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**Office of the Comptroller of the Currency**  
**12 CFR Part 3**  
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**FEDERAL RESERVE SYSTEM**  
**12 CFR Parts 208 and 225**  
**Regulations H and Y; Docket No. R-1401**  
**RIN No. 7100-AD61**

**FEDERAL DEPOSIT INSURANCE CORPORATION**  
**12 CFR Part 325**  
**RIN 3064-AD70**

**Risk-Based Capital Guidelines: Market Risk**

**AGENCIES:** Office of the Comptroller of the Currency, Department of the Treasury; Board of Governors of the Federal Reserve System; and Federal Deposit Insurance Corporation.

**ACTION:** Joint final rule.

**SUMMARY:** The Office of the Comptroller of the Currency (OCC), Board of Governors of the Federal Reserve System (Board), and Federal Deposit Insurance Corporation (FDIC) are revising their market risk capital rules to better capture positions for which the market risk capital rules are appropriate; reduce procyclicality; enhance the rules' sensitivity to risks that are not adequately captured under current methodologies; and increase transparency through enhanced disclosures. The final rule does not include all of the methodologies adopted by the Basel Committee on Banking Supervision for calculating the standardized specific risk capital requirements for debt and securitization positions due to their reliance on credit ratings, which is impermissible under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Instead, the final rule

includes alternative methodologies for calculating standardized specific risk capital requirements for debt and securitization positions.

**DATES:** The final rule is effective January 1, 2013.

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## **I. Introduction**

The first international capital framework for banks<sup>1</sup> entitled *International Convergence of Capital Measurement and Capital Standards* (1988 Capital Accord) was

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<sup>1</sup> For simplicity, and unless otherwise indicated, the preamble to this final rule uses the term “bank” to include banks and bank holding companies (BHCs). The terms “bank holding company” and “BHC” refer only to bank holding companies regulated by the Board.

developed by the Basel Committee on Banking Supervision (BCBS)<sup>2</sup> and endorsed by the G-10 central bank governors in 1988. The OCC, the Board, and the FDIC (collectively, the agencies) implemented the 1988 Capital Accord in 1989 through the issuance of the general risk-based capital rules.<sup>3</sup> In 1996, the BCBS amended the 1988 Capital Accord to require banks to measure and hold capital to cover their exposure to market risk associated with foreign exchange and commodity positions and positions located in the trading account (the Market Risk Amendment (MRA) or market risk framework).<sup>4</sup> The agencies implemented the MRA with an effective date of January 1, 1997 (market risk capital rule).<sup>5</sup>

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<sup>2</sup> The BCBS is a committee of banking supervisory authorities, which was established by the central bank governors of the G-10 countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Documents issued by the BCBS are available through the Bank for International Settlements Web site at <http://www.bis.org>.

<sup>3</sup> The agencies' general risk-based capital rules are at 12 CFR part 3, appendix A and 12 CFR part 167 (OCC); 12 CFR parts 208 and 225, appendix A (Board); and 12 CFR part 325, appendix A (FDIC).

<sup>4</sup> In 1997, the BCBS modified the MRA to remove a provision pertaining to the specific risk capital requirement under the internal models approach (*see* <http://www.bis.org/press/p970918a.htm>).

<sup>5</sup> 61 FR 47358 (September 6, 1996). In 1996, the Office of Thrift Supervision did not implement the market risk framework for savings associations and savings and loan holding companies. However, also included in today's *Federal Register*, the agencies are proposing to expand the scope of their market risk capital rules to apply to Federal and state savings associations as well as savings and loan holding companies. Therefore, the market risk rule would not apply to savings associations or savings and loan holding companies until such times as the agencies' were to finalize their proposal to expand the scope of their market risk capital rules. The agencies' market risk capital rules are at 12 CFR part 3, appendix B (OCC); 12 CFR parts 208 and 225, appendix E (Board); and 12 CFR part 325, appendix C (FDIC).

In June 2004, the BCBS issued a document entitled *International Convergence of Capital Measurement and Capital Standards: A Revised Framework* (Basel II), which was intended for use by individual countries as the basis for national consultation and implementation. Basel II sets forth a “three-pillar” framework that includes (1) risk-based capital requirements for credit risk, market risk, and operational risk (Pillar 1); (2) supervisory review of capital adequacy (Pillar 2); and (3) market discipline through enhanced public disclosures (Pillar 3).

Basel II retained much of the MRA; however, after its release, the BCBS announced that it would develop improvements to the market risk framework, especially with respect to the treatment of specific risk, which refers to the risk of loss on a position due to factors other than broad-based movements in market prices. As a result, in July 2005, the BCBS and the International Organization of Securities Commissions (IOSCO) jointly published *The Application of Basel II to Trading Activities and the Treatment of Double Default Effects* (the 2005 revisions). The BCBS incorporated the 2005 revisions into the June 2006 comprehensive version of Basel II and followed its “three-pillar” structure. Specifically, the Pillar 1 changes narrow the types of positions that are subject to the market risk framework and revise modeling standards and procedures for calculating minimum regulatory capital requirements. The Pillar 2 changes require banks to conduct internal assessments of their capital adequacy with respect to market risk, taking into account the output of their internal models, valuation adjustments, and stress tests. The Pillar 3 changes require banks to disclose certain quantitative and qualitative information, including their valuation techniques for covered positions, the soundness

standard used for modeling purposes, and their internal capital adequacy assessment methodologies.

The BCBS began work on significant changes to the market risk framework in 2007 and developed reforms aimed at addressing issues highlighted by the financial crisis. These changes were published in the BCBS's *Revisions to the Basel II Market Risk Framework, Guidelines for Computing Capital for Incremental Risk in the Trading Book*, and *Enhancements to the Basel II Framework* (collectively, the 2009 revisions).

The 2009 revisions place additional prudential requirements on banks' internal models for measuring market risk and require enhanced qualitative and quantitative disclosures, particularly with respect to banks' securitization activities. The revisions also introduce an incremental risk capital requirement to capture default and credit quality migration risk for non-securitization credit products. With respect to securitizations, the 2009 revisions require banks to apply a standardized measurement method for specific risk to these positions, except for "correlation trading" positions (described further below), for which banks may choose to model all material price risks. The 2009 revisions also add a stressed Value-at-Risk (VaR)-based capital requirement to banks' existing general VaR-based capital requirement. In June 2010, the BCBS published additional revisions to the market risk framework including a floor on the risk-based capital requirement for modeled correlation trading positions (2010 revisions).<sup>6</sup>

Both the 2005 and 2009 revisions include provisions that reference credit ratings. The 2005 revisions also expanded the "government" category of debt positions to include

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<sup>6</sup> The June 2010 revisions can be found in their entirety at <http://bis.org/press/p100618/annex.pdf>.

all sovereign debt and changed the standardized specific risk-weighting factor for sovereign debt from zero percent to a range of zero to 12.0 percent based on the credit rating of the obligor and the remaining contractual maturity of the debt position.<sup>7</sup>

The 2009 revisions include changes to the specific risk-weighting factors for rated and unrated securitization positions. For rated securitization positions, the revisions assign a specific risk-weighting factor based on the credit rating of a position, and whether such rating represents a long-term credit rating or a short-term credit rating. In addition, the 2009 revisions provide for the application of higher specific risk-weighting factors to rated resecuritization positions relative to similarly-rated securitization exposures. Under the 2009 revisions, unrated securitization positions were to be deducted from total capital, except when the unrated position was held by a bank that had approval and ability to use the supervisory formula approach (SFA) to determine the specific risk add-on for the unrated position. Finally, under Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems (Basel III), published by the BCBS in December 2010, and revised in June 2011, certain items, including certain securitization positions, that had been deducted from total capital are assigned a risk weight of 1,250 percent.

On January 11, 2011, the agencies issued a joint notice of proposed rulemaking (January 2011 proposal) that sought public comment on revisions to the agencies' market

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<sup>7</sup> In the context of the market risk capital rules, the specific risk-weighting factor is a scaled measure that is similar to the "risk weights" used in the general risk-based capital rules (e.g., the zero, 20 percent, 50 percent, and 100 percent risk weights) for determining risk-weighted assets. The measure for market risk is multiplied by 12.5 to convert it to market risk equivalent assets, which are then added to the denominator of the risk-based capital ratios.



risk capital rules to implement the 2005, 2009, and 2010 revisions.<sup>8</sup> The key objectives of the proposal were to enhance the rule's sensitivity to risks not adequately captured, including default and credit migration; enhance modeling requirements in a manner that is consistent with advances in risk management since the agencies' initial implementation of the MRA; modify the definition of "covered position" to better capture positions for which treatment under the rule is appropriate; address shortcomings in the modeling of certain risks; address procyclicality; and increase transparency through enhanced disclosures. The objective of enhancing the risk sensitivity of the market risk capital rule is particularly important because of banks' increased exposures to traded credit and other structured products, such as credit default swaps (CDSs) and asset-backed securities, and exposures to less liquid products. Generally, the risks of these products have not been fully captured by VaR models that rely on a 10-business-day, one-tail, 99.0 percent confidence level soundness standard.

When publishing the January 2011 proposal, the agencies did not propose to implement those aspects of the 2005 and 2009 revisions that rely on the use of credit ratings due to certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act).<sup>9</sup> The January 2011 proposal did not include new

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<sup>8</sup> 76 FR 1890 (January 11, 2011).

<sup>9</sup> Pub. L. 111-203, 124 Stat. 1376 (July 21, 2010). Section 939A(a) of the Dodd-Frank Act provides that not later than 1 year after the date of enactment, each Federal agency shall: (1) review any regulation issued by such agency that requires the use of an assessment of the credit-worthiness of a security or money market instrument; and (2) any references to or requirements in such regulations regarding credit ratings. Section 939A further provides that each such agency "shall modify any such regulations identified by the review under subsection (a) to remove any reference to or requirement of reliance on credit ratings and to substitute in such

specific risk add-ons but included as an interim solution the treatment under the agencies' current market risk capital rules. Subsequently, after developing and considering alternative standards of creditworthiness, the agencies issued in December 2011 a joint notice of proposed rulemaking (NPR) that amended the January 2011 proposal (December 2011 amendment) to include alternative methodologies for calculating the specific risk capital requirements for covered debt and securitization positions under the market risk capital rules, consistent with section 939A of the Dodd-Frank Act. The agencies are now adopting a final rule, which incorporates comments received on both the January 2011 proposal and December 2011 amendment and includes aspects of the BCBS's 2005, 2009, and 2010 revisions (collectively, the MRA revisions) to the market risk framework.

## **II. Overview of Comments**

The agencies received six comment letters on the January 2011 proposal and 30 comment letters on the December 2011 amendment from banking organizations, trade associations representing the banking or financial services industry, and other interested parties. This section of the preamble highlights commenters' main concerns and briefly describes how the agencies have responded to comments received in the final rule. A more detailed discussion of comments on specific provisions of the final rule is provided in section III of this preamble.

### **1. Comments on the January 2011 Proposal**

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regulations such standard of credit-worthiness as each respective agency shall determine as appropriate for such regulations.” *See* 15 U.S.C. 78o–7 note.

While commenters expressed general support for the proposed revisions to the agencies' market risk capital rules, many noted that the BCBS's market risk framework required further improvement in certain areas. For example, some commenters expressed concern about certain duplications in the capital requirements, such as the requirement for both a VaR-based measure and a stressed VaR-based measure, because such redundancies would result in excessive capital requirements and distortions in risk management. A different commenter noted that the use of numerous risk measures with different time horizons and conceptual approaches may encourage excessive risk taking.

Although commenters characterized the conceptual overlap of certain provisions of the January 2011 proposal as resulting in duplicative capital requirements, the agencies believe that these provisions provide a prudent level of conservatism in the market risk capital rule.

One commenter noted that the rule's VaR-based measure has notable shortcomings because it may encourage procyclical behavior and regulatory arbitrage. This commenter also asserted that because marked-to-market assets can experience significant price volatility, the proposal's required capital levels may not be sufficient to address this volatility. The agencies are concerned about these issues but believe that the January 2011 proposal addressed these concerns, for example, through the addition of a stressed VaR-based measure.

Commenters generally encouraged the agencies to continue work on the fundamental review of the market risk framework recently published as a consultative document through the BCBS, and one asserted that the agencies should wait until this

work is completed before revising the agencies' market risk capital rules.<sup>10</sup> While the agencies are committed to continued improvement of the market risk framework, they believe that the proposed modifications to the market risk capital rules are necessary to address current significant shortcomings in banks' measurement and capitalization of market risk.

Commenters also expressed concern that the January 2011 proposal differs from the 2005 and 2009 revisions in some respects, such as excluding from the definition of covered position a hedge that is not within the scope of the bank's hedging strategy, providing a more restrictive definition of two-way market, and establishing a surcharge for correlation trading position equal to 15 percent of the specific risk capital requirements for such positions. Commenters expressed concern that such differences could place U.S. banks at a competitive disadvantage to certain foreign banking organizations. In response to commenters' concerns, the agencies have revised the definition of two-way market and adjusted the surcharge as discussed more fully in sections II.3 and II.12, respectively, of this preamble.

## **2. Comments on the December 2011 Amendment**

While many commenters responding to the December 2011 amendment commended the agencies' efforts to develop viable alternatives to credit ratings, most commenters indicated that the amendment did not strike a reasonable balance between accurate measurement of risk and implementation burden. Commenters' general concerns with the December 2011 amendment include its overall lack of risk sensitivity

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<sup>10</sup> The consultative document is available at <http://www.bis.org/publ/bcbs219.htm>.

and its complexity. The agencies have incorporated a number of changes into the final rule based on feedback received from commenters, including modifications to the approaches for determining capital requirements for corporate debt positions and securitization positions proposed in the December 2011 amendment. These changes are intended to increase the risk sensitivity of the approaches as well as simplify and reduce the difficulty of implementing the approaches.

A few commenters asserted that the proposal exceeded the intent of the Dodd-Frank Act because the Dodd-Frank Act was limited to the replacement of credit ratings and did not include provisions that, in their estimation, would significantly increase capital requirements and thus negatively affect the economy. While the agencies acknowledge that capital requirements may generally increase under the final rule, the agencies also believe that the approach provides a prudent level of conservatism to address factors such as modeling uncertainties and that changes to the current rules are necessary to address significant shortcomings in the measurement and capitalization of market risk.

One commenter suggested that the agencies allow banks a transition period of at least one year to implement the market risk capital rule after incorporation of alternatives to credit ratings. The agencies believe that a one-year transition period is not necessary for banks to implement the credit ratings alternatives in the final rule. The agencies have determined based on comments and discussions with commenters that the information required for calculation of capital requirements under the final rule will be available to banks. Other commenters indicated that the proposal would be burdensome for community banks if the agencies used the proposed approaches to address the use of

credit ratings in the general risk-based capital rules. The agencies believe that it is important to align the methodologies for calculating specific risk-weighting factors for debt positions and securitization positions in the market risk capital rules with methodologies for assigning risk weights under the agencies' other capital rules. Such alignment reduces the potential for regulatory arbitrage between rules. The agencies are proposing similar credit rating alternatives in the three notices of proposed rulemaking for the risk-based capital requirements that are published elsewhere in today's *Federal Register*.

Several commenters requested extensions of the comment period citing the complexity of the December 2011 amendment and resulting difficulty of assessing its impact in the time period given as well as the considerable burden faced by banks in evaluating various regulations related to the Dodd-Frank Act within similar time periods. The agencies considered these requests but believe that sufficient time was provided between the agencies' announcement of the proposed amendment on December 7, 2011, and the close of the comment period on February 3, 2012, to allow for adequate analysis of the proposal. The agencies also met with a number of industry participants during the comment period and thereafter in order to clarify the intent of the comments.

Accordingly, the agencies chose not to extend the comment period on the December 2011 amendment.

### **III. Description of the Final Market Risk Capital Rule**

#### **1. Scope**

The market risk capital rule supplements both the agencies' general risk-based capital rules and the advanced capital adequacy guidelines (advanced approaches rules)

(collectively, the credit risk capital rules)<sup>11</sup> by requiring any bank subject to the market risk capital rule to adjust its risk-based capital ratios to reflect the market risk in its trading activities. The agencies did not propose to amend the scope of application of the market risk capital rule, which applies to any bank with aggregate trading assets and trading liabilities equal to 10 percent or more of total assets or \$1 billion or more. One commenter stated that the \$1 billion threshold for the application of the market risk capital rule is not a particularly risk-sensitive means for determining the applicability of the rule. This commenter also expressed concern that the proposed threshold is too low, and recommended an adjustment to recognize the relative risk of exposures, calculated by offsetting trading assets and liabilities. The agencies believe that the current scope of application of the market risk requirements reasonably identifies banks with significant levels of trading activity and therefore have retained the existing threshold criteria. While the agencies are concerned about placing undue burden on banks, the agencies believe that the thresholds provided in the final rule are reasonable given the risk profile of banks identified by the current scope of application.

Consistent with the January 2011 proposal, under the final rule, the primary federal supervisor of a bank that does not meet the threshold criteria would be still be able to apply the market risk capital rule to a bank. Conversely, the primary federal supervisor may exclude a bank from application of the rule if the supervisor were to

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<sup>11</sup> The agencies' advanced approaches rules are at 12 CFR part 3, appendix C (OCC); 12 CFR part 208, appendix F, and 12 CFR part 225, appendix G (Board); and 12 CFR part 325, appendix D (FDIC). For purposes of this preamble, the term "credit risk capital rules" refers to the general risk-based capital rules and the advanced approaches rules (that also include operational risk capital requirements), as applicable to the bank using the market risk capital rule.

deem it necessary or appropriate given the level of market risk of the bank or to ensure safe and sound banking practices.

## **2. Reservation of Authority**

The January 2011 proposal contained a reservation of authority that affirmed the authority of a bank's primary federal supervisor to require the bank to hold an overall amount of capital greater than would otherwise be required under the rule if that supervisor determined that the bank's capital requirement for market risk under the rule was not commensurate with the market risk of the bank's covered positions. In addition, the agencies anticipated that there may be instances when the January 2011 proposal would generate a risk-based capital requirement for a specific covered position or portfolio of covered positions that is not commensurate with the risks of the covered position or portfolio. In these circumstances, a bank's primary federal supervisor could require the bank to assign a different risk-based capital requirement to the covered position or portfolio of covered positions that more accurately reflects the risk of the position or portfolio. The January 2011 proposal also provided authority for a bank's primary federal supervisor to require the bank to calculate capital requirements for specific positions or portfolios using either the market risk capital rule or the credit risk capital rules, depending on which outcome more appropriately reflected the risks of the positions. The agencies did not receive any comment on the proposed reservation of authority and have adopted it without change in the final rule.

## **3. Definition of Covered Position**

The January 2011 proposal modified the definition of a covered position to include trading assets or trading liabilities (as reported on schedule RC-D of the Call



Report or Schedule HC-D of the Consolidated Financial Statements for Bank Holding Companies) that are trading positions. The January 2011 proposal defined a trading position as a position that is held by the bank for the purpose of short-term resale or with the intent of benefiting from actual or expected short-term price movements or to lock in arbitrage profits. Therefore, the characterization of an asset or liability as “trading” for purposes of U.S. Generally Accepted Accounting Principles (U.S. GAAP) would not on its own determine whether the asset or liability is a “trading position” for purposes of the January 2011 proposal. That is, being reported as a trading asset or trading liability on the regulatory reporting schedules is a necessary, but not sufficient, condition for meeting this aspect of the covered position definition under the January 2011 proposal. Such a position would also need to be either a trading position or hedge another covered position. In addition, the trading asset or trading liability must be free of any restrictive covenants on its tradability or the bank must be able to hedge the material risk elements of the position in a two-way market.

One commenter was concerned that this and other references to a two-way market in the January 2011 proposal could be construed to require that there be a two-way market for every covered position. The January 2011 proposal did not require that there be a two-way market for every covered position but did use that standard for defining some covered positions, such as certain correlation trading positions. Rather, in identifying its trading positions, a bank’s policies and procedures must take into account the extent to which a position, or a hedge of its material risks, can be marked-to-market daily by reference to a two-way market.

The January 2011 proposal defined a two-way market as a market where there are independent bona fide offers to buy and sell so that a price reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined within one day and settled at that price within five business days. Commenters expressed concern about the proposed definition of a two-way market including a requirement for settlement within five business days because it would automatically exclude a number of markets where settlement periods are longer than this time frame. In light of commenters' concerns, the agencies have modified this aspect of the definition in the final rule to require settlement within a "relatively short time frame conforming to trade custom."

Another commenter requested clarification regarding whether securities held as available for sale under U.S. GAAP may be treated as covered positions under the rule. This commenter also indicated that a narrow reading of the definitions of trading position and covered position could be interpreted to require banks to move positions between treatment under the market risk and the credit risk capital rules during periods of market stress. In particular, the commenter expressed concern about changes in capital treatment due to changes in a bank's short-term trading intent or the lack of a two-way market during periods of market stress that might be temporary. The commenter suggested that a bank should be able to continue to treat a position as a covered position if it met the definitional requirements when the position was established, notwithstanding changes in markets that led to a longer than expected time horizon for sale or hedging.

The agencies note that under section 3 of the final rule, as under the proposed rule, a bank must have clearly defined policies and procedures that determine which of its

positions are trading positions. With respect to the frequency of movement of positions, consistent with the requirements under U.S. GAAP, the agencies generally would expect re-designations of positions as trading or non-trading to be rare. Thus, in general, the agencies would not expect temporary market movements as described by the commenter to result in re-designations. In those limited circumstances where a bank re-designates a covered position, the bank should document the reasons for such action.

Commenters suggested allowing a bank to treat as a covered position any hedge that is outside of the bank's hedging strategy. The proposed definition of covered position included hedges that offset the risk of trading positions. The agencies are concerned that a bank could craft its hedging strategies to recognize as covered positions certain non-trading positions that are more appropriately treated under the credit risk capital rules. For example, mortgage-backed securities that are not held with the intent to trade, but are hedged with interest rate swaps, would not be covered positions. The agencies will review a bank's hedging strategies to ensure that they are not being manipulated in an inappropriate manner. Consistent with the concerns raised above, the agencies continue to believe that a position that hedges a trading position must be within the scope of a bank's hedging strategy as described in the rule. Thus, the final rule retains the treatment that hedges outside of a bank's hedging strategy as described in the final rule are not covered positions.

Other commenters sought clarification as to whether an internal hedge (between a banking unit and a trading unit of the same bank) could be treated as a covered position if it materially or completely offset the risk of a non-covered position or set of positions, provided the hedge meets the definition of a covered position. The agencies note that

internal hedges are not recognized for regulatory capital purposes because they are eliminated in consolidation.

Commenters inquired as to whether the phrase “restrictive covenants on its tradability,” in the covered position definition, applies to securities transferable only to qualified institutional buyers as required under Rule 144A of the Securities Act of 1933. The agencies do not believe an instrument’s designation as a 144A security in and of itself would preclude the instrument from meeting the definition of covered position. Another commenter asked whether level 3 securities could be treated as covered positions.<sup>12</sup> The agencies note that there is no explicit exclusion of level 3 securities from being designated as covered positions, as long as they meet the requirements of the covered position definition.

One commenter requested clarification as to whether the rule would permit a bank to determine at the portfolio level whether a set of positions satisfies the definition of covered position, provided the bank is able to demonstrate a sufficiently robust process for making this determination. Another commenter found it confusing and operationally challenging that the definition of covered position had requirements both at the position level, for example, specific exclusions, and at the portfolio level, in regard to hedging strategies. The commenter felt that many of the definitional requirements are better suited to assessment at a portfolio level based on robust policies and procedures. The

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<sup>12</sup> See Financial Accounting Standards Board Statement 157. This statement defines fair value, establishes a framework for measuring fair value in U.S. GAAP and expands disclosures about fair value measurement. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). Level 3 securities are those for which inputs are unobservable in the market.

agencies require that the covered position determination be made at the individual position level. The requirements for policies and procedures for identifying trading positions, defining hedging strategies, and management of covered positions are requirements for application of the market risk capital rule broadly.

The January 2011 proposal included within the definition of a covered position any foreign exchange or commodity position, regardless of whether it is a trading asset or trading liability. With prior supervisory approval, a bank could exclude from its covered positions any structural position in a foreign currency, which was defined as a position that is not a trading position and that is (1) subordinated debt, equity, or minority interest in a consolidated subsidiary that is denominated in a foreign currency; (2) capital assigned to a foreign branch that is denominated in a foreign currency; (3) a position related to an unconsolidated subsidiary or another item that is denominated in a foreign currency and that is deducted from the bank's tier 1 and tier 2 capital; or (4) a position designed to hedge a bank's capital ratios or earnings against the effect of adverse exchange rate movements on (1), (2), or (3).

Also, the proposed definition of covered position had several explicit exclusions. It explicitly excluded any position that, in form or substance, acts as a liquidity facility that provides support to asset-backed commercial paper, as well as all intangible assets, including servicing assets. Intangible assets were excluded because their risks are explicitly addressed in the credit risk capital rules, often through a deduction from capital. The agencies received no comment on these exclusions and have incorporated them into the final rule.

The definition of covered positions also excluded any hedge of a trading position that the bank's primary federal supervisor determines is outside the scope of a bank's hedging strategy. One commenter objected to that exclusion; however, the agencies believe that sound risk management should be guided by explicit strategies subject to appropriate oversight by bank management and, therefore, have retained this provision in the final rule.

Under the final rule and as proposed, the covered position definition excludes any equity position that is not publicly traded, other than a derivative that references a publicly traded equity; any direct real estate holding; and any position that a bank holds with the intent to securitize. Equity positions that are not publicly traded include private equity investments, most hedge fund investments, and other such closely-held and non-liquid investments that are not easily marketable. Direct real estate holdings include real estate for which the bank holds title, such as "other real estate owned" held from foreclosure activities, and bank premises used by a bank as part of its ongoing business activities. With respect to such real estate holdings, the determination of marketability and liquidity can be difficult or even impractical because the assets are an integral part of the bank's ongoing business. Indirect investments in real estate, such as through real estate investment trusts or special purpose vehicles, must meet the definition of a trading position to be a covered position. One commenter sought clarification that indirect real estate holdings (such as an exposure to a real estate investment trust) could qualify as a covered position. The agencies note that such an indirect investment may qualify, provided the position otherwise meets the definition of a covered position.

Commenters requested clarification regarding whether hedge fund exposures that hedge a covered position are within the scope of a bank's hedging strategy qualify for inclusion in the definition of a covered position. Generally, hedge fund exposures are not covered positions because they typically are equity positions (as defined under the final rule) that are not publicly traded. The fact that a bank has a hedging strategy for excluded equity positions would not alone qualify such positions to be treated as covered positions under the rule.

Positions that a bank holds with the intent to securitize include a "pipeline" or "warehouse" of loans being held for securitization. The agencies do not view the intent to securitize these positions as synonymous with the intent to trade them. Consistent with the 2009 revisions, the agencies believe the positions excluded from the covered position definition have significant constraints in terms of a bank's ability to liquidate them readily and value them reliably on a daily basis.

The covered position definition also excludes a credit derivative that a bank recognizes as a guarantee for purposes of calculating its risk-weighted assets under the agencies' credit risk capital rules if the credit derivative is used to hedge a position that is not a covered position (for example, a credit derivative hedge of a loan that is not a covered position). This treatment requires the bank to include the credit derivative in its risk-weighted assets for credit risk and exclude it from its VaR-based measure for market risk. This treatment of a credit derivative hedge avoids the mismatch that arises when the hedged position (for example, a loan) is not a covered position and the credit derivative hedge is a covered position. This mismatch has the potential to overstate the VaR-based measure of market risk because only one side of the transaction would be reflected in that

measure. Accordingly, the final rule adopts this aspect of the proposed definition of covered position without change.

Under the January 2011 proposal, in addition to commodities and foreign exchange positions, a covered position includes debt positions, equity positions, and securitization positions. Consistent with the January 2011 proposal, the final rule defines a debt position as a covered position that is not a securitization position or a correlation trading position and that has a value that reacts primarily to changes in interest rates or credit spreads. Examples of debt positions include corporate and government bonds, certain nonconvertible preferred stock, certain convertible bonds, and derivatives (including written and purchased options) for which the underlying instrument is a debt position.

The final rule defines an equity position as a covered position that is not a securitization position or a correlation trading position and that has a value that reacts primarily to changes in equity prices. Examples of equity positions include voting or nonvoting common stock, certain convertible bonds, commitments to buy or sell equity instruments, equity indices, and a derivative for which the underlying instrument is an equity position.

Under the final rule as under the January 2011 proposal, a securitization is defined as a transaction in which (1) all or a portion of the credit risk of one or more underlying exposures is transferred to one or more third parties; (2) the credit risk associated with the underlying exposures has been separated into at least two tranches that reflect different levels of seniority; (3) performance of the securitization exposures depends upon the performance of the underlying exposures; (4) all or substantially all of the underlying



exposures are financial exposures (such as loans, commitments, credit derivatives, guarantees, receivables, asset-backed securities, mortgage-backed securities, other debt securities, or equity securities); (5) for non-synthetic securitizations, the underlying exposures are not owned by an operating company;<sup>13</sup> (6) the underlying exposures are not owned by a small business investment company described in section 302 of the Small Business Investment Act of 1958 (15 U.S.C. 682); and (7) the underlying exposures are not owned by a firm an investment in which qualifies as a community development investment under 12 U.S.C. 24 (Eleventh).

Under the final rule, a bank's primary federal supervisor may determine that a transaction in which the underlying exposures are owned by an investment firm that exercises substantially unfettered control over the size and composition of its assets, liabilities, and off-balance sheet exposures is not a securitization based on the transaction's leverage, risk profile, or economic substance. Generally, the agencies would consider investment firms that can easily change the size and composition of their capital structure, as well as the size and composition of their assets and off-balance sheet exposures, as eligible for exclusion from the securitization definition.

Based on a particular transaction's leverage, risk profile, or economic substance, a bank's primary federal supervisor may also deem an exposure to a transaction to be a securitization exposure, even if the exposure does not meet the criteria in provisions (5), (6), or (7) above. A securitization position is a covered position that is (1) an on-balance

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<sup>13</sup> In a synthetic securitization, a company uses credit derivatives or guarantees to transfer a portion of the credit risk of one or more underlying exposures to third-party protection providers. The credit derivative or guarantee may be collateralized or uncollateralized.

sheet or off-balance sheet credit exposure (including credit-enhancing representations and warranties) that arises from a securitization (including a resecuritization) or (2) an exposure that directly or indirectly references a securitization exposure described in (1) above.

Under the final rule as under the January 2011 proposal, a securitization position includes  $n^{\text{th}}$ -to-default credit derivatives and resecuritization positions. The rule defines an  $n^{\text{th}}$ -to-default credit derivative as a credit derivative that provides credit protection only for the  $n^{\text{th}}$ -defaulting reference exposure in a group of reference exposures. In addition, a resecuritization is defined as a securitization in which one or more of the underlying exposures is a securitization exposure. A resecuritization position is (1) an on- or off-balance sheet exposure to a resecuritization or (2) an exposure that directly or indirectly references a resecuritization exposure described in (1).

Some commenters expressed the desire to align the proposed definition of securitization in the market risk capital rule with the Basel II definition. For instance, one commenter suggested excluding from the definition of a securitization exposures that do not resemble what is customarily thought of as a securitization. The agencies note that the proposed definition is consistent with the definition contained in the agencies' advanced approaches rules and believe that remaining consistent is important in order to reduce regulatory capital arbitrage opportunities across the rules.

The January 2011 proposal and the final rule define a correlation trading position as (1) a securitization position for which all or substantially all of the value of the underlying exposures is based on the credit quality of a single company for which a two-way market exists, or on commonly traded indices based on such exposures for which a

two-way market exists on the indices; or (2) a position that is not a securitization position and that hedges a position described in (1) above. Under this definition, a correlation trading position does not include a resecuritization position, a derivative of a securitization position that does not provide a pro rata share in the proceeds of a securitization tranche, or a securitization position for which the underlying assets or reference exposures are retail exposures, residential mortgage exposures, or commercial mortgage exposures. Correlation trading positions may include collateralized debt obligation (CDO) index tranches, bespoke CDO tranches, and n<sup>th</sup>-to-default credit derivatives. Standardized CDS indices and single-name CDSs are examples of instruments used to hedge these positions. While banks typically hedge correlation trading positions, hedging frequently does not reduce a bank's net exposure to a position because the hedges often do not perfectly match the position. The agencies are adopting the definition of a debt, equity, securitization, and correlation trading position in the final rule as proposed.

The agencies note that certain aspects of the final rule, including the definition of "covered position," are substantially similar to the definitions of similar terms used in the agencies' proposed rule that would implement section 619 of the Dodd-Frank Act, familiarly referred to as the "Volcker rule." The agencies intend to promote consistency across regulations employing similar concepts to increase regulatory effectiveness and reduce unnecessary burden.

Section 619 of the Dodd-Frank Act contains certain prohibitions and restrictions on the ability of a bank (or nonbank financial company supervised by the Board under Title I of the Dodd-Frank Act) to engage in proprietary trading and have certain interests

in, or relationships with, a covered fund as defined under section 619 of the Dodd-Frank Act and applicable regulations or private equity fund. Section 619 defines proprietary trading to mean engaging as a principal for the trading account, as defined under section 619(h)(6), of a bank (or relevant nonbank ) in the purchase or sale of securities and other financial instruments.

In November 2011, the agencies, together with the SEC sought comment on an NPR that would implement section 619 of the Dodd-Frank Act (the Volcker NPR). The Volcker NPR includes in the definition of “trading account” all exposures of a bank subject to the market risk capital rule that fall within the definition of “covered position,” except for certain foreign exchange and commodity positions, unless they otherwise are in an account that meets the other prongs of the Volcker NPR “trading account” definition. Those prongs focus on determining whether a banking entity subject to section 619 of the Dodd-Frank Act is acquiring or taking a position in securities or other covered instruments principally for the purpose of short-term trading. Specifically, the definition of “trading account” under the Volcker NPR would include any account that is used by a bank to acquire or take one or more covered financial positions for the purpose of (1) short-term resale, (2) benefitting from actual or expected short-term price movements, (3) realizing short-term arbitrage profits, or (4) hedging one or more such positions.

These standards correspond with the definition of “trading position” under the final market risk capital rule and are generally the type of positions to which the proprietary trading restrictions of section 13 of the BHC Act, which implements section 619 of the Dodd-Frank Act, were intended to apply. Thus, the Volcker NPR would cover

all positions of a bank that receive trading position treatment under the final market risk capital rule because they meet a nearly identical standard regarding short-term trading intent, thereby eliminating the potential for inconsistency or regulatory arbitrage in which a bank might characterize a position as “trading” for regulatory capital purposes but not for purposes of the Volcker NPR.

Covered positions generally would be subject to the Volcker NPR unless they are foreign exchange or commodity positions that would not otherwise fall into the definition of “trading account” under the Volcker NPR or would otherwise be eligible for one of the exemptions to the prohibitions under the Volcker NPR and section 619 of the Dodd-Frank Act.

#### **4. Requirements for the Identification of Trading Positions and Management of Covered Positions**

Section 3 of the January 2011 proposal introduced new requirements for the identification of trading positions and the management of covered positions. These new requirements would enhance prudent capital management to address the issues that arise when banks include more credit risk-related, less liquid, and less actively traded products in their covered positions. The risks of these positions may not be fully reflected in the requirements of the market risk capital rule and may be more appropriately captured under credit risk capital rules.

