AUTHENTICATED
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information relating to fraudulent transactions deleted;

d. An explanation of how the customer may obtain a credit report free of charge; and

e. Information about the availability of the FTC's online guidance regarding steps a consumer can take to protect against identity theft. The notice should encourage the customer to report any incidents of identity theft to the FTC, and should provide the FTC's Web site address and toll-free telephone number that customers may use to obtain the identity theft guidance and report suspected incidents of identity theft.[15]

2. The Agencies encourage financial institutions to notify the nationwide consumer reporting agencies prior to sending notices to a large number of customers that include contact information for the reporting agencies.

C. Delivery of Customer Notice

Customer notice should be delivered in any manner designed to ensure that a customer can reasonably be expected to receive it. For example, the institution may choose to contact all customers affected by telephone or by mail, or by electronic mail for those customers for whom it has a valid e-mail address and who have agreed to receive communications electronically.

[66 FR 8636, Feb. 1, 2001, as amended at 70 FR 15751, 15753, Mar. 29, 2005; 71 FR 5780, Feb. 3, 2006]

APPENDIX G TO PART 225—CAPITAL ADEQUACY GUIDELINES FOR BANK HOLDING COMPANIES: INTERNAL-RATINGS-BASED AND ADVANCED MEASUREMENT APPROACHES

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PART I. GENERAL PROVISIONS

Section 1. Purpose, Applicability, Reservation of Authority, and Principle of Conservatism

(a) *Purpose.* This appendix establishes:

(1) Minimum qualifying criteria for bank holding companies using bank holding company-specific internal risk measurement and management processes for calculating risk-based capital requirements;

[15] Currently, the FTC Web site for the ID Theft brochure and the FTC Hotline phone number are *http://www.consumer.gov/idtheft* and 1–877–IDTHEFT. The institution may also refer customers to any materials developed pursuant to section 151(b) of the FACT Act (educational materials developed by the FTC to teach the public how to prevent identity theft).

(2) Methodologies for such bank holding companies to calculate their risk-based capital requirements; and

(3) Public disclosure requirements for such bank holding companies.

(b) *Applicability*. (1) This appendix applies to a bank holding company that:

(i) Is not a consolidated subsidiary of another bank holding company that uses this appendix to calculate its risk-based capital requirements; and

(ii) That:

(A) Is a U.S.-based bank holding company that has total consolidated assets (excluding assets held by an insurance underwriting subsidiary), as reported on the most recent year-end FR Y–9C Report, equal to $250 billion or more;

(B) Has consolidated total on-balance sheet foreign exposure at the most recent year-end equal to $10 billion or more (where total on-balance sheet foreign exposure equals total cross-border claims less claims with head office or guarantor located in another country plus redistributed guaranteed amounts to the country of head office or guarantor plus local country claims on local residents plus revaluation gains on foreign exchange and derivative products, calculated in accordance with the Federal Financial Institutions Examination Council (FFIEC) 009 Country Exposure Report); or

(C) Has a subsidiary depository institution that is required, or has elected, to use 12 CFR part 3, appendix C, 12 CFR part 208, appendix F, 12 CFR part 325, appendix F, or 12 CFR part 567, appendix C to calculate its risk-based capital requirements.

(2) Any bank holding company may elect to use this appendix to calculate its risk-based capital requirements.

(3) A bank holding company that is subject to this appendix must use this appendix unless the Federal Reserve determines in writing that application of this appendix is not appropriate in light of the bank holding company's asset size, level of complexity, risk profile, or scope of operations. In making a determination under this paragraph, the Federal Reserve will apply notice and response procedures in the same manner and to the same extent as the notice and response procedures in 12 CFR 263.202.

(c) *Reservation of authority*—(1) *Additional capital in the aggregate.* The Federal Reserve may require a bank holding company to hold an amount of capital greater than otherwise required under this appendix if the Federal Reserve determines that the bank holding company's risk-based capital requirement under this appendix is not commensurate with the bank holding company's credit, market, operational, or other risks. In making a determination under this paragraph, the Federal Reserve will apply notice and response procedures in the same manner and to the same extent as the notice and response procedures in 12 CFR 263.202.

(2) *Specific risk-weighted asset amounts.* (i) If the Federal Reserve determines that the risk-weighted asset amount calculated under this appendix by the bank holding company for one or more exposures is not commensurate with the risks associated with those exposures, the Federal Reserve may require the bank holding company to assign a different risk-weighted asset amount to the exposures, to assign different risk parameters to the exposures (if the exposures are wholesale or retail exposures), or to use different model assumptions for the exposures (if relevant), all as specified by the Federal Reserve.

(ii) If the Federal Reserve determines that the risk-weighted asset amount for operational risk produced by the bank holding company under this appendix is not commensurate with the operational risks of the bank holding company, the Federal Reserve may require the bank holding company to assign a different risk-weighted asset amount for operational risk, to change elements of its operational risk analytical framework, including distributional and dependence assumptions, or to make other changes to the bank holding company's operational risk management processes, data and assessment systems, or quantification systems, all as specified by the Federal Reserve.

(3) *Other supervisory authority*. Nothing in this appendix limits the authority of the Federal Reserve 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.

(d) *Principle of conservatism*. Notwithstanding the requirements of this appendix, a bank holding company may choose not to apply a provision of this appendix to one or more exposures, provided that:

(1) The bank holding company can demonstrate on an ongoing basis to the satisfaction of the Federal Reserve that not applying the provision would, in all circumstances, unambiguously generate a risk-based capital requirement for each such exposure greater than that which would otherwise be required under this appendix;

(2) The bank holding company appropriately manages the risk of each such exposure;

(3) The bank holding company notifies the Federal Reserve in writing prior to applying this principle to each such exposure; and

(4) The exposures to which the bank holding company applies this principle are not, in the aggregate, material to the bank holding company.

Section 2. Definitions

Advanced internal ratings-based (IRB) systems means a bank holding company's internal risk rating and segmentation system; risk parameter quantification system; data management and maintenance system; and control, oversight, and validation system for credit risk of wholesale and retail exposures.

Advanced systems means a bank holding company's advanced IRB systems, operational risk management processes, operational risk data and assessment systems, operational risk quantification systems, and, to the extent the bank holding company uses the following systems, the internal models methodology, double default excessive correlation detection process, IMA for equity exposures, and IAA for securitization exposures to ABCP programs.

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

Applicable external rating means:

(1) With respect to an exposure that has multiple external ratings assigned by NRSROs, the lowest solicited external rating assigned to the exposure by any NRSRO; and

(2) With respect to an exposure that has a single external rating assigned by an NRSRO, the external rating assigned to the exposure by the NRSRO.

Applicable inferred rating means:

(1) With respect to an exposure that has multiple inferred ratings, the lowest inferred rating based on a solicited external rating; and

(2) With respect to an exposure that has a single inferred rating, the inferred rating.

Asset-backed commercial paper (ABCP) program means a program that primarily issues commercial paper that:

(1) Has an external rating; and

(2) Is backed by underlying exposures held in a bankruptcy-remote SPE.

Asset-backed commercial paper (ABCP) program sponsor means a bank holding company that:

(1) Establishes an ABCP program;

(2) Approves the sellers permitted to participate in an ABCP program;

(3) Approves the exposures to be purchased by an ABCP program; or

(4) Administers the ABCP program by monitoring the underlying exposures, underwriting or otherwise arranging for the placement of debt or other obligations issued by the program, compiling monthly reports, or ensuring compliance with the program documents and with the program's credit and investment policy.

Backtesting means the comparison of a bank holding company's internal estimates with actual outcomes during a sample period not used in model development. In this context, backtesting is one form of out-of-sample testing.

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

Benchmarking means the comparison of a bank holding company's internal estimates with relevant internal and external data or with estimates based on other estimation techniques.

Business environment and internal control factors means the indicators of a bank holding company's operational risk profile that reflect a current and forward-looking assessment of the bank holding company's underlying business risk factors and internal control environment.

Carrying value means, with respect to an asset, the value of the asset on the balance sheet of the bank holding company, determined in accordance with GAAP.

Clean-up call means a contractual provision that permits an originating bank holding company or servicer to call securitization exposures before their stated maturity or call date. See also *eligible clean-up call*.

Commodity derivative contract means a commodity-linked swap, purchased commodity-linked option, forward commodity-linked contract, or any other instrument linked to commodities that gives rise to similar counterparty credit risks.

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.

Controlled early amortization provision means an early amortization provision that meets all the following conditions:

(1) The originating bank holding company has appropriate policies and procedures to ensure that it has sufficient capital and liquidity available in the event of an early amortization;

(2) Throughout the duration of the securitization (including the early amortization period), there is the same pro rata sharing of interest, principal, expenses, losses, fees, recoveries, and other cash flows from the underlying exposures based on the originating bank holding company's and the investors' relative shares of the underlying exposures outstanding measured on a consistent monthly basis;

(3) The amortization period is sufficient for at least 90 percent of the total underlying exposures outstanding at the beginning of the early amortization period to be repaid or recognized as in default; and

(4) The schedule for repayment of investor principal is not more rapid than would be allowed by straight-line amortization over an 18-month period.

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

Credit-enhancing interest-only strip (CEIO) means an on-balance sheet asset that, in form or in substance:

(1) Represents a contractual right to receive some or all of the interest and no more than a minimal amount of principal due on the underlying exposures of a securitization; and

(2) Exposes the holder to credit risk directly or indirectly associated with the underlying exposures that exceeds a pro rata share of the holder's claim on the underlying exposures, whether through subordination provisions or other credit-enhancement techniques.

