuations in the market value of the related contracts (i.e., “variation margin”), plus
3. any additional deposits made to the account to meet margin calls or otherwise (i.e., “maintenance margin”), less
4. any withdrawals of excess balances from the account

When the performance bond takes the form of a pledge of assets with a broker rather than a margin account, the pledged assets shall be maintained on the books of the pledging banking organization and no other balance-sheet entry is made for the performance bond. In this case, gains and losses resulting from daily fluctuations in the market value of the related contracts are generally settled with the broker in cash. However, if the pledging banking organization also maintains a working balance with the broker against which recognized daily market gains and losses are posted, the working balance should be reported in Other Assets, and treated in the same manner as a margin account.

#### 2130.0.14.2 Valuation of Open Positions

All open positions in futures contracts must be reviewed at least monthly (or more often, if material) and their current market values determined. The market value of a futures contract is to be based on published price quotations. These futures positions must be revalued at their cur-



rent market values on these valuation dates and any changes in these values reported in accordance with the guidance presented below for hedge or nonhedge contracts, as appropriate.

### 2130.0.14.3 Criteria for Hedge-Accounting Treatment

A futures contract shall be accounted for as a hedge when the following conditions are met:

1. The banking organization must have determined that the item or group of items to be hedged (that is, the identifiable assets, liabilities, firm commitments, or anticipated transactions) will expose it to price or interest-rate risk.
2. The futures contract must reduce the exposure to risk. This will be demonstrated if, at the inception of the hedge and *throughout the hedge period*, *high correlation* is expected to exist between the changes in the prices of both the contract and the hedged item or group of items.<sup>10</sup> In other words, the banking organization must monitor the price movements of both the hedge contract and the hedged items to determine that it is probable that changes in the market value of the futures contract will offset the effects of price changes on the hedged items.
3. The futures contract must be designated in writing as a hedge by management at the inception of the hedge.

In order for a futures contract to qualify as a hedge of an anticipated transaction, the following two additional criteria must be met:

- a. The significant characteristics and expected terms of the anticipated transaction must be identified.
- b. The occurrence of the anticipated transaction must be probable.<sup>11</sup>

### 2130.0.14.4 Gains and Losses from Monthly Contract Valuations of Futures Contracts That Qualify as Hedges

If the hedge criteria are met, the accounting for

the futures contract shall be related to the accounting for the hedged item so that changes in the market value of the futures contract are recognized in income when the effects of related changes in the price or interest rate of the hedged item are recognized. If a banking organization must include unrealized changes in the fair value of a hedged item in income, a change in the market value of the related futures contract shall be recognized in income when the change occurs. Otherwise, a change in the market value of a futures contract that qualifies as a hedge of an existing asset or liability shall be recognized as an adjustment of the carrying amount of the hedged item. A change in the market value of a futures contract that is a hedge of a firm commitment shall be included in the measurement of the transaction that satisfies the commitment. A change in the market value of a futures contract that is a hedge of an anticipated transaction shall be included in the measurement of the subsequent transaction.

Once the carrying amount of an asset or liability has been adjusted for the change in the market value of a futures contract, the adjustment must be recognized in income in the same manner as other components of the carrying amount of that asset or liability (for example, using the interest method). If the item being hedged is an interest-bearing financial instrument otherwise reported at amortized historical cost, then the changes in the market value of the hedge contract that have been reflected as adjustments in the carrying amount of the financial instrument shall be amortized as an adjustment of interest income or expense over the expected remaining life of the hedged item.

If a futures contract that has been accounted for as a hedge of an anticipated transaction is closed before the date of the related transaction, the accumulated change in value of the contract shall be carried forward (assuming high correlation continues to exist) and included in the measurement of the related transaction. When it becomes probable that the quantity of the anticipated transaction will be less than that originally hedged, a pro rata portion of the futures results that would have been included in the measurement of the transaction shall be recognized as a gain or loss.

When futures contracts that are hedges are terminated, the gain or loss on the terminated contracts must be deferred and amortized over the remaining life of the hedged item.

10. Generally, banking practice maintains that correlation in the changes in the market values of the futures contract and the hedged item must be at least 80 percent for the "high correlation" criteria in FASB Statement No. 80 to be met.

11. It will be particularly difficult to meet this criteria when an anticipated transaction is not expected to take place in the near future.

### 2130.0.14.5 Gains and Losses from Monthly Contract Valuations of Futures Contracts That Do Not Qualify as Hedges

For futures contracts that are not accounted for as hedges, the change that has occurred in the market value of open positions since the last call report date shall be reflected in current income, either as “other noninterest income” for net gains or “other noninterest expense” for net losses.