Consistent with the January 2011 proposal, the final rule requires a bank to have clearly defined policies and procedures for determining which of its trading assets and trading liabilities are trading positions as well as which of its trading positions are correlation trading positions. In determining the scope of trading positions, the bank must consider (1) the extent to which a position (or a hedge of its material risks) can be

marked to market daily by reference to a two-way market; and (2) possible impairments to the liquidity of a position or its hedge.

In addition, a bank must have clearly defined trading and hedging strategies. The bank's trading and hedging strategies for its trading positions must be approved by senior management. The trading strategy must articulate the expected holding period of, and the market risk associated with, each portfolio of trading positions. The hedging strategy must articulate for each portfolio the level of market risk the bank is willing to accept and must detail the instruments, techniques, and strategies the bank will use to hedge the risk of the portfolio. The hedging strategy should be applied at the level at which trading positions are risk managed at the bank (for example, trading desk, portfolio levels).

Also consistent with the January 2011 proposal, the final rule requires a bank to have clearly defined policies and procedures for actively managing all covered positions. In the context of non-traded commodities and foreign exchange positions, active management includes managing the risks of those positions within the bank's risk limits. For all covered positions, these policies and procedures, at a minimum, must require (1) marking positions to market or model on a daily basis; (2) assessing on a daily basis the bank's ability to hedge position and portfolio risks and the extent of market liquidity; (3) establishment and daily monitoring of limits on positions by a risk control unit independent of the trading business unit; (4) daily monitoring by senior management of the information described in (1) through (3) above; (5) at least annual reassessment by senior management of established limits on positions; and (6) at least annual assessments by qualified personnel of the quality of market inputs to the valuation process, the

soundness of key assumptions, the reliability of parameter estimation in pricing models, and the stability and accuracy of model calibration under alternative market scenarios.

The January 2011 proposal introduced new requirements for the prudent valuation of covered positions, including maintaining policies and procedures for valuation, marking positions to market or to model, independent price verification, and valuation adjustments or reserves. Under the proposal, a bank's valuation of covered positions would be required to consider, as appropriate, unearned credit spreads, close-out costs, early termination costs, investing and funding costs, future administrative costs, liquidity, and model risk. These valuation requirements reflect the agencies' concerns about deficiencies in banks' valuation of less liquid trading positions, especially in light of the prior focus of the market risk capital rule on a 10-business-day time horizon and a one-tail, 99.0 percent confidence level, which has proven at times to be inadequate in reflecting the full extent of the market risk of less liquid positions.

Several commenters expressed concern about including consideration of future administrative costs in the valuation process because they believe calculation of this estimate would be difficult and arbitrary and would result in only a minor increase in total costs. In response to commenters' concern, the agencies removed this requirement from the final rule. In all other respects, the agencies are adopting the proposed requirements for the valuation of covered positions.

## **5. General Requirements for Internal Models**

*Model Approval and Ongoing Use Requirements.* The January 2011 proposal would have required a bank to receive the prior written approval of its primary federal supervisor before using any internal model to calculate its market risk capital

requirement. Also, a bank would be required to promptly notify its primary federal supervisor when the bank plans to extend the use of a model that the primary federal supervisor has approved to an additional business line or product type. The agencies consider these requirements to be appropriate and are adopting them in the final rule.

One commenter on the January 2011 proposal inquired as to whether models used by the bank, but developed by parties outside of the bank (commonly referred to as vendor models), are permissible for calculating market risk capital requirements given approval from the bank's primary federal supervisor. The agencies believe that a vendor model may be acceptable for purposes of calculating a bank's risk-based capital requirements if it otherwise meets the requirements of the rule and is properly understood and implemented by the bank.

The final rule, consistent with the January 2011 proposal, requires a bank to notify its primary federal supervisor promptly if it makes any change to an internal model that would result in a material change in the amount of risk-weighted assets for a portfolio of covered positions or when the bank makes any material change to its modeling assumptions. The bank's primary federal supervisor may rescind its approval, in whole or in part, of the use of any internal model and determine an appropriate regulatory capital requirement for the covered positions to which the model would apply, if it determines that the model no longer complies with the market risk capital rule or fails to reflect accurately the risks of the bank's covered positions. For example, if adverse market events or other developments reveal that a material assumption in an approved model is flawed, the bank's primary federal supervisor may require the bank to revise its model assumptions and resubmit the model specifications for review. In the final rule,



the agencies made minor modifications to this provision in section 3(c)(3) to improve clarity and correct a cross-reference.

Financial markets evolve rapidly, and internal models that were state-of-the-art at the time they were approved for use in risk-based capital calculations can become less effective as the risks of covered positions evolve and as the industry develops more sophisticated modeling techniques that better capture material risks. Therefore, under the final rule, as under the January 2011 proposal, a bank must review its internal models periodically, but no less frequently than annually, in light of developments in financial markets and modeling technologies, and to enhance those models as appropriate to ensure that they continue to meet the agencies' standards for model approval and employ risk measurement methodologies that are, in the bank's judgment, most appropriate for the bank's covered positions. It is essential that a bank continually review, and as appropriate, make adjustments to its models to help ensure that its market risk capital requirement reflects the risk of the bank's covered positions. A bank's primary federal supervisor will closely review the bank's model review practices as a matter of safety and soundness. The agencies are adopting these requirements in the final rule.

*Risks Reflected in Models.* The final rule requires a bank to incorporate its internal models into its risk management process and integrate the internal models used for calculating its VaR-based measure into its daily risk management process. The level of sophistication of a bank's models must be commensurate with the complexity and amount of its covered positions. To measure its market risk, a bank's internal models may use any generally accepted modeling approach, including but not limited to variance-covariance models, historical simulations, or Monte Carlo simulations. A

bank's internal models must properly measure all material risks in the covered positions to which they are applied. Consistent with the January 2011 proposal, the final rule requires that risks arising from less liquid positions and positions with limited price transparency be modeled conservatively under realistic market scenarios. The January 2011 proposal also would require a bank to have a rigorous process for re-estimating, re-evaluating, and updating its models to ensure continued applicability and relevance. The final rule retains these proposed requirements for internal models.

*Control, Oversight, and Validation Mechanisms.* The final rule, consistent with the January 2011 proposal, requires a bank to have a risk control unit that reports directly to senior management and that is independent of its business trading units. In addition, the final rule provides specific model validation standards similar to those in the advanced approaches rules. Specifically, the final rule requires a bank to validate its internal models initially and on an ongoing basis. The validation process must be independent of the internal models' development, implementation, and operation, or the validation process must be subjected to an independent review of its adequacy and effectiveness. The review personnel do not necessarily have to be external to the bank in order to achieve the required independence. A bank should ensure that individuals who perform the review are not biased in their assessment due to their involvement in the development, implementation, or operation of the models.

Also consistent with the January 2011 proposal, the final rule requires validation to include an evaluation of the conceptual soundness of the internal models. This should include an evaluation of empirical evidence and documentation supporting the methodologies used; important model assumptions and their limitations; adequacy and

robustness of empirical data used in parameter estimation and model calibration; and evidence of a model's strengths and weaknesses.

Validation also must include an ongoing monitoring process that includes a review of all model processes and verification that these processes are functioning as intended and the comparison of the bank's model outputs with relevant internal and external data sources or estimation techniques. The results of this comparison provide a valuable diagnostic tool for identifying potential weaknesses in a bank's models. As part of this comparison, the bank should investigate the source of any differences between the model estimates and the relevant internal or external data or estimation techniques and whether the extent of the differences is appropriate.

Validation of internal models must include an outcomes analysis process that includes backtesting. Consistent with the 2009 revisions, the January 2011 proposal required a bank's validation process for internal models used to calculate its VaR-based measure to include an outcomes analysis process that includes a comparison of the changes in the bank's portfolio value that would have occurred were end-of-day positions to remain unchanged (therefore, excluding fees, commissions, reserves, net interest income, and intraday trading) with VaR-based measures during a sample period not used in model development.

The final rule, consistent with the January 2011 proposal, requires a bank to stress test the market risk of its covered positions at a frequency appropriate to each portfolio and in no case less frequently than quarterly. The stress tests must take into account concentration risk, illiquidity under stressed market conditions, and other risks arising from the bank's trading activities that may not be captured adequately in the bank's

internal models. For example, it may be appropriate for a bank to include in its stress testing large price movements, one-way markets, nonlinear or deep out-of-the-money products, jumps-to-default, and significant changes in correlation. Relevant types of concentration risk include concentration by name, industry, sector, country, and market. Market concentration occurs when a bank holds a position that represents a concentrated share of the market for a security and thus requires a longer than usual liquidity horizon to liquidate the position without adversely affecting the market. A bank's primary federal supervisor will evaluate the robustness and appropriateness of any bank stress tests required under the final rule through the supervisory review process.

One commenter advocated an exemption from the proposed backtesting requirements for vendor models, and stated that banks using the same vendor model would be duplicating their efforts. The agencies believe that each bank must be responsible for ensuring that its market risk capital requirement reflects the risks of its covered positions. Each bank generally customizes some aspects of a vendor model and has a unique trading profile. Therefore, effective backtesting of either a vendor-provided or internally-developed model requires reference to a bank's experience with its own positions, which is consistent with guidance issued by the OCC and the Board with respect to the use of internal and third-party models.<sup>14</sup>

Consistent with the January 2011 proposal, the final rule requires a bank to have an internal audit function independent of business-line management that at least annually assesses the effectiveness of the controls supporting the bank's market risk measurement

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<sup>14</sup> See Supervisory Guidance on Model Risk Management, issued by the OCC and Federal Reserve (April 4, 2011).

systems, including the activities of the business trading units and independent risk control unit, compliance with policies and procedures, and the calculation of the bank's measure for market risk. The internal audit function should review the bank's validation processes, including validation procedures, responsibilities, results, timeliness, and responsiveness to findings. Further, the internal audit function should evaluate the depth, scope, and quality of the risk management system review process and conduct appropriate testing to ensure that the conclusions of these reviews are well-founded. At least annually, the internal audit function must report its findings to the bank's board of directors (or a committee thereof). The final rule adopts the January 2011 proposal's requirements pertaining to control, oversight, and validation mechanisms.

*Internal Assessment of Capital Adequacy.* The final rule, consistent with the January 2011 proposal, requires a bank to have a rigorous process for assessing its overall capital adequacy in relation to its market risk. This assessment must take into account market concentration and liquidity risks under stressed market conditions as well as other risks that may not be captured fully in the VaR-based measure.

*Documentation.* The final rule also adopts as proposed the requirement that a bank document adequately all material aspects of its internal models; the management and valuation of covered positions; its control, oversight, validation and review processes and results; and its internal assessment of capital adequacy. This documentation will facilitate the supervisory review process as well as the bank's internal audit or other review procedures.

## 6. Capital Requirement for Market Risk

Consistent with the January 2011 proposal, the final rule requires a bank to calculate its risk-based capital ratio denominator as the sum of its adjusted risk-weighted assets and market risk equivalent assets. However, the agencies are making changes to this calculation in the final rule for banks subject to the advanced approaches rules (as amended in June 2011 to implement certain provisions in section 171 of the Dodd-Frank Act).<sup>15</sup> Under the advanced approaches rules, a bank is required to calculate its risk-based capital requirements under the general risk-based capital rules and the advanced approaches rules for purposes of determining compliance with minimum regulatory capital requirements. Thus, a bank subject to the advanced approaches rules is required to calculate both a general risk-based capital ratio denominator based on the general risk-based capital rules and an advanced risk-based capital ratio denominator based on the advanced approaches rules, each supplemented by the market risk capital rules as appropriate.<sup>16</sup> Consequently, a bank subject to the advanced approaches rules and the market risk capital rules is also required to calculate both general adjusted risk-weighted assets and advanced adjusted risk-weighted assets under the market risk capital rules as

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<sup>15</sup> 76 FR 37620 (June 28, 2011).

<sup>16</sup> Section 171 of the Dodd-Frank Act (12 U.S.C. 5371) requires the agencies to establish consolidated minimum risk-based capital requirements for depository institutions, bank holding companies, savings and loan holding companies, and nonbank financial companies supervised by the Board that are not less than the capital requirements the agencies establish under section 38 of the Federal Deposit Insurance Act to apply to insured depository institutions, regardless of total asset size or foreign financial exposure (generally applicable risk-based capital requirements). Currently, the general risk-based capital rules (supplemented by the market risk capital rule) are the generally applicable risk-based capital rules for purposes of section 171 of the Dodd-Frank Act. 12 U.S.C. 5371.

the starting point to determine its risk-based capital ratio denominators. The agencies have revised the mechanics of section 4 of the final rule to be consistent with the risk-based capital ratio calculation requirements under the advanced approaches rules.

To calculate general market risk equivalent assets, a bank must multiply its general measure for market risk by 12.5. A bank subject to the advanced approaches rules also must calculate its advanced market risk equivalent assets by multiplying its advanced measure for market risk by 12.5. The final rule requires a bank's general and advanced measures for market risk to equal the sum of its VaR-based capital requirement, its stressed VaR-based capital requirement, specific risk add-ons, incremental risk capital requirement, comprehensive risk capital requirement, and capital requirement for *de minimis* exposures, each calculated according to defined applicable requirements. The components of the two measures for market risk described above are the same except for a potential difference stemming from the specific risk add-ons component. This difference arises because a bank may not use the SFA (discussed further below) to calculate its general measure for market risk for securitization positions while it must use the SFA, provided the bank has sufficient information, to calculate its advanced measure for market risk for the same positions. Consistent with the proposal, under the final rule, no adjustments are permitted to address potential double counting among any of the components of a bank's measure(s) for market risk.

The final rule requires a bank to include in its measure for market risk any specific risk add-on as required under section 7 of the rule, determined using the standardized measurement methods described in section 10 of the rule. For a bank subject to the advanced approaches rules, these standardized measurement methods may

include the SFA for securitization positions as discussed further below, where both the securitization position and the bank would meet the requirements to use the SFA. Such a bank must use the SFA in all instances where possible to calculate specific risk add-ons for its securitization positions. The agencies expect banks to use the SFA rather than the simplified supervisory formula approach (SSFA) in all instances where the data to calculate the SFA is available. The agencies expect a bank to apply the SFA on a consistent basis for a given position. For instance, if a bank is able to calculate a specific risk add-on for a securitization position using the SFA, the agencies would expect the bank to continue to have access to the information needed to perform this calculation on an ongoing basis for that position. If the bank were to change the methodology it used for calculating the specific risk add-on for such a securitization position, it should be able to explain and justify the change in approach (e.g., based on data availability) to its primary federal supervisor.

As described above, a bank subject to the advanced approaches rules must calculate two market risk equivalent asset amounts: a general measure for market risk and an advanced measure for market risk. A bank subject to the advanced approaches rules may not use the SFA to calculate its general measure for market risk, because this methodology is not available under the general risk-based capital rules.

The final rule requires a bank to include in both its general measure for market risk and its advanced measure for market risk its capital requirement for *de minimis* exposures. Specifically, a bank must add to its general and advanced measures for market risk the absolute value of the market value of those *de minimis* exposures that are not captured in the bank's VaR-based measure unless the bank has obtained prior written



approval from its primary federal supervisor to calculate a capital requirement for the *de minimis* exposures using alternative techniques that appropriately measure the market risk associated with those exposures. The agencies have made conforming changes to the proposed requirements for a bank to calculate its risk-based capital ratio denominator under the final rule. With regard to a bank's total risk-based capital numerator, the final rule, like the January 2011 proposal, eliminates tier 3 capital and the associated allocation methodologies.

As proposed, the final rule requires a bank's VaR-based capital requirement to equal the greater of (1) the previous day's VaR-based measure, or (2) the average of the daily VaR-based measures for each of the preceding 60 business days multiplied by three, or such higher multiplication factor required based on backtesting results determined according to section 4 of the rule and as discussed further below. Similarly, the final rule requires a bank's stressed VaR-based capital requirement to equal the greater of (1) the most recent stressed VaR-based measure; or (2) the average of the weekly stressed VaR-based measures for each of the preceding 12 weeks multiplied by three, or such higher multiplication factor as required based on backtesting results determined according to section 4 of the rule. The multiplication factor applicable to the stressed-VaR based measure for purposes of this calculation is based on the backtesting results for the bank's VaR-based measure; there is no separate backtesting requirement for the stressed VaR-based measure for purposes of calculating a bank's measure for market risk.

*Determination of the Multiplication Factor.* Consistent with the January 2011 proposal, the final rule requires a bank, each quarter, to compare each of its most recent 250 business days' of trading losses (excluding fees, commissions, reserves, net interest

income, and intraday trading ) with the corresponding daily VaR-based measure calibrated to a one-day holding period and at a one-tail, 99.0 percent confidence level. The excluded components of trading profit and loss are usually not modeled as part of the VaR-based measure. Therefore, excluding them from the regulatory backtesting framework will improve the accuracy of the backtesting and provide a better assessment of the bank's internal model.

The agencies sought comment on any challenges banks may face in formulating the proposed measure of trading loss, particularly whether any excluded components described above would present difficulties and the nature of those difficulties. Commenters expressed concern about challenges in calculating trading loss net of the above excluded components, noting that many banks only have trading gain and loss data which includes these components. According to commenters, because historical data are not always available for the components excluded from trading losses, it would be difficult to immediately create historical trading gains and losses that exclude these components. Commenters also indicated that banks will need to make changes to their systems to support this requirement. Because of these concerns, commenters requested additional time to come into compliance with the new requirement.

The agencies acknowledge these implementation concerns and recognize that banks may not be able to immediately implement the new backtesting requirements. Therefore, the agencies have specified in the final rule that banks will be allowed up to one year after the later of either January 1, 2013, or the date on which a bank becomes subject to the rule, to begin backtesting as required under the final rule. In the interim, consistent with safety and soundness principles, a bank subject to the rule as of January 1,

2013, should continue to follow their current regulatory backtesting procedures, in accordance with its primary federal supervisor's expectations.

One commenter expressed concern with the proposed backtesting requirements. In particular, the commenter described the frequency of calculations required for determining the number of exceptions as burdensome and unnecessary. The agencies believe that the comparison of daily trading loss to the corresponding daily VaR-based measure is a critical part of a bank's ongoing risk management. Such comparisons improve a bank's ability to make prompt adjustment to its market risk management to address factors such as changing market conditions and model deficiencies. A high number of exceptions could indicate modeling issues and warrants an increase in capital requirements by a higher multiplication factor. Accordingly, the agencies believe the multiplication factor and associated backtesting requirements provide appropriate incentives for banks to regularly update their VaR-based models and have adopted the proposed approach for determining the number of daily backtesting exceptions. With the exception of the timing consideration discussed above for calculating daily trading losses, the final rule retains the proposed backtesting requirements.

## **7. VaR-based Capital Requirement**

Consistent with the January 2011 proposal, section 5 of the final rule requires a bank to use one or more internal models to calculate a daily VaR-based measure that reflects general market risk for all covered positions. The daily VaR-based measure also may reflect the bank's specific risk for one or more portfolios of debt or equity positions and must reflect the specific risk for any portfolios of correlation trading positions that are modeled under section 9 of the rule. The rule defines general market risk as the risk

of loss that could result from broad market movements, such as changes in the general level of interest rates, credit spreads, equity prices, foreign exchange rates, or commodity prices. Specific risk is the risk of loss on a position that could result from factors other than broad market movements and includes event and default risk as well as idiosyncratic risk.<sup>17</sup> Like the January 2011 proposal, the final rule also allows a bank to include term repo-style transactions in its VaR-based measure even though these positions may not meet the definition of a covered position, provided the bank includes all such term repo-style transactions consistently over time.

Under the final rule, a term repo-style transaction is defined as a repurchase or reverse repurchase transaction, or a securities borrowing or securities lending transaction, including a transaction in which the bank acts as agent for a customer and indemnifies the customer against loss, that has an original maturity in excess of one business day, provided that it meets certain requirements, including being based solely on liquid and readily marketable securities or cash and subject to daily marking-to-market and daily margin maintenance requirements.<sup>18</sup> While repo-style transactions typically are close adjuncts to trading activities, U.S. GAAP traditionally has not permitted companies to report them as trading assets or trading liabilities. Repo-style transactions included in the

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<sup>17</sup> Default risk is the risk of loss on a position that could result from the failure of an obligor to make timely payments of principal or interest on its debt obligation and the risk of loss that could result from bankruptcy, insolvency, or similar proceeding. For credit derivatives, default risk means the risk of loss on a position that could result from the default of the reference name or exposure(s). Idiosyncratic risk is the risk of loss in the value of a position that arises from changes in risk factors unique to that position.

<sup>18</sup> See section 2 of the final rule for a complete definition of a term repo-style transaction.

VaR-based measure will continue to be subject to the requirements under the credit risk capital rules for calculating capital requirements for counterparty credit risk.

As in the January 2011 proposal, the final rule adds credit spread risk to the list of risk categories to be captured in a bank's VaR-based measure (that is, in addition to interest rate risk, equity price risk, foreign exchange rate risk, and commodity price risk). The VaR-based measure may incorporate empirical correlations within and across risk categories, provided the bank validates its models and justifies the reasonableness of its process for measuring correlations. If the VaR-based measure does not incorporate empirical correlations across market risk categories, the bank must add the separate measures from its internal models used to calculate the VaR-based measure to determine the bank's aggregate VaR-based measure. The final rule, as proposed, requires models to include risks arising from the nonlinear price characteristics of option positions or positions with embedded optionality.

Consistent with the 2009 revisions and the proposed rule, the final rule requires a bank to be able to justify to the satisfaction of its primary federal supervisor the omission of any risk factors from the calculation of its VaR-based measure that the bank includes in its pricing models. In addition, a bank must demonstrate to the satisfaction of its primary federal supervisor the appropriateness of any proxies used to capture the risks of the actual positions for which such proxies are used.

*Quantitative Requirements for VaR-based Measure.* Like the January 2011 proposal, the final rule does not change the existing quantitative requirements for the daily VaR-based measure. These include a one-tail, 99.0 percent confidence level, a ten-business-day holding period, and a historical observation period of at least one year. To

calculate VaR-based measures using a 10-day holding period, the bank may calculate 10-business-day measures directly or may convert VaR-based measures using holding periods other than 10 business days to the equivalent of a 10-business-day holding period. A bank that converts its VaR-based measure in this manner must be able to justify the reasonableness of its approach to the satisfaction of its primary federal supervisor. For example, a bank that computes its VaR-based measure by multiplying a daily VaR amount by the square root of 10 (that is, using the square root of time) should demonstrate that daily changes in portfolio value do not exhibit significant mean reversion, autocorrelation, or volatility clustering.<sup>19</sup>

Consistent with the January 2011 proposal, the final rule requires a bank's VaR-based measure to be based on data relevant to the bank's actual exposures and of sufficient quality to support the calculation of its risk-based capital requirements. The bank must update its data sets at least monthly or more frequently as changes in market conditions or portfolio composition warrant. For banks that use a weighting scheme or other method to identify the appropriate historical observation period, the bank must either (1) use an effective observation period of at least one year in which the average time lag of the observations is at least six months or (2) demonstrate to its primary federal supervisor that the method used is more effective than that described in (1) at representing the volatility of the bank's trading portfolio over a full business cycle. In the latter case, a bank must update its data more frequently than monthly and in a manner

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<sup>19</sup> Using the square root of time assumes that daily portfolio returns are independent and identically distributed. When this assumption is violated, the square root of time approximation is not appropriate.

appropriate for the type of weighting scheme. In general, a bank using a weighting scheme should update its data daily. Because the most recent observations typically are the most heavily weighted, it is important for a bank to include these observations in its VaR-based measure.

Also consistent with the January 2011 proposal, the final rule requires a bank to retain and make available to its primary federal supervisor model performance information on significant subportfolios. Taking into account the value and composition of a bank's covered positions, the subportfolios must be sufficiently granular to inform a bank and its supervisor about the ability of the bank's VaR-based model to reflect risk factors appropriately. A bank's primary federal supervisor must approve the number of significant subportfolios the bank uses for subportfolio backtesting. While the final rule does not prescribe the basis for determining significant subportfolios, the primary federal supervisor may consider the bank's evaluation of factors such as trading volume, product types and number of distinct traded products, business lines, and number of traders or trading desks.

The final rule, consistent with the January 2011 proposal, requires a bank to retain and make available to its primary federal supervisor, with no more than a 60-day lag, information for each subportfolio for each business day over the previous two years (500 business days) that includes (1) a daily VaR-based measure for the subportfolio calibrated to a one-tail, 99.0 percent confidence level; (2) the daily profit or loss for the subportfolio (that is, the net change in price of the positions held in the portfolio at the end of the previous business day); and (3) the p-value of the profit or loss on each day (that is, the

probability of observing a profit less than or a loss greater than reported in (2) above, based on the model used to calculate the VaR-based measure described in (1) above).

Daily information on the probability of observing a loss greater than that which occurred on any given day is a useful metric for banks and supervisors to assess the quality of a bank's VaR model. For example, if a bank that used a historical simulation VaR model using the most recent 500 business days experienced a loss equal to the second worst day of the 500, it would assign a probability of 0.004 (2/500) to that loss based on its VaR model. Applying this process many times over a long interval provides information about the adequacy of the VaR model's ability to characterize the entire distribution of losses, including information on the size and number of backtesting exceptions. The requirement to create and retain this information at the subportfolio level may help identify particular products or business lines for which the model does not adequately measure risk.

The agencies solicited comment on whether the proposed subportfolio backtesting requirements would present any challenges and, if so, the specific nature of such challenges. In addition, the agencies sought comment on how to determine an appropriate number of subportfolios for purposes of these requirements. The agencies also requested comment on whether the p-value is a useful statistic for evaluating the efficacy of the VaR model in gauging market risk, as well as whether the agencies should consider other statistics and, if so, why.

Several commenters urged the agencies to provide discretion and flexibility in identifying significant subportfolios. In particular, the commenters asked the agencies to allow banks to identify subportfolios based on the internal management structure of the



bank. Notwithstanding these comments, the agencies believe the final rule, like the January 2011 proposal, provides an appropriate level of flexibility, as it does not prescribe a specific basis or parameters for determining significant subportfolios. Some commenters urged the agencies to be sensitive to the operational challenges associated with meeting subportfolio backtesting requirements that would be caused by organizational changes and model enhancements. The agencies recognize the operational challenges involved in meeting these requirements and will consider them as part of the ongoing evaluation of a bank's compliance with the backtesting requirements. Some commenters stated that the p-value statistic does not add sufficient explanatory power to warrant the calculation effort, and instead recommended the use of "band breaks" to detect VaR model deficiencies.

The agencies believe that the p-value statistic adds significant explanatory power and will facilitate a more appropriate evaluation of the VaR models by both banks and supervisors. The agencies believe that the so-called band-break methodology generally fails to recognize modeling deficiencies comprehensively and view the p-value as an improvement over this methodology. VaR models and the break-band methodology evaluate only one statistic at the tail of the profit and loss distribution while the p-values provide information to banks and supervisors regarding the appropriateness of the entire profit and loss distribution. The agencies have thus decided to adopt the proposed subportfolio backtesting requirements in the final rule as proposed.

## **8. Stressed VaR-based Capital Requirement**

Like the January 2011 proposal, section 6 of the final rule requires a bank to calculate at least weekly a stressed VaR-based measure using the same internal model(s)

used to calculate its VaR-based measure. The stressed VaR-based measure supplements the VaR-based measure, which, due to inherent limitations, proved inadequate in producing capital requirements appropriate to the level of losses incurred at many banks during the financial market crisis that began in mid-2007. The stressed VaR-based measure mitigates the procyclicality of the minimum capital requirements for market risk and contributes to a more appropriate measure of the risks of a bank's covered positions.

*Quantitative Requirements for Stressed VaR-based Measure.* To determine the stressed VaR-based measure, the final rule, consistent with the January 2011 proposal, requires a bank to use the same model(s) used to calculate its VaR-based measure but with model inputs calibrated to reflect historical data from a continuous 12-month period that reflects a period of significant financial stress appropriate to the bank's current portfolio. The stressed VaR-based measure must be calculated at least weekly and be no less than the bank's VaR-based measure. The agencies generally expect that a bank's stressed VaR-based measure will be substantially greater than its VaR-based measure.

One commenter pointed out that one interpretation of the January 2011 proposal could be inconsistent with a BCBS interpretation, which appears to indicate that a weighting scheme should not be used for the stressed VaR-based measure. The final rule requires a bank to use the same internal model for its VaR-based measure and its stressed VaR-based measure. In general, if a bank chooses to use a weighting scheme for its VaR-based measure, the agencies expect this weighting scheme to also be used for its stressed VaR-based measure. Where there is not consistent use of weighting schemes across both measures, the bank should document and be able to explain its approach to its primary federal supervisor.

The final rule also requires a bank to have policies and procedures that describe how it determines the period of significant financial stress used to calculate the bank's stressed VaR-based measure and to be able to provide empirical support for the period used. These policies and procedures must address (1) how the bank links the period of significant financial stress used to calculate the stressed VaR-based measure to the composition and directional bias of the bank's current portfolio; and (2) the bank's process for selecting, reviewing, and updating the period of significant financial stress used to calculate the stressed VaR-based measure and for monitoring the appropriateness of the 12-month period in light of the bank's current portfolio. The bank must obtain the prior approval of its primary federal supervisor for these policies and procedures and must notify its primary federal supervisor if the bank makes any material changes to them. A bank's primary federal supervisor may require it to use a different period of significant financial stress in the calculation of the bank's stressed VaR-based measure. The final rule retains the proposed quantitative requirements for the stressed VaR-based measure.

## **9. Modeling Standards for Specific Risk**

Consistent with the January 2011 proposal, the final rule allows a bank to use one or more internal models to measure the specific risk of a portfolio of debt or equity positions with specific risk. A bank is required to use one or more internal models to measure the specific risk of a portfolio of correlation trading positions with specific risk that are modeled under section 9 of the final rule. However, a bank is not permitted to model the specific risk of securitization positions that are not modeled under section 9 of the rule. This treatment addresses regulatory arbitrage concerns as well as deficiencies in

the modeling of securitization positions that became more evident during the course of the financial market crisis that began in mid-2007.

Under the final rule and consistent with the January 2011 proposal, the internal models for specific risk are required to explain the historical price variation in the portfolio, be responsive to changes in market conditions, be robust to an adverse environment, and capture all material aspects of specific risk for debt and equity positions. Specifically, the final rule requires that a bank's internal models capture event risk and idiosyncratic risk; capture and demonstrate sensitivity to material differences between positions that are similar but not identical, and to changes in portfolio composition and concentrations. If a bank calculates an incremental risk measure for a portfolio of debt or equity positions under section 8 of the proposed rule, the bank is not required to capture default and credit migration risks in its internal models used to measure the specific risk of those portfolios.

Commenters asked for guidance or examples regarding the types of events captured by the definition of “event risk.” In response, the agencies have clarified the definition of event risk in the final rule as the risk of loss on equity or hybrid equity positions as a result of a financial event, such as the announcement or occurrence of a company merger, acquisition, spin-off or dissolution.

The January 2011 proposal required a bank that does not have an approved internal model that captures all material aspects of specific risk for a particular portfolio of debt, equity, or correlation trading positions to use the standardized measurement method to calculate a specific risk add-on for that portfolio. This requirement was intended to provide banks with incentive to model specific risk more robustly. However,

due to concerns about the ability of a bank to model the specific risk of certain securitization positions, the January 2011 proposal required a bank to calculate a specific risk add-on using the standardized measurement method for all of its securitization positions that are not correlation trading positions modeled under section 9 of the proposed rule. The agencies note that not all debt, equity, or securitization positions (for example, certain interest rate swaps) have specific risk. Therefore, there would be no specific risk capital requirement for positions without specific risk. A bank should have clear policies and procedures for determining whether a position has specific risk.

While the January 2011 proposal continued to provide for flexibility and a combination of approaches to measure market risk, including the use of different models to measure the general market risk and the specific risk of one or more portfolios of debt and equity positions, the agencies strongly encourage banks to develop and implement VaR-based models for both general market risk and specific risk. A bank's use of a combination of approaches is subject to supervisory review to ensure that the overall capital requirement for market risk is commensurate with the risks of the bank's covered positions. Except for the revision to the definition of event risk described above, the final rule retains the proposed requirements pertaining to modeling standards for specific risk.

#### **10. Standardized Specific Risk Capital Requirement**

The final rule, like the January 2011 proposal, requires a bank to calculate a total specific risk add-on for each portfolio of debt and equity positions for which the bank's VaR-based measure does not capture all material aspects of specific risk and for all of its securitization positions that is not modeled under section 9 of the rule. The final rule requires a bank to calculate each specific risk add-on in accordance with the requirements

of the final rule and add the total specific risk add-on for each portfolio to the applicable measure(s) for market risk.

Some commenters asserted that the capital requirement for a given covered position should not exceed the maximum loss a bank could incur on that position and requested that the agencies revise the rule accordingly to clarify this limitation. The agencies agree with the principle of limiting a bank's capital requirement for a covered position to its maximum possible loss. For long positions, this amount is the loss of all remaining value of the instrument, assuming no recovery. For short debt and securitization positions, this amount is the loss associated with the position becoming risk free. In some contexts (for example, equity positions), the maximum loss may be unbounded and not constrain the amount of capital to be held. The agencies have clarified in the final rule that the specific risk add-on for an individual debt or securitization position that represents purchased credit protection is capped at the current market value of the transaction, plus the absolute value of the present value of all remaining payments to the protection seller under the transaction where the sum is equal to the value of the protection leg of the transaction. The agencies have also clarified in the final rule that the specific risk add-on for an individual debt or securitization position that represents sold credit protection is capped at the effective notional amount of the credit derivative contract.

For debt, equity, and securitization positions that are derivatives with linear payoffs (for example, futures and equity swaps), the final rule, consistent with the January 2011 proposal, requires a bank to apply a specific risk-weighting factor that is included in the calculation of a specific risk add-on to the market value of the effective

notional amount of the underlying instrument or index portfolio (except where a bank would instead directly calculate a specific risk add-on for the position using the SFA). For debt, equity, and securitization positions that are derivatives with nonlinear payoffs (for example, options, interest rate caps, tranching positions), a bank must risk-weight the market value of the effective notional amount of the underlying instrument or instruments multiplied by the derivative's delta (that is, the change of the derivative's value relative to changes in the price of the underlying instrument or instruments). For a standard interest rate derivative, the effective notional amount refers to the apparent or stated notional principal amount. If the contract contains a multiplier or other leverage enhancement, the apparent or stated notional principal amount must be adjusted to reflect the effect of the multiplier or leverage enhancement in order to determine the effective notional amount.

A swap must be included as an effective notional position in the underlying debt, equity, or securitization instrument or portfolio, with the receiving side treated as a long position and the paying side treated as a short position. A bank may net long and short positions (including derivatives) in identical issues or identical indices. A bank may also net positions in depository receipts against an opposite position in an identical equity in different markets, provided that the bank includes the costs of conversion.