Credit-enhancing representations and warranties means representations and warranties that are made or assumed in connection with a transfer of underlying exposures (including loan servicing assets) and that obligate a bank holding company to protect another party from losses arising from the credit risk of the underlying exposures. Credit-enhancing representations and warranties include provisions to protect a party from losses resulting from the default or nonperformance of the obligors of the underlying exposures or from an insufficiency in the value of the collateral backing the underlying exposures. Credit-enhancing representations and warranties do not include:

(1) Early default clauses and similar warranties that permit the return of, or premium refund clauses that cover, first-lien residential mortgage exposures for a period not to exceed 120 days from the date of transfer, provided that the date of transfer is within one year of origination of the residential mortgage exposure;

(2) Premium refund clauses that cover underlying exposures guaranteed, in whole or in part, by the U.S. government, a U.S. government agency, or a U.S. government sponsored enterprise, provided that the clauses are for a period not to exceed 120 days from the date of transfer; or

(3) Warranties that permit the return of underlying exposures in instances of misrepresentation, fraud, or incomplete documentation.

Credit risk mitigant means collateral, a credit derivative, or a guarantee.

Credit-risk-weighted assets means 1.06 multiplied by the sum of:

(1) Total wholesale and retail risk-weighted assets;

(2) Risk-weighted assets for securitization exposures; and

(3) Risk-weighted assets for equity exposures.

Current exposure means, with respect to a netting set, the larger of zero or the market value of a transaction or portfolio of transactions within the netting set that would be lost upon default of the counterparty, assuming no recovery on the value of the transactions. Current exposure is also called replacement cost.

Default—(1) *Retail*. (i) A retail exposure of a bank holding company is in default if:

(A) The exposure is 180 days past due, in the case of a residential mortgage exposure or revolving exposure;

(B) The exposure is 120 days past due, in the case of all other retail exposures; or

(C) The bank holding company has taken a full or partial charge-off, write-down of principal, or material negative fair value adjustment of principal on the exposure for credit-related reasons.

(ii) Notwithstanding paragraph (1)(i) of this definition, for a retail exposure held by a non-U.S. subsidiary of the bank holding company that is subject to an internal ratings-based approach to capital adequacy consistent with the Basel Committee on Banking Supervision's ''International Convergence of Capital Measurement and Capital Standards: A Revised Framework'' in a non-U.S. jurisdiction, the bank holding company may elect to use the definition of default that is used in that jurisdiction, provided that the bank holding company has obtained prior approval from the Federal Reserve to use the definition of default in that jurisdiction.

(iii) A retail exposure in default remains in default until the bank holding company has reasonable assurance of repayment and performance for all contractual principal and interest payments on the exposure.

(2) *Wholesale*. (i) A bank holding company's wholesale obligor is in default if:

(A) The bank holding company determines that the obligor is unlikely to pay its credit obligations to the bank holding company in full, without recourse by the bank holding company to actions such as realizing collateral (if held); or

(B) The obligor is past due more than 90 days on any material credit obligation(s) to the bank holding company.[1]

(ii) An obligor in default remains in default until the bank holding company has reasonable assurance of repayment and performance for all contractual principal and

[1] Overdrafts are past due once the obligor has breached an advised limit or been advised of a limit smaller than the current outstanding balance.

interest payments on all exposures of the bank holding company to the obligor (other than exposures that have been fully written-down or charged-off).

Dependence means a measure of the association among operational losses across and within units of measure.

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

Derivative contract means a financial contract whose value is derived from the values of one or more underlying assets, reference rates, or indices of asset values or reference rates. Derivative contracts include interest rate derivative contracts, exchange rate derivative contracts, equity derivative contracts, commodity derivative contracts, credit derivatives, and any other instrument that poses similar counterparty credit risks. Derivative contracts also include unsettled securities, commodities, and foreign exchange transactions with a contractual settlement or delivery lag that is longer than the lesser of the market standard for the particular instrument or five business days.

Early amortization provision means a provision in the documentation governing a securitization that, when triggered, causes investors in the securitization exposures to be repaid before the original stated maturity of the securitization exposures, unless the provision:

(1) Is triggered solely by events not directly related to the performance of the underlying exposures or the originating bank holding company (such as material changes in tax laws or regulations); or

(2) Leaves investors fully exposed to future draws by obligors on the underlying exposures even after the provision is triggered.

Economic downturn conditions means, with respect to an exposure held by the bank holding company, those conditions in which the aggregate default rates for that exposure's wholesale or retail exposure subcategory (or subdivision of such subcategory selected by the bank holding company) in the exposure's national jurisdiction (or subdivision of such jurisdiction selected by the bank holding company) are significantly higher than average.

Effective maturity (M) of a wholesale exposure means:

(1) For wholesale exposures other than repo-style transactions, eligible margin loans, and OTC derivative contracts described in paragraph (2) or (3) of this definition:

(i) The weighted-average remaining maturity (measured in years, whole or fractional) of the expected contractual cash flows from the exposure, using the undiscounted amounts of the cash flows as weights; or

(ii) The nominal remaining maturity (measured in years, whole or fractional) of the exposure.

(2) For repo-style transactions, eligible margin loans, and OTC derivative contracts subject to a qualifying master netting agreement for which the bank holding company does not apply the internal models approach in paragraph (d) of section 32 of this appendix, the weighted-average remaining maturity (measured in years, whole or fractional) of the individual transactions subject to the qualifying master netting agreement, with the weight of each individual transaction set equal to the notional amount of the transaction.

(3) For repo-style transactions, eligible margin loans, and OTC derivative contracts for which the bank holding company applies the internal models approach in paragraph (d) of section 32 of this appendix, the value determined in paragraph (d)(4) of section 32 of this appendix.

Effective notional amount means, for an eligible guarantee or eligible credit derivative, the lesser of the contractual notional amount of the credit risk mitigant and the EAD of the hedged exposure, multiplied by the percentage coverage of the credit risk mitigant. For example, the effective notional amount of an eligible guarantee that covers, on a pro rata basis, 40 percent of any losses on a $100 bond would be $40.

Eligible clean-up call means a clean-up call that:

(1) Is exercisable solely at the discretion of the originating bank holding company or servicer;

(2) Is not structured to avoid allocating losses to securitization exposures held by investors or otherwise structured to provide credit enhancement to the securitization; and

(3)(i) For a traditional securitization, is only exercisable when 10 percent or less of the principal amount of the underlying exposures or securitization exposures (determined as of the inception of the securitization) is outstanding; or

(ii) For a synthetic securitization, is only exercisable when 10 percent or less of the principal amount of the reference portfolio of underlying exposures (determined as of the inception of the securitization) is outstanding.

Eligible credit derivative means a credit derivative in the form of a credit default swap, n^{th}-to-default swap, total return swap, or any other form of credit derivative approved by the Federal Reserve, provided that:

(1) The contract meets the requirements of an eligible guarantee and has been confirmed by the protection purchaser and the protection provider;

(2) Any assignment of the contract has been confirmed by all relevant parties;

(3) If the credit derivative is a credit default swap or n^{th}-to-default swap, the contract includes the following credit events:

(i) Failure to pay any amount due under the terms of the reference exposure, subject to any applicable minimal payment threshold that is consistent with standard market practice and with a grace period that is closely in line with the grace period of the reference exposure; and

(ii) Bankruptcy, insolvency, or inability of the obligor on the reference exposure to pay its debts, or its failure or admission in writing of its inability generally to pay its debts as they become due, and similar events;

(4) The terms and conditions dictating the manner in which the contract is to be settled are incorporated into the contract;

(5) If the contract allows for cash settlement, the contract incorporates a robust valuation process to estimate loss reliably and specifies a reasonable period for obtaining post-credit event valuations of the reference exposure;

(6) If the contract requires the protection purchaser to transfer an exposure to the protection provider at settlement, the terms of at least one of the exposures that is permitted to be transferred under the contract provides that any required consent to transfer may not be unreasonably withheld;

(7) If the credit derivative is a credit default swap or n^{th}-to-default swap, the contract clearly identifies the parties responsible for determining whether a credit event has occurred, specifies that this determination is not the sole responsibility of the protection provider, and gives the protection purchaser the right to notify the protection provider of the occurrence of a credit event; and

(8) If the credit derivative is a total return swap and the bank holding company records net payments received on the swap as net income, the bank holding company records offsetting deterioration in the value of the hedged exposure (either through reductions in fair value or by an addition to reserves).

Eligible credit reserves means all general allowances that have been established through a charge against earnings to absorb credit losses associated with on- or off-balance sheet wholesale and retail exposures, including the allowance for loan and lease losses (ALLL) associated with such exposures but excluding allocated transfer risk reserves established pursuant to 12 U.S.C. 3904 and other specific reserves created against recognized losses.