If high correlation ceases to exist, the banking organization should discontinue accounting for a futures contract as a hedge. When this occurs, the portion of the change in the market value of the contract that has not offset the market value changes of the hedged item, since the inception of the hedge, must be reflected in the Report of Income as “other noninterest income” or “other noninterest expense,” as appropriate. The contract should thereafter be accounted for as a nonhedge contract with subsequent changes in the contract’s market value reflected in current period income.

When futures contracts that are not hedges are terminated, the gain or loss on the terminated contract must be recognized currently in the Report of Income as “other noninterest income” or “other noninterest expense,” as appropriate.

There is the potential for holding companies and nonbank subsidiaries to follow the referenced accounting applications and break “hedges” with unrealized futures gains to recognize income, and maintain hedges with futures losses and adjust the carrying basis of the paired, that is, “hedged” asset. Examiners should look for patterns of taking gains and losses with a view to determining whether the opening and closing of contracts is consistent with the organization’s risk-reducing strategies.

### 2130.0.15 PREPARING INSPECTION REPORTS

Unsatisfactory comments pertaining to a bank holding company’s financial-contract activities should be noted on the “Examiner’s Comments,” “Policies and Supervision,” and “Analysis of Financial Factors” or other appropriate page depending on the severity of the comments within the bank holding company inspection report.

### 2130.0.16 INTERNAL CONTROLS AND INTERNAL AUDIT

The following is designed to illustrate desirable internal controls and internal audit procedures applicable to the organization’s activities in financial contracts. This illustration is not intended to serve as an absolute standard relating to contract activities, but is designed to supplement examiners’ knowledge relating to internal controls and internal audits in this context. In evaluating internal controls and audits, the examiner will need to evaluate the scope of futures, forward, and options activities to determine whether internal controls and audit procedures are adequate in relation to the volume and nature of the activities.

#### 2130.0.16.1 Internal Controls

It is a management’s responsibility to minimize the risks inherent in financial-contract activities through the establishment of policies and procedures covering organizational structure, segregation of duties, operating and accounting system controls, and comprehensive management reporting. Formal written procedures should be in place in connection with purchases and sales, processing, accounting, clearance and safekeeping activities relating to these transactions. In general, these procedures should be designed to ensure that all financial contracts are properly recorded and that senior management is aware of the exposure and gains or losses resulting from these activities. Some examples of desirable controls follow:

1. Written documentation indicating what types of contracts are eligible for purchase by the organization, which individual persons are eligible to purchase and sell contracts, which individual persons are eligible to sign contracts or confirmations, and the names of firms or institutions with whom employees are authorized to conduct business.
2. Written position limitations for each type of contract established by the banking organization’s board of directors and written procedures for authorizing trades, if any, in excess of those limits.
3. A system to monitor the organization’s exposure with customers and those broker-dealers and institutions eligible to do business with it. To implement this, management must determine the amount of credit risk permissible with various parties and then institute surveillance procedures to ensure

- that such limits are not exceeded without written authorization from senior management.
4. Separation of duties and supervision to ensure that persons executing transactions are not involved in approving the accounting media and/or making accounting entries. Further, persons executing transactions should not have authority to sign incoming or outgoing confirmations or contracts, reconcile records, clear transactions, or control the disbursement of margin payments.
  5. A clearly defined flow of order tickets and confirmations. Confirmations generated should, preferably, be prenumbered. In addition to promptly recording all commitments in a daily written commitment ledger, the related documentation should be filed separately for purposes of audit and examination. The flow of confirmations and order tickets should be designed to verify accuracy and enable reconciliations throughout the system, for example, to ensure that a person could not execute unauthorized transactions and bypass part of the accounting system, and to enable the reconciliation of traders' position reports to those positions maintained by an operating unit.
  6. Procedures to route incoming confirmations to an operations unit separate from the trading unit. Confirmations received from brokers, dealers, or others should be compared to confirmations (or other control records) prepared by the banking organization to ensure that it will not accept or make delivery of securities, or remit margin payments, pursuant to contracts unless there is proper authorization and documentation.
  7. Procedures for promptly resolving fails to receive or fails to deliver securities on the date securities are due to be received or sent pursuant to contracts.
  8. Procedures for resolving customer complaints by someone other than the person who executed the contract.
  9. Procedures for verifying brokers' reports of margin deposits and contract positions (use an outside pricing source), and reconciling such reports to the records.
  10. Procedures for daily review of outstanding contracts and supervision of traders. In addition, there should be periodic reports to management reflecting the margin deposits and contract positions.
  11. Selecting and training competent personnel to follow the written policies and guidelines.