Like the January 2011 proposal, the final rule expands the recognition of credit derivative hedging effects for debt and securitization positions. A set of transactions consisting of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge has a specific risk add-on of zero if the debt or securitization position is fully hedged by a total return swap (or similar instrument where

there is a matching of swap payments and changes in market value of the position) and there is an exact match between the reference obligation, the maturity, and the currency of the swap and the debt or securitization position.

The agencies are clarifying in the final rule that in cases where a total return swap references a portfolio of positions with different maturity dates, the total return swap maturity date must match the maturity date of the underlying asset in that portfolio that has the latest maturity date.

The January 2011 proposal also specified that if a set of transactions consisting of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge does not meet the criteria for no specific risk add-on described above, the specific risk add-on for the set of transactions is equal to 20.0 percent of the specific risk add-on for the side of the transaction with the higher specific risk add-on, provided that: (1) the credit risk of the position is fully hedged by a credit default swap (or similar instrument); (2) there is an exact match between the reference obligation and currency of the credit derivative hedge and the debt or securitization position; and (3) there is an exact match between the maturity date of the credit derivative hedge and the maturity date of the debt or securitization position.

A commenter noted that credit derivatives are traded on market conventions based on standard maturity dates, whereas debt or securitization instruments may not have standard maturity dates. In response, in the final rule the agencies provide clarification regarding the circumstances under which a bank could consider a credit derivative hedge with a standard maturity date and the debt or securitization position that the credit derivative hedges to have matched maturity dates. In particular, the maturity date of the



credit derivative hedge must be within 30 business days of the maturity date of the debt or securitization position in the case of sold credit protection. In the case of purchased credit protection, the maturity date of the credit derivative hedge must be later than the maturity date of the debt or securitization position, but no later than the standard maturity date for that instrument that immediately follows the maturity date of the debt or securitization position. In this case, the maturity date of the credit derivative hedge may not exceed the maturity date of the debt or securitization position by more than 90 calendar days.

Some commenters asked for clarification regarding whether the 20.0 percent add-on treatment described above would apply to a credit derivative that fully hedges the credit risk of a debt or securitization position, provided there is an exact match as to the obligor or issuer but not necessarily an exact match as to the specific security or obligation. The agencies note that a credit derivative may allow delivery of more than one reference obligation in the event of default of an obligor. In that case, for purposes of determining the specific risk add-on, the criteria of an exact match in reference obligation is satisfied if the debt or securitization position is included among the deliverable obligations provided in the credit derivative documentation.

For a set of transactions that consists of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge that does not meet the criteria for full offset or the 80.0 percent offset described above (for example, there is a mismatch in the maturity of the credit derivative hedge and that of the debt or securitization position), but in which all or substantially all of the price risk has been

hedged, the specific risk add-on is equal to the specific risk add-on for the side of the transaction with the higher specific risk add-on.

With respect to calculating the specific risk add-on for securitization products under the standardized measurement method of section 10 of the January 2011 proposal, commenters indicated that a bank should be permitted to de-construct the components of tranching securitization products in an index in order to give effect to the netting of long and short positions and hedges. Such an approach would mean, for example, that the exposure of various tranches that have some common issuers in otherwise different underlying portfolios would be calculated on an issuer basis and net exposure would be evaluated by aggregating across tranches at the issuer level. The agencies note that netting is allowed under the final rule, consistent with the proposal, for long and short securitization positions in identical issues or indices but not across positions in different issues or indices. Different tranches on the same underlying issue or index also do not qualify for netting. With regard to offsetting treatment, the agencies note that hedging offsets are available under certain conditions as discussed above. For instance, the hedge must have the identical underlying issue or index as the risk position and meet other criteria. A hedge with similar but different underlying issues or indices would not be a sufficient match for offsetting treatment. It is extremely unlikely that a hedge that is a different tranche from the securitization position would match changes in market value, fully hedge the credit risk, or even hedge substantially all the market risk of the securitization position. Therefore this matching of positions would not meet the definition of a hedge in the final rule, which requires a position or positions to offset all, or substantially all, of one or more material risk factors of another position.

A commenter indicated that the agencies should permit banks to use a look-through approach for untranchéd indices that would allow netting at the individual issuer level of index positions against individual issuer credit derivative exposures. The agencies believe such treatment is appropriate in this case as netting of exposures between the individual issuer level and the index is possible, as changes in the market value of certain components of an index can be matched with individual issuer exposures. However, matching of positions at the individual issuer level with tranchéd index positions is difficult, as it is unlikely that changes in market value of the tranchéd index would reasonably match market value changes in tranchéd index positions. Therefore, the matching of such positions would also not meet the definition of a hedge under the final rule.

Another commenter suggested specific treatments for various permutations of cash, synthetic, tranchéd, and untranchéd positions with different offsetting considerations. The agencies decided not to modify the final rule to accommodate these variations and believe the netting benefits and treatment of credit derivative hedges of debt and securitization positions as provided for in the final rule are consistent with the MRA.

One commenter noted that a pay-as-you-go CDS should receive the same full hedge recognition as a total return swap for purposes of determining the specific risk addition under the January 2011 proposal's standardized measurement method. While pay-as-you-go CDSs share several characteristics with total return swaps, the agencies do not believe the swap payments are sufficiently aligned with the changes in the market value of associated debt or securitization positions to warrant full offsetting treatment. If a

credit derivative hedge does not have payments that match changes in the market value of the debt or securitization position, then it does not meet the criteria for no specific risk add-on. However, this hedge still may meet the criteria for a partial offset if it fully hedges the credit risk of the debt or securitization position.

Another commenter suggested permitting banks to measure the specific risk of non-securitization positions that hedge securitization positions by using internal models rather than requiring use of the standardized measurement method for specific risk for these hedge positions. The commenter also requested that the agencies clarify whether securitization positions and their hedges or correlation trading positions and their hedges should be evaluated collectively or separately with regard to specific risk treatment under the January 2011 proposal.

In the case of a non-securitization position that hedges a securitization position that is not a correlation trading position, a bank is permitted to measure the specific risk of the hedge using either an approved internal model or the standardized measurement method. For the securitization position itself, a bank is required to use the standardized measurement method to calculate the specific risk add-on. Thus, in this case, the securitization position and its hedge are not necessarily treated collectively for purposes of measuring specific risk. In the case of a non-securitization position that hedges a correlation trading position, this same treatment applies to the extent the bank is not using a comprehensive risk model to measure the price risk of these positions. However, if a bank is using a comprehensive risk model for a portfolio of correlation trading positions, then the bank must use models to measure the specific risk of positions in that portfolio, inclusive of any hedges. That is, the portfolio is treated collectively when a bank is using

a comprehensive risk model. The bank must also determine the total specific risk add-on for all positions in the portfolio using the standardized measurement method for purposes of determining the comprehensive risk measure. The final rule clarifies that a position that is a correlation trading position under paragraph (2) of that definition and that otherwise meets the definition of a debt position or an equity position shall be considered a debt position or an equity position, respectively, for purposes of section 10 of the final rule.

Another commenter suggested permitting a bank the option of not using a derivative's delta to determine the effective notional amount of a derivative with a nonlinear payoff. The agencies expect an institution engaged in such derivatives activity to be able to calculate a delta and therefore have retained the delta calculation requirement in the final rule. The agencies believe this requirement provides the appropriate factor to convert the reference notional amount into an effective notional amount. While the final rule does not require supervisory approval to use the standardized measurement method, the model used to generate the delta value is subject to the model validation requirements under the final rule.

*Debt and Securitization Positions.* In the December 2011 amendment, the agencies proposed alternative creditworthiness standards for certain positions, consistent with section 939A of the Dodd-Frank Act, as described above. In developing these alternative standards, the agencies strove to establish capital requirements comparable to those published in the 2005 and 2009 revisions to ensure international consistency and competitive equity. At the same time, the agencies sought to develop alternatives that

incorporated relevant policy considerations, including risk sensitivity, transparency, consistency in application, and reduced opportunity for regulatory capital arbitrage.

The proposed alternative standards would set specific risk-weighting factors for various covered positions, including positions that are exposures to sovereign entities, depository institutions, public sector entities (PSEs), financial and non-financial companies, and securitization transactions. Each proposed standard (including alternatives to the proposed standards that the agencies requested comment on in the December 2011 amendment) and the final rule provisions with respect to each standard, are discussed in detail in this section.

*Sovereign Debt Positions.* Under the December 2011 amendment, a sovereign debt position was defined as a direct exposure to a sovereign entity. The proposal defined a sovereign entity as a central government or an agency, department, ministry, or central bank of a central government. A sovereign entity would not include commercial enterprises owned by the central government engaged in activities involving trade, commerce, or profit, which are generally conducted or performed in the private sector. The agencies have retained these definitions in the final rule.

Under the December 2011 amendment, a bank would determine specific risk-weighting factors for sovereign debt positions based on the Organization for Economic Co-operation and Development (OECD) Country Risk Classifications (CRCs).<sup>20</sup> The OECD's CRCs are used for transactions covered by the OECD arrangement on export credits in order to provide a basis under the arrangement for participating countries to

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<sup>20</sup> For more information on the OECD country risk classification methodology, see [http://www.oecd.org/document/49/0,3343,en\\_2649\\_34169\\_1901105\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/49/0,3343,en_2649_34169_1901105_1_1_1_1,00.html).

calculate the premium interest rate to be charged to cover the risk of non-repayment of export credits.

The CRC methodology was established in 1999 and classifies countries into categories based on the application of two basic components (1) the country risk assessment model (CRAM), which is an econometric model that produces a quantitative assessment of country credit risk; and (2) the qualitative assessment of the CRAM results, which integrates political risk and other risk factors not fully captured by the CRAM. The two components of the CRC methodology are combined and result in countries being classified into one of eight risk categories (0-7), with countries assigned to the 0 category having the lowest possible risk assessment and countries assigned to the 7 category having the highest. The OECD regularly updates CRCs for over 150 countries. Also, CRCs are recognized by the BCBS as an alternative to credit ratings.<sup>21</sup>

In the December 2011 amendment, the agencies proposed to assign specific risk-weighting factors to CRCs in a manner consistent with the assignment of risk weights to CRCs under the Basel II standardized framework, as set forth in table 1.

TABLE 1 – MAPPING OF CRC TO RISK WEIGHTS UNDER THE BASEL ACCORD

| CRC CLASSIFICATION         | RISK WEIGHT (IN PERCENT) |
|----------------------------|--------------------------|
| 0-1                        | 0                        |
| 2                          | 20                       |
| 3                          | 50                       |
| 4 to 6                     | 100                      |
| 7                          | 150                      |
| No classification assigned | 100                      |

<sup>21</sup> See “Basel II,” paragraph 55.

Similar to the 2005 revisions, the proposed specific risk-weighting factors for sovereign debt positions would range from zero percent for those assigned a CRC of 0 or 1 to 12.0 percent for sovereign debt positions assigned a CRC of 7. Sovereign debt positions that are backed by the full faith and credit of the United States are to be treated as having a CRC of zero. Also similar to the 2005 revisions, the specific risk-weighting factor for certain sovereigns that are deemed to be of low credit risk based on their CRC would vary depending on the remaining contractual maturity of the position. The specific risk-weighting factors for sovereign debt positions are shown in table 2.

TABLE 2 – SPECIFIC RISK-WEIGHTING FACTORS FOR SOVEREIGN DEBT POSITIONS

|                                 |      | <b>Specific Risk-weighting Factor<br/>(in percent)</b>                             |      |
|---------------------------------|------|--|------|
| CRC of Sovereign                | 0-1  | 0.0  |      |
|                                 | 2-3  | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |      | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |      | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 4-6  | 8.0  |      |
| 7                               | 12.0 |  |      |
| No CRC                          |      | 8.0  |      |
| Default by the Sovereign Entity |      | 12.0   |      |

Consistent with the general risk-based capital rules, in the December 2011 amendment the agencies proposed to permit banks to assign a sovereign debt position a specific risk-weighting factor that is lower than the applicable specific risk-weighting factor in table 2 if the position is denominated in the sovereign entity's currency, the bank has at least an equivalent amount of liabilities in that currency and the sovereign entity



allows banks under its jurisdiction to assign the lower specific risk-weighting factor to the same exposure to the sovereign entity. The agencies have included these provisions in the final rule. As a supplement to the CRC methodology, to ensure that current sovereign defaults and sovereign defaults in the recent past are treated appropriately under the market risk capital rule, the agencies proposed applying a 12.0 percent specific risk-weighting factor to sovereign debt positions in the event the sovereign has defaulted during the previous five years, regardless of its CRC. The agencies proposed to define default by a sovereign entity as noncompliance with its external debt service obligations or its inability or unwillingness to service an existing obligation according to its terms, as evidenced by failure to make full and timely payments of principal and interest, arrearages, or restructuring. In order to better capture restructuring of an obligation in the definition, the final rule defines default by a sovereign entity as noncompliance by the sovereign entity with its external debt service obligations or the inability or unwillingness of a sovereign entity to service an existing obligation according to its original contractual terms, as evidenced by failure to pay principal and interest timely and fully, arrearages, or restructuring. A default would include a voluntary or involuntary restructuring that results in a sovereign entity not servicing an existing obligation in accordance with the obligation's original terms. A bank must assign a specific risk-weighting factor of 8.0 percent to a sovereign debt position if the sovereign does not have a CRC assigned to it, unless the sovereign is in default.

The December 2011 amendment also discussed the potential use of two market-based indicators, in particular CDS spreads or bond spreads, as alternatives or possible supplements to the proposed CRC methodology. The agencies indicated that CDS

spreads for a given sovereign could be used to assign specific risk-weighting factors, with higher CDS spreads resulting in assignments of higher specific risk-weighting factors. Similarly, the agencies indicated that sovereign bond spreads could be used to assign specific risk-weighting factors, with higher bond credit spreads for a given sovereign resulting in higher specific risk-weighting factors. The agencies described potential difficulties in implementing each of these market-based alternatives and solicited comment regarding potential solutions to these limitations.

A number of commenters criticized the agencies' proposal to use CRCs for assigning specific risk-weighting factors, questioning the accuracy, reliability, and transparency of the CRC methodology. Two commenters raised policy concerns with respect to the purpose of section 939A around using measurements produced by the CRCs. One of these commenters expressed concern about the OECD having its own political and economic agenda. The other commenter noted that CRC ratings provide the most favorable rating to OECD members that are designated as high-income countries, without differentiating the varying risks among these countries.

Commenters also suggested that the CRC methodology was not created by the OECD as sovereign risk classifications and should not be used for the purpose of measuring sovereign credit risk because they measure irrelevant factors such as transfer and convertibility risk. Others noted the technical challenges in using the CRC methodology as a result of its limited history that make correlation and probability of default difficult to calculate. Several commenters questioned the logic of replacing one third-party ratings system with another that has shortcomings, such as a lack of risk sensitivity. A few commenters also suggested that the increase in the specific risk-

weighting factor due to default would not sufficiently address the lack of risk sensitivity of CRC ratings.

Several commenters encouraged the agencies to further develop the market-based alternatives to the CRC methodology the agencies discussed in the proposal. One commenter indicated that either of the market-based indicators would be superior to the CRC approach and should be developed further. Another commenter suggested an approach using CDS spreads in place of, or as a supplement to, the CRC methodology. One commenter indicated that sovereign bond spreads are not a reliable basis for the purpose of assigning specific risk-weighting factors because they can be affected by factors other than credit risk.

While recognizing that CRCs have certain limitations, the agencies consider CRCs to be a reasonable alternative to credit ratings and to be a more granular measure of risk than the current treatment based on OECD membership. The proposed definition of default by a sovereign entity was in part meant to address concerns regarding a lack of differentiation among the OECD “high-income” countries. In addition, more than 10 years of historical data is available for CRCs, which the agencies believe is a sufficient basis to evaluate this information. While the two market-based indicators have some conceptual merit, as noted by certain commenters the application of either would require considerably more evaluation in order to mitigate potential CDS or bond spread volatility and other major operational difficulties. As the agencies believe practical application of these market-based indicators would require further study before they could be used in a prudential framework such as a final rule, the agencies are adopting the proposed CRC-based methodology in the final rule.

In the final rule, the agencies made technical changes to section 10(b)(2)(i) in order to improve clarity regarding when sovereign default will result in assignment of a 12.0 percent specific risk-weighting factor. The language “immediately upon determination that the sovereign entity has defaulted on any outstanding sovereign debt position” has been replaced with “immediately upon determination that a default has occurred.” The language “if the sovereign entity has defaulted on any sovereign debt position during the previous five years” has been replaced with “if a default has occurred within the previous five years.”

Also, because the specific risk-weighting factors for debt positions that are exposures to a PSE, depository institution, foreign bank or credit union are tied to the CRC of the sovereign, the agencies have made clarifying and conforming changes to the specific risk-weighting factor tables for these exposures. A bank must assign an 8.0 percent specific risk-weighting factor to a sovereign debt position if the sovereign entity does not have a CRC assigned to it, unless the sovereign debt position must otherwise be assigned a higher specific risk-weighting factor. For each table, the agencies have added a “Default by the Sovereign Entity” category with a corresponding 12.0 percent specific risk-weighting factor.

*Exposures to Certain Supranational Entities and Multilateral Development Banks.*

The December 2011 amendment proposed assigning a specific risk-weighting factor of zero to exposures to certain supranational entities and multilateral development banks. Consistent with the December 2011 amendment, the final rule defines an MDB to include the International Bank for Reconstruction and Development, the Multilateral Investment Guarantee Agency, the International Finance Corporation, the Inter-American

Development Bank, the Asian Development Bank, the African Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the European Investment Fund, the Nordic Investment Bank, the Caribbean Development Bank, the Islamic Development Bank, the Council of Europe Development Bank, and any other multilateral lending institution or regional development bank in which the U.S. government is a shareholder or contributing member or which the bank's primary federal supervisor determines poses comparable credit risk.

Consistent with the treatment of exposures to certain supranational entities under Basel II, the final rule assigns a zero percent specific risk-weighting factor to debt positions that are exposures to the Bank for International Settlements, the European Central Bank, the European Commission, and the International Monetary Fund.

Also, generally consistent with the Basel framework, debt positions that are exposures to MDBs as defined in the final rule receive a zero percent specific risk-weighting factor under the final rule. This treatment is based on these MDBs' generally high-credit quality, strong shareholder support, and a shareholder structure comprised of a significant proportion of sovereign entities with strong creditworthiness.

Debt positions that are exposures to other regional development banks and multilateral lending institutions that do not meet these requirements would generally be treated as corporate debt positions and would be subject to the methodology described below. The agencies received no comments on the proposed treatment of MDBs and are adopting the proposed treatment in the final rule.

*Exposures to Government-sponsored Entities.* Under the December 2011 amendment, a government-sponsored entity (GSE) was defined as an agency or

corporation originally established or chartered by the U.S. government to serve public purposes specified by the U.S. Congress but whose obligations are not explicitly guaranteed by the full faith and credit of the U.S. government. Under the December 2011 amendment, debt positions that are exposures to GSEs would be assigned a specific risk-weighting factor of 1.6 percent. GSE equity exposures, including preferred stock, were assigned a specific risk-weighting factor of 8.0 percent.

A few commenters suggested that the agencies treat debt positions that are exposures to GSEs as explicitly backed by the full faith and credit of the United States and assign them the same specific risk-weighting factor as sovereign debt positions backed by the full faith and credit of the United States, which is zero. Although Fannie Mae and Freddie Mac are currently in government conservatorship and have certain capital support commitments from the U.S. Treasury, GSE obligations are not explicitly backed by the full faith and credit of the United States. Therefore, the agencies have adopted the proposed treatment of exposures to GSEs without change.

*Debt Positions that are Exposures to Depository Institutions, Foreign Banks, and Credit Unions.* Under the December 2011 amendment, specific risk-weighting factors would be applied to debt positions that are exposures to depository institutions, foreign banks, or credit unions based on the applicable specific risk-weighting factor of the entity's sovereign of incorporation, as shown in table 3. The term "sovereign of incorporation" refers to the country where an entity is incorporated, chartered, or similarly established. If a relevant entity's sovereign of incorporation is assigned to the 8.0 percent specific risk-weighting factor because of a lack of a CRC rating, then a debt

position that is an exposure to that entity also would be assigned an 8.0 percent specific risk-weighting factor.

TABLE 3 – SPECIFIC RISK-WEIGHTING FACTORS FOR DEPOSITORY INSTITUTION, FOREIGN BANK, AND CREDIT UNION DEBT POSITIONS

|                                 |     | <b>Specific Risk-weighting Factor<br/>(in percent)</b>                             |      |
|---------------------------------|-----|--|------|
| CRC of Sovereign                | 0-2 | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 3   | 8.0  |      |
|                                 | 4-7 | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

Consistent with the treatment under the general risk-based capital rules, debt positions that are exposures to a depository institution or foreign bank that are includable in the regulatory capital of that entity but that are not subject to deduction as a reciprocal holding would be assigned a specific risk-weighting factor of at least 8.0 percent.

A few commenters discussed the use of the CRC-based methodology to assign specific risk-weighting factors to positions that are exposures to depository institutions, foreign banks, and credit unions. Some of these commenters expressed concern that the CRC approach does not recognize differences in relative risk between individual entities under a given sovereign. One commenter suggested using a CDS spread methodology to increase risk sensitivity and decrease procyclicality, or where CDS spread data are unavailable, using asset swap or bond spreads as a proxy. Although there is a lack of risk

differentiation among these entities in a given sovereign of incorporation, this approach allows for a consistent, standardized application of capital requirements to these positions and, like the Basel capital framework and the current market risk capital rule, links the ultimate credit risk associated with these entities to that of the sovereign entity. In contrast to the current treatment, however, the CRC-based methodologies allow for greater differentiation of risk among exposures. Also, market-based methodologies proposed for depository institutions would require further study to determine feasibility. Therefore, the agencies are adopting the CRC-based methodology as proposed.

In addition, as discussed above, the agencies are clarifying in the final rule that a bank must assign a 12.0 percent specific risk-weighting factor to a debt position that is an exposure to a foreign bank either upon determination that an event of sovereign default has occurred in the foreign bank's sovereign of incorporation, or if a sovereign default has occurred in the foreign bank's sovereign of incorporation within the previous five years.

*Exposures to Public Sector Entities.* The December 2011 amendment would define a PSE as a state, local authority, or other governmental subdivision below the level of a sovereign entity. This definition does not include a commercial company owned by a government that engages in activities involving trade, commerce, or profit, which are generally conducted or performed in the private sector. In the December 2011 amendment, the specific risk-weighting factor assigned to a debt position that is an exposure to a PSE would be based on the CRC assigned to the sovereign of incorporation of the PSE as well as whether the position is a general obligation or a revenue obligation of the PSE. This methodology is similar to the approach under the Basel II standardized



approach for credit risk, which allows a bank to assign a risk weight to a PSE based on the credit rating of the PSE's sovereign of incorporation.

Under the December 2011 amendment, a general obligation would be defined as a bond or similar obligation that is guaranteed by the full faith and credit of a state or other political subdivisions of a sovereign entity. A revenue obligation would be defined as a bond or similar obligation that is an obligation of a state or other political subdivision of a sovereign entity but which the government entity is committed to repay with revenues from a specific project or activity versus general tax funds.

The proposed specific risk-weighting factors for debt positions that are exposures to general obligations and revenue obligations of PSEs, based on the PSE's sovereign of incorporation, are shown in tables 4 and 5, respectively.

**TABLE 4 – SPECIFIC RISK-WEIGHTING FACTORS FOR PSE GENERAL OBLIGATION DEBT POSITIONS**

|                                 |     | <b>General Obligation<br/>Specific Risk-weighting Factor (in percent)</b>          |      |
|---------------------------------|-----|--|------|
| CRC of Sovereign                | 0-2 | Remaining contractual maturity is 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity is greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 3   | 8.0  |      |
|                                 | 4-7 | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

**TABLE 5 – SPECIFIC RISK-WEIGHTING FACTORS FOR PSE REVENUE OBLIGATION DEBT POSITIONS**

|                  |     | <b>Revenue Obligation<br/>Specific Risk-weighting Factor (in percent)</b>          |      |
|------------------|-----|--|------|
| CRC of Sovereign | 0-1 | Remaining contractual maturity is 6 months or less                                 | 0.25 |
|                  |     | Remaining contractual maturity is greater than 6 and up to and including 24 months | 1.0  |
|                  |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                  | 2-3 | 8.0  |      |
|                  | 4-7 | 12.0   |      |

|                                 |      |
|---------------------------------|------|
| No CRC                          | 8.0  |
| Default by the Sovereign Entity | 12.0 |

In certain cases, the agencies have allowed a bank to use specific risk-weighting factors assigned by a foreign banking supervisor to debt positions that are exposures to PSEs in that supervisor's home country. Therefore, the agencies proposed to allow a bank to assign a specific risk-weighting factor to a debt position that is an exposure to a foreign PSE according to the specific risk-weighting factor that the foreign banking supervisor assigns. In no event, however, would the specific risk-weighting factor for such a position be lower than the lowest specific risk-weighting factor assigned to that PSE's sovereign of incorporation. The agencies have made a conforming change to the final rule, to more clearly indicate that the above treatment regarding exposures to PSEs in a supervisor's home country applies to both PSE general obligation and revenue obligation debt positions.

Few commenters expressed views related to the treatment of positions that are exposures to PSEs. Several commenters expressed concern with the proposed approach noting that the methodology does not recognize differences in the relative risks of PSEs of the same sovereign. These commenters expressed support for the use of either CDS or bond spreads instead of the CRC-based approach. For the reasons discussed above with respect to the CRC methodology generally, the agencies have decided to finalize the proposed specific risk-weighting factors for PSEs. In addition, as for depository institutions, foreign banks and credit unions, the agencies are clarifying that a bank must assign a 12.0 percent specific risk-weighting factor to a debt position that is an exposure to a PSE either upon determination that an event of sovereign default has occurred in the

PSE's sovereign of incorporation, or if a sovereign default has occurred in the PSE's sovereign of incorporation within the previous five years.

*Corporate Debt Positions.* The December 2011 amendment proposed to define a corporate debt position as a debt position that is an exposure to a company that is not a sovereign entity, the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund, a multilateral development bank, a depository institution, a foreign bank, a credit union, a PSE, a GSE, or a securitization.

In the December 2011 amendment, the agencies proposed to allow a bank to assign specific risk-weighting factors to corporate debt positions using a methodology that incorporates market-based information and historical accounting information (indicator-based methodology) to assign specific risk-weighting factors to corporate debt positions that are exposures to publicly-traded entities that are not financial institutions, and to assign a specific risk-weighting factor of 8.0 percent to all other corporate debt positions. Financial institutions were categorized separately from other entities because of the differences in their balance sheet structures. As an alternative to this methodology, the agencies proposed a simple methodology under which a bank would assign an 8.0 percent specific risk-weighting factor to all its corporate debt positions.

In developing the December 2011 amendment, the agencies considered a number of alternatives to credit ratings for assigning specific risk-weighting factors to debt positions that are exposures to financial institutions. However, each of these alternatives was viewed as either having significant drawbacks or as not being sufficiently developed

to propose. Thus, the agencies proposed to assign a specific risk-weighting factor of 8.0 percent to all corporate debt positions that are exposures to financial institutions.

In the December 2011 amendment, the agencies requested comment on using bond spreads as an alternative approach to assign specific risk-weighting factors to both financial and non-financial corporate debt positions. This type of approach would be forward-looking and may be useful for assigning specific risk-weighting factors to financial institutions.

Another alternative that the agencies discussed in the December 2011 amendment would permit banks to determine a specific risk-weighting factor for a corporate debt position based on whether the position is “investment grade,” which would be defined in a manner generally consistent with the OCC’s proposed revisions to its regulations at 12 CFR 1.2(d). The OCC proposed to revise its investment securities regulations to remove references to Nationally Recognized Statistical Rating Organization credit ratings, consistent with section 939A of the Dodd-Frank Act.<sup>22</sup> Under the OCC’s proposed revisions, a security would be “investment grade” if the issuer of the security has an adequate capacity to meet financial commitments under the security for the projected life of the security. To meet this new standard, national banks would have to determine that the risk of default by the obligor is low and the full and timely repayment of principal and interest is expected. When determining whether a particular issuer has an adequate capacity to meet financial commitments under a security for the projected life of the security, the national banks would be required to consider a number of factors, which

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<sup>22</sup> 76 FR 73526 (Nov. 29, 2011).

may include external credit ratings, internal risk ratings, default statistics, and other sources of information as appropriate for the particular security. While external credit ratings and assessments would remain a source of information and provide national banks with a standardized credit risk indicator, banks would be expected to supplement this information with due diligence processes and analyses appropriate for the bank's risk profile and for the size and complexity of the debt instrument. Under the OCC's approach, it would be possible for a security rated in the top four rating categories by a credit rating agency not to satisfy the proposed revised investment grade standard.

Several commenters expressed concerns that the proposed indicator-based methodology for non-financial publicly traded company debt positions is over-simplified, not risk sensitive, and procyclical. These commenters indicated that the methodology does not distinguish risks across different industries nor does it reflect detailed debt characteristics that could affect creditworthiness, such as term structure. These commenters also stated that the methodology is excessively conservative and results in much higher capital requirements for corporate debt positions with minimal credit risk than required by the MRA. Several commenters also noted that the indicators tend to be backward-looking when capital requirements are intended to protect against the risk of possible future events.

Some commenters supported the agencies' use of market data in assigning specific risk-weighting factors to corporate debt positions but also acknowledged that alternatives based on market data would require further study and refinement. These commenters suggested modifications to the proposed alternatives to be used to calculate specific risk capital requirements for corporate debt positions, such as recalibrating the

indicator-based methodology, or using an approach based on relative CDS or bond spreads. Commenters acknowledged the agencies' concerns with using CDS or bond spreads and agreed that these approaches are imperfect but viewed these alternatives with refinement as potentially superior to the proposed indicator-based methodology.

Specifically, several commenters suggested that a number of shortcomings of the proposed alternatives the agencies discussed in the December 2011 amendment could be addressed through technical modifications. These modifications include using rolling averages of CDS or bond spreads to reduce volatility, placing less reliance on inputs with illiquid underlying instruments, normalizing spreads against a more suitable benchmark, and possibly reducing the buckets to a binary "low risk" and "high risk" distinction to improve stability over time.

With respect to assigning specific risk-weighting factors based on the OCC's investment grade approach, a few commenters expressed reservations about such an approach. While acknowledging that the approach would be simpler than the proposed indicator-based methodology, commenters noted that this approach would be subjective and could result in different banks arriving at different assessments of creditworthiness for similar exposures.

The agencies continue to have significant reservations with the market-based alternatives, as bond markets may sometimes misprice risk and bond spreads may reflect factors other than credit risk. The agencies also are concerned that such an approach could introduce undue volatility into the risk-based capital requirements. The agencies have not identified a market-based alternative that they believe would provide sufficient risk sensitivity, transparency, and feasibility as a methodology for assigning specific risk-

weighting factors to corporate debt positions. While certain suggested modifications of proposed alternatives may provide some meaningful improvement, such modifications would require further study to determine appropriateness.

The agencies have considered the commenters' concerns regarding the indicator-based methodology. The agencies have concluded that concerns about the feasibility and efficacy of the indicator-based methodology, as expressed by commenters, outweigh policy considerations for implementing it and have decided not to include the approach in the final rule. Instead, the agencies have adopted in the final rule an investment grade methodology for assigning specific risk-weighting factors to all corporate debt positions of entities that have issued and outstanding public debt instruments, revised to include a maturity factor consistent with the current rules. Adoption of the investment grade methodology is in response to the significant shortcomings of the indicator- and market-based methodologies noted by commenters, and the need for an alternative that is reasonably risk sensitive and simple to implement. Banks must apply the investment grade methodology to all applicable corporate debt positions as described below. Additionally, the agencies have not included the proposed "simple methodology," which would assign a specific risk-weighting factor of 8.0 percent to all corporate debt positions, in the final rule. This alternative was introduced to allow banks an option that would mitigate calculation burden, but the agencies have determined that it is not necessary to include it in the final rule, as discussed below.

The agencies acknowledge concerns regarding potential disparity between banks in their investment grade designation for similar corporate debt positions. However, the agencies believe that ongoing regulatory supervision of banks' credit risk assessment

practices should address such disparities and that, on balance, the investment grade methodology would allow banks to calculate a more risk sensitive specific risk capital requirement for corporate debt positions, including those that are exposures to non-depository financial institutions. The agencies observe that this approach should be straightforward to implement because many banks would already be required to make similar investment grade determinations based on the OCC's revised investment permissibility standards. In addition, the agencies believe that concerns regarding potential disparate treatment would be addressed through ongoing supervision of bank's credit risk assessment practices.

Under the final rule, except as provided below, for corporate debt positions of entities that have issued and outstanding publicly traded instruments, a bank will first need to determine whether or not a given corporate debt position meets the definition of investment grade. To be considered investment grade under the final rule, the entity to which the bank is exposed through a loan or security, or the reference entity (with respect to a credit derivative), must have adequate capacity to meet financial commitments for the projected life of the asset or exposure. An entity is considered to have adequate capacity to meet financial commitments if the risk of its default is low and the full and timely repayment of principal and interest is expected. Corporations with issued and outstanding public instruments generally have to meet significant public disclosure requirements which should facilitate a bank's ability to obtain information necessary to make an investment grade determination for such entities. In contrast, banks are less likely to have access to such information for an entity with no issued and outstanding public instruments. Therefore, banks will not be allowed to use the investment grade



methodology for the positions of such “private” corporations, and positions that are exposures to such corporations will be assigned an 8.0 percent specific risk-weighting factor.

Based on the bank’s determination of whether a corporate debt position eligible for treatment under the investment grade methodology is investment grade, the bank must assign a specific risk-weighting factor based on the category and remaining contractual maturity of the position, in accordance with table 6 below. In general, there is a positive correlation between relative credit risk and the length of a corporate debt position’s remaining contractual maturity. Therefore, corporate debt positions deemed investment grade with a shorter remaining contractual maturity are generally assigned a lower specific risk-weighting factor. Corporate debt positions not deemed investment grade must be assigned a specific risk-weighting factor of 12.0 percent.

**TABLE 6 – SPECIFIC RISK-WEIGHTING FACTORS FOR CORPORATE DEBT POSITIONS UNDER THE INVESTMENT GRADE METHODOLOGY**

| <b>Category</b>      | <b>Remaining Contractual Maturity</b>            | <b>Specific Risk-weighting Factor (in percent)</b> |
|----------------------|--|--|
| Investment Grade     | 6 months or less                                 | 0.50   |
|                      | Greater than 6 and up to and including 24 months | 2.00   |
|                      | Greater than 24 months                           | 4.00   |
| Not investment Grade |  | 12.00  |

Consistent with the proposed rule, under the final rule, a bank must assign a specific risk-weighting factor of at least 8.0 percent to an interest-only mortgage-backed security that is not a securitization position. Also, because the ultimate economic condition of corporations is significantly dependent upon the economic conditions of their sovereign of incorporation, a bank shall not assign a corporate debt position a

specific risk-weighting factor that is lower than the specific risk-weighting factor that corresponds to the CRC of the issuer's sovereign of incorporation.

*Securitization Positions.* In the December 2011 amendment, the agencies proposed to allow banks to use a simplified version of the Basel II advanced approaches supervisory formula approach, referred to in the proposal as the SSFA, to assign specific risk-weighting factors to securitization and resecuritization positions. Additionally, the agencies proposed that a bank that either could not use the SSFA or chose not to use the SSFA must assign a specific risk-weighting factor of 100 percent to a securitization position, (equivalent to a 1,250 percent risk weight).