Eligible double default guarantor, with respect to a guarantee or credit derivative obtained by a bank holding company, means:

(1) *U.S.-based entities.* A depository institution, a bank holding company, a savings and loan holding company (as defined in 12 U.S.C. 1467a) provided all or substantially all of the holding company's activities are permissible for a financial holding company under 12 U.S.C. 1843(k), a securities broker or dealer registered with the SEC under the Securities Exchange Act of 1934 (15 U.S.C. 78o *et seq.*), or an insurance company in the business of providing credit protection (such as a monoline bond insurer or re-insurer) that is subject to supervision by a State insurance regulator, if:

(i) At the time the guarantor issued the guarantee or credit derivative or at any time thereafter, the bank holding company assigned a PD to the guarantor's rating grade that was equal to or lower than the PD associated with a long-term external rating in the third-highest investment-grade rating category; and

(ii) The bank holding company currently assigns a PD to the guarantor's rating grade that is equal to or lower than the PD associated with a long-term external rating in the lowest investment-grade rating category; or

(2) *Non-U.S.-based entities.* A foreign bank (as defined in §211.2 of the Federal Reserve Board's Regulation K (12 CFR 211.2)), a non-U.S.-based securities firm, or a non-U.S.-based insurance company in the business of providing credit protection, if:

(i) The bank holding company demonstrates that the guarantor is subject to consolidated supervision and regulation comparable to that imposed on U.S. depository institutions, securities broker-dealers, or insurance companies (as the case may be), or has issued and outstanding an unsecured long-term debt security without credit enhancement that has a long-term applicable external rating of at least investment grade;

(ii) At the time the guarantor issued the guarantee or credit derivative or at any time thereafter, the bank holding company assigned a PD to the guarantor's rating grade that was equal to or lower than the PD associated with a long-term external rating in the third-highest investment-grade rating category; and

(iii) The bank holding company currently assigns a PD to the guarantor's rating grade that is equal to or lower than the PD associated with a long-term external rating in the lowest investment-grade rating category.

Eligible guarantee means a guarantee that:

(1) Is written and unconditional;

(2) Covers all or a pro rata portion of all contractual payments of the obligor on the reference exposure;

(3) Gives the beneficiary a direct claim against the protection provider;

(4) Is not unilaterally cancelable by the protection provider for reasons other than the breach of the contract by the beneficiary;

(5) Is legally enforceable against the protection provider in a jurisdiction where the protection provider has sufficient assets against which a judgment may be attached and enforced;

(6) Requires the protection provider to make payment to the beneficiary on the occurrence of a default (as defined in the guarantee) of the obligor on the reference exposure in a timely manner without the beneficiary first having to take legal actions to pursue the obligor for payment;

(7) Does not increase the beneficiary's cost of credit protection on the guarantee in response to deterioration in the credit quality of the reference exposure; and

(8) Is not provided by an affiliate of the bank holding company, unless the affiliate is an insured depository institution, bank, securities broker or dealer, or insurance company that:

(i) Does not control the bank holding company; and

(ii) Is subject to consolidated supervision and regulation comparable to that imposed on U.S. depository institutions, securities broker-dealers, or insurance companies (as the case may be).

Eligible margin loan means an extension of credit where:

(1) The extension of credit is collateralized exclusively by liquid and readily marketable debt or equity securities, gold, or conforming residential mortgages;

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

(3) The extension of credit is conducted under an agreement that provides the bank holding company the right to accelerate and terminate the extension of credit and to liquidate or set off collateral promptly upon an event of default (including upon an event of 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;[2] and

(4) The bank holding company has conducted sufficient legal review to conclude with a well-founded basis (and maintains sufficient written documentation of that legal review) 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.

Eligible operational risk offsets means amounts, not to exceed expected operational loss, that:

(1) Are generated by internal business practices to absorb highly predictable and reasonably stable operational losses, including reserves calculated consistent with GAAP; and

(2) Are available to cover expected operational losses with a high degree of certainty over a one-year horizon.

Eligible purchased wholesale exposure means a purchased wholesale exposure that:

(1) The bank holding company or securitization SPE purchased from an unaffiliated seller and did not directly or indirectly originate;

(2) Was generated on an arm's-length basis between the seller and the obligor (intercompany accounts receivable and receivables subject to contra-accounts between firms that buy and sell to each other do not satisfy this criterion);

(3) Provides the bank holding company or securitization SPE with a claim on all proceeds from the exposure or a pro rata interest in the proceeds from the exposure;

(4) Has an M of less than one year; and

(5) When consolidated by obligor, does not represent a concentrated exposure relative to the portfolio of purchased wholesale exposures.

Eligible securitization guarantor means:

(1) A sovereign entity, the Bank for International Settlements, the International Monetary Fund, the European Central Bank, the European Commission, a Federal Home Loan Bank, Federal Agricultural Mortgage Corporation (Farmer Mac), a multilateral development bank, a depository institution, a bank holding company, a savings and loan holding company (as defined in 12 U.S.C. 1467a) provided all or substantially all of the holding company's activities are permissible for a financial holding company under 12 U.S.C. 1843(k), a foreign bank (as defined in §211.2 of the Federal Reserve Board's Regulation K (12 CFR 211.2)), or a securities firm;

(2) Any other entity (other than a securitization SPE) that has issued and outstanding an unsecured long-term debt security without credit enhancement that has a long-term applicable external rating in one of the three highest investment-grade rating categories; or

(3) Any other entity (other than a securitization SPE) that has a PD assigned by the bank holding company that is lower than or equal to the PD associated with a long-term external rating in the third highest investment-grade rating category.

Eligible servicer cash advance facility means a servicer cash advance facility in which:

(1) The servicer is entitled to full reimbursement of advances, except that a

[2] This requirement is met where all transactions under the agreement are (i) executed under U.S. law and (ii) constitute ''securities contracts'' under section 555 of the Bankruptcy Code (11 U.S.C. 555), 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. 4401–4407) or the Federal Reserve Board's Regulation EE (12 CFR part 231).

servicer may be obligated to make non-reimbursable advances for a particular underlying exposure if any such advance is contractually limited to an insignificant amount of the outstanding principal balance of that exposure;

(2) The servicer's right to reimbursement is senior in right of payment to all other claims on the cash flows from the underlying exposures of the securitization; and

(3) The servicer has no legal obligation to, and does not, make advances to the securitization if the servicer concludes the advances are unlikely to be repaid.

Equity derivative contract means an equity-linked swap, purchased equity-linked option, forward equity-linked contract, or any other instrument linked to equities that gives rise to similar counterparty credit risks.

Equity exposure means:

(1) A security or instrument (whether voting or non-voting) that represents a direct or indirect ownership interest in, and is a residual claim on, the assets and income of a company, unless:

(i) The issuing company is consolidated with the bank holding company under GAAP;

(ii) The bank holding company is required to deduct the ownership interest from tier 1 or tier 2 capital under this appendix;

(iii) The ownership interest incorporates a payment or other similar obligation on the part of the issuing company (such as an obligation to make periodic payments); or

(iv) The ownership interest is a securitization exposure;

(2) A security or instrument that is mandatorily convertible into a security or instrument described in paragraph (1) of this definition;

(3) An option or warrant that is exercisable for a security or instrument described in paragraph (1) of this definition; or

(4) Any other security or instrument (other than a securitization exposure) to the extent the return on the security or instrument is based on the performance of a security or instrument described in paragraph (1) of this definition.

Excess spread for a period means:

(1) Gross finance charge collections and other income received by a securitization SPE (including market interchange fees) over a period minus interest paid to the holders of the securitization exposures, servicing fees, charge-offs, and other senior trust or similar expenses of the SPE over the period; divided by

(2) The principal balance of the underlying exposures at the end of the period.

Exchange rate derivative contract means a cross-currency interest rate swap, forward foreign-exchange contract, currency option purchased, or any other instrument linked to exchange rates that gives rise to similar counterparty credit risks.

Excluded mortgage exposure means any one- to four-family residential pre-sold construction loan for a residence for which the purchase contract is cancelled that would receive a 100 percent risk weight under section 618(a)(2) of the Resolution Trust Corporation Refinancing, Restructuring, and Improvement Act and under 12 CFR part 225, appendix A, section III.C.3.

Expected credit loss (ECL) means:

(1) For a wholesale exposure to a non-defaulted obligor or segment of non-defaulted retail exposures that is carried at fair value with gains and losses flowing through earnings or that is classified as held-for-sale and is carried at the lower of cost or fair value with losses flowing through earnings, zero.

(2) For all other wholesale exposures to non-defaulted obligors or segments of non-defaulted retail exposures, the product of PD times LGD times EAD for the exposure or segment.

(3) For a wholesale exposure to a defaulted obligor or segment of defaulted retail exposures, the bank holding company's impairment estimate for allowance purposes for the exposure or segment.

(4) Total ECL is the sum of expected credit losses for all wholesale and retail exposures other than exposures for which the bank holding company has applied the double default treatment in section 34 of this appendix.

Expected exposure (EE) means the expected value of the probability distribution of non-negative credit risk exposures to a counterparty at any specified future date before the maturity date of the longest term transaction in the netting set. Any negative market values in the probability distribution of market values to a counterparty at a specified future date are set to zero to convert the probability distribution of market values to the probability distribution of credit risk exposures.

Expected operational loss (EOL) means the expected value of the distribution of potential aggregate operational losses, as generated by the bank holding company's operational risk quantification system using a one-year horizon.

Expected positive exposure (EPE) means the weighted average over time of expected (non-negative) exposures to a counterparty where the weights are the proportion of the time interval that an individual expected exposure represents. When calculating risk-based capital requirements, the average is taken over a one-year horizon.

Exposure at default (EAD). (1) For the on-balance sheet component of a wholesale exposure or segment of retail exposures (other than an OTC derivative contract, or a repo-style transaction or eligible margin loan for which the bank holding company determines EAD under section 32 of this appendix), EAD means:

(i) If the exposure or segment is a security classified as available-for-sale, the bank holding company's carrying value (including net accrued but unpaid interest and fees) for the exposure or segment less any allocated transfer risk reserve for the exposure or segment, less any unrealized gains on the exposure or segment, and plus any unrealized losses on the exposure or segment; or

(ii) If the exposure or segment is not a security classified as available-for-sale, the bank holding company's carrying value (including net accrued but unpaid interest and fees) for the exposure or segment less any allocated transfer risk reserve for the exposure or segment.