#### 2130.0.16.2 Internal Audit

The scope and frequency of the internal audit program should be designed to review the internal control procedures and verify that the internal controls purported to be in effect are being followed. Further, the internal auditor should verify that there are no material inadequacies in the internal control procedures that would permit a person acting individually to perpetrate errors or irregularities involving the records of the organization or assets that would not be detected by the internal control procedures in time to prevent material loss or misstatement of the banking organization's financial statements or serious violation of applicable banking, bank holding company, or securities rules or regulations. Any weaknesses in internal control procedures should be reported to management, along with recommendations for corrective action. If internal auditors do not report to an audit committee, the person to whom they report should not be in a position to misappropriate assets. In addition, auditors should occasionally spot-check contract prices and mark-to-market adjustments.

## 2130.0.17 LAWS, REGULATIONS, INTERPRETATIONS, AND ORDERS

<i>Subject</i>	<i>Laws</i> <sup>1</sup>	<i>Regulations</i> <sup>2</sup>	<i>Interpretations</i> <sup>3</sup>	<i>Orders</i>
Statement of policy concerning bank holding companies engaging in futures, forward, and options contracts on U.S. government and agency securities and money market instruments		225.142	4-830	
Policy Statement on Financial Contracts			3-1535	
Supervisory Policy Statement on Investment Securities and End-User Derivatives Activities			3-1562	

1. 12 U.S.C., unless specifically stated otherwise.

2. 12 C.F.R., unless specifically stated otherwise.

3. *Federal Reserve Regulatory Service* reference.

Financial institutions, including bank holding company subsidiaries, are lending securities with increasing frequency, and, in some instances, a financial institution may lend its own investment or trading-account securities. Financial institutions lend customers' securities held in custody, safekeeping, trust, or pension accounts. Because the securities available for lending often greatly exceed the demand for them, inexperienced lenders may be tempted to ignore commonly recognized safeguards. Bankruptcies of broker-dealers have heightened regulatory sensitivity to the potential for problems in this area.

### 2140.0.1 SECURITIES-LENDING MARKET

Securities brokers and commercial banks are the primary borrowers of securities. They borrow securities to cover securities fails (securities sold but not available for delivery), short sales, and option and arbitrage positions. Securities lending, which used to involve principally corporate equities and debt obligations, increasingly involves loans of large blocks of U.S. government and federal-agency securities.

Securities lending is conducted through open-ended "loan" agreements, which may be terminated on short notice by the lender or borrower. Repurchase agreements are generally used by owners of securities as financing vehicles and, in certain respects, are closely analogous to securities lending. The objective of securities lending, however, is to receive a safe return in addition to the normal interest or dividends. Securities loans in industry practice are generally collateralized by U.S. government or federal-agency securities, cash, or letters of credit.<sup>1</sup> At the outset, each loan is collateralized at a predetermined margin. If the market value of the collateral falls below an acceptable level during the time a loan is outstanding, a margin call is made by the lender institution. If a loan becomes over-collateralized because of appreciation of collateral or market depreciation of a loaned security, the borrower usually has the opportunity to request the return of any excessive margin.

When a securities loan is terminated, the securities are returned to the lender and the collateral to the borrower. Fees received on

securities loans are divided between the lender and the customer account that owns the securities. In situations involving cash collateral, part of the interest earned on the temporary investment of cash is returned to the borrower, and the remainder is divided between the lender and the customer account that owns the securities.

### 2140.0.2 DEFINITIONS OF CAPACITY

Securities lending may be done in various capacities and with differing associated liabilities. It is important that all parties involved understand in what capacity the lender is acting. For the purposes of these guidelines, the relevant capacities are as follows:

1. *Principal.* A lender offering securities from its own account is acting as principal. A lender institution offering customers' securities on an undisclosed basis is also considered to be acting as principal.
2. *Agent.* A lender offering securities on behalf of a customer-owner is acting as an agent. For the lender to be considered a bona fide or "fully disclosed" agent, it must disclose the names of the borrowers to the customer-owners (or give notice that names are available upon request), and must disclose the names of the customer-owner to borrowers (or give notice that names are available upon request). In all cases, the agent's compensation for handling the transaction should be disclosed to the customer-owner. Undisclosed agency transactions, that is, "blind brokerage" transactions in which participants cannot determine the identity of the contra party, are treated as if the lender was the principal.
3. *Directed agent.* A lender which lends securities at the direction of the customer-owner is acting as a directed agent. The customer directs the lender in all aspects of the transaction, including to whom the securities are loaned, the terms of the transaction (rebate rate and maturity/call provisions on the loan), acceptable collateral, investment of any cash collateral, and collateral delivery.
4. *Fiduciary.* A lender which exercises *discretion* in offering securities on behalf of and for the benefit of customer-owners is acting as a fiduciary. For purposes of these guidelines,

1. Broker-dealers borrowing securities are subject to the restrictions of the Federal Reserve's Regulation T (12 C.F.R. 220.10), which specifies acceptable borrowing purposes.

the underlying relationship may be as agent, trustee, or custodian.