Similar to the SFA, the proposed SSFA is a formula that starts with a baseline capital requirement derived from the capital requirements that apply to all exposures underlying a securitization and then assigns specific risk-weighting factors based on the subordination level of a position. The proposed SSFA was designed to apply relatively higher capital requirements to the more risky junior tranches of a securitization that are the first to absorb losses, and relatively lower requirements to the most senior positions. As proposed in the December 2011 amendment, the SSFA makes use of a parameter "K<sub>G</sub>," which is the weighted-average risk weight of the underlying exposures calculated using the agencies' general risk-based capital rules. In addition, the proposed SSFA required as inputs the attachment and detachment points of a particular securitization position and the amount of cumulative losses experienced by the underlying exposures of the securitization.

The SSFA as proposed would apply a 100 percent specific risk-weighting factor (equivalent to a 1,250 percent risk weight) to securitization positions that absorb losses

up to the amount of capital that would be required for the underlying exposures under the agencies' general risk-based capital rules had those exposures been held directly by a bank.

In addition, the December 2011 amendment proposed a supervisory specific risk-weighting factor floor (flexible floor) that would have increased from 1.6 percent to as high as 100 percent when cumulative losses on the underlying assets of the securitization exceeded 150 percent of  $K_G$ . Thus, at the inception of a securitization, the SSFA as proposed would require more capital on a transaction-wide basis than would be required if the pool of assets had not been securitized. That is, if the bank held every tranche of a securitization, its overall capital charge would be greater than if the bank held the underlying assets in portfolio. The agencies believe this overall outcome is important in reducing the likelihood of regulatory capital arbitrage through securitizations.

The agencies received significant comment on the proposed SSFA. Most commenters criticized the SSFA as proposed. Some commenters asserted that the application of the SSFA would result in prohibitively high capital requirements, which could lead to restricted credit access and place U.S. banks at a competitive disadvantage relative to non-U.S. banks. Commenters also stated that excessively high capital requirements for residential and commercial mortgage securitizations would stifle the growth of private residential mortgage-backed securitization and commercial real estate markets.

Many commenters expressed concerns that the SSFA inputs lacked risk sensitivity. In particular, commenters stated that  $K_G$  allowed for only two distinctions based on the type of underlying asset; residential mortgages and all other assets. Also,

commenters asserted that the proposed SSFA would not consider structural features or enhancements (for example, trigger mechanisms and reserve accounts) that may mitigate the risk of a given securitization.

In order to maintain uniform treatment between the final rule and the general risk-based capital rules, and minimize capital arbitrage, the agencies have maintained the definition of  $K_G$  as the weighted-average total capital requirement of the underlying exposures calculated using the general risk-based capital rules. In terms of enhancements, the agencies note that the relative seniority of the position as well as all cash funded enhancements are recognized as part of the SSFA calculation.

Commenters were concerned particularly with the flexible floor, which, as explained above, would increase the minimum specific risk-weighting factor for a securitization position if losses on the underlying exposures reached certain levels. Several commenters noted that the proposed flexible floor would not take into consideration the lag between rapidly rising delinquencies and realized losses, which may lead to underestimation of market risk capital required to protect a bank against the actual risk of a position. In its place, commenters suggested using more forward-looking indicators, such as the level of delinquencies of a securitization's underlying exposures. Commenters also noted that in combination with a risk-insensitive  $K_G$ , the flexible floor approach would lead to a situation in which relatively small losses may result in large increases in a senior tranche's capital requirements. Some commenters indicated that, in certain circumstances, the proposed approach could result in a high quality portfolio receiving a higher floor requirement than a lower quality portfolio with the same level of losses.

Commenters also requested that the agencies clarify the definition of attachment point, because the proposed rule indicated that the attachment point may include a reserve account to the extent that cash is present in the account, but the preamble to the proposal indicated that credit enhancements, such as excess spread would not be recognized. In addition, commenters stated that the attachment point should recognize the carrying value of a securitization position if the position is held at a discount from par, because the cushion created by such a discount should be an important factor in determining the amount of risk-based capital a bank must hold against a securitization position. The agencies have considered whether discounts from par should be recognized as credit enhancement. The agencies are concerned about the uncertainty of valuing securitization positions and as a result have decided not to recognize discounts from par as credit enhancements for purposes of calculating specific risk add-ons for these positions.

Commenters also stated that the proposed 20 percent absolute floor for specific risk-weighting factors assigned to securitization positions would be out of alignment with international standards and could place U.S. banks at a competitive disadvantage relative to non-U.S. banks. The agencies believe that a 20 percent floor is reasonably prudent given recent performance of securitization structures during times of stress and have retained this floor in the final rule.

Some commenters suggested that instead of applying the SSFA, the agencies should allow banks to “look through” senior-most securitization positions and use the risk weight applicable to the underlying assets of the securitization under the general risk-based capital rules. Given the considerable variability of tranche thickness for any given securitization, the agencies believe there is an opportunity for regulatory capital arbitrage

with respect to the other approaches specified in the final rule. Therefore, the agencies have not included this alternative in the final rule.

In order to improve the risk sensitivity of the SSFA, several commenters proposed replacing the flexible floor with an adjustment to  $K_G$ , based on either cumulative losses or delinquencies of a given securitization's underlying assets. To make the SSFA more risk sensitive and more forward-looking, the agencies have included in the final rule a modification to the SSFA, replacing the flexible floor with an adjustment of  $K_G$ , based on delinquencies of the underlying assets of the securitization position. Specifically, the parameter  $K_G$  is modified and translated into a parameter  $K_A$ , which is set equal to the weighted average of the  $K_G$  value, plus the multiple of a fixed parameter equal to 0.5 and the weighting variable  $W$ , described below.

$$K_A = (1 - W) \cdot K_G + (0.5 \cdot W)$$

As noted above, in the final rule,  $K_G$  is the weighted-average total capital requirement of the underlying exposures calculated using the general risk-based capital rules. The agencies believe it is important to calibrate specific risk-weighting factors for securitization exposures around the risk associated with the underlying assets of the securitization. This calibration also reduces the potential for arbitrage between the market risk and credit risk capital rules. The agencies therefore have maintained in the final rule the link between  $K_G$  and the risk weights in the general risk-based capital rules and no additional distinctions based on the type of underlying assets has been added for determination of  $K_G$ . The agencies believe that the SSFA as modified provides for more appropriate and risk-sensitive capital requirements for securitization positions.

In the final rule,  $K_G$  is expressed as a decimal value between zero and 1 (that is, an average risk weight of 100 percent means that  $K_G$  would equal 0.08). The important difference between this revision in the final rule and the December 2011 amendment is the addition of the weighting variable,  $W$ , which is the ratio of the sum of the dollar amounts of any underlying exposures within the securitized pool that are “delinquent” to the ending balance, measured in dollars, of underlying exposures. Delinquent exposures are those that are 90 days or more past due, subject to a bankruptcy or insolvency proceeding, in the process of foreclosure, held as real estate owned, have contractually deferred interest payments for 90 days or more, or are in default.

The agencies believe that the overall capital requirement will be sufficiently responsive and prudent to ensure sufficient capital for pools that demonstrate credit weakness. Therefore, Table 7 of the December 2011 amendment has been removed and, as noted above, the flexible floor has been replaced by an approach that uses  $K_A$ . Given this change, the specification of the SSFA in the final rule is as follows:

$$K_{SSFA} = \frac{e^{a \cdot u} - e^{a \cdot l}}{a(u-l)} .$$

$K_{SSFA}$  is the specific risk-weighting factor for the securitization position and is a function of three variables, labeled  $a$ ,  $u$ , and  $l$ . The constant  $e$  is the base of the natural logarithms (which equals 2.71828). The variables  $a$ ,  $u$ , and  $l$  have the following definitions:

$$a = -\frac{1}{p \cdot K_A}$$

$$u = D - K_A$$

$$l = A - K_A$$

The values of  $A$  and  $D$  denote the attachment and detachment points, respectively, for the position. Specifically,  $A$  is the attachment point for the position that represents the threshold at which credit losses will first be allocated to the position. This input is the ratio, expressed as a decimal value between zero and one, of the current dollar amount of the underlying exposures that are subordinated to the bank's position to the current dollar amount of underlying exposures. Any reserve account funded by the accumulated cash flows from the underlying exposures that is subordinated to the position that contains the bank's securitization exposure may be included in the calculation of  $A$  to the extent that cash is present in the account.  $D$  is the detachment point for the position that represents the threshold at which credit losses of principal allocated to the position would result in a total loss of principal. This input, which is a decimal value between zero and one, equals the value of  $A$  plus the ratio of the current dollar amount of the securitization positions that are *pari passu* (that is, have equal seniority with respect to credit risk) with the position to the current dollar amount of the underlying exposures. The SSFA specification is completed by the supervisory calibration parameter  $p$ , which is set equal to 0.5 for securitization positions that are not resecuritizations and 1.5 for resecuritization positions and the variable  $K_A$ , which is described above.

Commenters expressed concern that the December 2011 amendment was unclear regarding how the SSFA can be applied to certain securitization structures, in particular resecuritizations. For example, commenters noted that the SSFA methodology was



unclear as to the appropriate method for calculating the weighted-average risk weight for a pool of securitized assets when the pool included securitization positions. Under these circumstances, the agencies expect banks to use either the SSFA or, where appropriate, the SFA to measure that asset's contribution to  $K_G$ . For example, consider a hypothetical securitization tranche that has an attachment point at 0.06 and a detachment point at 0.07. Then assume that 90 percent of the underlying exposures were mortgage loans that qualified for a 50 percent risk weight and that the remaining 10 percent of the underlying exposures was a single tranche of a prior securitization (where those underlying mortgages also qualified for a 50 percent weight), thus qualifying the position as a resecuritization. Next, assume that the attachment point  $A$  of the securitization that is the 10 percent share of the resecuritization is 0.06 and the detachment point  $D$  is 0.08. Finally, assume that there are zero delinquent exposures in both the securitization and resecuritization pools.

The value of  $K_G$  for the resecuritization exposure would equal the weighted average of the two distinct  $K_G$  values. For the mortgages that qualify for the 50 percent risk weight and represent 90 percent of the resecuritization,  $K_G$  equals 0.04 (i.e., 50 percent of the 8 percent risk-based capital standard).

$$K_{G, \text{resecuritization}} = (0.9 \cdot 0.04) + (0.1 \cdot K_{G, \text{securitization}})$$

To calculate the value of  $K_{G, \text{securitization}}$  a bank would use the attachment and detachment points of 0.06 and 0.08, respectively. Applying those input parameters to the SSFA (together with  $p = 0.5$  and  $K_G = 0.04$ ) results in a  $K_{G, \text{securitization}}$  equal to 0.2325.

Substituting this value into the equation yields:

$$K_{G, \text{resecuritization}} = (0.9 \cdot 0.04) + (0.1 \cdot 0.2325) = 0.05925$$

This value of 0.05925 for  $K_{G, \text{resecuritization}}$ , would then be used in the calculation of the specific risk-weighting factor for the tranche of the resecuritization (where  $A = 0.06$ ,  $B = 0.07$ , and  $p = 1.5$ ). The result is a specific risk-weighting factor of 0.938 percent for the tranche that runs from 0.06 to 0.07. In this case, given that the attachment point is very close to the value of  $K_{G, \text{resecuritization}}$ , the capital requirement is nearly equal to dollar-for-dollar.

In the December 2011 amendment, the agencies described several possible alternative approaches to, or modifications of, the SSFA. These included alternative calibrations for the SSFA, a concentration ratio, a credit spread approach, a third-party vendor approach, and the use of the SFA for banks subject to the advanced approaches rules to calculate the specific risk-weighting factors for their securitization positions under the market risk capital rule. The agencies also requested comment on possible alterations to certain parameters in the SSFA, to better align specific risk-weighting factors produced by the SSFA with the specific risk-weighting factors that would otherwise be generated by the Basel Committee's market risk framework.

Several commenters did not support adoption of the alternative market-based approaches or the vendor approach described in the December 2011 amendment, and stated that an analytical assessment of creditworthiness such as the SSFA would be preferable. In addition, several commenters strongly supported using the SFA as permitted under the advanced approaches rules, particularly for correlation trading positions.

The agencies also have concerns about using a credit spread-based measure. These concerns relate particularly to the significant technical obstacles that would need to be overcome to make use of market based alternatives. The agencies therefore have decided to not include such measures as part of the final rule. Also, the agencies believe the vendor approach would require further study in order to implement it as part of a prudential framework.

However, in response to favorable comments regarding inclusion of the SFA, the agencies are incorporating the SFA into the final rule.<sup>23</sup> As discussed above, a bank that uses the advanced approaches rules and that qualifies for, and has a securitization position that qualifies for the SFA must use the SFA to calculate the specific risk add-on for the securitization position. The bank must calculate the specific risk add-on using the SFA as set forth in the advanced approaches rules and in accordance with section 10 of the final rule.<sup>24</sup> As mentioned above, a bank may not use the SFA for the purpose of calculating its general risk-based capital ratio denominator. If the bank or the securitization position does not qualify for the SFA, the bank may assign a specific risk-weighting factor to the securitization position using the SSFA or assign a 100 percent specific risk-weighting factor to the position. The agencies have established this hierarchy in order to provide flexibility to banks that have already implemented the SFA

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<sup>23</sup> When using the SFA, a bank must meet minimum requirements under the Basel II internal ratings-based approach to estimate probability of default and loss given default for the underlying exposures. Under the U.S. risk-based capital rules, the SFA is available only to banks that have been approved to use the advanced approaches rules. *See* 12 CFR part 3, appendix C, section 45 (OCC); 12 CFR part 208, appendix F, section 45, and 12 CFR part 225, appendix G, section 45 (Board); 12 CFR part 325, appendix D, section 45 (FDIC).

<sup>24</sup> *See id.*

but also to avoid potential capital arbitrage by requiring uniform treatment of securitizations according to which approach is feasible for a bank, and not allowing selective use of the SFA or the SSFA for any given position.

*N<sup>th</sup>-to-default credit derivatives.* Under the January 2011 proposal, the total specific risk add-on for a portfolio of n<sup>th</sup>-to-default credit derivatives would be calculated as the sum of the specific risk add-ons for individual n<sup>th</sup>-to-default credit derivatives, as computed therein. A bank would need to calculate a specific risk add-on for each n<sup>th</sup>-to-default credit derivative position regardless of whether the bank is a net protection buyer or net protection seller.

For first-to-default credit derivatives, the specific risk add-on would be the lesser of (1) the sum of the specific risk add-ons for the individual reference credit exposures in the group of reference exposures and (2) the maximum possible credit event payment under the credit derivative contract. Where a bank has a risk position in one of the reference credit exposures underlying a first-to-default credit derivative and the credit derivative hedges the bank's risk position, the bank would be allowed to reduce both the specific risk add-on for the reference credit exposure and that part of the specific risk add-on for the credit derivative that relates to the reference credit exposure such that its specific risk add-on for the pair reflects the bank's net position in the reference credit exposure. Where a bank has multiple risk positions in reference credit exposures underlying a first-to-default credit derivative, this offset would be allowed only for the underlying exposure having the lowest specific risk add-on.

For second-or-subsequent-to-default credit derivatives, the specific risk add-on would be the lesser of (1) the sum of the specific risk add-ons for the individual reference

credit exposures in the group of reference exposures but disregarding the (n-1) obligations with the lowest specific risk add-ons; or (2) the maximum possible credit event payment under the credit derivative contract. For second-or-subsequent-to-default credit derivatives, no offset of the specific risk add-on with an underlying exposure would have been allowed under the proposed rule.

N<sup>th</sup>-to-default derivatives meet the definition of securitizations. To simplify the overall framework for securitizations while maintaining similar risk sensitivity and to provide for a more uniform capital treatment of all securitizations including n<sup>th</sup>-to-default derivatives the final rule requires that a bank determine a specific risk add-on using the SFA for, or assign a specific risk-weighting factor using the SSFA to an n<sup>th</sup>-to-default credit derivative. A bank that does not use the SFA or SSFA for its positions in an n<sup>th</sup>-to-default credit derivative must assign a specific risk-weighting factor of 100 percent to the position. A bank must either calculate a specific risk add-on or assign a specific risk-weighting factor to an n<sup>th</sup>-to-default derivative, irrespective of whether the bank is a net protection buyer or seller. A bank must determine its position in the n<sup>th</sup>-to-default credit derivative as the largest notional dollar amount of all the underlying exposure. This treatment should reduce the complexity of calculating specific risk capital requirements across a banking organization's securitization positions while aligning these requirements with the market risk of the positions in a consistent manner.

When applying the SFA or the SSFA to n<sup>th</sup>-to-default derivatives, the attachment point (parameter A) is the ratio of the sum of the notional amounts of all underlying exposures that are subordinated to the bank's position to the total notional amount of all underlying exposures. For purposes of using the SFA to calculate the specific risk add-

on for the bank's position in an  $n^{\text{th}}$ -to-default derivative, parameter  $A$  must be set equal to the *credit enhancement level* ( $L$ ) input to the SFA formula. In the case of a first-to-default credit derivative, there are no underlying exposures that are subordinated to the bank's position. In the case of a second-or-subsequent-to default credit derivative, the smallest  $(n-1)$  underlying exposure(s) are subordinated to the bank's position.

For the SFA and the SSFA, the detachment point (parameter  $D$ ) is the sum of parameter  $A$  plus the ratio of the notional amount of the bank's position in the  $n^{\text{th}}$ -to-default credit derivative to the total notional amount of the underlying exposures. For purposes of using the SFA to calculate the specific risk add-on for the bank's position in an  $n^{\text{th}}$ -to-default derivative, parameter  $D$  must be set to equal the  $L$  input plus the *thickness of tranche* ( $T$ ) input to the SFA formula.

*Treatment under the Standardized Measurement Method for Specific Risk for Modeled Correlation Trading Positions and Non-modeled Securitization Positions.* The December 2011 amendment specified the following treatment for the determination of the total specific risk add-on for a portfolio of modeled correlation trading positions and for non-modeled securitization positions. For purposes of a bank calculating its comprehensive risk measure with respect to either the surcharge or floor calculation for a portfolio of correlation trading positions modeled under section 9 of the rule, the total specific risk add-on would be the greater of: (1) the sum of the bank's specific risk add-ons for each net long correlation trading position calculated using the standardized measurement method, or (2) the sum of the bank's specific risk add-ons for each net short correlation trading position calculated using the standardized measurement method.

For a bank's securitization positions that are not correlation trading positions and for securitization positions that are correlation trading positions not modeled under section 9 of the final rule, the total specific risk add-on would be the greater of: (1) the sum of the bank's specific risk add-ons for each net long securitization position calculated using the standardized measurement method, or (2) the sum of the bank's specific risk add-ons for each net short securitization position calculated using the standardized measurement method. This treatment would be consistent with the BCBS's revisions to the market risk framework and has been adopted in the final rule as proposed. With respect to securitization positions that are not correlation trading positions, the BCBS's June 2010 revisions provided a transitional period for this treatment. The agencies anticipate potential reconsideration of this provision at a future date.

*Equity Positions.* Under the final rule and consistent with the January 2011 proposal, the total specific risk add-on for a portfolio of equity positions is the sum of the specific risk add-ons of the individual equity positions, which are determined by multiplying the absolute value of the current market value of each net long or short equity position by an appropriate risk-weighting factor.

Consistent with the 2009 revisions, the final rule requires a bank to multiply the absolute value of the current market value of each net long or short equity position by a risk-weighting factor of 8.0 percent. For equity positions that are index contracts comprising a well-diversified portfolio of equity instruments, the absolute value of the current market value of each net long or short position is multiplied by a risk-weighting factor of 2.0 percent. A portfolio is well-diversified if it contains a large number of

individual equity positions, with no single position representing a substantial portion of the portfolio's total market value.

The final rule, like the proposal retains the specific risk treatment in the current market risk capital rule for equity positions arising from futures-related arbitrage strategies where long and short positions are in exactly the same index at different dates or in different market centers or where long and short positions are in index contracts at the same date in different but similar indices. The final rule also retains the current treatment for futures contracts on main indices that are matched by offsetting positions in a basket of stocks comprising the index.

*Due Diligence Requirements for Securitization Positions.* Like the proposed rule, the final rule requires banks to perform due diligence on all securitization positions. These due diligence requirements emphasize the need for banks to conduct their own due diligence of borrower creditworthiness, in addition to any use of third-party assessments, and not place undue reliance on external credit ratings.

In order to meet the proposed due diligence requirements, a bank must be able to demonstrate, to the satisfaction of its primary federal supervisor, a comprehensive understanding of the features of a securitization position that would materially affect its performance by conducting and documenting the analysis described below of the risk characteristics of each securitization position. The bank's analysis must be commensurate with the complexity of the securitization position and the materiality of the position in relation to the bank's capital.

The final rule requires a bank to conduct and document an analysis of the risk characteristics of each securitization position prior to acquiring the position, considering



(1) structural features of the securitization that would materially impact performance, for example, the contractual cash flow waterfall, waterfall-related triggers, credit enhancements, liquidity enhancements, market value triggers, the performance of organizations that service the position, and deal-specific definitions of default; (2) relevant information regarding the performance of the underlying credit exposure(s), for example, the percentage of loans 30, 60, and 90 days past due; default rates; prepayment rates; loans in foreclosure; property types; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographic diversification data on the underlying exposure(s); (3) relevant market data of the securitization, for example, bid-ask spreads, most recent sales price and historical price volatility, trading volume, implied market rating, and size, depth and concentration level of the market for the securitization; and (4) for resecuritization positions, performance information on the underlying securitization exposures, for example, the issuer name and credit quality, and the characteristics and performance of the exposures underlying the securitization exposures. On an on-going basis, but no less frequently than quarterly, the bank must also evaluate, review, and update as appropriate the analysis required above for each securitization position.

The agencies sought comment on the challenges involved in meeting the proposed due diligence requirements and how the agencies might address these challenges while ensuring that a bank conducts an appropriate level of due diligence commensurate with the risks of its securitization positions. Several commenters agreed with the underlying purpose of the proposed due diligence requirements, which is to avoid undue reliance on credit ratings. However, they also stated that banks should still be allowed to consider

credit ratings as a factor in the due diligence process. The agencies note that the rule does not preclude banks from considering the credit rating of a position as part of its due diligence. However, reliance on credit ratings alone is insufficient and not consistent with the expectations of the due diligence requirements.

One commenter criticized the proposed requirements as excessive for “low risk” securitizations, and others requested clarification as to whether the extent of due diligence would be determined by the relative risk of a position. Other commenters expressed concern that the proposed requirement to document the bank’s analysis of the position would be very difficult to accomplish prior to acquisition of a position. As an alternative, some commenters suggested revising the documentation requirements to require completion by the end of the day, except for newly originated securities where banks should be allowed up to three days to satisfy the documentation requirement. Other commenters suggested a transition period for implementation of the proposed due diligence requirements, together with a provision that grandfathers positions acquired prior to the rule’s effective date. The agencies appreciate these concerns and have revised the final rule to allow banks up to three business days after the acquisition of a securitization position to document its due diligence. Positions acquired before the final rule becomes effective will not be subject to this documentation requirement, but the agencies expect each bank to understand and actively manage the risks associated with all of its positions.

Aside from changes noted above, the agencies have adopted in the final rule the due diligence requirements for securitizations as proposed.

## **11. Incremental Risk Capital Requirement**

Consistent with the proposed rule, under section 8 of the final rule, a bank that measures the specific risk of a portfolio of debt positions using internal models must calculate an incremental risk measure for that portfolio using an internal model (incremental risk model). Incremental risk consists of the default risk and credit migration risk of a position. Default risk means the risk of loss on a position that could result from the failure of an obligor to make timely payments of principal or interest on its debt obligation, and the risk of loss that could result from bankruptcy, insolvency, or similar proceeding. Credit migration risk means the price risk that arises from significant changes in the underlying credit quality of the position. With the prior approval of its primary federal supervisor, a bank may also include portfolios of equity positions in its incremental risk model, provided that it consistently includes such equity positions in a manner that is consistent with how the bank internally measures and manages the incremental risk for such positions at the portfolio level. For purposes of the incremental risk capital requirement, default is deemed to occur with respect to an equity position that is included in the bank's incremental risk model upon the default of any debt of the issuer of the equity position. A bank may not include correlation trading positions or securitization positions in its incremental risk model.

Under the final rule, a bank's incremental risk model must meet certain requirements and be approved by the bank's primary federal supervisor before the bank may use it to calculate its risk-based capital requirement. The model must measure incremental risk over a one-year time horizon and at a one-tail, 99.9 percent confidence level, under the assumption of either a constant level of risk or of constant positions.

The liquidity horizon of a position is the time that would be required for a bank to reduce its exposure to, or hedge all of the material risks of, the position in a stressed market. The liquidity horizon for a position may not be less than the shorter of three months or the contractual maturity of the position.

A position's liquidity horizon is a key risk attribute for purposes of calculating the incremental risk measure under the assumption of a constant level of risk because it puts into context a bank's overall risk exposure to an actively managed portfolio. A constant level of risk assumption assumes that the bank rebalances, or rolls over, its trading positions at the beginning of each liquidity horizon over a one-year horizon in a manner that maintains the bank's initial risk level. The bank must determine the rebalancing frequency in a manner consistent with the liquidity horizons of the positions in the portfolio. Positions with longer (that is, less liquid) liquidity horizons are more difficult to hedge and result in more exposure to both default and credit migration risk over any fixed time horizon. In particular, two positions with differing liquidity horizons but exactly the same amount of default risk if held in a static portfolio over a one-year horizon may exhibit significantly different amounts of default risk if held in a dynamic portfolio in which hedging can occur in response to observable changes in credit quality. The position with the shorter liquidity horizon can be hedged more rapidly and with less cost in the event of a change in credit quality, which leads to a different exposure to default risk over a one-year horizon than the position with the longer liquidity horizon.

Several commenters expressed concern that the proposed liquidity horizon of the shorter of three months or the contractual maturity of the position for the incremental risk measure would be excessively long for certain highly liquid exposures, including

sovereign debt. A three-month horizon is the minimum standard established by the BCBS for exposures with longer or no contractual maturities, and the agencies believe that it is important to establish a minimum liquidity horizon to address risks associated with stressed market conditions. Therefore, the agencies have not modified this requirement in the final rule.

Under the January 2011 proposal, a bank could instead calculate the incremental risk measure under the assumption of constant positions. A constant position assumption assumes that a bank maintains the same set of positions throughout the one-year horizon. If a bank uses this assumption, it must do so consistently across all portfolios for which it models incremental risk. A bank has flexibility in whether it chooses to use a constant risk or constant position assumption in its incremental risk model; however, the agencies expect that the assumption will remain fairly constant once selected. As with any material change to modeling assumptions, the proposed rule would require a bank to promptly notify its primary federal supervisor if it changes from a constant risk to a constant position assumption or vice versa. Further, to the extent a bank estimates a comprehensive risk measure under section 9 of the proposed rule, the bank's selection of a constant position or a constant risk assumption must be consistent between the bank's incremental risk model and comprehensive risk model. Similarly, the bank's treatment of liquidity horizons must be consistent between a bank's incremental risk model and comprehensive risk model. The final rule adopts these aspects of the proposal without change.

Consistent with the proposal, the final rule requires a bank's incremental risk model to recognize the impact of correlations between default and credit migration events

among obligors. In particular, the presumption of the existence of a macro-economically driven credit cycle implies some degree of correlation between default and credit migration events across different issuers. The degree of correlation between default and credit migration events of different issuers may also depend on issuer attributes such as industry sector or region of domicile. The model must also reflect the effect of issuer and market concentrations, as well as concentrations that can arise within and across product classes during stressed conditions.

A bank's incremental risk model must reflect netting only of long and short positions that reference the same financial instrument and must also reflect any material mismatch between a position and its hedge. Examples of such mismatches include maturity mismatches as well as mismatches between an underlying position and its hedge (for example, the use of an index position to hedge a single name security).

A bank's incremental risk model must also recognize the effect that liquidity horizons have on dynamic hedging strategies. In such cases, the bank must (1) choose to model the rebalancing of the hedge consistently over the relevant set of trading positions; (2) demonstrate that inclusion of rebalancing results in more appropriate risk measurement; (3) demonstrate that the market for the hedge is sufficiently liquid to permit rebalancing during periods of stress; and (4) capture in the incremental risk model any residual risks arising from such hedging strategies.

An incremental risk model must reflect the nonlinear impact of options and other positions with material nonlinear behavior with respect to default and credit migration changes. In light of the one-year horizon of the incremental risk measure and the extremely high confidence level required, it is important that nonlinearities be explicitly

recognized. Price changes resulting from defaults or credit migrations can be large and the resulting nonlinear behavior of the position can be material. The bank's incremental risk model also must be consistent with the bank's internal risk management methodologies for identifying, measuring, and managing risk.

A bank that calculates an incremental risk measure under section 8 of the rule must calculate its incremental risk capital requirement at least weekly. This capital requirement is the greater of (1) the average of the incremental risk measures over the previous 12 weeks and (2) the most recent incremental risk measure. The final rule adopts the proposed requirements for incremental risk without change.

## **12. Comprehensive Risk Capital Requirement**

Consistent with the January 2011 proposal, section 9 of the final rule permits a bank that has received prior approval from its primary federal supervisor, to measure all material price risks of one or more portfolios of correlation trading positions (comprehensive risk measure) using an internal model (comprehensive risk model). If the bank uses a comprehensive risk model for a portfolio of correlation trading positions, the bank must also measure the specific risk of that portfolio using internal models that meet the requirements in section 7(b) of the final rule. If the bank does not use a comprehensive risk model to calculate the price risk of a portfolio of correlation trading positions, it must calculate a specific risk add-on for the portfolio as would be required under section 7(c) of the final rule, determined using the standardized measurement method for specific risk described in section 10 of the final rule.

A bank's comprehensive risk model must meet several requirements. The model must measure comprehensive risk (that is, all price risk) consistent with a one-year time

horizon and at a one-tail, 99.9 percent confidence level, under the assumption either of a constant level of risk or of constant positions. As noted above, while a bank has flexibility in whether it chooses to use a constant risk or constant position assumption, the agencies expect that the assumption will remain fairly constant once selected. The bank's selection of a constant position assumption or a constant risk assumption must be consistent between the bank's comprehensive risk model and its incremental risk model. Similarly, the bank's treatment of liquidity horizons must be consistent between the bank's comprehensive risk model and its incremental risk model.

The final rule requires a bank's comprehensive risk model to capture all material price risk, including, but not limited to (1) the risk associated with the contractual structure of cash flows of the position, its issuer, and its underlying exposures (for example, the risk arising from multiple defaults, including the ordering of defaults, in tranching products); (2) credit spread risk, including nonlinear price risks; (3) volatility of implied correlations, including nonlinear price risks such as the cross-effect between spreads and correlations; (4) basis risks (for example, the basis between the spread of an index and the spread on its constituents and the basis between implied correlation of an index tranche and that of a bespoke tranche); (5) recovery rate volatility as it relates to the propensity for recovery rates to affect tranche prices; and (6) to the extent the comprehensive risk measure incorporates benefits from dynamic hedging, the static nature of the hedge over the liquidity horizon.

The risks above have been identified as particularly important for correlation trading positions. However, the comprehensive risk model is intended to capture all material price risks related to those correlation trading positions that are included in the



comprehensive risk model. Accordingly, additional risks that are not explicitly discussed above but are a material source of price risk must be included in the comprehensive risk model.

The final rule also requires a bank to have sufficient market data to ensure that it fully captures the material price risks of the correlation trading positions in its comprehensive risk measure. Moreover, the bank must be able to demonstrate that its model is an appropriate representation of comprehensive risk in light of the historical price variation of its correlation trading positions. The agencies will scrutinize the positions a bank identifies as correlation trading positions and will also review whether the correlation trading positions have sufficient market data available to support reliable modeling of material risks. If there is insufficient market data to support reliable modeling for certain positions (such as new products), the agencies may require the bank to exclude these positions from the comprehensive risk model and, instead, require the bank to calculate specific risk add-ons for these positions under the standardized measurement method for specific risk. The final rule also requires a bank to promptly notify its primary federal supervisor if the bank plans to extend the use of a model that has been approved by the supervisor to an additional business line or product type.

A bank approved to measure comprehensive risk for one or more portfolios of correlation trading positions must calculate at least weekly a comprehensive risk measure. Under the January 2011 proposal, the comprehensive risk measure was equal to the sum of the output from the bank's approved comprehensive risk model plus a surcharge on the bank's modeled correlation trading positions. The agencies proposed setting the surcharge equal to 15.0 percent of the total specific risk add-on that would

apply to the bank's modeled correlation trading positions under the standardized measurement method for specific risk in section 10 of the rule but have modified the surcharge in the final rule as described below.

Under the final rule, a bank must initially calculate the comprehensive risk measure under the surcharge approach while banks and supervisors gain experience with the banks' comprehensive risk models. Over time, with approval from its primary federal supervisor, a bank may be permitted to use a floor approach to calculate its comprehensive risk measure as the greater of (1) the output from the bank's approved comprehensive risk model; or (2) 8.0 percent of the total specific risk add-on that would apply to the bank's modeled correlation trading positions under the standardized measurement method for specific risk, provided that certain conditions are met. These conditions are that the bank has met the comprehensive risk modeling requirements in the final rule for a period of at least one year and can demonstrate the effectiveness of its comprehensive risk model through the results of ongoing validation efforts, including robust benchmarking. Such results may incorporate a comparison of the bank's internal model results to those from an alternative model for certain portfolios and other relevant data. The agencies may also consider a benchmarking approach that uses banks' internal models to determine capital requirements for a portfolio specified by the supervisors to allow for a relative assessment of models across banks. A bank's primary federal supervisor will monitor the appropriateness of the floor approach on an ongoing basis and may rescind its approval of this approach if it determines that the bank's comprehensive risk model does not sufficiently reflect the risks of the bank's modeled correlation trading positions.

One commenter criticized the interim surcharge approach. The commenter stated that it is excessive, risk insensitive, and inconsistent with what the commenter viewed as a more customary practice of phasing in capital charges over time. The commenter, therefore, recommended that the agencies eliminate the surcharge provision and only adopt the floor approach discussed above. Several commenters also noted that the floor approach could eliminate a bank's incentive to hedge its risks, to the extent the floor is a binding constraint. Commenters suggested clarifications and modifications to the treatment of correlation trading positions, including applying a floor that is consistent with the MRA and recognizing hedges to avoid situations where unhedged positions are subjected to lower capital requirements than hedged positions.

Notwithstanding these concerns, many banks have limited ability to perform robust validation of their comprehensive risk model using standard backtesting methods. Accordingly, the agencies believe it is appropriate to include a surcharge as an interim prudential measure until banks are better able to validate their comprehensive risk models and as an incentive for a bank to make ongoing model improvements. Accordingly, the agencies will maintain a surcharge in the rule but at a lower level of 8 percent. The agencies believe that a surcharge at this level helps balance the concerns raised by commenters regarding the proposed 15 percent surcharge and concerns about deficiencies in comprehensive risk models as mentioned above. Commenters also requested clarification as to whether multiple correlation trading portfolios can be treated on a combined basis for purposes of the comprehensive risk measure and floor calculations. The final rule clarifies that the floor applies to the aggregate comprehensive risk measure of all modeled portfolios.