(2) For the off-balance sheet component of a wholesale exposure or segment of retail exposures (other than an OTC derivative contract, or a repo-style transaction or eligible margin loan for which the bank holding company determines EAD under section 32 of this appendix) in the form of a loan commitment, line of credit, trade-related letter of credit, or transaction-related contingency, EAD means the bank holding company's best estimate of net additions to the outstanding amount owed the bank holding company, including estimated future additional draws of principal and accrued but unpaid interest and fees, that are likely to occur over a one-year horizon assuming the wholesale exposure or the retail exposures in the segment were to go into default. This estimate of net additions must reflect what would be expected during economic downturn conditions. Trade-related letters of credit are short-term, self-liquidating instruments that are used to finance the movement of goods and are collateralized by the underlying goods. Transaction-related contingencies relate to a particular transaction and include, among other things, performance bonds and performance-based letters of credit.

(3) For the off-balance sheet component of a wholesale exposure or segment of retail exposures (other than an OTC derivative contract, or a repo-style transaction or eligible margin loan for which the bank holding company determines EAD under section 32 of this appendix) in the form of anything other than a loan commitment, line of credit, trade-related letter of credit, or transaction-related contingency, EAD means the notional amount of the exposure or segment.

(4) EAD for OTC derivative contracts is calculated as described in section 32 of this appendix. A bank holding company also may determine EAD for repo-style transactions and eligible margin loans as described in section 32 of this appendix.

(5) For wholesale or retail exposures in which only the drawn balance has been securitized, the bank holding company must reflect its share of the exposures' undrawn balances in EAD. Undrawn balances of revolving exposures for which the drawn balances have been securitized must be allocated between the seller's and investors' interests on a pro rata basis, based on the proportions of the seller's and investors' shares of the securitized drawn balances.

Exposure category means any of the wholesale, retail, securitization, or equity exposure categories.

External operational loss event data means, with respect to a bank holding company, gross operational loss amounts, dates, recoveries, and relevant causal information for operational loss events occurring at organizations other than the bank holding company.

External rating means a credit rating that is assigned by an NRSRO to an exposure, provided:

(1) The credit rating fully reflects the entire amount of credit risk with regard to all payments owed to the holder of the exposure. If a holder is owed principal and interest on an exposure, the credit rating must fully reflect the credit risk associated with timely repayment of principal and interest. If a holder is owed only principal on an exposure, the credit rating must fully reflect only the credit risk associated with timely repayment of principal; and

(2) The credit rating is published in an accessible form and is or will be included in the transition matrices made publicly available by the NRSRO that summarize the historical performance of positions rated by the NRSRO.

Financial collateral means collateral:

(1) In the form of:

(i) Cash on deposit with the bank holding company (including cash held for the bank holding company by a third-party custodian or trustee);

(ii) Gold bullion;

(iii) Long-term debt securities that have an applicable external rating of one category below investment grade or higher;

(iv) Short-term debt instruments that have an applicable external rating of at least investment grade;

(v) Equity securities that are publicly traded;

(vi) Convertible bonds that are publicly traded;

(vii) Money market mutual fund shares and other mutual fund shares if a price for the shares is publicly quoted daily; or

(viii) Conforming residential mortgages; and

(2) In which the bank holding company has a perfected, first priority security interest or, outside of the United States, the legal equivalent thereof (with the exception of cash on deposit and notwithstanding the prior security interest of any custodial agent).

GAAP means generally accepted accounting principles as used in the United States.

Gain-on-sale means an increase in the equity capital (as reported on Schedule HC of the FR Y–9C Report) of a bank holding company that results from a securitization (other than an increase in equity capital that results from the bank holding company's receipt of cash in connection with the securitization).

Guarantee means a financial guarantee, letter of credit, insurance, or other similar financial instrument (other than a credit derivative) that allows one party (beneficiary) to transfer the credit risk of one or more specific exposures (reference exposure) to another party (protection provider). See also *eligible guarantee.*

High volatility commercial real estate (HVCRE) exposure means a credit facility that finances or has financed the acquisition, development, or construction (ADC) of real property, unless the facility finances:

(1) One- to four-family residential properties; or

(2) Commercial real estate projects in which:

(i) The loan-to-value ratio is less than or equal to the applicable maximum supervisory loan-to-value ratio in the relevant agency's real estate lending standards at 12 CFR part 34, subpart D (OCC), 12 CFR part 208, appendix C (Federal Reserve); 12 CFR part 365, subpart D (FDIC); and 12 CFR 560.100–560.101 (OTS).

(ii) The borrower has contributed capital to the project in the form of cash or unencumbered readily marketable assets (or has paid development expenses out-of-pocket) of at least 15 percent of the real estate's appraised ''as completed'' value; and

(iii) The borrower contributed the amount of capital required by paragraph (2)(ii) of this definition before the bank holding company advances funds under the credit facility, and the capital contributed by the borrower, or internally generated by the project, is contractually required to remain in the project throughout the life of the project. The life of a project concludes only when the credit facility is converted to permanent financing or is sold or paid in full. Permanent financing may be provided by the bank holding company that provided the ADC facility as long as the permanent financing is subject to the bank holding company's underwriting criteria for long-term mortgage loans.

Inferred rating. A securitization exposure has an *inferred rating* equal to the external rating referenced in paragraph (2)(i) of this definition if:

(1) The securitization exposure does not have an external rating; and

(2) Another securitization exposure issued by the same issuer and secured by the same underlying exposures:

(i) Has an external rating;

(ii) Is subordinated in all respects to the unrated securitization exposure;

(iii) Does not benefit from any credit enhancement that is not available to the unrated securitization exposure; and

(iv) Has an effective remaining maturity that is equal to or longer than that of the unrated securitization exposure.

Interest rate derivative contract means a single-currency interest rate swap, basis swap, forward rate agreement, purchased interest rate option, when-issued securities, or any other instrument linked to interest rates that gives rise to similar counterparty credit risks.

Internal operational loss event data means, with respect to a bank holding company, gross operational loss amounts, dates, recoveries, and relevant causal information for operational loss events occurring at the bank holding company.

Investing bank holding company means, with respect to a securitization, a bank holding company that assumes the credit risk of a securitization exposure (other than an originating bank holding company of the securitization). In the typical synthetic securitization, the investing bank holding company sells credit protection on a pool of underlying exposures to the originating bank holding company.

Investment fund means a company:

(1) All or substantially all of the assets of which are financial assets; and

(2) That has no material liabilities.

Investors' interest EAD means, with respect to a securitization, the EAD of the underlying exposures multiplied by the ratio of:

(1) The total amount of securitization exposures issued by the securitization SPE to investors; divided by

(2) The outstanding principal amount of underlying exposures.

Loss given default (LGD) means:

(1) For a wholesale exposure, the greatest of:

(i) Zero;

(ii) The bank holding company's empirically based best estimate of the long-run default-weighted average economic loss, per dollar of EAD, the bank holding company would expect to incur if the obligor (or a typical obligor in the loss severity grade assigned by the bank holding company to the exposure) were to default within a one-year horizon over a mix of economic conditions, including economic downturn conditions; or

(iii) The bank holding company's empirically based best estimate of the economic loss, per dollar of EAD, the bank holding company would expect to incur if the obligor (or a typical obligor in the loss severity grade assigned by the bank holding company to the exposure) were to default within a one-year horizon during economic downturn conditions.

(2) For a segment of retail exposures, the greatest of:

(i) Zero;

(ii) The bank holding company's empirically based best estimate of the long-run default-weighted average economic loss, per dollar of EAD, the bank holding company would expect to incur if the exposures in the segment were to default within a one-year horizon over a mix of economic conditions, including economic downturn conditions; or

(iii) The bank holding company's empirically based best estimate of the economic loss, per dollar of EAD, the bank holding company would expect to incur if the exposures in the segment were to default within a one-year horizon during economic downturn conditions.

(3) The economic loss on an exposure in the event of default is all material credit-related losses on the exposure (including accrued but unpaid interest or fees, losses on the sale of collateral, direct workout costs, and an appropriate allocation of indirect workout costs). Where positive or negative cash flows on a wholesale exposure to a defaulted obligor or a defaulted retail exposure (including proceeds from the sale of collateral, workout costs, additional extensions of credit to facilitate repayment of the exposure, and draw-downs of unused credit lines) occur after the date of default, the economic loss must reflect the net present value of cash flows as of the default date using a discount rate appropriate to the risk of the defaulted exposure.

Main index means the Standard & Poor's 500 Index, the FTSE All-World Index, and any other index for which the bank holding company can demonstrate to the satisfaction of the Federal Reserve that the equities represented in the index have comparable liquidity, depth of market, and size of bid-ask spreads as equities in the Standard & Poor's 500 Index and FTSE All-World Index.

Multilateral development bank means the International Bank for Reconstruction and Development, 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 Federal Reserve determines poses comparable credit risk.

Nationally recognized statistical rating organization (NRSRO) means an entity registered with the SEC as a nationally recognized statistical rating organization under section 15E of the Securities Exchange Act of 1934 (15 U.S.C. 78o–7).

Netting set means a group of transactions with a single counterparty that are subject to a qualifying master netting agreement or qualifying cross-product master netting agreement. For purposes of the internal models methodology in paragraph (d) of section 32 of this appendix, each transaction that is not subject to such a master netting agreement is its own netting set.

N^{th}-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.