5. *Finder*: A finder brings together a borrower and a lender of securities for a fee. Finders do not take possession of the securities or collateral. Delivery of securities and collateral is direct between the borrower and the lender, and the finder does not become involved. The finder is simply a fully disclosed intermediary.

### 2140.0.3 GUIDELINES

All bank holding companies or their subsidiaries that participate in securities lending should establish written policies and procedures governing these activities. Other than commercial banks with trust departments, the bank holding company subsidiaries most likely to be engaged in securities lending are non-deposit-taking trust companies and certain discount brokers which provide custody services and make margin loans. At a minimum, policies and procedures should cover each of the topics in these guidelines.

#### 2140.0.3.1 Recordkeeping

Before establishing a securities-lending program, a financial firm or institution must establish an adequate recordkeeping system. At a minimum, the system should produce daily reports showing which securities are available for lending, and which are currently lent, outstanding loans by borrower, outstanding loans by account, new loans, returns of loaned securities, and transactions by account. These records should be updated as often as necessary to ensure that the lender institution fully accounts for all outstanding loans, that adequate collateral is required and maintained, and that policies and concentration limits are being followed.

#### 2140.0.3.2 Administrative Procedures

All securities lent and all securities standing as collateral must be marked to market daily. Procedures must ensure that any necessary calls for additional margin are made on a timely basis.

In addition, written procedures should outline how to choose the customer account that will be the source of lent securities when they are held

in more than one account. Possible methods include loan volume analysis, automated queue, a lottery, or some combination of these. Securities loans should be fairly allocated among all accounts participating in a securities-lending program.

Internal controls should include operating procedures designed to segregate duties and timely management reporting systems. Periodic internal audits should assess the accuracy of accounting records, the timeliness of management reports, and the lender's overall compliance with established policies and the firm's procedures.

#### 2140.0.3.3 Credit Analysis and Approval of Borrowers

In spite of strict standards of collateralization, securities-lending activities involve risk of loss. Such risks may arise from malfeasance or failure of the borrowing firm or institution. Therefore, a duly established management or supervisory committee of the lender should formally approve, in advance, transactions with any borrower.

Credit and limit approvals should be based upon a credit analysis of the borrower. A review should be performed before establishing such a relationship and reviews should be conducted at regular intervals thereafter. Credit reviews should include an analysis of the borrower's financial statement, and should consider capitalization, management, earnings, business reputation, and any other factors that appear relevant. Analyses should be performed in an independent department of the lender, by persons who routinely perform credit analyses. Analyses performed solely by the person(s) managing the securities-lending program are not sufficient.

#### 2140.0.3.4 Credit and Concentration Limits

After the initial credit analysis, management of the lender should establish an individual credit limit for the borrower. That limit should be based on the market value of the securities to be borrowed, and should take into account possible temporary (overnight) exposures resulting from a decline in collateral values or from occasional inadvertent delays in transferring collateral. Credit and concentration limits should take into account other extensions of credit by the lender to the same borrower or related interests.

Procedures should be established to ensure that credit and concentration limits are not exceeded without proper authorization from management.

### 2140.0.3.5 Collateral Management

Securities borrowers generally pledge and maintain collateral at a level equal to at least 100 percent of the value of the securities borrowed.<sup>2</sup> The minimum amount of excess collateral, or “margin,” acceptable to the lender should relate to price volatility of the loaned securities and the collateral (if other than cash).<sup>3</sup> Generally, the minimum initial collateral on securities loans is at least 102 percent of the market value of the lent securities plus, for debt securities, any accrued interest.

Collateral must be maintained at the agreed margin. A daily “mark-to-market” or valuation procedure must be in place to ensure that calls for additional collateral are made on a timely basis. The valuation procedures should take into account the value of accrued interest on debt securities.

Securities should not be lent unless collateral has been received or will be received simultaneously with the loan. As a minimum step toward perfecting the lender’s interest, collateral should be delivered directly to the lender or an independent third-party trustee.

### 2140.0.3.6 Cash as Collateral

When cash is used as collateral, the lender is responsible for making it income productive. Lenders should establish written guidelines for selecting investments for cash collateral. Generally, a lender will invest cash collateral in repurchase agreements, master notes, a short-term investment fund (STIF), U.S. or Eurodollar certificates of deposit, commercial paper, or some other type of money market instrument. If the lender is acting in any capacity other than as principal, the written agreement authorizing the

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2. Employee benefit plans subject to the Employee Retirement Income Security Act are specifically required to collateralize securities loans at a minimum of 100 percent of the market value of loaned securities (see section 2140.0.3.10 below).

3. The level of margin should be dictated by level of risk being underwritten by the securities lender. Factors to be considered in determining whether to require margin above the recommended minimum include the type of collateral, the maturity of collateral and lent securities, the term of the securities loan, and the costs which may be incurred when liquidating collateral and replacing loaned securities.

lending relationship should specify how cash collateral is to be invested.