In addition to these requirements, the final rule, consistent with the proposal, requires a bank to at least weekly apply to its portfolio of correlation trading positions a set of specific, supervisory stress scenarios that capture changes in default rates, recovery rates, and credit spreads; correlations of underlying exposures; and correlations of a correlation trading position and its hedge. A bank must retain and make available to its primary federal supervisor the results of the supervisory stress testing, including comparisons with the capital requirements generated by the bank's comprehensive risk model. A bank also must promptly report to its primary federal supervisor any instances where the stress tests indicate any material deficiencies in the comprehensive risk model.

The agencies included various options for stress scenarios in the preamble to the proposed rule, including an approach that involved specifying stress scenarios based on credit spread shocks to certain correlation trading positions (for example, single-name CDSs, CDS indices, index tranches), which may replicate historically observed spreads. Another approach would require a bank to calibrate its existing valuation model to certain specified stress periods by adjusting credit-related risk factors to reflect a given stress period. The credit-related risk factors, as adjusted, would then be used to revalue the bank's correlation trading portfolio under one or more stress scenarios.

The agencies sought comment on the benefits and drawbacks of the supervisory stress scenario requirements described above, and suggestions for possible specific stress scenario approaches for the correlation trading portfolio. One commenter suggested providing more specific requirements for the supervisory stress scenarios in the rule, particularly with regard to the time periods used to benchmark the shocks and candidate risk factors for banks to use in specifying the scenarios. This commenter believed that

use of the same specifications across banks would improve supervisory benchmarking capabilities.

Other commenters encouraged banks and supervisors to continue to work together to enhance stress test standards and approaches. These commenters also suggested that supervisors allow banks flexibility in stress testing their portfolios of correlation trading positions and recommended more benchmarking exercises through the use of so-called “test portfolio” exercises.

The agencies believe that benchmarking across banks is a worthwhile exercise, but wish to retain the proposed rule’s level of specificity because appropriate factors, such as time periods and particular shock events, will likely vary over time and may be more appropriately specified through a different mechanism. The agencies appreciate the need to work with banks to improve stress testing, and expect to do so as part of the ongoing supervisory process. The agencies have evaluated the appropriate bases for supervisory stress scenarios to be applied to a bank’s portfolio of correlation trading positions. There are inherent difficulties in prescribing stress scenarios that would be universally applicable and relevant across all banks and across all products contained in banks’ correlation trading portfolios. The agencies believe a level of comparability is important for assessing the sufficiency and appropriateness of banks’ comprehensive risk models, but also recognize that specific scenarios may not be relevant for certain products or for certain modeling approaches. The agencies have considered these comments and have retained the proposed stress testing requirements for the comprehensive risk measure in the final rule. Therefore, the final rule does not include supervisory stress scenarios.

Several commenters expressed concern regarding how comprehensive risk models will be assessed by supervisors. One commenter expressed concern that it would be very difficult to benchmark against actual results of a comprehensive risk model, given that it is designed to capture “deep tail loss” over a relatively long time horizon. Instead, the commenter suggested comparing the distribution of shocks that produce the comprehensive risk measure to historical experiences or evaluating the pricing or market risk factor technique to determine if there is any reason to think that a deeper tail or longer horizon of the comprehensive risk measure is not supportable. The agencies believe that the techniques described by the commenter should be part of a robust benchmarking process. The agencies may use various methods including standard supervisory examinations, benchmarking exercises using test portfolios, and other relevant techniques to evaluate the models. The agencies recognize that backtesting models calibrated to long time horizons and higher percentiles is less informative than backtesting of standard VaR models. As a result, banks likely will need to use indirect model validation methods, such as stress tests, scenario analysis or other methods to assess their models.

As under the proposal, under the final rule a bank that calculates a comprehensive risk measure under section 9 of the final rule is required to calculate its comprehensive risk capital requirement at least weekly. This capital requirement is the greater of (1) the average of the comprehensive risk measures over the previous 12 weeks or (2) the most recent comprehensive risk measure.

### **13. Disclosure Requirements**

Like the January 2011 proposal, the final rule adopts disclosure requirements designed to increase transparency and improve market discipline on the top-tier consolidated legal entity that is subject to the market risk capital rule. The disclosure requirements include a breakdown of certain components of a bank's market risk capital requirement, information on a bank's modeling approaches, and qualitative and quantitative disclosures relating to a bank's securitization activities.

Consistent with the approach taken in the agencies' advanced approaches rules, the final rule requires a bank to comply with the disclosure requirements under section 12 of the rule unless it is a consolidated subsidiary of another depository institution or bank holding company that is subject to the disclosure requirements. A bank subject to section 12 is required to adopt a formal disclosure policy approved by its board of directors that addresses the bank's approach for determining the disclosures it makes. The policy must address the associated internal controls and disclosure controls and procedures. The board of directors and senior management must ensure that appropriate verification of the bank's disclosures takes place and that effective internal controls and disclosure controls and procedures are maintained. One or more senior officers must attest that the disclosures meet the requirements, and the board of directors and senior management are responsible for establishing and maintaining an effective internal control structure over financial reporting, including the information required under section 12 of the final rule.

The proposed rule would have required a bank, at least quarterly, to disclose publicly for each material portfolio of covered positions (1) the high, low, and mean

VaR-based measures over the reporting period and the VaR-based measure at period-end; (2) the high, low, and mean stressed VaR-based measures over the reporting period and the stressed VaR-based measure at period-end; (3) the high, low, and mean incremental risk capital requirements over the reporting period and the incremental risk capital requirement at period-end; (4) the high, low, and mean comprehensive risk capital requirements over the reporting period and the comprehensive risk capital requirement at period-end; (5) separate measures for interest rate risk, credit spread risk, equity price risk, foreign exchange rate risk, and commodity price risk used to calculate the VaR-based measure; and (6) a comparison of VaR-based measures with actual results and an analysis of important outliers. In addition, a bank would have been required to publicly disclose the following information at least quarterly (1) the aggregate amount of on-balance sheet and off-balance sheet securitization positions by exposure type and (2) the aggregate amount of correlation trading positions.

The proposed rule also would have required a bank to make qualitative disclosures at least annually, or more frequently in the event of material changes, of the following information for each material portfolio of covered positions (1) the composition of material portfolios of covered positions; (2) the bank's valuation policies, procedures, and methodologies for covered positions including, for securitization positions, the methods and key assumptions used for valuing such positions, any significant changes since the last reporting period, and the impact of such change; (3) the characteristics of its internal models, including, for the bank's incremental risk capital requirement and the comprehensive risk capital requirement, the approach used by the bank to determine liquidity horizons; the methodologies used to achieve a capital



assessment that is consistent with the required soundness standard; and the specific approaches used in the validation of these models; (4) a description of its approaches for validating the accuracy of its internal models and modeling processes; (5) a description of the stress tests applied to each market risk category; (6) the results of a comparison of the bank's internal estimates with actual outcomes during a sample period not used in model development; (7) the soundness standard on which its internal capital adequacy assessment is based, including a description of the methodologies used to achieve a capital adequacy assessment that is consistent with the soundness standard and the requirements of the market risk capital rule; (8) a description of the bank's processes for monitoring changes in the credit and market risk of securitization positions, including how those processes differ for resecuritization positions; and (9) a description of the bank's policy governing the use of credit risk mitigation to mitigate the risks of securitization and resecuritization positions.

Several commenters expressed concerns that certain disclosure requirements, and in particular the requirement to disclose the median for various risk measures, exceeded those required under the 2009 revisions. Upon consideration of such concerns, the agencies have removed this disclosure requirement from the final rule.

Some commenters also asked for clarification as to whether banks have flexibility to determine or identify what constitutes a "portfolio" and determine and disclose risk measures most meaningful for these portfolios. The final rule clarifies that the disclosure requirements apply to each material portfolio of covered positions. The market risk capital calculations should generally be the basis for disclosure content. A bank should provide further disclosure as needed for material portfolios or relevant risk measures.

Some commenters also expressed concern that the proposed requirement to disclose information regarding stress test scenarios and their results could lead to the release of proprietary information. In response, the agencies note that the final rule, like the proposed rule, would allow a bank to withhold from disclosure any information that is proprietary or confidential if the bank believes that disclosure of specific commercial or financial information would prejudice seriously its position. Instead, the bank must disclose more general information about the subject matter of the requirement, together with the fact that, and the reason why, the specific items of information have not been disclosed. In implementing this requirement, the agencies will work with banks on a case-by-case basis to address any questions about the types of more general information that would satisfy the final rule.

Another commenter supported strengthening disclosure requirements regarding validation procedures and the stressed VaR-based measure, particularly correlation and valuation assumptions. The commenter believed such enhancements would provide the market more detailed information to assess a given bank's relative risk. The agencies recognize the importance of market discipline in encouraging sound risk management practices and fostering financial stability. However, requirements for greater information disclosure need to be balanced with the burden it places on banks providing the information. The agencies believe the rule's disclosure requirements (in alignment with the 2009 revisions) strike a reasonable balance in this respect.

Some commenters expressed concern that certain disclosures would not improve transparency. Specifically, some commenters noted that the proposed requirement to report separate VaR-based measures for covered positions for market risk capital

purposes and for public accounting standards is likely to cause market confusion.

Another commenter believed that certain types of disclosures, particularly those relating to model outputs, will not necessarily lead to greater understanding of positions and risks, as they are either overly superficial or difficult to compare accurately between banks.

Commenters also expressed concern that the timing of the proposal's required disclosures does not align with the timing of required disclosures under the advanced approaches rules and believed that the two disclosure regimes should become effective at the same time.

The agencies believe that public disclosures allow the market to better understand the risks of a given bank and encourage banks to provide sufficient information to provide appropriate context to their public disclosures. In terms of the timing of market risk capital rule disclosures aligning with those required under the advanced approaches rules, the agencies note that certain banks subject to the market risk capital rule are not subject to the advanced approaches rules. Further, the implementation framework under the advanced approaches rules varies sufficiently from that of the market risk capital rule that required disclosures under the market risk capital rule could be unnecessarily delayed depending on a bank's implementation status under the advanced approaches rules. For these reasons, the agencies have not aligned the timing of the disclosure requirements across the rules.

Except for the removal of the median measures in the quantitative disclosure requirements, described above, the final rule retains the proposed disclosure requirements. Many of the disclosure requirements reflect information already disclosed

publicly by the banking industry. Banks are encouraged, but not required, to provide access to these disclosures in a central location on their web sites.

#### **IV. Regulatory Flexibility Act Analysis**

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.* (RFA), generally requires that, in connection with a notice of proposed rulemaking, an agency prepare and make available for public comment a final regulatory flexibility analysis that describes the impact of a final rule on small entities.<sup>25</sup> The regulatory flexibility analysis otherwise required under section 604 of the RFA is not required if an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities and publishes its certification and a short, explanatory statement in the *Federal Register* along with its rule. Under regulations issued by the Small Business Administration,<sup>26</sup> a small entity includes a commercial bank or bank holding company with assets of \$175 million or less (a small banking organization). As of December 31, 2011, there were approximately 2,385 small bank holding companies, 607 small national banks, 386 small state member banks, and 2,466 small state nonmember banks. No comments on the effect of small entities were received in response to the notice of proposed rulemaking.

As discussed above, the final rule applies only if a bank holding company or bank has aggregated trading assets and trading liabilities equal to 10 percent or more of quarter-end total assets or \$1 billion or more. No small bank holding companies or banks satisfy these criteria. Therefore, no small entities would be subject to this rule.

#### **V. OCC Unfunded Mandates Reform Act of 1995 Determination**

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<sup>25</sup> See 5 U.S.C. 603(a).

<sup>26</sup> See 13 CFR 121.201.

The Unfunded Mandates Reform Act of 1995 (UMRA) requires federal agencies to prepare a budgetary impact statement before promulgating a rule that includes a federal mandate that may result in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector of \$100 million or more (adjusted annually for inflation) in any one year. The current inflation-adjusted expenditure threshold is \$126.4 million. If a budgetary impact statement is required, section 205 of the UMRA also requires an agency to identify and consider a reasonable number of regulatory alternatives before promulgating a rule.

In conducting the regulatory analysis, UMRA requires each federal agency to provide:

- The text of the draft regulatory action, together with a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet that need;
- An assessment of the potential costs and benefits of the regulatory action, including an explanation of the manner in which the regulatory action is consistent with a statutory mandate and, to the extent permitted by law, promotes the President's priorities and avoids undue interference with State, local, and tribal governments in the exercise of their governmental functions;
- An assessment, including the underlying analysis, of benefits anticipated from the regulatory action (such as, but not limited to, the promotion of the efficient functioning of the economy and private markets, the enhancement of health and safety, the protection of the natural environment, and the elimination or reduction

of discrimination or bias) together with, to the extent feasible, a quantification of those benefits;

- An assessment, including the underlying analysis, of costs anticipated from the regulatory action (such as, but not limited to, the direct cost both to the government in administering the regulation and to businesses and others in complying with the regulation, and any adverse effects on the efficient functioning of the economy, private markets (including productivity, employment, and competitiveness), health, safety, and the natural environment), together with, to the extent feasible, a quantification of those costs; and
- An assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and reasonably viable nonregulatory actions), and an explanation why the planned regulatory action is preferable to the identified potential alternatives.
- An estimate of any disproportionate budgetary effects of the federal mandate upon any particular regions of the nation or particular State, local, or tribal governments, urban or rural or other types of communities, or particular segments of the private sector.
- An estimate of the effect the rulemaking action may have on the national economy, if the OCC determines that such estimates are reasonably feasible and that such effect is relevant and material.

## **A. The Need for Regulatory Action**

Federal banking law directs federal banking agencies including the Office of the Comptroller of the Currency (OCC) to require banking organizations to hold adequate capital. The law authorizes federal banking agencies to set minimum capital levels to ensure that banking organizations maintain adequate capital. The law gives banking agencies broad discretion with respect to capital regulation by authorizing them to use other methods that they deem appropriate to ensure capital adequacy. As the primary supervisor of national banks and federally chartered savings associations, the OCC oversees the capital adequacy of national banks, federally chartered thrifts, and federal branches of foreign banking organizations (hereafter collectively referred to as “banks”). If banks under the OCC’s supervision fail to maintain adequate capital, federal law authorizes the OCC to take enforcement action up to and including placing the bank in receivership, conservatorship, or requiring its sale, merger, or liquidation.

In 1996, the Basel Committee on Banking Supervision amended its risk-based capital standards to include a requirement that banks measure and hold capital to cover their exposure to market risk associated with foreign exchange and commodity positions and positions located in the trading account. The OCC (along with the Federal Reserve Board and the FDIC) implemented this market risk amendment (MRA) effective January 1, 1997.<sup>27</sup>

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<sup>27</sup> See Beverly J. Hirtle, “What Market Risk Capital Reporting Tells Us about Bank Risk,” *Economic Policy Review*, Federal Reserve Bank of New York, Sep. 2003, for a discussion of the role of market risk capital standards and an analysis of the information content of market risk capital levels. The author finds some evidence that market risk capital provides new information about an individual institution’s risk exposure over

### *The Final Rule*

The final rule would modify the current market risk capital rule by adjusting the minimum risk-based capital calculation, introducing new measures of creditworthiness for purposes of determining appropriate risk weights, and adding public disclosure requirements. The final rule would also 1) modify the definition of covered positions to include assets that are in the trading book and held with the intent to trade; 2) introduce new requirements for the identification of trading positions and the management of covered positions; and 3) require banks to have clearly defined policies and procedures for actively managing all covered positions, for the prudent valuation of covered positions and for specific internal model validation standards. The final rule will generally apply to any bank with aggregate trading assets and liabilities that are at least 10 percent of total assets or at least \$1 billion. These thresholds are the same as those currently used to determine applicability of the market risk rule.

Under current risk-based capital rules, a banking organization that is subject to the market risk capital guidelines must hold capital to support its exposure to general market risk arising from fluctuations in interest rates, equity prices, foreign exchange rates, and commodity prices, as well as its exposure to specific risk associated with certain debt and equity positions. Under current rules, covered positions include all positions in a bank's trading account and all foreign exchange and commodity positions, whether or not in the trading account. The current rule covers assets held in the trading book, regardless of

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time. In particular, a change in an institution's market risk capital is a strong predictor of change in future trading revenue volatility.



whether they are held with the intent to trade. The final rule would modify the definition of covered positions to include assets that are in the trading book and held with the intent to trade. The new covered positions would include trading assets and trading liabilities that are trading positions, i.e., held for the purpose of short-term resale, to lock in arbitrage profits, to benefit from actual or expected short-term price movements, or to hedge covered positions. In addition to commodities and foreign exchange positions, covered positions under the final rule would include certain debt positions, equity positions and securitization positions.

The final rule also introduces new requirements for the identification of trading positions and the management of covered positions. The final rule would require banks to have clearly defined policies and procedures for actively managing all covered positions, for the prudent valuation and stress testing of covered positions and for specific internal model validation standards. Banks must also have clearly defined trading and hedging strategies. The final rule also requires banks to have a risk control unit that is independent of its trading units and that reports directly to senior management. Under the final rule, banks must also document all material aspects of its market risk modeling and management, and publicly disclose various measures of market risk for each material portfolio of covered positions.

To be adequately capitalized, banks subject to the market risk capital guidelines must maintain an overall minimum 8.0 percent ratio of total qualifying capital (the sum of tier 1 capital and tier 2 capital, net of all deductions) to the sum of risk-weighted assets and market risk equivalent assets. Market risk equivalent assets equal the bank's measure for market risk multiplied by 12.5.

Under current rules, the measure for market risk is as follows:<sup>28</sup>

Market Risk Measure = (Value-at-Risk based capital requirement) + (Specific risk capital requirement) + (Capital requirement for de minimis exposures)

Under the final rule, the new market risk measure would be as follows (new risk measure components are italicized):

New Market Risk Measure = (Value-at-Risk based capital requirement) + (Stressed Value-at-Risk based capital requirement) + (Specific risk capital charge) + (Incremental risk capital requirement) + (Comprehensive risk capital requirement) + (Capital charge for de minimis exposures)

The Basel Committee and the federal banking agencies designed the new components of the market risk measure to capture key risks overlooked by the current market risk measure. The incremental risk requirement gathers in default risk and migration risk for unsecuritized items in the trading book. The comprehensive risk charge considers correlation trading activities and the stressed value-at-risk (VaR) component requires banks to include a VaR assessment that is calibrated to historical data from a 12-month period that reflects a period of significant financial stress.

#### Alternative Creditworthiness Standards

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<sup>28</sup> The following are the components of the current Market Risk Measure. Value-at-Risk (VaR) is an estimate of the maximum amount that the value of one or more positions could decline due to market price or rate movements during a fixed holding period within a stated confidence interval. Specific risk is the risk of loss on a position that could result from factors other than broad market movements and includes event risk, default risk, and idiosyncratic risk. There may also be a capital requirement for *de minimis* exposures, if any, that are not included in the bank's VaR models.

In addition to introducing several new components into the formula for the market risk measure, the final rule will also introduce new creditworthiness standards to meet the requirements of Section 939A of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank). Section 939A requires federal agencies to remove references to credit ratings from regulations and replace credit ratings with appropriate alternatives. Institutions subject to the market risk rule will use the alternative measures of creditworthiness described below to determine appropriate risk-weighting factors within the specific risk component of the market risk measure.

#### Alternative Measure for Securitization Positions

The alternative measure for securitization positions is a simplified version of the Basel II advanced approaches supervisory formula approach. The simplified supervisory formula approach (SSFA) applies a 100 percent risk-weighting factor to the junior-most portion of a securitization structure. This 100 percent factor applies to tranches that fall below the amount of capital that a bank would have to hold if it retained the entire pool on its balance sheet. For the remaining portions of the securitization pool, the SSFA uses an exponential decay function to assign a marginal capital charge per dollar of a tranche. Securitization positions for which a bank does not use the SSFA would be subject to a 100 percent risk-weighting factor. The final rule would also adjust the calibration of the SSFA based on the historical credit performance of the pool of securitized assets.

#### *Alternative Measure for Corporate Debt Positions*

The alternative measure for corporate exposures will apply capital requirements to exposures to publicly traded corporate entities based on the remaining maturity of an exposure and whether the exposure is “investment grade,” which is defined without

reference to credit ratings, consistent with the OCC's definition of "investment grade" as that term has been defined for purposes of Part 1.

*Alternative Measure for Exposures to Sovereign Entities*

The final rule would assign specific risk capital requirements to sovereign exposures based on OECD Country Risk Classifications (CRCs). The final rule would also apply a risk-weighting factor of 12 percent to sovereigns that have defaulted on any exposure during the previous five years. Default would include a restructure (whether voluntary or involuntary) that results in a sovereign entity not servicing an obligation according to its terms prior to the restructuring. Exposures to the United States government and its agencies would always carry a zero percent risk-weighting factor. Sovereign entities that have no CRC would carry an 8 percent risk-weighting factor. For sovereign exposures with a CRC rating of 2 or 3, the risk-weighting factor would also depend on the exposure's remaining maturity.

The final rule would also apply risk-weighting factors of zero percent to exposures to supranational entities and multilateral development banks. International organizations that would receive a zero percent risk-weighting factor include the Bank for International Settlements, the European Central Bank, the European Commission, and the International Monetary Fund. The final rule would apply a zero percent risk-weighting factor to exposures to 13 named multilateral development banks and any multilateral lending institution or regional development bank in which the U.S. government is a shareholder or member, or if the bank's primary federal supervisor determines that the entity poses comparable credit risk.

### *Other Positions*

Government Sponsored Entities (GSEs): The proposal would apply a 1.6 percent risk-weighting factor for GSE debt positions. GSE equity exposures would receive an 8 percent risk-weighting factor.

Depository Institutions, Foreign Banks, and Credit Unions: Generally, the rule would apply a risk-weighting factor that is linked to the sovereign entity risk-weighting factor. Exposures to depository institutions with a sovereign CRC rating between zero and two would receive a risk-weighting factor between 0.25 percent and 1.6 percent depending on the remaining maturity. Depository institutions with no CRC sovereign rating or a sovereign CRC rating of 3 would receive an eight percent risk-weighting factor, and depository institutions where a sovereign default has occurred in the past five years or the sovereign CRC rating is between four and seven would receive a 12 percent risk-weighting factor.

Public Sector Entities (PSEs): A PSE is a state, local authority, or other governmental subdivision below the level of a sovereign entity. The final rule would assign a risk-weighting factor to a PSE based on the PSE's sovereign risk-weighting factor. One risk-weighting factor schedule would apply to general obligation claims and another schedule would apply to revenue obligations.

### **B. Cost-benefit Analysis of the Final Rule**

#### 1. Organizations Affected by the Final Rule<sup>29</sup>

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<sup>29</sup> Unless otherwise noted, the population of banks used in this analysis consists of all FDIC-insured national banks and uninsured national bank and trust companies. Banking organizations are aggregated to the top holding company level.

According to December 31, 2011, Call Report data, 208 FDIC-insured institutions had trading assets or trading liabilities. Of these 208 institutions, 25 institutions had trading assets and liabilities that are at least 10 percent of total assets or at least \$1 billion. Aggregated to the highest holding company there are 25 banking organizations, of which, 14 are national banking organizations. One federally chartered thrift holding company also meets the market risk threshold, but it is a subsidiary of one of the 14 national banking organizations.<sup>30</sup> Table 1 shows the total assets, trading assets, trading liabilities, market risk equivalent assets, and the market risk measure for these 14 OCC-regulated institutions as of December 31, 2011. The market risk measure is used to determine market risk equivalent assets, which are added to the denominator with adjusted risk-weighted assets to determine a bank's risk-based capital ratio.

**Table 1. Trading Book Measures of OCC-Regulated Organizations Affected by the Market Risk Rule (Call Reports as of December 31, 2011, \$ in billions)**

| Measure  | Amount<br>(\$ billions) |
|--|-------------------------|
| Total Assets   | \$7,697.3               |
| Trading Assets   | \$651.3                 |
| Trading Liabilities  | \$282.7                 |
| Consolidated Trading Activity:<br>(Trading Assets + Trading Liabilities) | \$934.0                 |
| Market Risk Equivalent Assets  | \$197.9                 |
| Market Risk Measure  | \$15.8                  |

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<sup>30</sup> A national banking organization is any bank holding company with a subsidiary national bank. Federally chartered savings associations did not report comparable trading assets and trading liabilities data on the Thrift Financial Report, but began reporting this information with March 2012 Call Reports. According to March 31, 2012 Call Report data, no OCC-regulated thrift meets the threshold for the Market Risk rule to apply.

## 2. Impact of the Final rule

The key qualitative benefits of the final rule are the following:

- makes required regulatory capital more sensitive to market risk,
- enhances modeling requirements consistent with advances in risk management,
- better captures trading positions for which market risk capital treatment is appropriate,
- increases transparency through enhanced market disclosures.
- increased market risk capital should lower the probability of catastrophic losses to the bank occurring because of market risk,
- modified requirements should reduce the procyclicality of market risk capital.

We derive our estimates of the final rule's effect on the market risk measure from the third trading book impact study conducted by the Basel Committee on Banking Supervision in 2009 and an analysis conducted by the Federal Reserve and the OCC.<sup>31</sup> Based on these two assessments, we estimate that the market risk measure will increase 200 percent on average. Because the market risk measure is equal to 8 percent of market risk equivalent assets, the market risk measure itself provides one estimate of the amount of regulatory capital required for an adequately capitalized bank. Thus, tripling the

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<sup>31</sup> The report, "Analysis of the third trading book impact study", is available at [www.bis.org/publ/bcbs163.htm](http://www.bis.org/publ/bcbs163.htm). The study gathered data from 43 banks in 10 countries, including six banks from the United States.

market risk measure suggests that minimum required capital would be approximately \$47.4 billion under the final rule, which would represent an increase of \$31.6 billion.<sup>32</sup>

To estimate the cost to banks of this new capital requirement, we examine the effect of this requirement on capital structure and the overall cost of capital.<sup>33</sup> The cost of financing a bank or any firm is the weighted average cost of its various financing sources, which amounts to a weighted average cost of the many different types of debt and equity financing. Because interest payments on debt are tax deductible, a more leveraged capital structure reduces corporate taxes, thereby lowering after-tax funding costs, and the weighted average cost of financing tends to decline as leverage marginally increases. Thus, an increase in required equity capital would force a bank to deleverage and – all else equal – would increase the cost of capital for that bank.

This increased cost would be tax benefits forgone: the capital requirement (\$31.6 billion), multiplied by the interest rate on the debt displaced and by the effective marginal tax rate for the banks affected by the final rule. The effective marginal corporate tax rate is affected not only by the statutory federal and state rates, but also by the probability of positive earnings (since there is no tax benefit when earnings are negative), and for the offsetting effects of personal taxes on required bond yields. Graham (2000) considers these factors and estimates a median marginal tax benefit of \$9.40 per \$100 of interest. So, using an estimated interest rate on debt of 6 percent, we estimate that the annual tax benefits

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<sup>32</sup> An alternative estimate comparing adequate capital amounts under current and new market risk rules for each affected bank suggests that the capital increase would be approximately \$31.7 billion. Using capital levels reported in December 31, 2011, Call Reports, affected banks would remain adequately capitalized under either estimate.

<sup>33</sup> See Merton H. Miller, (1995), “Do the M & M propositions apply to banks?” *Journal of Banking & Finance*, Vol. 19, pp. 483-489.



foregone on \$31.6 billion of capital switching from debt to equity is approximately \$31.6 billion \* 0.06 (interest rate) \* 0.094 (median marginal tax savings) = \$178 million.<sup>34</sup>

In addition to the revised market risk measure, the final rule includes new disclosure requirements. We estimate that the new disclosure requirements and implementation of calculations for the new market risk measures may involve some additional system costs. Because the proposed market risk rule only applies to 14 national bank holding companies and will only affect institutions already subject to the current market risk rule, we expect these additional system costs to be *de minimis*.<sup>35</sup> We do not anticipate that the final rule will create significant additional administrative costs for the OCC.<sup>36</sup>

#### *Estimated Costs of Credit Rating Alternatives*

The final rule will also require institutions to (1) establish systems to determine risk-weighting factors using the alternative measures of creditworthiness described in the proposal, and (2) apply these alternative measures to the bank's trading portfolio. We believe that the principal costs of this component of the rule will involve the costs of

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<sup>34</sup> See John R. Graham, (2000), [\*How Big Are the Tax Benefits of Debt?\*](#), *Journal of Finance*, Vol. 55, No. 5, pp. 1901-1941. Graham points out that ignoring the offsetting effects of personal taxes would increase the median marginal tax rate to \$31.5 per \$100 of interest.

<sup>35</sup> We estimate that these additional costs will be close to zero because institutions that are subject to the current market risk rule have the systems in place to calculate the current market risk measure. These existing systems should be able to accommodate the new components of the revised market risk measure. Also, items affected by the new disclosure requirements are primarily byproducts of the management of market risk and the calculation of the market risk measure.

<sup>36</sup> Discussion with the Director of the Market Risk Analysis Division indicated that the division would be able to accommodate the proposed revisions to the market risk rule with current staffing levels.

gathering and updating the information necessary to calculate the relevant risk-weighting factors, and establishing procedures and maintaining the programs that perform the calculations.

In particular, the final rule would require each affected institution to:

1. Establish and maintain a system to implement the simplified supervisory formula approach (SSFA) for securitization positions.
2. Establish and maintain a system to determine risk-weighting factors for corporate debt positions.
3. Establish and maintain a system to assign risk-weighting factors to sovereign exposures.
4. Establish and maintain systems to assign risk-weighting factors to public sector entities, depository institutions, and other positions.

Listed below are the variables banks will need to gather to calculate the risk-weighting factors under the final rule:

Securitization Positions:

1. Weighted average risk-weighting factor of assets in the securitized pool as determined under generally applicable risk-based capital rules
2. The attachment point of the relevant tranche
3. The detachment point of the relevant tranche
4. Cumulative losses

Corporate Debt Positions:

1. Investment grade determination
2. Remaining contractual maturity

Sovereign Entity Debt Positions:

1. Organization for Economic Co-operation and Development Country Risk Classifications (CRC) Score
2. Remaining contractual maturity

Table 2 shows our estimate of the number of hours required to perform the various activities necessary to meet the requirements of the final rule. We base these estimates on the scope of work required by the final rule and the extent to which these requirements extend current business practices. Although the total cost of gathering the new variables will depend on the size of the institution's consolidated trading activity, we believe that the costs of establishing systems to match variables with exposures and calculate the appropriate risk-weighting factor will account for most of the expenses associated with the credit rating alternatives. Once a bank establishes a system, we expect the marginal cost of calculating the risk-weighting factor for each additional asset in a particular category, e.g., securitizations and corporate exposures, to be relatively small.

We estimate that financial institutions covered by the final rule will spend approximately 1,300 hours during the first year the rule is in effect. In subsequent years, we estimate that financial institutions will spend approximately 180 hours per year on activities related to determining risk-weighting factors using the alternative measures of creditworthiness in the final rule.

Table 3 shows our overall cost estimate tied to developing alternative measures of creditworthiness under the market risk rule. Our estimate of the compliance cost of the final rule is the product of our estimate of the hours required per institution, our estimate

of the number of institutions affected by the rule, and an estimate of hourly wages. To estimate hours necessary per activity, we estimate the number of employees each activity is likely to need and the number of days necessary to assess, implement, and perfect the required activity. To estimate hourly wages, we reviewed data from May 2010 for wages (by industry and occupation) from the U.S. Bureau of Labor Statistics (BLS) for depository credit intermediation (NAICS 522100). To estimate compensation costs associated with the final rule, we use \$85 per hour, which is based on the average of the 90<sup>th</sup> percentile for seven occupations (*i.e.*, accountants and auditors, compliance officers, financial analysts, lawyers, management occupations, software developers, and statisticians) plus an additional 33 percent to cover inflation and private sector benefits.<sup>37</sup> As shown in table 3, we estimate that the cost of the alternative measures of creditworthiness in the first year of implementation will be approximately \$1.5 million.

We also recognize that risk-weighting factors, and hence, market risk capital requirements may change as a result of these new measures of creditworthiness. We expect that the largest capital impact of the new risk-weighting factors will occur with securitizations, corporate debt positions, and exposures to sovereigns. The increased sensitivity to risk of the alternative measures of creditworthiness implies that specific risk capital requirements may go down for some trading assets and up for others. For those assets with a higher specific risk capital charge under the final rule, however, that increase may be large, in some instances requiring a dollar-for-dollar capital charge.

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<sup>37</sup> According to the BLS' employer costs of employee benefits data, thirty percent represents the average private sector costs of employee benefits.

At this time we are not able to estimate the capital impact of the alternative measures of creditworthiness with any degree of precision. While we know that the impact on U.S. Treasury Securities will be zero, the impact on the other asset categories is less clear. For instance, while anecdotal evidence suggests that roughly half of “other debt securities” is corporate debt and half is non-U.S. government securities, the actual capital impact will depend on the quality of these assets as determined by the measures of creditworthiness. While we anticipate that this impact could be large, we lack information on the composition and quality of the trading portfolio that would allow us to accurately estimate a likely capital charge. The actual impact on market risk capital requirements will also depend on the extent to which institutions model specific risk.

Combining capital costs (\$178 million) with the costs of applying the alternative measures of creditworthiness (\$1.5 million), we estimate that the total cost of the final rule will be \$179.5 million per year in 2012 dollars.

**Table 2. Estimated Annual Hours for Creditworthiness Measurement Activities for Institutions Subject to the Market Risk Rule**

| Trading Position         | Activity                                | Estimated hours per institution |
|--------------------------|---|---------------------------------|
| Securitization           | System development                      | 480                             |
|                          | Data acquisition                        | 240                             |
|                          | Calculation, verification, and training | 120                             |
| Corporate Debt           | System development                      | 60                              |
|                          | Data acquisition                        | 50                              |
|                          | Calculation, verification, and training | 10                              |
| Sovereign Debt           | System development                      | 80                              |
|                          | Data acquisition                        | 30                              |
|                          | Calculation, verification, and training | 60                              |
| Other Positions Combined | System development                      | 80                              |
|                          | Data acquisition                        | 30                              |
|                          | Calculation, verification, and training | 60                              |
| Total Hours              |   | 1,300                           |

**Table 3. Estimated Costs of Credit Rating Alternatives to the Market Risk Rule**

| Institution                    | Number of institutions | Estimated hours per institution | Estimated cost per institution | Estimated cost |
|--------------------------------|------------------------|---------------------------------|--------------------------------|----------------|
| National banking organizations | 14                     | 1,300                           | \$110,500                      | \$1,547,000    |

### 3. Additional Costs and Benefits of the Final rule

As the Basel Committee on Banking Supervision points out in the July 2009 paper that recommends revisions to the market risk framework, the trading book proved to be an important source of losses during the financial crisis that began in mid-2007 and an important source of the buildup of leverage that preceded the crisis.<sup>38</sup> These concerns find some echo in empirical evidence. Stiroh (2004) studies the potential diversification benefits from various types of noninterest income and finds that trading activities are associated with lower risk-adjusted returns and higher risk.<sup>39</sup>

### C. Comparison Between Final Rule and Baseline

Under the baseline scenario, the current market risk rule would continue to apply. Because the final rule affects the same institutions as the current rule, table 1 reflects the current baseline. Thus, under the baseline, required market risk capital would remain at current levels and there would be no additional cost associated with adding capital. However, the final rule's qualitative benefits of making required regulatory capital more sensitive to market risk, increased transparency, and the improved targeting of trading positions would be lost under the baseline scenario.