Obligor means the legal entity or natural person contractually obligated on a wholesale exposure, except that a bank holding company may treat the following exposures as having separate obligors:

(1) Exposures to the same legal entity or natural person denominated in different currencies;

(2) (i) An income-producing real estate exposure for which all or substantially all of the repayment of the exposure is reliant on the cash flows of the real estate serving as collateral for the exposure; the bank holding company, in economic substance, does not have recourse to the borrower beyond the real estate collateral; and no cross-default or cross-acceleration clauses are in place other than clauses obtained solely out of an abundance of caution; and

(ii) Other credit exposures to the same legal entity or natural person; and

(3) (i) A wholesale exposure authorized under section 364 of the U.S. Bankruptcy Code (11 U.S.C. 364) to a legal entity or natural person who is a debtor-in-possession for purposes of Chapter 11 of the Bankruptcy Code; and

(ii) Other credit exposures to the same legal entity or natural person.

Operational loss means a loss (excluding insurance or tax effects) resulting from an operational loss event. Operational loss includes all expenses associated with an operational loss event except for opportunity costs, forgone revenue, and costs related to risk management and control enhancements implemented to prevent future operational losses.

Operational loss event means an event that results in loss and is associated with any of the following seven operational loss event type categories:

(1) Internal fraud, which means the operational loss event type category that comprises operational losses resulting from an act involving at least one internal party of a type intended to defraud, misappropriate property, or circumvent regulations, the law, or company policy, excluding diversity- and discrimination-type events.

(2) External fraud, which means the operational loss event type category that comprises operational losses resulting from an act by a third party of a type intended to defraud, misappropriate property, or circumvent the law. Retail credit card losses arising from non-contractual, third-party initiated fraud (for example, identity theft) are external fraud operational losses. All other third-party initiated credit losses are to be treated as credit risk losses.

(3) Employment practices and workplace safety, which means the operational loss event type category that comprises operational losses resulting from an act inconsistent with employment, health, or safety laws or agreements, payment of personal injury claims, or payment arising from diversity- and discrimination-type events.

(4) Clients, products, and business practices, which means the operational loss event type category that comprises operational losses resulting from the nature or design of a product or from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements).

(5) Damage to physical assets, which means the operational loss event type category that comprises operational losses resulting from the loss of or damage to physical assets from natural disaster or other events.

(6) Business disruption and system failures, which means the operational loss event type category that comprises operational losses resulting from disruption of business or system failures.

(7) Execution, delivery, and process management, which means the operational loss event type category that comprises operational losses resulting from failed transaction processing or process management or losses arising from relations with trade counterparties and vendors.

Operational risk means the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events (including legal risk but excluding strategic and reputational risk).

Operational risk exposure means the 99.9th percentile of the distribution of potential aggregate operational losses, as generated by the bank holding company's operational risk quantification system over a one-year horizon (and not incorporating eligible operational risk offsets or qualifying operational risk mitigants).

Originating bank holding company, with respect to a securitization, means a bank holding company that:

(1) Directly or indirectly originated or securitized the underlying exposures included in the securitization; or

(2) Serves as an ABCP program sponsor to the securitization.

Other retail exposure means an exposure (other than a securitization exposure, an equity exposure, a residential mortgage exposure, an excluded mortgage exposure, a qualifying revolving exposure, or the residual value portion of a lease exposure) that is managed as part of a segment of exposures with homogeneous risk characteristics, not on an individual-exposure basis, and is either:

(1) An exposure to an individual for non-business purposes; or

(2) An exposure to an individual or company for business purposes if the bank holding company's consolidated business credit exposure to the individual or company is $1 million or less.

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

Probability of default (PD) means:

(1) For a wholesale exposure to a non-defaulted obligor, the bank holding company's empirically based best estimate of the long-run average one-year default rate for the rating grade assigned by the bank holding company to the obligor, capturing the average default experience for obligors in the rating grade over a mix of economic conditions (including economic downturn conditions) sufficient to provide a reasonable estimate of the average one-year default rate over the economic cycle for the rating grade.

(2) For a segment of non-defaulted retail exposures, the bank holding company's empirically based best estimate of the long-run average one-year default rate for the exposures in the segment, capturing the average default experience for exposures in the segment over a mix of economic conditions (including economic downturn conditions) sufficient to provide a reasonable estimate of the average one-year default rate over the economic cycle for the segment and adjusted upward as appropriate for segments for which seasoning effects are material. For purposes of this definition, a segment for which seasoning effects are material is a segment where there is a material relationship between the time since origination of exposures within the segment and the bank holding company's best estimate of the long-run average one-year default rate for the exposures in the segment.

(3) For a wholesale exposure to a defaulted obligor or segment of defaulted retail exposures, 100 percent.

Protection amount (P) means, with respect to an exposure hedged by an eligible guarantee or eligible credit derivative, the effective notional amount of the guarantee or credit derivative, reduced to reflect any currency mismatch, maturity mismatch, or lack of restructuring coverage (as provided in section 33 of this appendix).

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, meaning that there are enough independent bona fide offers to buy and sell so that a sales price reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined promptly and a trade can be settled at such a price within five business days.

Qualifying central counterparty means a counterparty (for example, a clearinghouse) that:

(1) Facilitates trades between counterparties in one or more financial markets by either guaranteeing trades or novating contracts;

(2) Requires all participants in its arrangements to be fully collateralized on a daily basis; and

(3) The bank holding company demonstrates to the satisfaction of the Federal Reserve is in sound financial condition and is subject to effective oversight by a national supervisory authority.

Qualifying cross-product master netting agreement means a qualifying master netting agreement that provides for termination and close-out netting across multiple types of financial transactions or qualifying master netting agreements in the event of a counterparty's default, provided that:

(1) The underlying financial transactions are OTC derivative contracts, eligible margin loans, or repo-style transactions; and

(2) The bank holding company obtains a written legal opinion verifying the validity and enforceability of the agreement under applicable law of the relevant jurisdictions if the counterparty fails to perform upon an event of default, including upon an event of bankruptcy, insolvency, or similar proceeding.

Qualifying master netting agreement means any written, legally enforceable bilateral agreement, provided that:

(1) The agreement creates a single legal obligation for all individual transactions covered by the agreement upon an event of default, including bankruptcy, insolvency, or similar proceeding, of the counterparty;

(2) The agreement provides the bank holding company 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 default, including upon an event of 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;

(3) The bank holding company has conducted sufficient legal review to conclude with a well-founded basis (and maintains sufficient written documentation of that legal review) that:

(i) The agreement meets the requirements of paragraph (2) of this definition; and

(ii) In the event of a legal challenge (including one resulting from default or from bankruptcy, insolvency, or similar proceeding) the relevant court and administrative authorities would find the agreement to be legal, valid, binding, and enforceable under the law of the relevant jurisdictions;

(4) The bank holding company establishes and maintains procedures to monitor possible changes in relevant law and to ensure that the agreement continues to satisfy the requirements of this definition; and

(5) The agreement does not contain a walkaway clause (that is, a provision that permits a non-defaulting counterparty to make a lower payment than it would make otherwise under the agreement, or no payment at all, to a defaulter or the estate of a defaulter, even if the defaulter or the estate of the defaulter is a net creditor under the agreement).

Qualifying revolving exposure (QRE) means an exposure (other than a securitization exposure or equity exposure) to an individual that is managed as part of a segment of exposures with homogeneous risk characteristics, not on an individual-exposure basis, and:

(1) Is revolving (that is, the amount outstanding fluctuates, determined largely by the borrower's decision to borrow and repay, up to a pre-established maximum amount);

(2) Is unsecured and unconditionally cancelable by the bank holding company to the fullest extent permitted by Federal law; and

(3) Has a maximum exposure amount (drawn plus undrawn) of up to $100,000.

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 holding company acts as agent for a customer and indemnifies the customer against loss, provided that:

(1) The transaction is based solely on liquid and readily marketable securities, cash, gold, or conforming residential mortgages;

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

(3)(i) The transaction is a ''securities contract'' or ''repurchase agreement'' under section 555 or 559, respectively, of the Bankruptcy Code (11 U.S.C. 555 or 559), a qualified financial contract under 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 under sections 401–407 of the Federal Deposit Insurance Corporation Improvement Act of 1991 (12 U.S.C. 4401–4407) or the Federal Reserve Board's Regulation EE (12 CFR part 231); or

(ii) If the transaction does not meet the criteria set forth in paragraph (3)(i) of this definition, then either:

(A) The transaction is executed under an agreement that provides the bank holding company 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 upon an event of 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; or

(B) The transaction is:

(*1*) Either overnight or unconditionally cancelable at any time by the bank holding company; and

(*2*) Executed under an agreement that provides the bank holding company 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 counterparty default; and

(4) The bank holding company has conducted sufficient legal review to conclude with a well-founded basis (and maintains sufficient written documentation of that legal review) 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.

Residential mortgage exposure means an exposure (other than a securitization exposure, equity exposure, or excluded mortgage exposure) that is managed as part of a segment of exposures with homogeneous risk characteristics, not on an individual-exposure basis, and is:

(1) An exposure that is primarily secured by a first or subsequent lien on one- to four-family residential property; or

(2) An exposure with an original and outstanding amount of $1 million or less that is primarily secured by a first or subsequent lien on residential property that is not one to four family.

Retail exposure means a residential mortgage exposure, a qualifying revolving exposure, or an other retail exposure.

Retail exposure subcategory means the residential mortgage exposure, qualifying revolving exposure, or other retail exposure subcategory.

Risk parameter means a variable used in determining risk-based capital requirements for wholesale and retail exposures, specifically probability of default (PD), loss given default (LGD), exposure at default (EAD), or effective maturity (M).