Using cash collateral to pay for liabilities of the lender or its holding company would be an improper *conflict of interest* unless that strategy was specifically authorized in writing by the owner of the lent securities.

### 2140.0.3.7 Letters of Credit as Collateral

If a lender plans to accept letters of credit as collateral, it should establish guidelines for their use. Those guidelines should require a credit analysis of the banks issuing the letter of credit before securities are lent against that collateral. Analyses must be periodically updated and reevaluated. The lender should also establish concentration limits for the banks issuing letters of credit, and procedures should ensure they are not exceeded. In establishing concentration limits on letters of credit accepted as collateral, the lender’s total outstanding credit exposures from the issuing bank should be considered.

### 2140.0.3.8 Written Agreements

Securities should be lent only pursuant to a written agreement between the lender and the owner of the securities, specifically authorizing the institution to offer the securities for loan. The agreement should outline the lender’s authority to reinvest cash collateral (if any) and responsibilities with regard to custody and valuation of collateral. In addition, the agreement should detail the fee or compensation that will go to the owner of the securities in the form of a fee schedule or other specific provision. Other items which should be covered in the agreement have been discussed earlier in these guidelines.

A lender must also have written agreements with the parties who wish to borrow securities. These agreements should specify the duties and responsibilities of each party. A written agreement may detail acceptable types of collateral (including letters of credit); standards for collateral custody and control, collateral valuation and initial margin, accrued interest, marking to market, and margin calls; methods for transmitting coupon or dividend payments received if a security is on loan on a payment date; conditions which will trigger the termination of a loan (including events of default); and acceptable

methods of delivery for loaned securities and collateral.

### 2140.0.3.9 Use of Finders

Some lenders may use a finder to place securities, and some financial institutions may act as finders. A finder brings together a borrower and a lender for a fee. Finders should not take possession of securities or collateral. The delivery of securities loaned and collateral should be direct between the borrower and the lender. A finder should not be involved in the delivery process.

The finder should act only as a fully disclosed intermediary. The lender must always know the name and financial condition of the borrower of any securities it lends. If the lender does not have that information, it and its customers are exposed to unnecessary risks.

Written policies should be in place concerning the use of finders in a securities-lending program. These policies should cover circumstances in which a finder will be used, which party pays the fee (borrower or lender), and which finders the lender institution will use.

### 2140.0.3.10 Employee Benefit Plans

The Department of Labor has issued two class exemptions which deal with securities-lending programs for employee benefit plans covered by the Employee Retirement Income Security Act (ERISA): Prohibited Transaction Exemption 81-6 (46 FR 7527 (January 23, 1981) and correction (46 FR 10570 (February 3, 1981))), and Prohibited Transaction Exemption 82-63 (47 FR 14804 (April 6, 1982)). The exemptions authorize transactions which might otherwise constitute unintended "prohibited transactions" under ERISA. Any firm engaged in the lending of

securities for an employee benefit plan subject to ERISA should take all steps necessary to design and maintain its program to conform with these exemptions.

Prohibited Transaction Exemption 81-6 permits the lending of securities owned by employee benefit plans to persons who could be "parties in interest" with respect to such plans, provided certain conditions specified in the exemption are met. Under those conditions, neither the borrower nor an affiliate of the borrower can have discretionary control over the investment of plan assets, or offer investment advice concerning the assets, and the loan must be made pursuant to a written agreement. The exemption also establishes a minimum acceptable level for collateral based on the market value of the loaned securities.

Prohibited Transaction Exemption 82-63 permits compensation of a fiduciary for services rendered in connection with loans of plan assets that are securities. The exemption details certain conditions which must be met.

### 2140.0.3.11 Indemnification

Certain lenders offer participating accounts indemnification against losses in connection with securities-lending programs. Such indemnifications may cover a variety of occurrences including all financial loss, losses from a borrower default, or losses from collateral default. Lenders that offer such indemnification should obtain a legal opinion from counsel concerning the legality of their specific form of indemnification under federal and/or state law.

A lender which offers an indemnity to its customers may, in light of other related factors, be assuming the benefits and, more importantly, the liabilities of a principal. Therefore, lenders offering indemnification should also obtain written opinions from their accountants concerning the proper financial statement disclosure of their actual or contingent liabilities.



## 2140.0.4 LAWS, REGULATIONS, INTERPRETATIONS, AND ORDERS

<i>Subject</i>	<i>Laws</i> <sup>1</sup>	<i>Regulations</i> <sup>2</sup>	<i>Interpretations</i> <sup>3</sup>	<i>Orders</i>
Securities Lending policy statement of the Federal Financial Institutions Examination Council, adopted by the Federal Reserve Board on May 6, 1985			3-1579.5	

1. 12 U.S.C., unless specifically stated otherwise.