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<sup>38</sup> Basel Committee on Banking Supervision, "Revisions to the Basel II market risk framework," July 2009, available at [www.bis.org](http://www.bis.org).

<sup>39</sup> See Kevin J. Stiroh, "Diversification in Banking: Is Noninterest Income the Answer?" *Journal of Money, Credit, and Banking*, Vol. 36, No. 5, October 2004.

## D. Comparison Between Final Rule and Alternatives

UMRA requires a comparison between the final rule and reasonable alternatives when the impact assessment exceeds the inflation-adjusted expenditure threshold. In this regulatory impact analysis, we compare the final rule with two alternatives that modify the size thresholds for the rule. The baseline provides a comparison between the rule and the economic environment with no modifications to the current market risk measure. For Alternative A, we assess the impact of a rule with various size thresholds. For Alternative B, we assess the impact of a rule that changes the conditional statement of the rule's thresholds from "or" to "and". Thus, alternative B assesses the impact of a market risk rule that applies to banks with trading assets and liabilities greater than \$1 billion and a trading book to assets ratio of at least 10 percent.

### *Assessment of Alternative A*

Under Alternative A, we consider a rule that has the same provisions as the final rule, but we alter the rule's trading book size threshold. In our analysis of alternative A, we do not alter the 10 percent threshold for the trading book to asset ratio. Rather, we only vary the \$1 billion trading book threshold. Table 4 shows how changing the dollar threshold changes the number of institutions affected by the rule and the estimated cost of the rule, continuing to assume that market risk capital will increase by 200 percent. The results for the final rule are shown in bold.

**Table 4. Alternative A: Impact of Variations in Trading Book Size Threshold**

(December 31, 2011 Call Reports)

| Size Threshold | Number of Institutions Affected | Trading Book (\$ billions) | Increase in Market Risk Measure (\$ billions) | Estimated Cost of Additional Capital (\$ millions) |
|----------------|---------------------------------|----------------------------|---|--|
| \$5 billion    | 7                               | \$921.7                    | \$31.4  | \$177  |
| \$4 billion    | 7                               | \$921.7                    | \$31.4  | \$177  |

|                    |           |                |               |              |
|--------------------|-----------|----------------|---------------|--------------|
| \$3 billion        | 7         | \$921.7        | \$31.4        | \$177        |
| \$2 billion        | 9         | \$926.3        | \$31.4        | \$177        |
| <b>\$1 billion</b> | <b>14</b> | <b>\$933.9</b> | <b>\$31.6</b> | <b>\$178</b> |
| \$500 million      | 18        | \$937.3        | \$31.6        | \$178        |
| \$250 million      | 21        | \$938.3        | \$32.0        | \$180        |

Because trading assets and liabilities are concentrated in relatively few institutions, modest changes in the size thresholds have little impact on the dollar volume of trading assets affected by the market risk rule and thus little impact on the estimated cost of the rule. Changing the size threshold does affect the number of institutions affected by the rule. Table 4 suggests that the banking agencies' systemic concerns could play a role in determining the appropriate size threshold for applicability of the market risk rule. The banking agencies may select a size threshold that ensures that the market risk rule applies to appropriate institutions as this choice has little impact on aggregate costs. The banking agencies' decision to use the same threshold as applies under current rules makes sense as implementation costs could be significant for individual institutions not already subject to the market risk rule.<sup>40</sup>

#### *Assessment of Alternative B*

Under Alternative B, we consider a rule that has the same provisions as the final rule, but we change the condition of the size thresholds from “or” to “and”. With this change, the final rule would apply to institutions that have \$1 billion or more in trading assets and liabilities and a trading book to asset ratio of at least 10 percent. Table 5 shows the effect of changing the rule so that an institution must meet both thresholds for

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<sup>40</sup> We estimate that these start-up costs could range between \$0.5 million and \$2 million depending on the size and complexity of the trading book. These start-up costs include new system costs, acquisition of expertise, training and compliance costs.



the market risk rule to apply. Again, we assume that the provisions of the final rule lead to a 200 percent increase in the market risk measure.

As Table 5 shows, making the applicability of the market risk rule contingent on meeting both size thresholds would reduce the number of banks affected by the rule to three using the current thresholds of \$1 billion and 10 percent. Not surprisingly, as this alternative affects some institutions with larger trading books, the estimated cost of the rule does decrease with the number of institutions affected by the rule.

**Table 5. Alternative B: Impact of Variations in Size Threshold Conditions (December 31, 2011 Call Reports)**

| Thresholds                       | Number of Institutions Affected | Trading Book (\$ billions) | Increase in Market Risk Measure (\$ billions) | Estimated Cost of Additional Capital (\$ millions) |
|----------------------------------|---------------------------------|----------------------------|---|--|
| <b>\$1 billion or 10 percent</b> | <b>14</b>                       | <b>\$933.9</b>             | <b>\$31.6</b>                                 | <b>\$178</b>                                       |
| \$2 billion and 10 percent       | 3                               | \$715.6                    | \$21.8  | \$123  |
| \$1 billion and 10 percent       | 3                               | \$715.6                    | \$21.8  | \$123  |
| \$500 million and 10 percent     | 3                               | \$715.6                    | \$21.8  | \$123  |
| \$2 billion and 5 percent        | 5                               | \$903.2                    | \$30.6  | \$173  |
| \$1 billion and 5 percent        | 6                               | \$904.9                    | \$30.8  | \$174  |
| \$500 million and 5 percent      | 6                               | \$904.9                    | \$30.8  | \$174  |
| \$2 billion and 1 percent        | 9                               | \$926.3                    | \$31.4  | \$177  |
| \$1 billion and 1 percent        | 13                              | \$932.2                    | \$31.6  | \$178  |
| \$500 million and 1 percent      | 16                              | \$934.5                    | \$31.6  | \$178  |

#### **E. Overall Impact of Final Rule, Baseline, and Alternatives**

Under our baseline scenario, which reflects the current application of the market risk rule, a market risk capital charge of approximately \$15.8 billion applies to 14 national banks. Under the final rule, this capital charge would continue to apply to the

same 14 banks but the capital charge would likely triple. We estimate that the cost of the additional capital would be approximately \$178 million per year. Our overall estimate of the cost of the final market risk rule is \$179.5 million, which reflects capital costs and compliance costs associated with implementing the alternative measures of creditworthiness.<sup>41</sup>

Our alternatives examine the impact of a market risk rule that uses different size thresholds in order to determine which institutions are subject to the rule. With alternative A we consider altering the \$1 billion trading book threshold used currently and maintained under the final rule. Although varying the size threshold changed the number of institutions affected by the rule, the overall capital cost of the rule did not change significantly. This reflects the high concentration of trading assets and liabilities in a relatively small number of banks. As long as the final rule applies to these institutions, the additional required capital and its corresponding cost will not change considerably.

Alternative B did affect both the number of institutions subject to the final rule and the cost of the final rule by limiting the market risk rule to institutions that meet both

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<sup>41</sup> Our capital estimate reflects the amount of capital banks would need to accumulate to meet the eight percent minimum capital requirement after implementation of the final market risk rule relative to the eight percent minimum capital requirement under the current rule. Because the banks affected by the rule are currently well capitalized, our estimates suggest that they could remain adequately capitalized under the final rule even if they keep capital at current levels. The availability of this reservoir of capital offsets the need for banks to incur the cost of accumulating further capital to meet the requirements of the final market risk rule. The extent to which they use current capital to offset the new market risk capital requirement is up to the banks. Should they elect to acquire the full \$31.6 billion in minimum capital required by the final rule, we estimate that cost at \$178 million.

size criteria, i.e., a \$1 billion trading book and a trading book to asset ratio of at least 10 percent. Only three national banks currently meet both of these criteria, and applying the final rule to these institutions would require an additional \$21.8 billion in market risk capital at a cost of approximately \$123million per year. Clearly, the estimated cost of the final rule would fall if the size thresholds determining applicability of the market risk rule were to increase. However, the current size thresholds, which continue to apply under the final rule, capture those institutions that the regulatory agencies believe should be subject to market risk capital rules.

The final rule changes covered positions, disclosure requirements, and methods relating to calculating the market risk measure. These changes achieve the important objectives of making required regulatory capital more sensitive to market risk, increases transparency of the trading book and market risk, and better captures trading positions for which market risk capital treatment is appropriate. The final rule carries over the current thresholds used to determine the applicability of the market risk rule. The banking agencies have determined that these size thresholds capture the appropriate institutions; those most exposed to market risk.

The large increase in required market risk capital, which we estimate to be approximately \$31.6 billion under the final rule, will provide a considerable buttress to the capital position of institutions subject to the market risk rule. This additional capital should dramatically lower the likelihood of catastrophic losses from market risk occurring at these institutions, which will enhance the safety and soundness of these institutions, the banking system, and world financial markets. Although there is some concern regarding the burden of the proposed increase in market risk capital and the

effect this could have on bank lending,<sup>42</sup> in the OCC's opinion, the final rule offers a better balance between costs and benefits than either the baseline or the alternatives.

The OCC does not expect the revised risk-based capital guidelines to have any disproportionate budgetary effect on any particular regions of the nation or particular State, local, or tribal governments, urban or rural or other types of communities, or particular segments of the private sector.

## **VI. Paperwork Reduction Act**

In accordance with the requirements of the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3521), the agencies may not conduct or sponsor, and the respondent is not required to respond to, an information collection unless it displays a currently valid Office of Management and Budget (OMB) control number. The OMB control number for the OCC and the FDIC will be assigned and the OMB control number for the Board will be 7100–0314. In conjunction with the January 2011 notice of proposed rulemaking, the OCC and the FDIC submitted the information collection requirements contained therein to OMB for review. In response, OMB filed comments with the OCC and FDIC in accordance with 5 CFR 1320.11(c) withholding PRA approval. The agencies subsequently determined that there were no additional information collection requirements in the December 2011 Amendment and, therefore, the agencies made no PRA filing in conjunction with it. In addition, this final rule contains no additional information collection requirements. The OCC and the FDIC have

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<sup>42</sup> When financial institutions are strong and financial markets are robust, raising new capital or adjusting capital funding sources poses little difficulty for the financial institution. As financial markets weaken, factors affecting a bank's financing may have spillover effects that may affect bank operational decisions such as lending.

submitted the information collection requirements in the final rule to OMB for review and approval under 44 U.S.C. 3506 and 5 CFR part 1320. The Board reviewed the final rule under the authority delegated to the Board by OMB. The final rule contains requirements subject to the PRA. The information collection requirements are found in sections 3, 4, 5, 6, 7, 8, 9, 10, and 13 of the final rule.

No comments concerning PRA were received in response to the notice of proposed rulemaking. Therefore, the hourly burden estimates for respondents noted in the proposed rule have not changed. The burden in the proposed rule for section 10(d), which requires documentation quarterly for analysis of risk characteristics of each securitization position it holds, has been renumbered to 10(f). The burden in the proposed rule for section 11, which requires quarterly quantitative disclosures, annual qualitative disclosures, and a formal disclosure policy approved by the board of directors that addresses the bank's approach for determining the market risk disclosures it makes, has been renumbered to 13. The agencies have an ongoing interest in your comments.

Comments are invited on:

- (a) Whether the collection of information is necessary for the proper performance of the agencies' functions, including whether the information has practical utility;
- (b) The accuracy of the estimates of the burden of the information collection, including the validity of the methodology and assumptions used;
- (c) Ways to enhance the quality, utility, and clarity of the information to be collected;

(d) Ways to minimize the burden of the information collection on respondents, including through the use of automated collection techniques or other forms of information technology; and

(e) Estimates of capital or start up costs and costs of operation, maintenance, and purchase of services to provide information.

## **VII. Plain Language**

Section 722 of the Gramm-Leach-Bliley Act requires the Federal banking agencies to use plain language in all proposed and final rules published after January 1, 2000. The agencies invited comment on whether the proposed rule was written plainly and clearly or whether there were ways the agencies could make the rule easier to understand. The agencies received no comments on these matters and believe that the final rule is written plainly and clearly in conjunction with the agencies' risk-based capital rules.

### **Text of the Common Rules (All Agencies)**

The text of the common rules appears below:

#### **Appendix \_\_\_ to Part \_\_\_ -- Risk-Based Capital Guidelines; Market Risk**

Section 1 Purpose, Applicability, and Reservation of Authority

Section 2 Definitions

Section 3 Requirements for Application of the Market Risk Capital Rule

Section 4 Adjustments to the Risk-Based Capital Ratio Calculations

Section 5 VaR-based Measure

Section 6 Stressed VaR-based Measure

Section 7 Specific Risk

Section 8 Incremental Risk

Section 9 Comprehensive Risk

Section 10 Standardized Measurement Method for Specific Risk

Section 11 Simplified Supervisory Formula Approach

Section 12 Market Risk Disclosures

### **Section 1. Purpose, Applicability, and Reservation of Authority**

(a) *Purpose.* This appendix establishes risk-based capital requirements for [banks] with significant exposure to market risk and provides methods for these [banks] to calculate their risk-based capital requirements for market risk. This appendix supplements and adjusts the risk-based capital calculations under [the general risk-based capital rules] and [the advanced capital adequacy framework] and establishes public disclosure requirements.

(b) *Applicability.* (1) This appendix applies to any [bank] with aggregate trading assets and trading liabilities (as reported in the [bank]'s most recent quarterly [regulatory report]), equal to:

(i) 10 percent or more of quarter-end total assets as reported on the most recent quarterly [Call Report or FR Y-9C]; or

(ii) \$1 billion or more.

(2) The [Agency] may apply this appendix to any [bank] if the [Agency] deems it necessary or appropriate because of the level of market risk of the [bank] or to ensure safe and sound banking practices.

(3) The [Agency] may exclude a [bank] that meets the criteria of paragraph (b)(1) of this section from application of this appendix if the [Agency] determines that the exclusion is appropriate based on the level of market risk of the [bank] and is consistent with safe and sound banking practices.

(c) *Reservation of authority.* (1) The [Agency] may require a [bank] to hold an amount of capital greater than otherwise required under this appendix if the [Agency] determines that the [bank]'s capital requirement for market risk as calculated under this appendix is not commensurate with the market risk of the [bank]'s covered positions. In making determinations under paragraphs (c)(1) through (c)(3) of this section, the [Agency] will apply notice and response procedures generally in the same manner as the notice and response procedures set forth in [12 CFR 3.12, 12 CFR 263.202, 12 CFR 325.6(c), 12 CFR 567.3(d)].

(2) If the [Agency] determines that the risk-based capital requirement calculated under this appendix by the [bank] for one or more covered positions or portfolios of covered positions is not commensurate with the risks associated with those positions or portfolios, the [Agency] may require the [bank] to assign a different risk-based capital requirement to the positions or portfolios that more accurately reflects the risk of the positions or portfolios.

(3) The [Agency] may also require a [bank] to calculate risk-based capital requirements for specific positions or portfolios under this appendix, or under [the advanced capital adequacy framework] or [the general risk-based capital rules], as appropriate, to more accurately reflect the risks of the positions.



(4) Nothing in this appendix limits the authority of the [Agency] under any other provision of law or regulation to take supervisory or enforcement action, including action to address unsafe or unsound practices or conditions, deficient capital levels, or violations of law.

## **Section 2. Definitions**

For purposes of this appendix, the following definitions apply:

*Affiliate* with respect to a company means any company that controls, is controlled by, or is under common control with, the company.

*Backtesting* means the comparison of a [bank]'s internal estimates with actual outcomes during a sample period not used in model development. For purposes of this appendix, backtesting is one form of out-of-sample testing.

*Bank holding company* is defined in section 2(a) of the Bank Holding Company Act of 1956 (12 U.S.C. 1841(a)).

*Commodity position* means a position for which price risk arises from changes in the price of a commodity.

*Company* means a corporation, partnership, limited liability company, depository institution, business trust, special purpose entity, association, or similar organization.

*Control* A person or company controls a company if it:

- (1) Owns, controls, or holds with power to vote 25 percent or more of a class of voting securities of the company; or
- (2) Consolidates the company for financial reporting purposes.

*Corporate debt position* means a debt position that is an exposure to a company that is not a sovereign entity, the Bank for International Settlements, the European

Central Bank, the European Commission, the International Monetary Fund, a multilateral development bank, a depository institution, a foreign bank, a credit union, a public sector entity, a government-sponsored entity, or a securitization.

Correlation trading position means:

(1) A securitization position for which all or substantially all of the value of the underlying exposures is based on the credit quality of a single company for which a two-way market exists, or on commonly traded indices based on such exposures for which a two-way market exists on the indices; or

(2) A position that is not a securitization position and that hedges a position described in paragraph (1) of this definition; and

(3) A correlation trading position does not include:

(i) A resecuritization position;

(ii) A derivative of a securitization position that does not provide a pro rata share in the proceeds of a securitization tranche; or

(iii) A securitization position for which the underlying assets or reference exposures are retail exposures, residential mortgage exposures, or commercial mortgage exposures.

*Country risk classification (CRC)* for a sovereign entity means the consensus CRC published from time to time by the Organization for Economic Cooperation and Development that provides a view of the likelihood that the sovereign entity will service its external debt.

*Covered position* means the following positions:

(1) A trading asset or trading liability (whether on- or off-balance sheet),<sup>43</sup> as reported on Schedule RC-D of the Call Report or Schedule HC-D of the FR Y-9C, that meets the following conditions:

(i) The position is a trading position or hedges another covered position;<sup>44</sup> and

(ii) The position is free of any restrictive covenants on its tradability or the [bank] is able to hedge the material risk elements of the position in a two-way market;

(2) A foreign exchange or commodity position, regardless of whether the position is a trading asset or trading liability (excluding any structural foreign currency positions that the [bank] chooses to exclude with prior supervisory approval); and

(3) Notwithstanding paragraphs (1) and (2) of this definition, a covered position does not include:

(i) An intangible asset, including any servicing asset;

(ii) Any hedge of a trading position that the [Agency] determines to be outside the scope of the [bank]'s hedging strategy required in paragraph (a)(2) of section 3 of this appendix;

(iii) Any position that, in form or substance, acts as a liquidity facility that provides support to asset-backed commercial paper;

(iv) A credit derivative the [bank] recognizes as a guarantee for risk-weighted asset amount calculation purposes under [the advanced capital adequacy framework] or [the general risk-based capital rules];

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<sup>43</sup> Securities subject to repurchase and lending agreements are included as if they are still owned by the lender.

<sup>44</sup> A position that hedges a trading position must be within the scope of the bank's hedging strategy as described in paragraph (a)(2) of section 3 of this appendix.

(v) Any equity position that is not publicly traded, other than a derivative that references a publicly traded equity;

(vi) Any position a [bank] holds with the intent to securitize; or

(vii) Any direct real estate holding.

*Credit derivative* means a financial contract executed under standard industry documentation that allows one party (the protection purchaser) to transfer the credit risk of one or more exposures (reference exposure(s)) to another party (the protection provider).

*Credit union* means an insured credit union as defined under the Federal Credit Union Act (12 U.S.C. 1752).

*Default by a sovereign entity* means noncompliance by the sovereign entity with its external debt service obligations or the inability or unwillingness of a sovereign entity to service an existing obligation according to its original contractual terms, as evidenced by failure to pay principal and interest timely and fully, arrearages, or restructuring.

*Debt position* means a covered position that is not a securitization position or a correlation trading position and that has a value that reacts primarily to changes in interest rates or credit spreads.

*Depository institution* is defined in section 3 of the Federal Deposit Insurance Act (12 U.S.C. 1813).

*Equity position* means a covered position that is not a securitization position or a correlation trading position and that has a value that reacts primarily to changes in equity prices.

*Event risk* means the risk of loss on equity or hybrid equity positions as a result of a financial event, such as the announcement or occurrence of a company merger, acquisition, spin-off, or dissolution.

*Foreign bank* means a foreign bank as defined in § 211.2 of the Federal Reserve Board's Regulation K (12 CFR 211.2), other than a depository institution.

*Foreign exchange position* means a position for which price risk arises from changes in foreign exchange rates.

*General market risk* means the risk of loss that could result from broad market movements, such as changes in the general level of interest rates, credit spreads, equity prices, foreign exchange rates, or commodity prices.

*General obligation* means a bond or similar obligation that is guaranteed by the full faith and credit of states or other political subdivisions of a sovereign entity.

*Government-sponsored entity (GSE)* means an entity established or chartered by the U.S. government to serve public purposes specified by the U.S. Congress but whose debt obligations are not explicitly guaranteed by the full faith and credit of the U.S. government.

*Hedge* means a position or positions that offset all, or substantially all, of one or more material risk factors of another position.

*Idiosyncratic risk* means the risk of loss in the value of a position that arises from changes in risk factors unique to that position.

*Incremental risk* means the default risk and credit migration risk of a position. Default risk means the risk of loss on a position that could result from the failure of an obligor to make timely payments of principal or interest on its debt obligation, and the

risk of loss that could result from bankruptcy, insolvency, or similar proceeding. Credit migration risk means the price risk that arises from significant changes in the underlying credit quality of the position.

*Investment grade* means that the entity to which the [bank] is exposed through a loan or security, or the reference entity with respect to a credit derivative, has adequate capacity to meet financial commitments for the projected life of the asset or exposure. Such an entity or reference entity has adequate capacity to meet financial commitments if the risk of its default is low and the full and timely repayment of principal and interest is expected.

*Market risk* means the risk of loss on a position that could result from movements in market prices.

*Multilateral development bank* means the International Bank for Reconstruction and Development, the Multilateral Investment Guarantee Agency, the International Finance Corporation, the Inter-American Development Bank, the Asian Development Bank, the African Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the European Investment Fund, the Nordic Investment Bank, the Caribbean Development Bank, the Islamic Development Bank, the Council of Europe Development Bank, and any other multilateral lending institution or regional development bank in which the U.S. government is a shareholder or contributing member or which the [Agency] determines poses comparable credit risk.

*N<sup>th</sup>-to-default credit derivative* means a credit derivative that provides credit protection only for the n<sup>th</sup>-defaulting reference exposure in a group of reference exposures.

*Over-the-counter (OTC) derivative* means a derivative contract that is not traded on an exchange that requires the daily receipt and payment of cash-variation margin.

*Public sector entity (PSE)* means a state, local authority, or other governmental subdivision below the sovereign entity level.

*Publicly traded* means traded on:

(1) Any exchange registered with the SEC as a national securities exchange under section 6 of the Securities Exchange Act of 1934 (15 U.S.C. 78f); or

(2) Any non-U.S.-based securities exchange that:

(i) Is registered with, or approved by, a national securities regulatory authority; and

(ii) Provides a liquid, two-way market for the instrument in question.

*Qualifying securities borrowing transaction* means a cash-collateralized securities borrowing transaction that meets the following conditions:

(1) The transaction is based on liquid and readily marketable securities;

(2) The transaction is marked-to-market daily;

(3) The transaction is subject to daily margin maintenance requirements; and

(4)(i) The transaction is a securities contract for the purposes of section 555 of the Bankruptcy Code (11 U.S.C. 555), a qualified financial contract for the purposes of section 11(e)(8) of the Federal Deposit Insurance Act (12 U.S.C. 1821(e)(8)), or a netting contract between or among financial institutions for the purposes of sections 401-407 of the Federal Deposit Insurance Corporation Improvement Act of 1991 (12 U.S.C. 4401-4407) or the Board's Regulation EE (12 CFR part 231); or

(ii) If the transaction does not meet the criteria in paragraph (4)(i) of this definition, either:

(A) The [bank] has conducted sufficient legal review to reach a well-founded conclusion that:

(1) The securities borrowing agreement executed in connection with the transaction provides the [bank] the right to accelerate, terminate, and close-out on a net basis all transactions under the agreement and to liquidate or set off collateral promptly upon an event of counterparty default, including in a bankruptcy, insolvency, or other similar proceeding of the counterparty; and

(2) Under applicable law of the relevant jurisdiction, its rights under the agreement are legal, valid, binding, and enforceable and any exercise of rights under the agreement will not be stayed or avoided; or

(B) The transaction is either overnight or unconditionally cancelable at any time by the [bank], and the [bank] has conducted sufficient legal review to reach a well-founded conclusion that:

(1) The securities borrowing agreement executed in connection with the transaction provides the [bank] the right to accelerate, terminate, and close-out on a net basis all transactions under the agreement and to liquidate or set off collateral promptly upon an event of counterparty default; and

(2) Under the law governing the agreement, its rights under the agreement are legal, valid, binding, and enforceable.

*Resecuritization* means a securitization in which one or more of the underlying exposures is a securitization position.

Resecuritization position means a covered position that is:

(1) An on- or off-balance sheet exposure to a resecuritization; or



(2) An exposure that directly or indirectly references a resecuritization exposure in paragraph (1) of this definition.

*Revenue obligation* means a bond or similar obligation, including loans and leases, that is an obligation of a state or other political subdivision of a sovereign entity, but for which the government entity is committed to repay with revenues from the specific project financed rather than with general tax funds.

*SEC* means the U.S. Securities and Exchange Commission.

*Securitization* means a transaction in which:

(1) All or a portion of the credit risk of one or more underlying exposures is transferred to one or more third parties;

(2) The credit risk associated with the underlying exposures has been separated into at least two tranches that reflect different levels of seniority;

(3) Performance of the securitization exposures depends upon the performance of the underlying exposures;

(4) All or substantially all of the underlying exposures are financial exposures (such as loans, commitments, credit derivatives, guarantees, receivables, asset-backed securities, mortgage-backed securities, other debt securities, or equity securities);

(5) For non-synthetic securitizations, the underlying exposures are not owned by an operating company;

(6) The underlying exposures are not owned by a small business investment company described in section 302 of the Small Business Investment Act of 1958 (15 U.S.C. 682); and

(7) The underlying exposures are not owned by a firm an investment in which qualifies as a community development investment under 12 U.S.C. 24(Eleventh).

(8) The [Agency] may determine that a transaction in which the underlying exposures are owned by an investment firm that exercises substantially unfettered control over the size and composition of its assets, liabilities, and off-balance sheet exposures is not a securitization based on the transaction's leverage, risk profile, or economic substance.

(9) The [Agency] may deem an exposure to a transaction that meets the definition of a securitization, notwithstanding paragraph (5), (6), or (7) of this definition, to be a securitization based on the transaction's leverage, risk profile, or economic substance.

*Securitization position* means a covered position that is:

(1) An on-balance sheet or off-balance sheet credit exposure (including credit-enhancing representations and warranties) that arises from a securitization (including a resecuritization); or

(2) An exposure that directly or indirectly references a securitization exposure described in paragraph (1) of this definition.

*Sovereign debt position* means a direct exposure to a sovereign entity.

*Sovereign entity* means a central government (including the U.S. government) or an agency, department, ministry, or central bank of a central government.

*Sovereign of incorporation* means the country where an entity is incorporated, chartered, or similarly established.

*Specific risk* means the risk of loss on a position that could result from factors other than broad market movements and includes event risk, default risk, and idiosyncratic risk.

*Structural position in a foreign currency* means a position that is not a trading position and that is:

(1) Subordinated debt, equity, or minority interest in a consolidated subsidiary that is denominated in a foreign currency;

(2) Capital assigned to foreign branches that is denominated in a foreign currency;

(3) A position related to an unconsolidated subsidiary or another item that is denominated in a foreign currency and that is deducted from the [bank]'s tier 1 and tier 2 capital; or

(4) A position designed to hedge a [bank]'s capital ratios or earnings against the effect on paragraphs (1), (2), or (3) of this definition of adverse exchange rate movements.

*Term repo-style transaction* means a repurchase or reverse repurchase transaction, or a securities borrowing or securities lending transaction, including a transaction in which the [bank] acts as agent for a customer and indemnifies the customer against loss, that has an original maturity in excess of one business day, provided that:

(1) The transaction is based solely on liquid and readily marketable securities or cash;

(2) The transaction is marked-to-market daily and subject to daily margin maintenance requirements;

(3) The transaction is executed under an agreement that provides the [bank] the right to accelerate, terminate, and close-out the transaction on a net basis and to liquidate or set off collateral promptly upon an event of default (including bankruptcy, insolvency, or similar proceeding) of the counterparty, provided that, in any such case, any exercise of rights under the agreement will not be stayed or avoided under applicable law in the relevant jurisdictions;<sup>45</sup> and

(4) The [bank] has conducted and documented sufficient legal review to conclude with a well-founded basis that the agreement meets the requirements of paragraph (3) of this definition and is legal, valid, binding, and enforceable under applicable law in the relevant jurisdictions.

*Tier 1 capital* is defined in [the general risk-based capital rules] or [the advanced capital adequacy framework], as applicable.

*Tier 2 capital* is defined in [the general risk-based capital rules] or [the advanced capital adequacy framework], as applicable.

*Trading position* means a position that is held by the [bank] for the purpose of short-term resale or with the intent of benefiting from actual or expected short-term price movements, or to lock in arbitrage profits.

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<sup>45</sup> This requirement is met where all transactions under the agreement are (i) executed under U.S. law and (ii) constitute “securities contracts” or “repurchase agreements” under section 555 or 559, respectively, of the Bankruptcy Code (11 U.S.C. 555 or 559), qualified financial contracts under section 11(e)(8) of the Federal Deposit Insurance Act (12 U.S.C. 1821(e)(8)), or netting contracts between or among financial institutions under sections 401-407 of the Federal Deposit Insurance Corporation Improvement Act of 1991 (12 U.S.C. 4407), or the Federal Reserve Board's Regulation EE (12 CFR part 231).

*Two-way market* means a market where there are independent bona fide offers to buy and sell so that a price reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined within one day and settled at that price within a relatively short time frame conforming to trade custom.

*Underlying exposure* means one or more exposures that have been securitized in a securitization transaction.

*Value-at-Risk (VaR)* means the estimate of the maximum amount that the value of one or more positions could decline due to market price or rate movements during a fixed holding period within a stated confidence interval.

### **Section 3. Requirements for Application of the Market Risk Capital Rule**

(a) *Trading positions.* (1) *Identification of trading positions.* A [bank] must have clearly defined policies and procedures for determining which of its trading assets and trading liabilities are trading positions and which of its trading positions are correlation trading positions. These policies and procedures must take into account:

(i) The extent to which a position, or a hedge of its material risks, can be marked-to-market daily by reference to a two-way market; and

(ii) Possible impairments to the liquidity of a position or its hedge.

(2) *Trading and hedging strategies.* A [bank] must have clearly defined trading and hedging strategies for its trading positions that are approved by senior management of the [bank].

(i) The trading strategy must articulate the expected holding period of, and the market risk associated with, each portfolio of trading positions.

(ii) The hedging strategy must articulate for each portfolio of trading positions the level of market risk the [bank] is willing to accept and must detail the instruments, techniques, and strategies the [bank] will use to hedge the risk of the portfolio.

(b) *Management of covered positions.* (1) *Active management.* A [bank] must have clearly defined policies and procedures for actively managing all covered positions. At a minimum, these policies and procedures must require:

(i) Marking positions to market or to model on a daily basis;

(ii) Daily assessment of the [bank]'s ability to hedge position and portfolio risks, and of the extent of market liquidity;

(iii) Establishment and daily monitoring of limits on positions by a risk control unit independent of the trading business unit;

(iv) Daily monitoring by senior management of information described in paragraphs (b)(1)(i) through (b)(1)(iii) of this section;

(v) At least annual reassessment of established limits on positions by senior management; and

(vi) At least annual assessments by qualified personnel of the quality of market inputs to the valuation process, the soundness of key assumptions, the reliability of parameter estimation in pricing models, and the stability and accuracy of model calibration under alternative market scenarios.

(2) *Valuation of covered positions.* The [bank] must have a process for prudent valuation of its covered positions that includes policies and procedures on the valuation of positions, marking positions to market or to model, independent price verification, and valuation adjustments or reserves. The valuation process must consider, as appropriate,

unearned credit spreads, close-out costs, early termination costs, investing and funding costs, liquidity, and model risk.

(c) *Requirements for internal models.* (1) A [bank] must obtain the prior written approval of the [Agency] before using any internal model to calculate its risk-based capital requirement under this appendix.

(2) A [bank] must meet all of the requirements of this section on an ongoing basis. The [bank] must promptly notify the [Agency] when:

(i) The [bank] plans to extend the use of a model that the [Agency] has approved under this appendix to an additional business line or product type;

(ii) The [bank] makes any change to an internal model approved by the [Agency] under this appendix that would result in a material change in the [bank]'s risk-weighted asset amount for a portfolio of covered positions; or

(iii) The [bank] makes any material change to its modeling assumptions.

(3) The [Agency] may rescind its approval of the use of any internal model (in whole or in part) or of the determination of the approach under section 9(a)(2)(ii) of this appendix for a [bank]'s modeled correlation trading positions and determine an appropriate capital requirement for the covered positions to which the model would apply, if the [Agency] determines that the model no longer complies with this appendix or fails to reflect accurately the risks of the [bank]'s covered positions.

(4) The [bank] must periodically, but no less frequently than annually, review its internal models in light of developments in financial markets and modeling technologies, and enhance those models as appropriate to ensure that they continue to meet the

[Agency]'s standards for model approval and employ risk measurement methodologies that are most appropriate for the [bank]'s covered positions.

(5) The [bank] must incorporate its internal models into its risk management process and integrate the internal models used for calculating its VaR-based measure into its daily risk management process.

(6) The level of sophistication of a [bank]'s internal models must be commensurate with the complexity and amount of its covered positions. A [bank]'s internal models may use any of the generally accepted approaches, including but not limited to variance-covariance models, historical simulations, or Monte Carlo simulations, to measure market risk.

(7) The [bank]'s internal models must properly measure all the material risks in the covered positions to which they are applied.

(8) The [bank]'s internal models must conservatively assess the risks arising from less liquid positions and positions with limited price transparency under realistic market scenarios.

(9) The [bank] must have a rigorous and well-defined process for re-estimating, re-evaluating, and updating its internal models to ensure continued applicability and relevance.

(10) If a [bank] uses internal models to measure specific risk, the internal models must also satisfy the requirements in paragraph (b)(1) of section 7 of this appendix.

(d) *Control, oversight, and validation mechanisms.* (1) The [bank] must have a risk control unit that reports directly to senior management and is independent from the business trading units.



(2) The [bank] must validate its internal models initially and on an ongoing basis. The [bank]'s validation process must be independent of the internal models' development, implementation, and operation, or the validation process must be subjected to an independent review of its adequacy and effectiveness. Validation must include:

(i) An evaluation of the conceptual soundness of (including developmental evidence supporting) the internal models;

(ii) An ongoing monitoring process that includes verification of processes and the comparison of the [bank]'s model outputs with relevant internal and external data sources or estimation techniques; and

(iii) An outcomes analysis process that includes backtesting. For internal models used to calculate the VaR-based measure, this process must include a comparison of the changes in the [bank]'s portfolio value that would have occurred were end-of-day positions to remain unchanged (therefore, excluding fees, commissions, reserves, net interest income, and intraday trading) with VaR-based measures during a sample period not used in model development.