Scenario analysis means a systematic process of obtaining expert opinions from business managers and risk management experts to derive reasoned assessments of the likelihood and loss impact of plausible high-severity operational losses. Scenario analysis may include the well-reasoned evaluation and use of external operational loss event data, adjusted as appropriate to ensure relevance to a bank holding company's operational risk profile and control structure.

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

Securitization means a traditional securitization or a synthetic securitization.

Securitization exposure means an on-balance sheet or off-balance sheet credit exposure that arises from a traditional or synthetic securitization (including credit-enhancing representations and warranties).

Securitization special purpose entity (securitization SPE) means a corporation, trust, or other entity organized for the specific purpose of holding underlying exposures of a securitization, the activities of which are limited to those appropriate to accomplish this purpose, and the structure of which is intended to isolate the underlying exposures held by the entity from the credit risk of the seller of the underlying exposures to the entity.

Senior securitization exposure means a securitization exposure that has a first priority claim on the cash flows from the underlying exposures. When determining whether a securitization exposure has a first priority claim on the cash flows from the underlying exposures, a bank holding company is not required to consider amounts due under interest rate or currency derivative contracts, fees due, or other similar payments. Both the most senior commercial paper issued by an ABCP program and a liquidity facility that supports the ABCP program may be senior securitization exposures if the liquidity facility provider's right to reimbursement of the drawn amounts is senior to all claims on the cash flows from the underlying exposures except amounts due under interest rate or currency derivative contracts, fees due, or other similar payments.

S*ervicer cash advance facility* means a facility under which the servicer of the underlying exposures of a securitization may advance cash to ensure an uninterrupted flow of payments to investors in the securitization, including advances made to cover foreclosure costs or other expenses to facilitate the timely collection of the underlying exposures. See also *eligible servicer cash advance facility*.

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

Sovereign exposure means:

(1) A direct exposure to a sovereign entity; or

(2) An exposure directly and unconditionally backed by the full faith and credit of a sovereign entity.

Subsidiary means, with respect to a company, a company controlled by that company.

Synthetic 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 through the use of one or more credit derivatives or guarantees (other than a guarantee that transfers only the credit risk of an individual retail exposure);

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

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

(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).

Tier 1 capital is defined in 12 CFR part 225, appendix A, as modified in part II of this appendix.

Tier 2 capital is defined in 12 CFR part 225, appendix A, as modified in part II of this appendix.

Total qualifying capital means the sum of tier 1 capital and tier 2 capital, after all deductions required in this appendix.

Total risk-weighted assets means:

(1) The sum of:

(i) Credit risk-weighted assets; and

(ii) Risk-weighted assets for operational risk; minus

(2) Excess eligible credit reserves not included in tier 2 capital.

Total wholesale and retail risk-weighted assets means the sum of risk-weighted assets for wholesale exposures to non-defaulted obligors and segments of non-defaulted retail exposures; risk-weighted assets for wholesale exposures to defaulted obligors and segments of defaulted retail exposures; risk-weighted assets for assets not defined by an exposure category; and risk-weighted assets for nonmaterial portfolios of exposures (all as determined in section 31 of this appendix) and risk-weighted assets for unsettled transactions (as determined in section 35 of this appendix) minus the amounts deducted from capital pursuant to 12 CFR part 225, appendix A (excluding those deductions reversed in section 12 of this appendix).

Traditional 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 other than through the use of credit derivatives or guarantees;

(2) The credit risk associated with the underlying exposures has been separated into at least two tranches reflecting 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) 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 Federal Reserve 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 traditional securitization based on the transaction's leverage, risk profile, or economic substance.

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

Tranche means all securitization exposures associated with a securitization that have the same seniority level.

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

Unexpected operational loss (UOL) means the difference between the bank holding company's operational risk exposure and the bank holding company's expected operational loss.

Unit of measure means the level (for example, organizational unit or operational loss event type) at which the bank holding company's operational risk quantification system generates a separate distribution of potential operational losses.

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

Wholesale exposure means a credit exposure to a company, natural person, sovereign entity, or governmental entity (other than a securitization exposure, retail exposure, excluded mortgage exposure, or equity exposure). Examples of a wholesale exposure include:

(1) A non-tranched guarantee issued by a bank holding company on behalf of a company;

(2) A repo-style transaction entered into by a bank holding company with a company and any other transaction in which a bank holding company posts collateral to a company and faces counterparty credit risk;

(3) An exposure that a bank holding company treats as a covered position under 12 CFR part 225, appendix E for which there is a counterparty credit risk capital requirement;

(4) A sale of corporate loans by a bank holding company to a third party in which the bank holding company retains full recourse;

(5) An OTC derivative contract entered into by a bank holding company with a company;

(6) An exposure to an individual that is not managed by a bank holding company as part of a segment of exposures with homogeneous risk characteristics; and

(7) A commercial lease.

Wholesale exposure subcategory means the HVCRE or non-HVCRE wholesale exposure subcategory.

Section 3. Minimum Risk-Based Capital Requirements

(a) Except as modified by paragraph (c) of this section or by section 23 of this appendix, each bank holding company must meet a minimum ratio of:

(1) Total qualifying capital to total risk-weighted assets of 8.0 percent; and

(2) Tier 1 capital to total risk-weighted assets of 4.0 percent.

(b) Each bank holding company must hold capital commensurate with the level and nature of all risks to which the bank holding company is exposed.

(c) When a bank holding company subject to 12 CFR part 225, appendix E calculates its risk-based capital requirements under this appendix, the bank holding company must also refer to 12 CFR part 225, appendix E for supplemental rules to calculate risk-based capital requirements adjusted for market risk.

PART II. QUALIFYING CAPITAL

Section 11. Additional Deductions

(a) *General.* A bank holding company that uses this appendix must make the same deductions from its tier 1 capital and tier 2 capital required in 12 CFR part 225, appendix A, except that:

(1) A bank holding company is not required to deduct certain equity investments and CEIOs (as provided in section 12 of this appendix); and

(2) A bank holding company also must make the deductions from capital required by paragraphs (b) and (c) of this section.

(b) *Deductions from tier 1 capital.* A bank holding company must deduct from tier 1 capital any gain-on-sale associated with a securitization exposure as provided in paragraph (a) of section 41 and paragraphs (a)(1), (c), (g)(1), and (h)(1) of section 42 of this appendix.

(c) *Deductions from tier 1 and tier 2 capital.* A bank holding company must deduct the exposures specified in paragraphs (c)(1) through (c)(7) in this section 50 percent from tier 1 capital and 50 percent from tier 2 capital. If the amount deductible from tier 2 capital exceeds the bank holding company's actual tier 2 capital, however, the bank holding company must deduct the excess from tier 1 capital.

(1) *Credit-enhancing interest-only strips (CEIOs).* In accordance with paragraphs (a)(1) and (c) of section 42 of this appendix, any CEIO that does not constitute gain-on-sale.

(2) *Non-qualifying securitization exposures.* In accordance with paragraphs (a)(4) and (c) of section 42 of this appendix, any securitization exposure that does not qualify for the Ratings-Based Approach, the Internal Assessment Approach, or the Supervisory Formula Approach under sections 43, 44, and 45 of this appendix, respectively.

(3) *Securitizations of non-IRB exposures.* In accordance with paragraphs (c) and (g)(4) of section 42 of this appendix, certain exposures to a securitization any underlying exposure of which is not a wholesale exposure, retail exposure, securitization exposure, or equity exposure.

(4) *Low-rated securitization exposures.* In accordance with section 43 and paragraph (c) of section 42 of this appendix, any securitization exposure that qualifies for and must be deducted under the Ratings-Based Approach.

(5) *High-risk securitization exposures subject to the Supervisory Formula Approach.* In accordance with paragraphs (b) and (c) of section 45 of this appendix and paragraph (c) of section 42 of this appendix, certain high-risk securitization exposures (or portions thereof) that qualify for the Supervisory Formula Approach.

(6) *Eligible credit reserves shortfall.* In accordance with paragraph (a)(1) of section 13 of this appendix, any eligible credit reserves shortfall.

(7) *Certain failed capital markets transactions.* In accordance with paragraph (e)(3) of section 35 of this appendix, the bank holding company's exposure on certain failed capital markets transactions.

(8) A bank holding company must also deduct an amount equal to the minimum regulatory capital requirement established by the regulator of any insurance underwriting subsidiary of the holding company. For U.S.-based insurance underwriting subsidiaries, this amount generally would be 200 percent of the subsidiary's Authorized Control Level as established by the appropriate state regulator of the insurance company.

Section 12. Deductions and Limitations Not Required

(a) *Deduction of CEIOs.* A bank holding company is not required to make the deductions from capital for CEIOs in 12 CFR part 225, appendix A, section II.B.1.e.

(b) *Deduction for certain equity investments.* A bank holding company is not required to make the deductions from capital for nonfinancial equity investments in 12 CFR part 225, appendix A, section II.B.5.

Section 13. Eligible Credit Reserves

(a) *Comparison of eligible credit reserves to expected credit losses*—(1) *Shortfall of eligible credit reserves.* If a bank holding company's eligible credit reserves are less than the bank holding company's total expected credit losses, the bank holding company must deduct the shortfall amount 50 percent from tier 1 capital and 50 percent from tier 2 capital. If the amount deductible from tier 2 capital exceeds the bank holding company's actual tier 2 capital, the bank holding company must deduct the excess amount from tier 1 capital.

(2) *Excess eligible credit reserves.* If a bank holding company's eligible credit reserves exceed the bank holding company's total expected credit losses, the bank holding company may include the excess amount in tier 2 capital to the extent that the excess amount does not exceed 0.6 percent of the bank holding company's credit-risk-weighted assets.