2. 12 C.F.R., unless specifically stated otherwise.

3. Federal Reserve Regulatory Service reference.

Depository institutions and others involved with the purchase of United States Government and Agency obligations under agreements to resell (reverse repurchase agreements),<sup>2</sup> have sometimes incurred significant losses. The most important factors causing these heavy losses have been inadequate credit risk management and the failure to exercise effective control over securities collateralizing the transactions.<sup>3</sup>

The following minimum guidelines address the need for managing credit risk exposure to counterparties under securities repurchase agreements and for controlling the securities in those transactions, and should be followed when entering into repurchase agreements with securities dealers and others.

Depository institutions and nonbank subsidiaries that actively engage in repurchase agreements are encouraged to have more comprehensive policies and controls to suit their particular circumstances. The examining staffs of the Federal Reserve should review written policies and procedures of dealers to determine their adequacy in light of these minimum guidelines and the scope of each subsidiary's operations.

### 2150.0.1 CREDIT POLICY GUIDELINES

The apparent safety of short-term repurchase agreements which are collateralized by highly liquid, U.S. Government and Federal agency obligations has contributed to an attitude of complacency. Some portfolio managers have underestimated the credit risk associated with the performance of the counterparty to the transactions, and have not taken adequate steps to

assure control of the securities covered by the agreement.

All firms that engage in securities repurchase agreement transactions should establish written credit policies and procedures governing these activities. At a minimum, those policies and procedures should cover the following:

*Written policies* should establish "know your counterparty" principles. Engaging in repurchase agreement transactions in volume and in large dollar amounts frequently requires the services of a counterparty who is a dealer in the underlying securities. Some firms which deal in the markets for U.S. Government and Federal agency securities are subsidiaries of, or related to, financially stronger and better known firms. However, these stronger firms may be independent of their U.S. Government securities subsidiaries and affiliates and may not be legally obligated to stand behind the transactions of related companies. Without an express guarantee, the stronger firm's financial position cannot be relied upon in assessing the creditworthiness of a counterparty.

It is important to know the legal entity that is the actual counterparty to each repurchase agreement transaction. Know about the actual counterparty's character, integrity of management, activities, and the financial markets in which it deals. Be particularly careful in conducting repurchase agreements with any firm that offers terms that are significantly more favorable than those currently prevailing in the market.

In certain situations firms may use, or serve as, brokers or finders in order to locate repurchase agreement counterparties or particular securities. When using or acting as this type of agent the names of each counterparty should be fully disclosed. Do not enter into undisclosed agency or "blind brokerage" repurchase transactions in which the counterparty's name is not disclosed.

#### 2150.0.1.1 Dealings with Unregulated Securities Dealers

A dealer in U.S. Government and Federal agency obligations is not necessarily a Federally insured bank or thrift, or a broker/dealer registered with the Securities and Exchange Commission. Therefore, the dealer firm may not

1. A repurchase agreement is a transaction involving the sale of assets by one party to another, subject to an agreement by the seller to repurchase the assets at a specified date or in specified circumstances.

2. In order to avoid confusion among market participants who sometimes use the same term to describe different sides of the same transaction, the term "repurchase agreement" will be used in the balance of this statement to refer to both repurchase and reverse repurchase agreements. A repurchase agreement is one in which a party that owns securities acquires funds by transferring the securities to another party under an agreement to repurchase the securities at an agreed upon future date. A reverse repurchase (resale) agreement is one in which a party provides funds by acquiring securities pursuant to an agreement to resell them at an agreed upon future date.

3. Throughout this document repurchase agreements are generally discussed in terms of secured credit transactions. This usage should not be deemed to be based upon a legal determination.

be subject to any Federal regulatory oversight.

A firm doing business with an unregulated securities dealer should be certain that the dealer voluntarily complies with the Federal Reserve Bank of New York's minimum capital guideline, which currently calls for liquid capital to exceed measured risk by 20 percent (that is, the ratio of a dealer's liquid capital to risk of 1.2:1). This ratio can be calculated by a dealer using either the Securities and Exchange Commission's Net Capital Rule for Brokers and Dealers (Rule 15c31) or the Federal Reserve Bank of New York's Capital Adequacy Guidelines for United States Government Securities Dealers. To ensure that an unregulated dealer complies with either of those capital standards, it should certify its compliance with the capital standard and provide the following three forms of certification:

1. A letter of certification from the dealer that the dealer will adhere on a continuous basis to the capital adequacy standard;

2. Audited financial statements which demonstrate that as of the audit date the dealer was in compliance with the standard and the amount of liquid capital; and

3. A copy of a letter from the firm's certified public accountant stating that it found no material weaknesses in the dealer's internal systems and controls incident to adherence to the standard.<sup>4</sup>

*Periodic evaluations* of counterparty creditworthiness should be conducted by individuals who routinely make credit decisions and who are not involved in the execution of repurchase agreement transactions.