(3) The [bank] must stress test the market risk of its covered positions at a frequency appropriate to each portfolio, and in no case less frequently than quarterly. The stress tests must take into account concentration risk (including but not limited to concentrations in single issuers, industries, sectors, or markets), illiquidity under stressed market conditions, and risks arising from the [bank]'s trading activities that may not be adequately captured in its internal models.

(4) The [bank] must have an internal audit function independent of business-line management that at least annually assesses the effectiveness of the controls supporting

the [bank]'s market risk measurement systems, including the activities of the business trading units and independent risk control unit, compliance with policies and procedures, and calculation of the [bank]'s measures for market risk under this appendix. At least annually, the internal audit function must report its findings to the [bank]'s board of directors (or a committee thereof).

(e) *Internal assessment of capital adequacy.* The [bank] must have a rigorous process for assessing its overall capital adequacy in relation to its market risk. The assessment must take into account risks that may not be captured fully in the VaR-based measure, including concentration and liquidity risk under stressed market conditions.

(f) *Documentation.* The [bank] must adequately document all material aspects of its internal models, management and valuation of covered positions, control, oversight, validation and review processes and results, and internal assessment of capital adequacy.

#### **Section 4. Adjustments to the Risk-Based Capital Ratio Calculations**

(a) *Risk-based capital ratio denominators.* A [bank] must calculate its general risk-based capital ratio denominator by following the steps described in paragraphs (a)(1) through (a)(4) of this section. A [bank] subject to [the advanced capital adequacy framework] must use its general risk-based capital ratio denominator for purposes of determining its total risk-based capital ratio and its tier 1 risk-based capital ratio under section 3(a)(2)(ii) and section 3(a)(3)(ii), respectively, of [the advanced capital adequacy framework], provided that the [bank] may not use the supervisory formula approach (SFA) in section 10(b)(2)(vii)(B) of this appendix for purposes of this calculation. A [bank] subject to [the advanced capital adequacy framework] also must calculate an advanced risk-based capital ratio denominator by following the steps in paragraphs (a)(1)

through (a)(4) of this section for purposes of determining its total risk-based capital ratio and its tier 1 risk-based capital ratio under sections 3(a)(2)(i) and section 3(a)(3)(i), respectively, of [the advanced capital adequacy framework].

(1) *Adjusted risk-weighted assets.* (i) The [bank] must calculate:

(A) General adjusted risk-weighted assets, which equals risk-weighted assets as determined in accordance with [the general risk-based capital rules] with the adjustments in paragraphs (a)(1)(ii) and, if applicable, (a)(1)(iii) of this section; and

(B) For a [bank] subject to [the advanced capital adequacy framework], advanced adjusted risk-weighted assets, which equal risk-weighted assets as determined in accordance with [the advanced capital adequacy framework] with the adjustments in paragraph (a)(1)(ii) of this section.

(ii) For purposes of calculating its general and advanced adjusted risk-weighted assets under paragraphs (a)(1)(i)(A) and (a)(1)(i)(B) of this section, respectively, the [bank] must exclude the risk-weighted asset amounts of all covered positions (except foreign exchange positions that are not trading positions and over-the-counter derivative positions).

(iii) For purposes of calculating its general adjusted risk-weighted assets under paragraph (a)(1)(i)(A) of this section, a [bank] may exclude receivables that arise from the posting of cash collateral and are associated with qualifying securities borrowing transactions to the extent the receivable is collateralized by the market value of the borrowed securities.

(2) *Measure for market risk.* The [bank] must calculate the general measure for market risk (except, as provided in paragraph (a) of this section, that the [bank] may not

use the SFA in section 10(b)(2)(vii)(B) of this appendix for purposes of this calculation), which equals the sum of the VaR-based capital requirement, stressed VaR-based capital requirement, specific risk add-ons, incremental risk capital requirement, comprehensive risk capital requirement, and capital requirement for de minimis exposures all as defined under this paragraph (a)(2). A [bank] subject to [the advanced capital adequacy framework] also must calculate the advanced measure for market risk, which equals the sum of the VaR-based capital requirement, stressed VaR-based capital requirement, specific risk add-ons, incremental risk capital requirement, comprehensive risk capital requirement, and capital requirement for de minimis exposures as defined under this paragraph (a)(2).

(i) *VaR-based capital requirement.* A [bank]'s VaR-based capital requirement equals the greater of:

(A) The previous day's VaR-based measure as calculated under section 5 of this appendix; or

(B) The average of the daily VaR-based measures as calculated under section 5 of this appendix for each of the preceding 60 business days multiplied by three, except as provided in paragraph (b) of this section.

(ii) *Stressed VaR-based capital requirement.* A [bank]'s stressed VaR-based capital requirement equals the greater of:

(A) The most recent stressed VaR-based measure as calculated under section 6 of this appendix; or

(B) The average of the stressed VaR-based measures as calculated under section 6 of this appendix for each of the preceding 12 weeks multiplied by three, except as provided in paragraph (b) of this section.

(iii) *Specific risk add-ons.* A [bank]'s specific risk add-ons equal any specific risk add-ons that are required under section 7 of this appendix and are calculated in accordance with section 10 of this appendix.

(iv) *Incremental risk capital requirement.* A [bank]'s incremental risk capital requirement equals any incremental risk capital requirement as calculated under section 8 of this appendix.

(v) Comprehensive risk capital requirement. A [bank]'s comprehensive risk capital requirement equals any comprehensive risk capital requirement as calculated under section 9 of this appendix.

(vi) *Capital requirement for de minimis exposures.* A [bank]'s capital requirement for *de minimis* exposures equals:

(A) The absolute value of the market value of those *de minimis* exposures that are not captured in the [bank]'s VaR-based measure or under paragraph (a)(2)(vi)(B) of this section; and

(B) With the prior written approval of the [Agency], the capital requirement for any *de minimis* exposures using alternative techniques that appropriately measure the market risk associated with those exposures.

(3) *Market risk equivalent assets.* The [bank] must calculate general market risk equivalent assets as the general measure for market risk (as calculated in paragraph (a)(2) of this section) multiplied by 12.5. A [bank] subject to [the advanced capital adequacy

framework] also must calculate advanced market risk equivalent assets as the advanced measure for market risk (as calculated in paragraph (a)(2) of this section) multiplied by 12.5.

(4) *Denominator calculation.* (i) The [bank] must add general market risk equivalent assets (as calculated in paragraph (a)(3) of this section) to general adjusted risk-weighted assets (as calculated in paragraph (a)(1)(i) of this section). The resulting sum is the [bank]'s general risk-based capital ratio denominator.

(ii) A [bank] subject to [the advanced capital adequacy framework] must add advanced market risk equivalent assets (as calculated in paragraph (a)(3) of this section) to advanced adjusted risk-weighted assets (as calculated in paragraph (a)(1)(i) of this section). The resulting sum is the [bank]'s advanced risk-based capital ratio denominator.

(b) *Backtesting.* A [bank] must compare each of its most recent 250 business days' trading losses (excluding fees, commissions, reserves, net interest income, and intraday trading) with the corresponding daily VaR-based measures calibrated to a one-day holding period and at a one-tail, 99.0 percent confidence level. A [bank] must begin backtesting as required by this paragraph no later than one year after the later of January 1, 2013, and the date on which the [bank] becomes subject to this appendix. In the interim, consistent with safety and soundness principles, a [bank] subject to this appendix as of its effective date should continue to follow backtesting procedures in accordance with the [Agency]'s supervisory expectations.

(1) Once each quarter, the [bank] must identify the number of exceptions (that is, the number of business days for which the actual daily net trading loss, if any, exceeds

the corresponding daily VaR-based measure) that have occurred over the preceding 250 business days.

(2) A [bank] must use the multiplication factor in table 1 of this appendix that corresponds to the number of exceptions identified in paragraph (b)(1) of this section to determine its VaR-based capital requirement for market risk under paragraph (a)(2)(i) of this section and to determine its stressed VaR-based capital requirement for market risk under paragraph (a)(2)(ii) of this section until it obtains the next quarter's backtesting results, unless the [Agency] notifies the [bank] in writing that a different adjustment or other action is appropriate.

Table 1 – Multiplication Factors Based on Results of Backtesting

| Number of Exceptions | Multiplication Factor |
|----------------------|-----------------------|
| 4 or fewer           | 3.00                  |
| 5                    | 3.40                  |
| 6                    | 3.50                  |
| 7                    | 3.65                  |
| 8                    | 3.75                  |
| 9                    | 3.85                  |
| 10 or more           | 4.00                  |

## Section 5. VaR-based Measure

(a) *General requirement.* A [bank] must use one or more internal models to calculate daily a VaR-based measure of the general market risk of all covered positions. The daily VaR-based measure also may reflect the [bank]'s specific risk for one or more portfolios of debt and equity positions, if the internal models meet the requirements of paragraph (b)(1) of section 7 of this appendix. The daily VaR-based measure must also reflect the [bank]'s specific risk for any portfolio of correlation trading positions that is modeled under section 9 of this appendix. A [bank] may elect to include term repo-style

transactions in its VaR-based measure, provided that the [bank] includes all such term repo-style transactions consistently over time.

(1) The [bank]'s internal models for calculating its VaR-based measure must use risk factors sufficient to measure the market risk inherent in all covered positions. The market risk categories must include, as appropriate, interest rate risk, credit spread risk, equity price risk, foreign exchange risk, and commodity price risk. For material positions in the major currencies and markets, modeling techniques must incorporate enough segments of the yield curve – in no case less than six – to capture differences in volatility and less than perfect correlation of rates along the yield curve.

(2) The VaR-based measure may incorporate empirical correlations within and across risk categories, provided the [bank] validates and demonstrates the reasonableness of its process for measuring correlations. If the VaR-based measure does not incorporate empirical correlations across risk categories, the [bank] must add the separate measures from its internal models used to calculate the VaR-based measure for the appropriate market risk categories (interest rate risk, credit spread risk, equity price risk, foreign exchange rate risk, and/or commodity price risk) to determine its aggregate VaR-based measure.

(3) The VaR-based measure must include the risks arising from the nonlinear price characteristics of options positions or positions with embedded optionality and the sensitivity of the market value of the positions to changes in the volatility of the underlying rates, prices, or other material risk factors. A [bank] with a large or complex options portfolio must measure the volatility of options positions or positions with embedded optionality by different maturities and/or strike prices, where material.



(4) The [bank] must be able to justify to the satisfaction of the [Agency] the omission of any risk factors from the calculation of its VaR-based measure that the [bank] uses in its pricing models.

(5) The [bank] must demonstrate to the satisfaction of the [Agency] the appropriateness of any proxies used to capture the risks of the [bank]'s actual positions for which such proxies are used.

(b) *Quantitative requirements for VaR-based measure.* (1) The VaR-based measure must be calculated on a daily basis using a one-tail, 99.0 percent confidence level, and a holding period equivalent to a 10-business-day movement in underlying risk factors, such as rates, spreads, and prices. To calculate VaR-based measures using a 10-business-day holding period, the [bank] may calculate 10-business-day measures directly or may convert VaR-based measures using holding periods other than 10 business days to the equivalent of a 10-business-day holding period. A [bank] that converts its VaR-based measure in such a manner must be able to justify the reasonableness of its approach to the satisfaction of the [Agency].

(2) The VaR-based measure must be based on a historical observation period of at least one year. Data used to determine the VaR-based measure must be relevant to the [bank]'s actual exposures and of sufficient quality to support the calculation of risk-based capital requirements. The [bank] must update data sets at least monthly or more frequently as changes in market conditions or portfolio composition warrant. For a [bank] that uses a weighting scheme or other method for the historical observation period, the [bank] must either:

(i) Use an effective observation period of at least one year in which the average time lag of the observations is at least six months; or

(ii) Demonstrate to the [Agency] that its weighting scheme is more effective than a weighting scheme with an average time lag of at least six months representing the volatility of the [bank]'s trading portfolio over a full business cycle. A [bank] using this option must update its data more frequently than monthly and in a manner appropriate for the type of weighting scheme.

(c) A [bank] must divide its portfolio into a number of significant subportfolios approved by the [Agency] for subportfolio backtesting purposes. These subportfolios must be sufficient to allow the [bank] and the [Agency] to assess the adequacy of the VaR model at the risk factor level; the [Agency] will evaluate the appropriateness of these subportfolios relative to the value and composition of the [bank]'s covered positions. The [bank] must retain and make available to the [Agency] the following information for each subportfolio for each business day over the previous two years (500 business days), with no more than a 60-day lag:

(1) A daily VaR-based measure for the subportfolio calibrated to a one-tail, 99.0 percent confidence level;

(2) The daily profit or loss for the subportfolio (that is, the net change in price of the positions held in the portfolio at the end of the previous business day); and

(3) The p-value of the profit or loss on each day (that is, the probability of observing a profit that is less than, or a loss that is greater than, the amount reported for purposes of paragraph (c)(2) of this section based on the model used to calculate the VaR-based measure described in paragraph (c)(1) of this section).

## **Section 6. Stressed VaR-Based Measure**

(a) *General requirement.* At least weekly, a [bank] must use the same internal model(s) used to calculate its VaR-based measure to calculate a stressed VaR-based measure.

(b) *Quantitative requirements for stressed VaR-based measure.* (1) A [bank] must calculate a stressed VaR-based measure for its covered positions using the same model(s) used to calculate the VaR-based measure, subject to the same confidence level and holding period applicable to the VaR-based measure under section 5 of this appendix, but with model inputs calibrated to historical data from a continuous 12-month period that reflects a period of significant financial stress appropriate to the [bank]'s current portfolio.

(2) The stressed VaR-based measure must be calculated at least weekly and be no less than the [bank]'s VaR-based measure.

(3) A [bank] must have policies and procedures that describe how it determines the period of significant financial stress used to calculate the [bank]'s stressed VaR-based measure under this section and must be able to provide empirical support for the period used. The [bank] must obtain the prior approval of the [Agency] for, and notify the [Agency] if the [bank] makes any material changes to, these policies and procedures. The policies and procedures must address:

(i) How the [bank] links the period of significant financial stress used to calculate the stressed VaR-based measure to the composition and directional bias of its current portfolio; and

(ii) The [bank]'s process for selecting, reviewing, and updating the period of significant financial stress used to calculate the stressed VaR-based measure and for monitoring the appropriateness of the period to the [bank]'s current portfolio.

(4) Nothing in this section prevents the [Agency] from requiring a [bank] to use a different period of significant financial stress in the calculation of the stressed VaR-based measure.

## **Section 7. Specific Risk**

(a) *General requirement.* A [bank] must use one of the methods in this section to measure the specific risk for each of its debt, equity, and securitization positions with specific risk.

(b) *Modeled specific risk.* A [bank] may use models to measure the specific risk of covered positions as provided in paragraph (a) of section 5 of this appendix (therefore, excluding securitization positions that are not modeled under section 9 of this appendix). A [bank] must use models to measure the specific risk of correlation trading positions that are modeled under section 9 of this appendix.

(1) *Requirements for specific risk modeling.* (i) If a [bank] uses internal models to measure the specific risk of a portfolio, the internal models must:

(A) Explain the historical price variation in the portfolio;

(B) Be responsive to changes in market conditions;

(C) Be robust to an adverse environment, including signaling rising risk in an adverse environment; and

(D) Capture all material components of specific risk for the debt and equity positions in the portfolio. Specifically, the internal models must:

(1) Capture event risk and idiosyncratic risk;

(2) Capture and demonstrate sensitivity to material differences between positions that are similar but not identical and to changes in portfolio composition and concentrations.

(ii) If a [bank] calculates an incremental risk measure for a portfolio of debt or equity positions under section 8 of this appendix, the [bank] is not required to capture default and credit migration risks in its internal models used to measure the specific risk of those portfolios.

(2) *Specific risk fully modeled for one or more portfolios.* If the [bank]'s VaR-based measure captures all material aspects of specific risk for one or more of its portfolios of debt, equity, or correlation trading positions, the [bank] has no specific risk add-on for those portfolios for purposes of paragraph (a)(2)(iii) of section 4 of this appendix.

(c) *Specific risk not modeled.*

(1) If the [bank]'s VaR-based measure does not capture all material aspects of specific risk for a portfolio of debt, equity, or correlation trading positions, the [bank] must calculate a specific-risk add-on for the portfolio under the standardized measurement method as described in section 10 of this appendix.

(2) A [bank] must calculate a specific risk add-on under the standardized measurement method as described in section 10 of this appendix for all of its securitization positions that are not modeled under section 9 of this appendix.

## **Section 8. Incremental Risk**

(a) *General requirement.* A [bank] that measures the specific risk of a portfolio of debt positions under section 7(b) of this appendix using internal models must calculate at least weekly an incremental risk measure for that portfolio according to the requirements in this section. The incremental risk measure is the [bank]'s measure of potential losses due to incremental risk over a one-year time horizon at a one-tail, 99.9 percent confidence level, either under the assumption of a constant level of risk, or under the assumption of constant positions. With the prior approval of the [Agency], a [bank] may choose to include portfolios of equity positions in its incremental risk model, provided that it consistently includes such equity positions in a manner that is consistent with how the [bank] internally measures and manages the incremental risk of such positions at the portfolio level. If equity positions are included in the model, for modeling purposes default is considered to have occurred upon the default of any debt of the issuer of the equity position. A [bank] may not include correlation trading positions or securitization positions in its incremental risk measure.

(b) *Requirements for incremental risk modeling.* For purposes of calculating the incremental risk measure, the incremental risk model must:

(1) Measure incremental risk over a one-year time horizon and at a one-tail, 99.9 percent confidence level, either under the assumption of a constant level of risk, or under the assumption of constant positions.

(i) A constant level of risk assumption means that the [bank] rebalances, or rolls over, its trading positions at the beginning of each liquidity horizon over the one-year horizon in a manner that maintains the [bank]'s initial risk level. The [bank] must

determine the frequency of rebalancing in a manner consistent with the liquidity horizons of the positions in the portfolio. The liquidity horizon of a position or set of positions is the time required for a [bank] to reduce its exposure to, or hedge all of its material risks of, the position(s) in a stressed market. The liquidity horizon for a position or set of positions may not be less than the shorter of three months or the contractual maturity of the position.

(ii) A constant position assumption means that the [bank] maintains the same set of positions throughout the one-year horizon. If a [bank] uses this assumption, it must do so consistently across all portfolios.

(iii) A [bank]'s selection of a constant position or a constant risk assumption must be consistent between the [bank]'s incremental risk model and its comprehensive risk model described in section 9 of this appendix, if applicable.

(iv) A [bank]'s treatment of liquidity horizons must be consistent between the [bank]'s incremental risk model and its comprehensive risk model described in section 9 of this appendix, if applicable.

(2) Recognize the impact of correlations between default and migration events among obligors.

(3) Reflect the effect of issuer and market concentrations, as well as concentrations that can arise within and across product classes during stressed conditions.

(4) Reflect netting only of long and short positions that reference the same financial instrument.

(5) Reflect any material mismatch between a position and its hedge.

(6) Recognize the effect that liquidity horizons have on dynamic hedging strategies. In such cases, a [bank] must:

(i) Choose to model the rebalancing of the hedge consistently over the relevant set of trading positions;

(ii) Demonstrate that the inclusion of rebalancing results in a more appropriate risk measurement;

(iii) Demonstrate that the market for the hedge is sufficiently liquid to permit rebalancing during periods of stress; and

(iv) Capture in the incremental risk model any residual risks arising from such hedging strategies.

(7) Reflect the nonlinear impact of options and other positions with material nonlinear behavior with respect to default and migration changes.

(8) Maintain consistency with the [bank]'s internal risk management methodologies for identifying, measuring, and managing risk.

(c) Calculation of incremental risk capital requirement. The incremental risk capital requirement is the greater of:

(1) The average of the incremental risk measures over the previous 12 weeks; or

(2) The most recent incremental risk measure.



## **Section 9. Comprehensive Risk**

(a) *General requirement.* (1) Subject to the prior approval of the [Agency], a [bank] may use the method in this section to measure comprehensive risk, that is, all price risk, for one or more portfolios of correlation trading positions.

(2) A [bank] that measures the price risk of a portfolio of correlation trading positions using internal models must calculate at least weekly a comprehensive risk measure that captures all price risk according to the requirements of this section. The comprehensive risk measure is either:

(i) The sum of:

(A) The [bank]'s modeled measure of all price risk determined according to the requirements in paragraph (b) of this section; and

(B) A surcharge for the [bank]'s modeled correlation trading positions equal to the total specific risk add-on for such positions as calculated under section 10 of this appendix multiplied by 8.0 percent; or

(ii) With approval of the [Agency] and provided the [bank] has met the requirements of this section for a period of at least one year and can demonstrate the effectiveness of the model through the results of ongoing model validation efforts including robust benchmarking, the greater of:

(A) The [bank]'s modeled measure of all price risk determined according to the requirements in paragraph (b) of this section; or

(B) The total specific risk add-on that would apply to the bank's modeled correlation trading positions as calculated under section 10 of this appendix multiplied by 8.0 percent.

(b) *Requirements for modeling all price risk.* If a [bank] uses an internal model to measure the price risk of a portfolio of correlation trading positions:

(1) The internal model must measure comprehensive risk over a one-year time horizon at a one-tail, 99.9 percent confidence level, either under the assumption of a constant level of risk, or under the assumption of constant positions.

(2) The model must capture all material price risk, including but not limited to the following:

(i) The risks associated with the contractual structure of cash flows of the position, its issuer, and its underlying exposures;

(ii) Credit spread risk, including nonlinear price risks;

(iii) The volatility of implied correlations, including nonlinear price risks such as the cross-effect between spreads and correlations;

(iv) Basis risk;

(v) Recovery rate volatility as it relates to the propensity for recovery rates to affect tranche prices; and

(vi) To the extent the comprehensive risk measure incorporates the benefits of dynamic hedging, the static nature of the hedge over the liquidity horizon must be recognized. In such cases, a [bank] must:

(A) Choose to model the rebalancing of the hedge consistently over the relevant set of trading positions;

(B) Demonstrate that the inclusion of rebalancing results in a more appropriate risk measurement;

(C) Demonstrate that the market for the hedge is sufficiently liquid to permit rebalancing during periods of stress; and

(D) Capture in the comprehensive risk model any residual risks arising from such hedging strategies;

(3) The [bank] must use market data that are relevant in representing the risk profile of the [bank]'s correlation trading positions in order to ensure that the [bank] fully captures the material risks of the correlation trading positions in its comprehensive risk measure in accordance with this section; and

(4) The [bank] must be able to demonstrate that its model is an appropriate representation of comprehensive risk in light of the historical price variation of its correlation trading positions.

*(c) Requirements for stress testing.*

(1) A [bank] must at least weekly apply specific, supervisory stress scenarios to its portfolio of correlation trading positions that capture changes in:

(i) Default rates;

(ii) Recovery rates;

(iii) Credit spreads;

(iv) Correlations of underlying exposures; and

(v) Correlations of a correlation trading position and its hedge.

(2) Other requirements. (i) A [bank] must retain and make available to the [Agency] the results of the supervisory stress testing, including comparisons with the capital requirements generated by the [bank]'s comprehensive risk model.

(ii) A [bank] must report to the [Agency] promptly any instances where the stress tests indicate any material deficiencies in the comprehensive risk model.

(d) *Calculation of comprehensive risk capital requirement.* The comprehensive risk capital requirement is the greater of:

- (1) The average of the comprehensive risk measures over the previous 12 weeks; or
- (2) The most recent comprehensive risk measure.

#### **Section 10. Standardized Measurement Method for Specific Risk**

(a) *General requirement.* A [bank] must calculate a total specific risk add-on for each portfolio of debt and equity positions for which the [bank]'s VaR-based measure does not capture all material aspects of specific risk and for all securitization positions that are not modeled under section 9 of this appendix. A [bank] must calculate each specific risk add-on in accordance with the requirements of this section. Notwithstanding any other definition or requirement in this appendix, a position that would have qualified as a debt position or an equity position but for the fact that it qualifies as a correlation trading position under paragraph (2) of the definition of correlation trading position, shall be considered a debt position or an equity position, respectively, for purposes of this section 10.

(1) The specific risk add-on for an individual debt or securitization position that represents sold credit protection is capped at the notional amount of the credit derivative contract. The specific risk add-on for an individual debt or securitization position that represents purchased credit protection is capped at the current market value of the transaction plus the absolute value of the present value of all remaining payments to the

protection seller under the transaction. This sum is equal to the value of the protection leg of the transaction.

(2) For debt, equity, or securitization positions that are derivatives with linear payoffs, a [bank] must assign a specific risk-weighting factor to the market value of the effective notional amount of the underlying instrument or index portfolio, except for a securitization position for which the [bank] directly calculates a specific risk add-on using the SFA in paragraph (b)(2)(vii)(B) of this section. A swap must be included as an effective notional position in the underlying instrument or portfolio, with the receiving side treated as a long position and the paying side treated as a short position. For debt, equity, or securitization positions that are derivatives with nonlinear payoffs, a [bank] must risk weight the market value of the effective notional amount of the underlying instrument or portfolio multiplied by the derivative's delta.

(3) For debt, equity, or securitization positions, a [bank] may net long and short positions (including derivatives) in identical issues or identical indices. A [bank] may also net positions in depositary receipts against an opposite position in an identical equity in different markets, provided that the [bank] includes the costs of conversion.

(4) A set of transactions consisting of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge has a specific risk add-on of zero if:

(i) The debt or securitization position is fully hedged by a total return swap (or similar instrument where there is a matching of swap payments and changes in market value of the debt or securitization position);

(ii) There is an exact match between the reference obligation of the swap and the debt or securitization position;

(iii) There is an exact match between the currency of the swap and the debt or securitization position; and

(iv) There is either an exact match between the maturity date of the swap and the maturity date of the debt or securitization position; or, in cases where a total return swap references a portfolio of positions with different maturity dates, the total return swap maturity date must match the maturity date of the underlying asset in that portfolio that has the latest maturity date.

(5) The specific risk add-on for a set of transactions consisting of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge that does not meet the criteria of paragraph (a)(4) of this section is equal to 20.0 percent of the capital requirement for the side of the transaction with the higher specific risk add-on when:

(i) The credit risk of the position is fully hedged by a credit default swap or similar instrument;

(ii) There is an exact match between the reference obligation of the credit derivative hedge and the debt or securitization position;

(iii) There is an exact match between the currency of the credit derivative hedge and the debt or securitization position; and

(iv) There is either an exact match between the maturity date of the credit derivative hedge and the maturity date of the debt or securitization position; or, in the case where the credit derivative hedge has a standard maturity date:

(A) The maturity date of the credit derivative hedge is within 30 business days of the maturity date of the debt or securitization position; or

(B) For purchased credit protection, the maturity date of the credit derivative hedge is later than the maturity date of the debt or securitization position, but is no later than the standard maturity date for that instrument that immediately follows the maturity date of the debt or securitization position. The maturity date of the credit derivative hedge may not exceed the maturity date of the debt or securitization position by more than 90 calendar days.

(6) The specific risk add-on for a set of transactions consisting of either a debt position and its credit derivative hedge or a securitization position and its credit derivative hedge that does not meet the criteria of either paragraph (a)(4) or (a)(5) of this section, but in which all or substantially all of the price risk has been hedged, is equal to the specific risk add-on for the side of the transaction with the higher specific risk add-on.

(b) *Debt and securitization positions.* (1) The total specific risk add-on for a portfolio of debt or securitization positions is the sum of the specific risk add-ons for individual debt or securitization positions, as computed under this section. To determine the specific risk add-on for individual debt or securitization positions, a [bank] must multiply the absolute value of the current market value of each net long or net short debt or securitization position in the portfolio by the appropriate specific risk-weighting factor as set forth in paragraphs (b)(2)(i) through (b)(2)(vii) of this section.

(2) For the purpose of this section, the appropriate specific risk-weighting factors include:

(i) *Sovereign debt positions. (A) In general.* A [bank] must assign a specific risk-weighting factor to a sovereign debt position based on the CRC applicable to the sovereign entity and, as applicable, the remaining contractual maturity of the position, in accordance with table 2. Sovereign debt positions that are backed by the full faith and credit of the United States are treated as having a CRC of 0.

**TABLE 2 – SPECIFIC RISK-WEIGHTING FACTORS FOR SOVEREIGN DEBT POSITIONS**

|                                 |     | <b>Specific Risk-weighting Factor<br/>(in percent)</b>                             |      |
|---------------------------------|-----|--|------|
| <b>CRC of Sovereign</b>         | 0-1 | 0.0  |      |
|                                 | 2-3 | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 4-6 | 8.0  |      |
|                                 | 7   | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

(B) Notwithstanding paragraph (b)(2)(i)(A) of this section, a [bank] may assign to a sovereign debt position a specific risk-weighting factor that is lower than the applicable specific risk-weighting factor in table 2 if:

- (1) The position is denominated in the sovereign entity’s currency;
- (2) The [bank] has at least an equivalent amount of liabilities in that currency; and
- (3) The sovereign entity allows banks under its jurisdiction to assign the lower specific risk-weighting factor to the same exposures to the sovereign entity.



(C) A [bank] must assign a 12.0 percent specific risk-weighting factor to a sovereign debt position immediately upon determination that a default has occurred; or if a default has occurred within the previous five years.

(D) A [bank] must assign an 8.0 percent specific risk-weighting factor to a sovereign debt position if the sovereign entity does not have a CRC assigned to it, unless the sovereign debt position must be assigned a higher specific risk-weighting factor under paragraph (b)(2)(i)(C) of this section.

(ii) *Certain supranational entity and multilateral development bank debt positions.* A [bank] may assign a 0.0 percent specific risk-weighting factor to a debt position that is an exposure to the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund, or an MDB.

(iii) *GSE debt positions.* A [bank] must assign a 1.6 percent specific risk-weighting factor to a debt position that is an exposure to a GSE. Notwithstanding the foregoing, a [bank] must assign an 8.0 percent specific risk-weighting factor to preferred stock issued by a GSE.

(iv) *Depository institution, foreign bank, and credit union debt positions.* (A) Except as provided in paragraph (b)(2)(iv)(B) of this section, a [bank] must assign a specific risk-weighting factor to a debt position that is an exposure to a depository institution, a foreign bank, or a credit union using the specific risk-weighting factor that corresponds to that entity's sovereign of incorporation and, as applicable, the remaining contractual maturity of the position, in accordance with table 3.

**TABLE 3 – SPECIFIC RISK-WEIGHTING FACTORS FOR DEPOSITORY INSTITUTION, FOREIGN BANK, AND CREDIT UNION DEBT POSITIONS**

|                                 |     | <b>Specific Risk-weighting Factor<br/>(in percent)</b>                             |      |
|---------------------------------|-----|--|------|
| <b>CRC of Sovereign</b>         | 0-2 | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 3   | 8.0  |      |
|                                 | 4-7 | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

(B) A [bank] must assign a specific risk-weighting factor of 8.0 percent to a debt position that is an exposure to a depository institution or a foreign bank that is includable in the depository institution’s or foreign bank’s regulatory capital and that is not subject to deduction as a reciprocal holding under the [general risk-based capital rules].

(C) A [bank] must assign a 12.0 percent specific risk-weighting factor to a debt position that is an exposure to a foreign bank immediately upon determination that a default by the foreign bank’s sovereign of incorporation has occurred or if a default by the foreign bank’s sovereign of incorporation has occurred within the previous five years.

(v) *PSE debt positions.* (A) Except as provided in paragraph (b)(2)(v)(B) of this section, a [bank] must assign a specific risk-weighting factor to a debt position that is an exposure to a PSE based on the specific risk-weighting factor that corresponds to the PSE’s sovereign of incorporation and to the position’s categorization as a general

obligation or revenue obligation and, as applicable, the remaining contractual maturity of the position, as set forth in tables 4 and 5.

(B) A [bank] may assign a lower specific risk-weighting factor than would otherwise apply under tables 4 and 5 to a debt position that is an exposure to a foreign PSE if:

(1) The PSE’s sovereign of incorporation allows banks under its jurisdiction to assign a lower specific risk-weighting factor to such position; and

(2) The specific risk-weighting factor is not lower than the risk weight that corresponds to the PSE’s sovereign of incorporation in accordance with tables 4 and 5.

(C) A [bank] must assign a 12.0 percent specific risk-weighting factor to a PSE debt position immediately upon determination that a default by the PSE’s sovereign of incorporation has occurred or if a default by the PSE’s sovereign of incorporation has occurred within the previous five years.

TABLE 4 – SPECIFIC RISK-WEIGHTING FACTORS FOR PSE GENERAL OBLIGATION DEBT POSITIONS

|                                 |     | <b>General Obligation<br/>Specific Risk-weighting Factor<br/>(in percent)</b>      |      |
|---------------------------------|-----|--|------|
| CRC of Sovereign                | 0-2 | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 3   | 8.0  |      |
|                                 | 4-7 | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

**TABLE 5 – SPECIFIC RISK-WEIGHTING FACTORS FOR PSE REVENUE OBLIGATION DEBT POSITIONS**

|                                 |     | <b>Revenue Obligation<br/>Specific Risk-weighting Factor<br/>(in percent)</b>      |      |
|---------------------------------|-----|--|------|
| CRC of Sovereign                | 0-1 | Remaining contractual maturity of 6 months or less                                 | 0.25 |
|                                 |     | Remaining contractual maturity of greater than 6 and up to and including 24 months | 1.0  |
|                                 |     | Remaining contractual maturity exceeds 24 months                                   | 1.6  |
|                                 | 2-3 | 8.0  |      |
|                                 | 4-7 | 12.0   |      |
| No CRC                          |     | 8.0  |      |
| Default by the Sovereign Entity |     | 12.0   |      |

(vi) *Corporate debt positions.* Except as otherwise provided in paragraph

(b)(2)(vi)(B), a [bank] must assign a specific risk-weighting factor to a corporate debt position in accordance with the investment grade methodology in paragraph (b)(2)(vi)(A) of this section.

(A) *Investment grade methodology.* (1) For corporate debt positions that are exposures to entities that have issued and outstanding publicly traded instruments, a [bank] must assign a specific risk-weighting factor based on the category and remaining contractual maturity of the position, in accordance with table 6. For purposes of this paragraph (A), the [bank] must determine whether the position is in the investment grade or not investment grade category.

**TABLE 6 – SPECIFIC RISK-WEIGHTING FACTORS FOR CORPORATE DEBT POSITIONS UNDER THE INVESTMENT GRADE METHODOLOGY**

| Category             | Remaining Contractual Maturity                   | Specific Risk-weighting Factor (in percent) |
|----------------------|--|---|
| Investment Grade     | 6 months or less                                 | 0.50  |
|                      | Greater than 6 and up to and including 24 months | 2.00  |
|                      | Greater than 24 months                           | 4.00  |
| Not-investment Grade |  | 12.00                                       |

(2) A [bank] must assign an 8.0 percent specific risk-weighting factor for corporate debt positions that are exposures to entities that do not have publicly traded instruments outstanding.

(B) *Limitations.* (1) A [bank] must assign a specific risk-weighting factor of at least 8.0 percent to an interest-only mortgage-backed security that is not a securitization position.

(2) A [bank] shall not assign a corporate debt position a specific risk-weighting factor that is lower than the specific risk-weighting factor that corresponds to the CRC of the issuer’s sovereign of incorporation in table 1.