(b) *Treatment of allowance for loan and lease losses.* Regardless of any provision in 12 CFR part 225, appendix A, the ALLL is included in tier 2 capital only to the extent provided in paragraph (a)(2) of this section and in section 24 of this appendix.

PART III. QUALIFICATION

Section 21. Qualification Process

(a) *Timing.* (1) A bank holding company that is described in paragraph (b)(1) of section 1 of this appendix must adopt a written implementation plan no later than six months after the later of April 1, 2008, or the date the bank holding company meets a criterion in that section. The implementation plan must incorporate an explicit first floor period start date no later than 36 months after the later of April 1, 2008, or the date the bank holding company meets at least one criterion under paragraph (b)(1) of section 1 of this appendix. The Federal Reserve may extend the first floor period start date.

(2) A bank holding company that elects to be subject to this appendix under paragraph (b)(2) of section 1 of this appendix must adopt a written implementation plan.

(b) *Implementation plan.* (1) The bank holding company's implementation plan must address in detail how the bank holding company complies, or plans to comply, with the qualification requirements in section 22 of this appendix. The bank holding company also must maintain a comprehensive and sound planning and governance process to oversee the implementation efforts described in the plan. At a minimum, the plan must:

(i) Comprehensively address the qualification requirements in section 22 of this appendix for the bank holding company and each consolidated subsidiary (U.S. and foreign-based) of the bank holding company with respect to all portfolios and exposures of the bank holding company and each of its consolidated subsidiaries;

(ii) Justify and support any proposed temporary or permanent exclusion of business lines, portfolios, or exposures from application of the advanced approaches in this appendix (which business lines, portfolios, and exposures must be, in the aggregate, immaterial to the bank holding company);

(iii) Include the bank holding company's self-assessment of:

(A) The bank holding company's current status in meeting the qualification requirements in section 22 of this appendix; and

(B) The consistency of the bank holding company's current practices with the Federal Reserve's supervisory guidance on the qualification requirements;

(iv) Based on the bank holding company's self-assessment, identify and describe the areas in which the bank holding company proposes to undertake additional work to comply with the qualification requirements in section 22 of this appendix or to improve the consistency of the bank holding company's current practices with the Federal Reserve's supervisory guidance on the qualification requirements (gap analysis);

(v) Describe what specific actions the bank holding company will take to address the areas identified in the gap analysis required by paragraph (b)(1)(iv) of this section;

(vi) Identify objective, measurable milestones, including delivery dates and a date when the bank holding company's implementation of the methodologies described in this appendix will be fully operational;

(vii) Describe resources that have been budgeted and are available to implement the plan; and

(viii) Receive approval of the bank holding company's board of directors.

(2) The bank holding company must submit the implementation plan, together with a copy of the minutes of the board of directors' approval, to the Federal Reserve at least 60 days before the bank holding company proposes to begin its parallel run, unless the Federal Reserve waives prior notice.

(c) *Parallel run.* Before determining its risk-based capital requirements under this appendix and following adoption of the implementation plan, the bank holding company must conduct a satisfactory parallel run. A satisfactory parallel run is a period of no less than four consecutive calendar quarters during which the bank holding company complies with the qualification requirements in section 22 of this appendix to the satisfaction of the Federal Reserve. During the parallel run, the bank holding company must report to the Federal Reserve on a calendar quarterly basis its risk-based capital ratios using 12 CFR part 225, appendix A and the risk-based capital requirements described in this appendix. During this period, the bank holding company is subject to 12 CFR part 225, appendix A.

(d) *Approval to calculate risk-based capital requirements under this appendix.* The Federal Reserve will notify the bank holding company of the date that the bank holding company may begin its first floor period if the Federal Reserve determines that:

(1) The bank holding company fully complies with all the qualification requirements in section 22 of this appendix;

(2) The bank holding company has conducted a satisfactory parallel run under paragraph (c) of this section; and

(3) The bank holding company has an adequate process to ensure ongoing compliance with the qualification requirements in section 22 of this appendix.

(e) *Transitional floor periods.* Following a satisfactory parallel run, a bank holding company is subject to three transitional floor periods.

(1) *Risk-based capital ratios during the transitional floor periods*—(i) *Tier 1 risk-based capital ratio.* During a bank holding company's transitional floor periods, the bank holding company's tier 1 risk-based capital ratio is equal to the lower of:

(A) The bank holding company's floor-adjusted tier 1 risk-based capital ratio; or

(B) The bank holding company's advanced approaches tier 1 risk-based capital ratio.

(ii) *Total risk-based capital ratio.* During a bank holding company's transitional floor periods, the bank holding company's total risk-based capital ratio is equal to the lower of:

(A) The bank holding company's floor-adjusted total risk-based capital ratio; or

(B) The bank holding company's advanced approaches total risk-based capital ratio.

(2) *Floor-adjusted risk-based capital ratios.* (i) A bank holding company's floor-adjusted tier 1 risk-based capital ratio during a transitional floor period is equal to the bank holding company's tier 1 capital as calculated under 12 CFR part 225, appendix A, divided by the product of:

(A) The bank holding company's total risk-weighted assets as calculated under 12 CFR part 225, appendix A; and

(B) The appropriate transitional floor percentage in Table 1.

(ii) A bank holding company's floor-adjusted total risk-based capital ratio during a transitional floor period is equal to the sum of the bank holding company's tier 1 and tier 2 capital as calculated under 12 CFR part 225, appendix A, divided by the product of:

(A) The bank holding company's total risk-weighted assets as calculated under 12 CFR part 225, appendix A; and

(B) The appropriate transitional floor percentage in Table 1.

(iii) A bank holding company that meets the criteria in paragraph (b)(1) or (b)(2) of section 1 of this appendix as of April 1, 2008, must use 12 CFR part 225, appendix A during the parallel run and as the basis for its transitional floors.

TABLE 1—TRANSITIONAL FLOORS

Transitional floor period	Transitional floor percentage
First floor period	95 percent.
Second floor period	90 percent.
Third floor period	85 percent.

(3) *Advanced approaches risk-based capital ratios.* (i) A bank holding company's advanced approaches tier 1 risk-based capital ratio equals the bank holding company's tier 1 risk-based capital ratio as calculated under this appendix (other than this section on transitional floor periods).

(ii) A bank holding company's advanced approaches total risk-based capital ratio equals the bank holding company's total risk-based capital ratio as calculated under this appendix (other than this section on transitional floor periods).

(4) *Reporting.* During the transitional floor periods, a bank holding company must report to the Federal Reserve on a calendar quarterly basis both floor-adjusted risk-based capital ratios and both advanced approaches risk-based capital ratios.

(5) *Exiting a transitional floor period.* A bank holding company may not exit a transitional floor period until the bank holding company has spent a minimum of four consecutive calendar quarters in the period and the Federal Reserve has determined that the bank holding company may exit the floor period. The Federal Reserve's determination will be based on an assessment of the bank holding company's ongoing compliance with the qualification requirements in section 22 of this appendix.

(6) *Interagency study.* After the end of the second transition year (2010), the Federal banking agencies will publish a study that evaluates the advanced approaches to determine if there are any material deficiencies. For any primary Federal supervisor to authorize any institution to exit the third transitional floor period, the study must determine that there are no such material deficiencies that cannot be addressed by then-existing tools, or, if such deficiencies are found, they are first remedied by changes to this appendix. Notwithstanding the preceding sentence, a primary Federal supervisor that disagrees with the finding of material deficiency may not authorize any institution under its jurisdiction to exit the third transitional floor period unless it provides a public report explaining its reasoning.

Section 22. Qualification Requirements

(a) *Process and systems requirements.* (1) A bank holding company must have a rigorous process for assessing its overall capital adequacy in relation to its risk profile and a comprehensive strategy for maintaining an appropriate level of capital.

(2) The systems and processes used by a bank holding company for risk-based capital purposes under this appendix must be consistent with the bank holding company's internal risk management processes and management information reporting systems.

(3) Each bank holding company must have an appropriate infrastructure with risk measurement and management processes that meet the qualification requirements of this section and are appropriate given the bank holding company's size and level of complexity. Regardless of whether the systems and models that generate the risk parameters necessary for calculating a bank holding company's risk-based capital requirements are located at any affiliate of the bank holding company, the bank holding company itself must ensure that the risk parameters and reference data used to determine its risk-based capital requirements are representative of its own credit risk and operational risk exposures.

(b) *Risk rating and segmentation systems for wholesale and retail exposures.* (1) A bank holding company must have an internal risk rating and segmentation system that accurately and reliably differentiates among degrees of credit risk for the bank holding company's wholesale and retail exposures.

(2) For wholesale exposures:

(i) A bank holding company must have an internal risk rating system that accurately and reliably assigns each obligor to a single rating grade (reflecting the obligor's likelihood of default). A bank holding company may elect, however, not to assign to a rating grade an obligor to whom the bank holding company extends credit based solely on the financial strength of a guarantor, provided that all of the bank holding company's exposures to the obligor are fully covered by eligible guarantees, the bank holding company applies the PD substitution approach in paragraph (c)(1) of section 33 of this appendix to all exposures to that obligor, and the bank holding company immediately assigns the obligor to a rating grade if a guarantee can no longer be recognized under this appendix. The bank holding company's wholesale obligor rating system must have at least seven discrete rating grades for non-defaulted obligors and at least one rating grade for defaulted obligors.