Prior to engaging in initial transactions with a new counterparty, obtain audited financial statements and regulatory filings (if any) from counterparties, and insist that similar information be provided on a periodic and timely basis in the future. Recent failures of government securities dealers have typically been foreshadowed by delays in producing these statements. Many firms are registered with the Securities and Exchange Commission as broker/dealers and have to file financial statements and should be willing to provide a copy of these filings.

The counterparty credit analysis should consider the financial statements of the entity that is to be the counterparty as well as those of any

related companies that could have an impact on the financial condition of the counterparty. When transacting business with a subsidiary, consolidated financial statements of a parent are not adequate. Repurchase agreements should not be entered into with any counterparty that is unwilling to provide complete and timely disclosure of its financial condition. As part of this analysis, the firm should make inquiry about the counterparty's general reputation and whether there have been any formal enforcement actions against the counterparty or its affiliates by State or Federal securities regulators.

*Maximum position* and temporary exposure limits for each approved counterparty should be established based upon credit analysis performed. Periodic reviews and updates of those limits are necessary.

Individual repurchase agreement counterparty limits should consider overall exposure to the same or related counterparty. Repurchase agreement counterparty limitations should include the overall permissible dollar positions in repurchase agreements, maximum repurchase agreement maturities and limits on temporary exposure that may result from decreases in collateral values or delays in receiving collateral.

## 2150.0.2 GUIDELINES FOR CONTROLLING REPURCHASE AGREEMENT COLLATERAL

Repurchase agreements can be a useful asset and liability management tool, but repurchase agreements can expose a firm to serious risks if they are not managed appropriately. It is possible to reduce repurchase agreement risk by negotiating written agreements with all repurchase agreement counterparties and custodian banks. Compliance with the terms of these written agreements should be monitored on a daily basis. If prudent management control requirements of repurchase agreements are too burdensome, other asset/liability management tools should be used.

The marketplace perceives repurchase agreement transactions as similar to lending transactions collateralized by highly liquid Government securities. However, experience has shown that the collateral securities will probably *not* serve as protection if the counterparty becomes insolvent or fails, and the purchasing firm does not have control over the securities. Ultimate responsibility for establishing adequate control procedures rests with management of the firm. Management should obtain a written legal opin-

4. This letter should be similar to that which must be given to the SEC by registered broker/dealers.

ion as to the adequacy of the procedures utilized to establish and protect the firm's interest in the underlying collateral.

A *written agreement* specific to a repurchase agreement transaction or master agreement governing all repurchase agreement transactions should be entered into with each counterparty. The written agreement should specify all the terms of the transaction and the duties of both the buyer and seller. Senior managers should consult legal counsel regarding the content of the repurchase and custodial agreements. The repurchase and custodial agreements should specify, but should not be limited to, the following:

- Acceptable types and maturities of collateral securities;
- Initial acceptable margin for collateral securities of various types and maturities
- Margin maintenance, call, default and sellout provisions;
- Rights to interest and principal payments;
- Rights to substitute collateral; and
- The persons authorized to transact business on behalf of the firm and its counterparty.

### 2150.0.2.1 Confirmations

Some repurchase agreement confirmations may contain terms that attempt to change the firm's rights in the transaction. The firm should obtain and compare written confirmations for each repurchase agreement transaction to be certain that the information on the confirmation is consistent with the terms of the agreement. The confirmation should identify specific collateral securities.

### 2150.0.2.2 Control of Securities

As a general rule, a firm should obtain possession or control of the underlying securities and take necessary steps to protect its interest in the securities. The legal steps necessary to protect its interest may vary with applicable facts and law and accordingly should be undertaken with the advice of counsel. Additional prudential management controls may include:

- delivery of either physical securities to, or in the case of book entry securities, making appropriate entries in the books of a third party custodian designated under a written custodial agreement which explicitly recognizes the

firm's interest in the securities as superior to that of any other person; or

- appropriate entries on the books of a third party custodian acting pursuant to a tripartite agreement with the firm and the counterparty, ensuring adequate segregation and identification of either physical or book-entry securities.

Where control of the underlying securities is not established, the firm may be regarded only as an unsecured general creditor of the insolvent counterparty. In such instance, *substantial losses are likely to be incurred*. Accordingly, a firm should not enter into a repurchase agreement without obtaining control of the securities unless all of the following minimum procedures are observed: (1) it is completely satisfied as to the creditworthiness of the counterparty; (2) the transaction is within credit limitations that have been pre-approved by the board of directors, or a committee of the board, for unsecured transactions with the counterparty; (3) periodic credit evaluations of the counterparty are conducted; and (4) the firm has ascertained that collateral segregation procedures of the counterparty are adequate. Unless prudential internal procedures of these types are instituted and observed, the firm may be cited for engaging in unsafe or unsound practices.

