

date and include this calculated amount in its risk-weighted assets. Such contractual exposures may include direct-credit substitutes, recourse obligations, residual interests, liquidity facilities, and loans.

(3) *Inclusion of ALLL in Tier 2 capital for the first and second quarters.* During the exclusion period, including for the two calendar quarter-end regulatory report dates within the exclusion period, a bank that excludes VIE assets from risk-weighted assets pursuant to paragraph (b)(1) of this section may include in Tier 2 capital the full amount of the allowance for loan and lease losses (ALLL) calculated as of the implementation date that is attributable to the assets it excludes pursuant to paragraph (b)(1) of this section 5 (inclusion amount). The amount of ALLL includable in Tier 2 capital in accordance with this paragraph shall not be subject to the limitations set forth in section 2(b)(1) of this appendix A.

(c) *Phase-in period.* (1) *Exclusion amount.* For purposes of this paragraph (c), exclusion amount is defined as the amount of risk-weighted assets excluded in paragraph (b)(1) of this section as of the implementation date.

(2) *Risk-weighted assets during the third and fourth quarters.* A bank that excludes assets of consolidated VIEs from risk-weighted assets pursuant to paragraph (b)(1) of this section may, for the third and fourth quarters after the implementation date (phase-in period), including for the two calendar quarter-end regulatory report dates within those quarters, exclude from risk-weighted assets 50 percent of the exclusion amount, provided that the bank may not include in risk-weighted assets pursuant to this paragraph an amount less than the aggregate risk-weighted assets calculated pursuant to paragraph (b)(2) of this section.

(3) *Inclusion of ALLL in Tier 2 capital during the third and fourth quarters.* A bank that excludes assets of consolidated VIEs from risk-weighted assets pursuant to paragraph (c)(2) of this section may, for the phase-in period, include in Tier 2 capital 50 percent of the inclusion amount it included in Tier 2 capital during the exclusion period, notwithstanding the limit on including ALLL in Tier 2 capital in section 2(b)(1) of this appendix A.

(d) *Implicit recourse limitation.* Notwithstanding any other provision in this section 5, assets held by a VIE to which the bank has provided recourse through credit enhancement beyond any contractual obligation to support assets it has sold may not be excluded from risk-weighted assets.

[54 FR 4177, Jan. 27, 1989]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting appendix A to part 3 of title 12, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.fdsys.gov](http://www.fdsys.gov).

#### APPENDIX B TO PART 3—RISK-BASED CAPITAL GUIDELINES; MARKET RISK

Section 1	Purpose, Applicability, and Reservation of Authority
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##### *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 appendix A to this part and appendix C to this part 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 Consolidated Reports of Condition and Income (Call Report)), equal to:

- (i) 10 percent or more of quarter-end total assets as reported on the most recent quarterly Call Report; or
- (ii) \$1 billion or more.

(2) The OCC may apply this appendix to any bank if the OCC 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 OCC may exclude a bank that meets the criteria of paragraph (b)(1) of this section from application of this appendix if the OCC 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 OCC may require a bank to hold an amount of capital greater than otherwise required under this appendix if the OCC 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 OCC 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 OCC 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 OCC 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 OCC may also require a bank to calculate risk-based capital requirements for specific positions or portfolios under this appendix, or under appendix C to this part or appendix A to this part, as appropriate, to more accurately reflect the risks of the positions.

(4) Nothing in this appendix limits the authority of the OCC 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 OCC determines to be outside the scope of the bank's hedging strategy required in paragraph (a)(2) of section 3 of this appendix;

<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.

(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 appendix C to this part or appendix A to this part;

(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 non-compliance 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 OCC determines poses comparable credit risk.

*Nth-to-default credit derivative* means a credit derivative that provides credit protection only for the nth-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 OCC 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 OCC 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.

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*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 appendix A to this part or appendix C to this part, as applicable.

*Tier 2 capital* is defined in appendix A to this part or appendix C to this part, 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.

*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-

<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).

to-market daily by reference to a two-way market; and

(i) 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 OCC 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 OCC when:

(i) The bank plans to extend the use of a model that the OCC 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 OCC 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 OCC 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 OCC 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 OCC'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, vali-

ation 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 appendix C to this part 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 appendix C to this part, 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 appendix C to this part 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 appendix C to this part.

(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 appendix A to this part with the adjustments in paragraphs (a)(1)(ii) and, if applicable, (a)(1)(iii) of this section; and

(B) For a bank subject to appendix C to this part, advanced adjusted risk-weighted assets, which equal risk-weighted assets as determined in accordance with appendix C to this part 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 appendix C to this part 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 OCC, 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 appendix C to this part 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 appendix C to this part 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 OCC'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 OCC 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 OCC 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 OCC 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 OCC.

(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 OCC 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 OCC for subportfolio backtesting purposes. These subportfolios must be sufficient to allow the bank and the OCC to assess the adequacy of the VaR model at the risk factor level; the OCC 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 OCC 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 OCC for, and notify the OCC 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 OCC 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 OCC, 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 OCC, 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

(i) With approval of the OCC 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 OCC 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 OCC 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

		Specific risk-weighting factor	Percent
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

(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

		Specific risk-weighting factor	Percent
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

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

		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 appendix A to this part.

(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

		General obligation specific risk-weighting factor (in percent)	Percent
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

		Revenue obligation specific risk-weighting factor	Percent
		Remaining contractual maturity of 6 months or less.	0.25

TABLE 5—SPECIFIC RISK-WEIGHTING FACTORS FOR PSE REVENUE OBLIGATION DEBT POSITIONS—Continued

CRC of Sovereign .....	0–1	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 appendix C to this part 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 appendix C to this part must calculate a specific risk add-on for a securitization position using the SFA in

section 45 of appendix C to this part 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 appendix C to this part. A bank that uses appendix C to this part 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 appendix C to this part must set the specific risk add-on for the position equal to the risk-based capital requirement, calculated under section 45 of appendix C to this part.



(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) *Nth-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 nth-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 nth-to-default credit derivative as the largest notional dollar amount of all the underlying exposures.

(I) 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 nth-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 nth-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 nth-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 nth-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 nth-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

<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.

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 OCC that the equities represented in the index have liquidity, depth of market, and 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 OCC 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 appendix A to this part.  $K_G$  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:

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

(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.* 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:

(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 the internal models used for purposes of this appendix. For the incremental risk capital requirement and the comprehensive risk capital requirement, this must include:

(i) The approach used by the bank to determine liquidity horizons;

(ii) The methodologies used to achieve a capital assessment that is consistent with the required soundness standard; and

(iii) The specific approaches used in the validation of these models;

(4) A description of the approaches used for validating and evaluating the accuracy of internal models and modeling processes for purposes of this appendix;

(5) 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;

(6) 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;

(7) 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;

(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

(8) A description of the bank's policy governing the use of credit risk mitigation to mitigate the risks of securitization and resecuritization positions.

[77 FR 53112, Aug. 30, 2012]

## **PART 4—ORGANIZATION AND FUNCTIONS, AVAILABILITY AND RELEASE OF INFORMATION, CONTRACTING OUTREACH PROGRAM, POST-EMPLOYMENT RESTRICTIONS FOR SENIOR EXAMINERS**

### **Subpart A—Organization and Functions**

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4.3 Comptroller of the Currency.

4.4 Washington office and web site.