(vii) *Securitization positions.* (A) *General requirements.* (1) A [bank] that does not use the [advanced capital adequacy framework] must assign a specific risk-weighting factor to a securitization position using either the simplified supervisory formula approach (SSFA) in accordance with section 11 of this appendix or assign a specific risk-weighting factor of 100 percent to the position.

(2) A [bank] that uses the [advanced capital adequacy framework] must calculate a specific risk add-on for a securitization position using the SFA in section 45 of [the advanced capital adequacy framework] and in accordance with paragraph (b)(2)(vii)(B) of this section if the [bank] and the securitization position each qualifies to use the SFA

under the [advanced capital adequacy framework]. A [bank] that uses the [advanced capital adequacy framework] and that has a securitization position that does not qualify for the SFA may assign a specific risk-weighting factor to the securitization position using the SSFA in accordance with section 11 of this appendix or assign a specific risk-weighting factor of 100 percent to the position.

(3) A [bank] must treat a short securitization position as if it is a long securitization position solely for calculation purposes when using the SFA in paragraph (b)(2)(vii)(B) or the SSFA in section 11 of this appendix.

(B) SFA. To calculate the specific risk add-on for a securitization position using the SFA, a [bank] that is subject to [the advanced capital adequacy framework] must set the specific risk add-on for the position equal to the risk-based capital requirement, calculated under section 45 of [the advanced capital adequacy framework].

(C) SSFA. To use the SSFA to determine the specific risk-weighting factor for a securitization position, a [bank] must calculate the specific risk-weighting factor in accordance with section 11 of this appendix.

(D) *N<sup>th</sup>-to-default credit derivatives*. A [bank] must determine a specific risk add-on using the SFA in paragraph (b)(2)(vii)(B), or assign a specific risk-weighting factor using the SSFA in section 11 of this appendix to an n<sup>th</sup>-to-default credit derivative in accordance with this paragraph (D), irrespective of whether the [bank] is a net protection buyer or net protection seller. A [bank] must determine its position in the n<sup>th</sup>-to-default credit derivative as the largest notional dollar amount of all the underlying exposures.

(1) For purposes of determining the specific risk add-on using the SFA in paragraph (b)(2)(vii)(B) or the specific risk-weighting factor for an n<sup>th</sup>-to-default credit

derivative using the SSFA in section 11 of this appendix, the [bank] must calculate the attachment point and detachment point of its position as follows:

(i) The attachment point (parameter A) is the ratio of the sum of the notional amounts of all underlying exposures that are subordinated to the [bank]'s position to the total notional amount of all underlying exposures. For purposes of using the SFA to calculate the specific add-on for its position in an  $n^{\text{th}}$ -to-default credit derivative, parameter A must be set equal to *the credit enhancement level* (L) input to the SFA formula. In the case of a first-to-default credit derivative, there are no underlying exposures that are subordinated to the [bank]'s position. In the case of a second-or-subsequent-to-default credit derivative, the smallest (n-1) notional amounts of the underlying exposure(s) are subordinated to the [bank]'s position.

(ii) The detachment point (parameter D) equals the sum of parameter A plus the ratio of the notional amount of the [bank]'s position in the  $n^{\text{th}}$ -to-default credit derivative to the total notional amount of all underlying exposures. For purposes of using the SFA to calculate the specific risk add-on for its position in an  $n^{\text{th}}$ -to-default credit derivative, parameter D must be set to equal L plus the *thickness of tranche* (T) input to the SFA formula.

(2) A [bank] that does not use the SFA to determine a specific risk-add on, or the SSFA to determine a specific risk-weighting factor for its position in an  $n^{\text{th}}$ -to-default credit derivative must assign a specific risk-weighting factor of 100 percent to the position.

(c) *Modeled correlation trading positions.* For purposes of calculating the comprehensive risk measure for modeled correlation trading positions under either

paragraph (a)(2)(i) or (a)(2)(ii) of section 9 of this appendix, the total specific risk add-on is the greater of:

(1) The sum of the [bank]'s specific risk add-ons for each net long correlation trading position calculated under this section; or

(2) The sum of the [bank]'s specific risk add-ons for each net short correlation trading position calculated under this section.

(d) *Non-modeled securitization positions.* For securitization positions that are not correlation trading positions and for securitizations that are correlation trading positions not modeled under section 9 of this appendix, the total specific risk add-on is the greater of:

(1) The sum of the [bank]'s specific risk add-ons for each net long securitization position calculated under this section; or

(2) The sum of the [bank]'s specific risk add-ons for each net short securitization position calculated under this section.

(e) *Equity positions.* The total specific risk add-on for a portfolio of equity positions is the sum of the specific risk add-ons of the individual equity positions, as computed under this section. To determine the specific risk add-on of individual equity positions, a [bank] must multiply the absolute value of the current market value of each net long or net short equity position by the appropriate specific risk-weighting factor as determined under this paragraph:

(1) The [bank] must multiply the absolute value of the current market value of each net long or net short equity position by a specific risk-weighting factor of 8.0 percent. For equity positions that are index contracts comprising a well-diversified



portfolio of equity instruments, the absolute value of the current market value of each net long or net short position is multiplied by a specific risk-weighting factor of 2.0 percent.<sup>46</sup>

(2) For equity positions arising from the following futures-related arbitrage strategies, a [bank] may apply a 2.0 percent specific risk-weighting factor to one side (long or short) of each position with the opposite side exempt from an additional capital requirement:

(i) Long and short positions in exactly the same index at different dates or in different market centers; or

(ii) Long and short positions in index contracts at the same date in different, but similar indices.

(3) For futures contracts on main indices that are matched by offsetting positions in a basket of stocks comprising the index, a [bank] may apply a 2.0 percent specific risk-weighting factor to the futures and stock basket positions (long and short), provided that such trades are deliberately entered into and separately controlled, and that the basket of stocks is comprised of stocks representing at least 90.0 percent of the capitalization of the index. A main index refers to the Standard & Poor's 500 Index, the FTSE All-World Index, and any other index for which the [bank] can demonstrate to the satisfaction of the [Agency] that the equities represented in the index have liquidity, depth of market, and

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<sup>46</sup> A portfolio is well-diversified if it contains a large number of individual equity positions, with no single position representing a substantial portion of the portfolio's total market value.

size of bid-ask spreads comparable to equities in the Standard & Poor's 500 Index and FTSE All-World Index.

(f) *Due diligence requirements.* (1) A [bank] must demonstrate to the satisfaction of the [Agency] a comprehensive understanding of the features of a securitization position that would materially affect the performance of the position by conducting and documenting the analysis set forth in paragraph (f)(2) of this section. The [bank]'s analysis must be commensurate with the complexity of the securitization position and the materiality of the position in relation to capital.

(2) To support the demonstration of its comprehensive understanding, for each securitization position a [bank] must:

(i) Conduct an analysis of the risk characteristics of a securitization position prior to acquiring the position and document such analysis within three business days after acquiring the position, considering:

(A) Structural features of the securitization that would materially impact the performance of the position, for example, the contractual cash flow waterfall, waterfall-related triggers, credit enhancements, liquidity enhancements, market value triggers, the performance of organizations that service the position, and deal-specific definitions of default;

(B) Relevant information regarding the performance of the underlying credit exposure(s), for example, the percentage of loans 30, 60, and 90 days past due; default rates; prepayment rates; loans in foreclosure; property types; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographic diversification data on the underlying exposure(s);

(C) Relevant market data of the securitization, for example, bid-ask spreads, most recent sales price and historical price volatility, trading volume, implied market rating, and size, depth and concentration level of the market for the securitization; and

(D) For resecuritization positions, performance information on the underlying securitization exposures, for example, the issuer name and credit quality, and the characteristics and performance of the exposures underlying the securitization exposures; and

(ii) On an on-going basis (no less frequently than quarterly), evaluate, review, and update as appropriate the analysis required under paragraph (f)(1) of this section for each securitization position.

#### **Section 11. Simplified Supervisory Formula Approach**

(a) *General requirements.* To use the SSFA to determine the specific risk-weighting factor for a securitization position, a [bank] must have data that enables it to assign accurately the parameters described in paragraph (b) of this section. Data used to assign the parameters described in paragraph (b) of this section must be the most currently available data and no more than 91 calendar days old. A [bank] that does not have the appropriate data to assign the parameters described and defined, for purposes of this section, in paragraph (b) of this section must assign a specific risk-weighting factor of 100 percent to the position.

(b) *SSFA parameters.* To calculate the specific risk-weighting factor for a securitization position using the SSFA, a [bank] must have accurate information on the five inputs to the SSFA calculation described in paragraphs (b)(1) through (b)(5) of this section:

(1)  $K_G$  is the weighted-average (with unpaid principal used as the weight for each exposure) total capital requirement of the underlying exposures calculated using the [general risk-based capital rules].  $K_G$  is expressed as a decimal value between zero and 1 (that is, an average risk weight of 100 percent represents a value of  $K_G$  equal to .08).

(2) Parameter W is expressed as a decimal value between zero and one.

Parameter W is the ratio of the sum of the dollar amounts of any underlying exposures within the securitized pool that meet any of the criteria as set forth in paragraphs (i) through (vi) of this paragraph (b)(2) to the ending balance, measured in dollars, of underlying exposures:

- (i) Ninety days or more past due;
- (ii) Subject to a bankruptcy or insolvency proceeding;
- (iii) In the process of foreclosure;
- (iv) Held as real estate owned;
- (v) Has contractually deferred interest payments for 90 days or more; or
- (vi) Is in default.

(3) Parameter A is the attachment point for the position, which represents the threshold at which credit losses will first be allocated to the position. Parameter A equals the ratio of the current dollar amount of underlying exposures that are subordinated to the position of the [bank] to the current dollar amount of underlying exposures. Any reserve account funded by the accumulated cash flows from the underlying exposures that is subordinated to the position that contains the [bank]'s securitization exposure may be included in the calculation of parameter A to the extent that cash is present in the account. Parameter A is expressed as a decimal value between zero and one.

(4) Parameter D is the detachment point for the position, which represents the threshold at which credit losses of principal allocated to the position would result in a total loss of principal. Parameter D equals parameter A plus the ratio of the current dollar amount of the securitization positions that are pari passu with the position (that is, have equal seniority with respect to credit risk) to the current dollar amount of the underlying exposures. Parameter D is expressed as a decimal value between zero and one.

(5) A supervisory calibration parameter,  $p$ , is equal to 0.5 for securitization positions that are not resecuritization positions and equal to 1.5 for resecuritization positions.

(c) *Mechanics of the SSFA*.  $K_G$  and  $W$  are used to calculate  $K_A$ , the augmented value of  $K_G$ , which reflects the observed credit quality of the underlying pool of exposures.  $K_A$  is defined in paragraph (d) of this section. The values of parameters A and D, relative to  $K_A$  determine the specific risk-weighting factor assigned to a position as described in this paragraph and paragraph (d) of this section. The specific risk-weighting factor assigned to a securitization position, or portion of a position, as appropriate, is the larger of the specific risk-weighting factor determined in accordance with this paragraph and paragraph (d) of this section and a specific risk-weighting factor of 1.6 percent.

(1) When the detachment point, parameter D, for a securitization position is less than or equal to  $K_A$ , the position must be assigned a specific risk-weighting factor of 100 percent.

(2) When the attachment point, parameter A, for a securitization position is greater than or equal to  $K_A$ , the [bank] must calculate the specific risk-weighting factor in accordance with paragraph (d) of this section.

(3) When A is less than  $K_A$  and D is greater than  $K_A$ , the specific risk-weighting factor is a weighted-average of 1.00 and  $K_{SSFA}$  calculated in accordance with paragraph (d) of this section, but with the parameter A revised to be set equal to  $K_A$ . For the purpose of this weighted-average calculation:

(i) The weight assigned to 1.00 equals  $\frac{K_A - A}{D - A}$ .

(ii) The weight assigned to  $K_{SSFA}$  equals  $\frac{D - K_A}{D - A}$ . The specific risk-weighting factor

will be set equal to:

$$SRWF = 100 \times \left[ \left( \frac{K_A - A}{D - A} \right) \times 1.00 \right] + \left[ \left( \frac{D - K_A}{D - A} \right) \times K_{SSFA} \right]$$

(d) SSFA equation. (1) The [bank] must define the following parameters:

$$K_A = (1 - W) \cdot K_G + (0.5 \cdot W)$$

$$a = -\frac{1}{p \cdot K_A}$$

$$u = D - K_A$$

$$l = A - K_A$$

$e = 2.71828$ , the base of the natural logarithms.

(2) Then the [bank] must calculate  $K_{SSFA}$  according to the following equation:

$$K_{SSFA} = \frac{e^{a \cdot u} - e^{a \cdot l}}{a(u - l)}$$

(3) The specific risk-weighting factor for the position (expressed as a percent) is equal to  $K_{SSFA} \times 100$ .

## **Section 12. Market Risk Disclosures**

(a) *Scope.* A [bank] must comply with this section unless it is a consolidated subsidiary of a bank holding company or a depository institution that is subject to these requirements or of a non-U.S. banking organization that is subject to comparable public disclosure requirements in its home jurisdiction. A [bank] must make quantitative disclosures publicly each calendar quarter. If a significant change occurs, such that the most recent reporting amounts are no longer reflective of the [bank]'s capital adequacy and risk profile, then a brief discussion of this change and its likely impact must be provided as soon as practicable thereafter. Qualitative disclosures that typically do not change each quarter may be disclosed annually, provided any significant changes are disclosed in the interim. If a [bank] believes that disclosure of specific commercial or financial information would prejudice seriously its position by making public certain information that is either proprietary or confidential in nature, the [bank] is not required to disclose these specific items, but must disclose more general information about the subject matter of the requirement, together with the fact that, and the reason why, the specific items of information have not been disclosed.

(b) *Disclosure policy.* The [bank] must have a formal disclosure policy approved by the board of directors that addresses the [bank]'s approach for determining its market risk disclosures. The policy must address the associated internal controls and disclosure controls and procedures. The board of directors and senior management must ensure that appropriate verification of the disclosures takes place and that effective internal controls and disclosure controls and procedures are maintained. One or more senior officers of the [bank] must attest that the disclosures meet the requirements of this appendix, and the

board of directors and senior management are responsible for establishing and maintaining an effective internal control structure over financial reporting, including the disclosures required by this section.

(c) *Quantitative disclosures.*

(1) For each material portfolio of covered positions, the [bank] must disclose publicly the following information at least quarterly:

(i) The high, low, and mean VaR-based measures over the reporting period and the VaR-based measure at period-end;

(ii) The high, low, and mean stressed VaR-based measures over the reporting period and the stressed VaR-based measure at period-end;

(iii) The high, low, and mean incremental risk capital requirements over the reporting period and the incremental risk capital requirement at period-end;

(iv) The high, low, and mean comprehensive risk capital requirements over the reporting period and the comprehensive risk capital requirement at period-end, with the period-end requirement broken down into appropriate risk classifications (for example, default risk, migration risk, correlation risk);

(v) Separate measures for interest rate risk, credit spread risk, equity price risk, foreign exchange risk, and commodity price risk used to calculate the VaR-based measure; and

(vi) A comparison of VaR-based estimates with actual gains or losses experienced by the [bank], with an analysis of important outliers.

(2) In addition, the [bank] must disclose publicly the following information at least quarterly:



(i) The aggregate amount of on-balance sheet and off-balance sheet securitization positions by exposure type; and

(ii) The aggregate amount of correlation trading positions.

(d) *Qualitative disclosures.*

(1) For each material portfolio of covered positions, the [bank] must disclose publicly the following information at least annually, or more frequently in the event of material changes for each portfolio:

(i) The composition of material portfolios of covered positions;

(ii) The [bank]'s valuation policies, procedures, and methodologies for covered positions including, for securitization positions, the methods and key assumptions used for valuing such positions, any significant changes since the last reporting period, and the impact of such change;

(iii) The characteristics of the internal models used for purposes of this appendix.

For the incremental risk capital requirement and the comprehensive risk capital requirement, this must include:

(A) The approach used by the [bank] to determine liquidity horizons;

(B) The methodologies used to achieve a capital assessment that is consistent with the required soundness standard; and

(C) The specific approaches used in the validation of these models;

(iv) A description of the approaches used for validating and evaluating the accuracy of internal models and modeling processes for purposes of this appendix;

(v) For each market risk category (that is, interest rate risk, credit spread risk, equity price risk, foreign exchange risk, and commodity price risk), a description of the stress tests applied to the positions subject to the factor;

(vi) The results of the comparison of the [bank]'s internal estimates for purposes of this appendix with actual outcomes during a sample period not used in model development;

(vii) The soundness standard on which the [bank]'s internal capital adequacy assessment under this appendix is based, including a description of the methodologies used to achieve a capital adequacy assessment that is consistent with the soundness standard;

(2) A description of the [bank]'s processes for monitoring changes in the credit and market risk of securitization positions, including how those processes differ for resecuritization positions; and

(3) A description of the [bank]'s policy governing the use of credit risk mitigation to mitigate the risks of securitization and resecuritization positions.

[END OF COMMON TEXT]

List of Subjects

12 CFR Part 3

Administrative practices and procedure, Capital, National banks, Reporting and recordkeeping requirements, Risk.

12 CFR Part 208

Confidential business information, Crime, Currency, Federal Reserve System, Mortgages, reporting and recordkeeping requirements, Securities.

## 12 CFR Part 225

Administrative practice and procedure, Banks, banking, Federal Reserve System, Holding companies, Reporting and recordkeeping requirements, Securities.

## 12 CFR Part 325

Administrative practice and procedure, Banks, banking, Capital Adequacy, Reporting and recordkeeping requirements, Savings associations, State non-member banks.

### **Adoption of Proposed Common Rule**

The adoption of the final common rules by the agencies, as modified by agency-specific text, is set forth below:

#### **Department of the Treasury**

#### **Office of the Comptroller of the Currency**

#### **12 CFR CHAPTER I**

#### **Authority and Issuance**

For the reasons set forth in the common preamble, part 3 of chapter I of title 12 of the Code of Federal Regulations are amended as follows:

#### **PART 3 – MINIMUM CAPITAL RATIOS; ISSUANCE OF DIRECTIVES**

1. The authority citation for part 3 continues to read as follows:

**Authority:** 12 U.S.C. 93a, 161, 1818, 3907 and 3909.

2. Appendix B to part 3 is revised to read as set forth at the end of the common preamble.

#### **Appendix B to Part 3 – Risk-Based Capital Guidelines; Market Risk**

3. Appendix B to part 3 is further amended by:

- a. Removing “[the advanced capital adequacy framework]” wherever it appears and adding in its place “Appendix C to this part”;
- b. Removing “[Agency]” wherever it appears and adding in its place “OCC”;
- c. Removing “[Agency’s]” wherever it appears and adding in its place “OCC’s”;
- d. Removing “[bank]” wherever it appears and adding in its place “bank”;
- e. Removing “[banks]” wherever it appears and adding in its place “banks”;
- f. Removing “[Call Report or FR Y–9C]” wherever it appears and adding in its place “Call Report”;
- g. Removing “[regulatory report]” wherever it appears and adding in its place “Consolidated Reports of Condition and Income (Call Report)”;
- h. Removing “[the general risk-based capital rules]” wherever it appears and adding in its place “Appendix A to this part”.

## **Board of Governors of the Federal Reserve System**

### **12 CFR CHAPTER II**

#### **Authority and Issuance**

For the reasons set forth in the common preamble, parts 208 and 225 of chapter II of title 12 of the Code of Federal Regulations are amended as follows:

#### **PART 208 – MEMBERSHIP OF STATE BANKING INSTITUTIONS IN THE FEDERAL RESERVE SYSTEM (REGULATION H)**

- 4. The authority citation for part 208 continues to read as follows:

**Authority:** 12 U.S.C. 24, 36, 92a, 93a, 248(a), 248(c), 321-338a, 371d, 461, 481-486, 601, 611, 1814, 1816, 1818, 1820(d)(9), 1833(j), 1828(o), 1831, 1831o, 1831p-1, 1831r-1, 1831w, 1831x, 1835a, 1882, 2901-2907, 3105, 3310, 3331-3351, and 3905-

3909; 15 U.S.C. 78b, 78I(b), 78I(i), 780-4(c)(5), 78q, 78q-1, and 78w, 1681s, 1681w, 6801, and 6805; 31 U.S.C. 5318; 42 U.S.C. 4012a, 4104a, 4104b, 4106 and 4128.

5. Appendix E to part 208 is revised to read as set forth at the end of the common preamble.

**Appendix E to Part 208 – Capital Adequacy Guidelines for State Member Banks: Market Risk**

6. Appendix E to part 208 is amended by:

- a. Removing “[the advanced capital adequacy framework]” wherever it appears and adding in its place “Appendix F to this part”;
- b. Removing “[bank]” wherever it appears and adding in its place “bank”;
- c. Removing “[banks]” wherever it appears and adding in its place “banks”;
- d. Removing “[Call Report or FR Y–9C]” wherever it appears and adding in its place “Call Report”;
- e. Removing “[regulatory report]” wherever it appears and adding in its place “Consolidated Reports of Condition and Income (Call Report)”;
- f. Removing “[the general risk-based capital rules]” wherever it appears and adding in its place “Appendix A to this part”.
- g. Removing “[Agency]” wherever it appears in section 1 and adding in its place “Board”;
- h. Removing “[Agency]” in the definition of covered position in section 2 and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;
- i. Removing “[Agency]” in the definitions of multilateral development bank and securitization in section 2 and adding in its place “Board”;

j. Removing “[Agency]” in the definition of covered position in section 2 and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;

k. Revising section 3(c) to read as follows:

**Section 3. Requirements for Application of the Market Risk Capital Rule**

\* \* \* \* \*

(c) *Requirements for internal models.* (1) A bank must obtain the prior written approval of the Board or the appropriate Reserve Bank, with concurrence of the Board, before using any internal model to calculate its risk-based capital requirement under this appendix.

(2) A bank must meet all of the requirements of this section on an ongoing basis. The bank must promptly notify the Board and the appropriate Reserve Bank when:

(i) The bank plans to extend the use of a model that the Board or the appropriate Reserve Bank, with concurrence of the Board, has approved under this appendix to an additional business line or product type;

(ii) The bank makes any change to an internal model approved by the Board or the appropriate Reserve Bank, with concurrence of the Board, under this appendix that would result in a material change in the bank’s risk-weighted asset amount for a portfolio of covered positions; or

(iii) The bank makes any material change to its modeling assumptions.

(3) The Board or the appropriate Reserve Bank, with concurrence of the Board, may rescind its approval of the use of any internal model (in whole or in part) or of the determination of the approach under section 9(a)(2)(ii) of this appendix for a bank’s modeled correlation trading positions and determine an appropriate capital requirement

for the covered positions to which the model would apply, if the Board or the appropriate Reserve Bank, with concurrence of the Board, determines that the model no longer complies with this appendix or fails to reflect accurately the risks of the bank's covered positions.

\* \* \* \* \*

- l. Removing “[Agency]” in section 3(e)(4) and adding in its place “Board”;
- m. Removing “[Agency]” in the section 4(a)(2)(vi)(B) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;
- n. Revising section (4)(b) to read as follows:

#### **Section 4. Adjustments to the Risk-Based Capital Ratio Calculations**

\* \* \* \* \*

(b) Backtesting. A bank must compare each of its most recent 250 business days' trading losses (excluding fees, commissions, reserves, net interest income, and intraday trading) with the corresponding daily VaR-based measures calibrated to a one-day holding period and at a one-tail, 99.0 percent confidence level. A bank must begin backtesting as required by this paragraph no later than one year after the later of January 1, 2013 and the date on which the bank becomes subject to this appendix. In the interim, consistent with safety and soundness principles, a bank subject to this appendix as of its effective date should continue to follow backtesting procedures in accordance with the supervisory expectations of the Board or the appropriate Reserve Bank.

\* \* \* \* \*

- o. Removing “[Agency]” in section 4(b)(2) and adding in its place “Board or the appropriate Reserve Bank, with the concurrence of the Board,”;

p. Removing “[Agency]” in sections 5(a)(4) and 5(a)(5) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;

q. Removing “[Agency]” in sections 5(b)(1) and 5(b)(2)(ii) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;

\* \* \* \* \*

r. Revising section 5(c) to read as follows:

**Section 5. VaR-based Measure**

\* \* \* \* \*

(c) A bank must divide its portfolio into a number of significant subportfolios approved by the Board or the appropriate Reserve Bank, with concurrence of the Board, for subportfolio backtesting purposes. These subportfolios must be sufficient to allow the bank and the Board or the appropriate Reserve Bank, with concurrence of the Board, to assess the adequacy of the VaR model at the risk factor level; the Board or the appropriate Reserve Bank, with concurrence of the Board, will evaluate the appropriateness of these subportfolios relative to the value and composition of the bank’s covered positions. The bank must retain and make available to the Board and the appropriate Reserve Bank the following information for each subportfolio for each business day over the previous two years (500 business days), with no more than a 60-day lag:

\* \* \* \* \*

s. Revising section 6(b)(3) to read as follows:

\* \* \* \* \*



(3) A bank must have policies and procedures that describe how it determines the period of significant financial stress used to calculate the bank’s stressed VaR-based measure under this section and must be able to provide empirical support for the period used. The bank must obtain the prior approval of the Board or the appropriate Reserve Bank, with concurrence of the Board, for, and notify the Board and the appropriate Reserve Bank if the bank makes any material changes to, these policies and procedures. The policies and procedures must address:

\* \* \* \* \*

- t. Removing “[Agency]” in section 6(b)(4) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;
- u. Removing “[Agency]” in section 8(a) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;
- v. Removing “[Agency]” in sections 9(a)(1) and 9(a)(2)(ii) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;
- w. Removing “[Agency]” in sections 9(c)(2)(i) and (ii) wherever it appears and adding in its place “Board and the appropriate Reserve Bank”;
- x. Removing “[Agency]” in sections 10(e) and (f) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;

**PART 225 – BANK HOLDING COMPANIES AND CHANGE IN BANK CONTROL (REGULATION Y)**

7. The authority citation for part 225 continues to read as follows:

**Authority:** 12 U.S.C. 1817(j)(13), 1818, 1828(o), 1831i, 1831p-1, 1843(c)(8), 1844(b), 1972(1), 3106, 3108, 3310, 3331-3351, 3907, and 3909; 15 U.S.C. 1681s, 1681w, 6801 and 6805.

8. Appendix E to part 225 is revised to read as set forth at the end of the common preamble.

### **Appendix E to Part 225 – Capital Adequacy Guidelines for Bank Holding**

#### **Companies: Market Risk**

9. Appendix E is amended by:
- a. Removing “[the advanced capital adequacy framework]” wherever it appears and adding in its place “Appendix G to this part”;
  - b. Removing “[bank]” wherever it appears and adding in its place “bank holding company”;
  - c. Removing “[banks]” wherever it appears and adding in its place “bank holding companies”;
  - d. Removing “[Call Report or FR Y-9C]” wherever it appears and adding in its place “FR Y-9C”;
  - e. Removing “[regulatory report]” wherever it appears and adding in its place “Consolidated Financial Statements for Bank Holding Companies (FR Y-9C)”; and
  - f. Removing “[the general risk-based capital rules]” wherever it appears and adding in its place “Appendix A to this part”.
  - g. Removing “[Agency]” wherever it appears in section 1 and adding in its place “Board”;

- h. Removing “[Agency]” in the definition of covered position in section 2 and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;
- i. Removing “[Agency]” in the definitions of multilateral development bank and securitization in section 2 and adding in its place “Board”;
- j. Removing “[Agency]” in the definition of covered position in section 2 and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;
- k. Revising section 3(c) to read as follows:

### **Section 3. Requirements for Application of the Market Risk Capital Rule**

\* \* \* \* \*

(c) Requirements for internal models. (1) A bank holding company must obtain the prior written approval of the Board or the appropriate Reserve Bank, with concurrence of the Board, before using any internal model to calculate its risk-based capital requirement under this appendix.

(2) A bank holding company must meet all of the requirements of this section on an ongoing basis. The bank holding company must promptly notify the Board and the appropriate Reserve Bank when:

(i) The bank holding company plans to extend the use of a model that the Board or the appropriate Reserve Bank, with concurrence of the Board has approved under this appendix to an additional business line or product type;

(ii) The bank holding company makes any change to an internal model approved by the Board or the appropriate Reserve Bank, with concurrence of the Board, under this appendix that would result in a material change in the bank holding company's risk-weighted asset amount for a portfolio of covered positions; or

(iii) The bank holding company makes any material change to its modeling assumptions.

(3) The Board or the appropriate Reserve Bank, with concurrence of the Board, may rescind its approval of the use of any internal model (in whole or in part) or of the determination of the approach under section 9(a)(2)(ii) of this appendix for a bank holding company's modeled correlation trading positions and determine an appropriate capital requirement for the covered positions to which the model would apply, if the Board or the appropriate Reserve Bank, with concurrence of the Board, determines that the model no longer complies with this appendix or fails to reflect accurately the risks of the bank holding company's covered positions.

\* \* \* \* \*

- l. Removing “[Agency]” in section 3(e)(4) and adding in its place “Board”;
- m. Removing “[Agency]” in the section 4(a)(2)(vi)(B) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;
- n. Revising section (4)(b) to read as follows:

**Section 4. Adjustments to the Risk-Based Capital Ratio Calculations**

\* \* \* \* \*

(b) Backtesting. A bank holding company must compare each of its most recent 250 business days' trading losses (excluding fees, commissions, reserves, net interest income, and intraday trading) with the corresponding daily VaR-based measures calibrated to a one-day holding period and at a one-tail, 99.0 percent confidence level. A bank holding company must begin backtesting as required by this paragraph no later than one year after the later of January 1, 2013 and the date on which the bank holding

company becomes subject to this appendix. In the interim, consistent with safety and soundness principles, a bank holding company subject to this appendix as of its effective date should continue to follow backtesting procedures in accordance with the supervisory expectations of the Board or the appropriate Reserve Bank.

\* \* \* \* \*

o. Removing “[Agency]” in section 4(b)(2) and adding in its place “Board or the appropriate Reserve Bank, with the concurrence of the Board”;

p. Removing “[Agency]” in sections 5(a)(4) and 5(a)(5) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;

q. Removing “[Agency]” in sections 5(b)(1) and 5(b)(2)(ii) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;

r. Revising section 5(c) to read as follows:

**Section 5. VaR-based Measure**

\* \* \* \* \*

(c) A bank holding company must divide its portfolio into a number of significant subportfolios approved by the Board or the appropriate Reserve Bank, with concurrence of the Board, for subportfolio backtesting purposes. These subportfolios must be sufficient to allow the bank holding company and the Board or the appropriate Reserve Bank, with concurrence of the Board, to assess the adequacy of the VaR model at the risk factor level; the Board or the appropriate Reserve Bank, with concurrence of the Board, will evaluate the appropriateness of these subportfolios relative to the value and composition of the bank holding company’s covered positions. The bank holding company must retain and make available to the Board and the appropriate Reserve Bank

the following information for each subportfolio for each business day over the previous two years (500 business days), with no more than a 60-day lag:

\* \* \* \* \*

s. Revising section 6(b)(3) to read as follows:

\* \* \* \* \*

(3) A bank holding company must have policies and procedures that describe how it determines the period of significant financial stress used to calculate the bank holding company's stressed VaR-based measure under this section and must be able to provide empirical support for the period used. The bank holding company must obtain the prior approval of the Board or the appropriate Reserve Bank, with concurrence of the Board, for, and notify the Board and the appropriate Reserve Bank if the bank holding company makes any material changes to, these policies and procedures. The policies and procedures must address:

\* \* \* \* \*

t. Removing “[Agency]” in section 6(b)(4) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;

u. Removing “[Agency]” in section 8(a) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;

v. Removing “[Agency]” in sections 9(a)(1) and 9(a)(2)(ii) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board”;

w. Removing “[Agency]” in sections 9(c)(2)(i) and (ii) wherever it appears and adding in its place “Board and the appropriate Reserve Bank”;

x. Removing “[Agency]” in sections 10(e) and (f) and adding in its place “Board or the appropriate Reserve Bank, with concurrence of the Board,”;

## **Federal Deposit Insurance Corporation**

### **12 CFR CHAPTER III**

#### **Authority and Issuance**

For the reasons set forth in the common preamble, part 325 of chapter III of title 12 of the Code of Federal Regulations is amended as follows:

#### **PART 325 – CAPITAL MAINTENANCE**

10. The authority citation for part 325 continues to read as follows:

**Authority:** 12 U.S.C. 1815(a), 1815(b), 1816, 1818(a), 1818(b), 1818(c), 1818(t), 1819(Tenth), 1828(c), 1828(d), 1828(i), 1828(n), 1828(o), 1831o, 1835, 3907, 3909, 4808; Pub. L. 102-233, 105 Stat. 1761, 1789, 1790 (12 U.S.C. 1831n note); Pub. L. 102-242, 105 Stat. 2236, 2355, as amended by Pub. L. 103-325, 108 Stat. 2160, 2233 (12 U.S.C. 1828 note); Pub. L. 102-242, 105 Stat. 2236, 2386, as amended by Pub. L. 102-550, 106 Stat. 3672, 4089 (12 U.S.C. 1828 note).

11. Appendix C to part 325 is revised to read as set forth at the end of the common preamble.

#### **Appendix C to Part 325 – Risk-Based Capital for State Nonmember Banks: Market Risk**

12. Appendix C is further amended by:

- a. Removing “[Agency]” wherever it appears and adding in its place “FDIC”;
- b. Removing “[Agency’s]” wherever it appears and adding in its place “FDIC’s”;
- c. Removing “[bank]” wherever it appears and adding in its place “bank”;

- d. Removing “[banks]” wherever it appears and adding in its place “banks”;
- e. Removing [Call Report or FR Y-9C] wherever it appears and adding in its place “Call Report”;
- f. Removing “[the advanced capital adequacy framework]” wherever it appears and adding in its place “Appendix D to this part”;
- g. Removing “[regulatory report]” wherever it appears and adding in its place “Consolidated Reports of Condition and Income (Call Report)”;
- h. Removing “[the general risk-based capital rules]” wherever it appears and adding in its place “Appendix A to this part”.



[THIS SIGNATURE PAGE RELATES TO ISSUANCE OF FINAL RULE TITLES  
“RISK-BASED CAPITAL GUIDELINES: MARKET RISK”]

Dated: 6/11/12

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Thomas J. Curry,  
Comptroller of the Currency.

Billing Code: 4810-33-P

[THIS SIGNATURE PAGE RELATES TO ISSUANCE OF FINAL RULE TITLES  
“RISK-BASED CAPITAL GUIDELINES: MARKET RISK”]

By order of the Board of Governors of the Federal Reserve System, July 3, 2012.

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Jennifer J. Johnson  
Secretary of the Board.

[THIS SIGNATURE PAGE RELATES TO THE ISSUANCE OF FINAL RULE  
TITLED “RISK-BASED CAPITAL GUIDELINES: MARKET RISK”]

Dated at Washington, D.C., this 12<sup>th</sup> day of June, 2012.

By order of the Board of Directors.

Federal Deposit Insurance Corporation.

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Robert E. Feldman,  
Executive Secretary.

Billing Code: 6714-10-P