All receipts and deliveries of either physical or book-entry securities should be made according to written procedures, and third party deliveries should be confirmed in writing directly by the custodian. It is not acceptable to receive confirmation from the counterparty that the securities are segregated in a firm's name with a custodian; the firm should, however, obtain a copy of the advice of the counterparty to the custodian requesting transfer of the securities to the firm. Where securities are to be delivered, payment for securities should not be made until the securities are actually delivered to the firm or its agent. The custodial contract should provide that the custodian takes delivery of the securities subject to the exclusive direction of the firm.

Substitution of securities should not be allowed without the prior consent of the firm. The firm should give its consent before the delivery of the substitute securities to it or a third party custodian. Any substitution of securities should take into consideration the following discussion of "margin requirements."

### 2150.0.2.3 Margin Requirements

The amount paid under the repurchase agreement should be less than the market value of the securities, including the amount of any accrued interest, with the difference representing a predetermined margin. Factors to be considered in establishing an appropriate margin include the size and maturity of the repurchase transaction, the type and maturity of the underlying securities, and the creditworthiness of the counterparty. Margin requirements on U.S. Government and Federal agency obligations underlying repurchase agreements should allow for the anticipated price volatility of the security until the maturity of the repurchase agreement. Less marketable securities may require additional margin to compensate for less liquid market conditions. Written repurchase agreement policies and procedures should require daily mark-to-market of repurchase agreement securities to the bid side of the market. Repurchase agreements should provide for additional securities or cash to be placed with the firm or its custodian bank to maintain the margin within the predetermined level.

Margin calculations should also consider accrued interest on underlying securities and the anticipated amount of accrued interest over the term of the repurchase agreement, the date of interest payment and which party is entitled to receive the payment. In the case of pass-through securities, anticipated principal reductions should also be considered when determining margin adequacy.

*Prudent management* procedures should be followed in the administration of any repurchase agreement. Longer term repurchase agreements require management's daily attention to the effects of securities substitutions, margin maintenance requirements (including consideration of any coupon interest or principal payments) and possible changes in the financial condition of the counterparty. Engaging in open repurchase agreement transactions without maturity dates may be regarded as an unsafe and unsound practice unless the firm has retained rights to terminate the transaction quickly to protect itself against changed circumstances. Similarly, automatic renewal of short-term repurchase agreement transactions without reviewing collateral values and adjusting collateral margin may be regarded as an unsafe and unsound practice. If additional margin is not deposited when

required, the firm's rights to sell securities or otherwise liquidate the repurchase agreement should be exercised without hesitation.

### 2150.0.2.4 Overcollateralization

A firm should use current market values, including the amount of any accrued interest, to determine the price of securities that are sold under repurchase agreements. Counterparties should not be provided with excessive margin. Thus, the written repurchase agreement contract should provide that the counterparty must make additional payment or return securities if the margin exceeds agreed upon levels. When acquiring funds under repurchase agreements it is prudent business practice to keep at a reasonable margin the difference between the market value of the securities delivered to the counterparty and the amount borrowed. The excess market value of securities sold may be viewed as an unsecured loan to the counterparty subject to the unsecured lending limitations for the firm and should be treated accordingly for credit policy and control purposes.

## 2150.0.3 OPERATIONS

A firm's operational functions should be designed to regulate the custody and movement of securities and to adequately account for trading transactions. Because of the dollar volume and speed of trading activities, operational inefficiencies can quickly result in major problems.

In some cases, a firm may not receive or deliver a security by settlement date. When a firm fails to receive a security by the settlement date, a liability exists until the transaction is consummated or cancelled. When the security is not delivered to the contra-party by settlement date, a receivable exists until that "fail" is resolved. "Fails" to deliver for an extended time, or a substantial number of cancellations, are sometimes characteristic of poor operational control or questionable trading activities.

Fails should be controlled by prompt reporting and follow-up procedures. The use of multi-copy confirmation forms enables operational personnel to retain and file a copy by settlement date and should allow for prompt fail reporting and resolution.

## 2150.0.4 LAWS, REGULATIONS, INTERPRETATIONS, AND ORDERS

<i>Subject</i>	<i>Laws</i> <sup>1</sup>	<i>Regulations</i> <sup>2</sup>	<i>Interpretations</i> <sup>3</sup>	<i>Orders</i>
Federal Financial Institutions Examination Council policy statement, adopted by the Federal Reserve Board on November 12, 1985, on repurchase agreements			3-1579	

1. 12 U.S.C., unless specifically stated otherwise.

2. 12 C.F.R., unless specifically stated otherwise.

3. Federal Reserve Regulatory Service reference.