(ii) Unless the bank holding company has chosen to directly assign LGD estimates to each wholesale exposure, the bank holding company must have an internal risk rating system that accurately and reliably assigns each wholesale exposure to a loss severity rating grade (reflecting the bank holding company's estimate of the LGD of the exposure). A bank holding company employing loss severity rating grades must have a sufficiently granular loss severity grading system to avoid grouping together exposures with widely ranging LGDs.

(3) For retail exposures, a bank holding company must have an internal system that groups retail exposures into the appropriate retail exposure subcategory, groups the retail exposures in each retail exposure subcategory into separate segments with homogeneous risk characteristics, and assigns accurate and reliable PD and LGD estimates for each segment on a consistent basis. The bank holding company's system must identify and group in separate segments by subcategories exposures identified in paragraphs (c)(2)(ii) and (iii) of section 31 of this appendix.

(4) The bank holding company's internal risk rating policy for wholesale exposures must describe the bank holding company's rating philosophy (that is, must describe how wholesale obligor rating assignments are affected by the bank holding company's choice of the range of economic, business, and industry conditions that are considered in the obligor rating process).

(5) The bank holding company's internal risk rating system for wholesale exposures must provide for the review and update (as appropriate) of each obligor rating and (if applicable) each loss severity rating whenever the bank holding company receives new material information, but no less frequently than annually. The bank holding company's retail exposure segmentation system must provide for the review and update (as appropriate) of assignments of retail exposures to segments whenever the bank holding company receives new material information, but generally no less frequently than quarterly.

(c) *Quantification of risk parameters for wholesale and retail exposures.* (1) The bank

holding company must have a comprehensive risk parameter quantification process that produces accurate, timely, and reliable estimates of the risk parameters for the bank holding company's wholesale and retail exposures.

(2) Data used to estimate the risk parameters must be relevant to the bank holding company's actual wholesale and retail exposures, and of sufficient quality to support the determination of risk-based capital requirements for the exposures.

(3) The bank holding company's risk parameter quantification process must produce appropriately conservative risk parameter estimates where the bank holding company has limited relevant data, and any adjustments that are part of the quantification process must not result in a pattern of bias toward lower risk parameter estimates.

(4) The bank holding company's risk parameter estimation process should not rely on the possibility of U.S. government financial assistance, except for the financial assistance that the U.S. government has a legally binding commitment to provide.

(5) Where the bank holding company's quantifications of LGD directly or indirectly incorporate estimates of the effectiveness of its credit risk management practices in reducing its exposure to troubled obligors prior to default, the bank holding company must support such estimates with empirical analysis showing that the estimates are consistent with its historical experience in dealing with such exposures during economic downturn conditions.

(6) PD estimates for wholesale obligors and retail segments must be based on at least five years of default data. LGD estimates for wholesale exposures must be based on at least seven years of loss severity data, and LGD estimates for retail segments must be based on at least five years of loss severity data. EAD estimates for wholesale exposures must be based on at least seven years of exposure amount data, and EAD estimates for retail segments must be based on at least five years of exposure amount data.

(7) Default, loss severity, and exposure amount data must include periods of economic downturn conditions, or the bank holding company must adjust its estimates of risk parameters to compensate for the lack of data from periods of economic downturn conditions.

(8) The bank holding company's PD, LGD, and EAD estimates must be based on the definition of default in this appendix.

(9) The bank holding company must review and update (as appropriate) its risk parameters and its risk parameter quantification process at least annually.

(10) The bank holding company must at least annually conduct a comprehensive review and analysis of reference data to determine relevance of reference data to the bank holding company's exposures, quality of reference data to support PD, LGD, and EAD estimates, and consistency of reference data to the definition of default contained in this appendix.

(d) *Counterparty credit risk model.* A bank holding company must obtain the prior written approval of the Federal Reserve under section 32 of this appendix to use the internal models methodology for counterparty credit risk.

(e) *Double default treatment.* A bank holding company must obtain the prior written approval of the Federal Reserve under section 34 of this appendix to use the double default treatment.

(f) *Securitization exposures.* A bank holding company must obtain the prior written approval of the Federal Reserve under section 44 of this appendix to use the Internal Assessment Approach for securitization exposures to ABCP programs.

(g) *Equity exposures model.* A bank holding company must obtain the prior written approval of the Federal Reserve under section 53 of this appendix to use the Internal Models Approach for equity exposures.

(h) *Operational risk*—(1) *Operational risk management processes.* A bank holding company must:

(i) Have an operational risk management function that:

(A) Is independent of business line management; and

(B) Is responsible for designing, implementing, and overseeing the bank holding company's operational risk data and assessment systems, operational risk quantification systems, and related processes;

(ii) Have and document a process (which must capture business environment and internal control factors affecting the bank holding company's operational risk profile) to identify, measure, monitor, and control operational risk in bank holding company products, activities, processes, and systems; and

(iii) Report operational risk exposures, operational loss events, and other relevant operational risk information to business unit management, senior management, and the board of directors (or a designated committee of the board).

(2) *Operational risk data and assessment systems.* A bank holding company must have operational risk data and assessment systems that capture operational risks to which the bank holding company is exposed. The bank holding company's operational risk data and assessment systems must:

(i) Be structured in a manner consistent with the bank holding company's current business activities, risk profile, technological processes, and risk management processes; and

(ii) Include credible, transparent, systematic, and verifiable processes that incorporate the following elements on an ongoing basis:

(A) *Internal operational loss event data.* The bank holding company must have a systematic process for capturing and using internal operational loss event data in its operational risk data and assessment systems.

(*1*) The bank holding company's operational risk data and assessment systems must include a historical observation period of at least five years for internal operational loss event data (or such shorter period approved by the Federal Reserve to address transitional situations, such as integrating a new business line).

(*2*) The bank holding company must be able to map its internal operational loss event data into the seven operational loss event type categories.

(*3*) The bank holding company may refrain from collecting internal operational loss event data for individual operational losses below established dollar threshold amounts if the bank holding company can demonstrate to the satisfaction of the Federal Reserve that the thresholds are reasonable, do not exclude important internal operational loss event data, and permit the bank holding company to capture substantially all the dollar value of the bank holding company's operational losses.

(B) *External operational loss event data.* The bank holding company must have a systematic process for determining its methodologies for incorporating external operational loss event data into its operational risk data and assessment systems.

(C) *Scenario analysis.* The bank holding company must have a systematic process for determining its methodologies for incorporating scenario analysis into its operational risk data and assessment systems.

(D) *Business environment and internal control factors.* The bank holding company must incorporate business environment and internal control factors into its operational risk data and assessment systems. The bank holding company must also periodically compare the results of its prior business environment and internal control factor assessments against its actual operational losses incurred in the intervening period.

(3) *Operational risk quantification systems.* (i) The bank holding company's operational risk quantification systems:

(A) Must generate estimates of the bank holding company's operational risk exposure using its operational risk data and assessment systems;

(B) Must employ a unit of measure that is appropriate for the bank holding company's range of business activities and the variety of operational loss events to which it is exposed, and that does not combine business activities or operational loss events with demonstrably different risk profiles within the same loss distribution;

(C) Must include a credible, transparent, systematic, and verifiable approach for weighting each of the four elements, described in paragraph (h)(2)(ii) of this section, that a bank holding company is required to incorporate into its operational risk data and assessment systems;

(D) May use internal estimates of dependence among operational losses across and within units of measure if the bank holding company can demonstrate to the satisfaction of the Federal Reserve that its process for estimating dependence is sound, robust to a variety of scenarios, and implemented with integrity, and allows for the uncertainty surrounding the estimates. If the bank holding company has not made such a demonstration, it must sum operational risk exposure estimates across units of measure to calculate its total operational risk exposure; and

(E) Must be reviewed and updated (as appropriate) whenever the bank holding company becomes aware of information that may have a material effect on the bank holding company's estimate of operational risk exposure, but the review and update must occur no less frequently than annually.

(ii) [Reserved]

(j) *Control, oversight, and validation mechanisms.* (1) The bank holding company's senior management must ensure that all components of the bank holding company's advanced systems function effectively and comply with the qualification requirements in this section.

(2) The bank holding company's board of directors (or a designated committee of the board) must at least annually review the effectiveness of, and approve, the bank holding company's advanced systems.

(3) A bank holding company must have an effective system of controls and oversight that:

(i) Ensures ongoing compliance with the qualification requirements in this section;

(ii) Maintains the integrity, reliability, and accuracy of the bank holding company's advanced systems; and

(iii) Includes adequate governance and project management processes.

(4) The bank holding company must validate, on an ongoing basis, its advanced systems. The bank holding company's validation process must be independent of the advanced systems' 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 advanced systems;

(ii) An ongoing monitoring process that includes verification of processes and benchmarking; and

(iii) An outcomes analysis process that includes back-testing.

(5) The bank holding company must have an internal audit function independent of business-line management that at least annually assesses the effectiveness of the controls supporting the bank holding company's advanced systems and reports its findings to the bank holding company's board of directors (or a committee thereof).

(6) The bank holding company must periodically stress test its advanced systems. The stress testing must include a consideration of how economic cycles, especially downturns, affect risk-based capital requirements (including migration across rating grades and segments and the credit risk mitigation benefits of double default treatment).

(k) *Documentation.* The bank holding company must adequately document all material aspects of its advanced systems.

Section 23. Ongoing Qualification

(a) *Changes to advanced systems.* A bank holding company must meet all the qualification requirements in section 22 of this appendix on an ongoing basis. A bank holding company must notify the Federal Reserve when the bank holding company makes any change to an advanced system that would result in a material change in the bank holding company's risk-weighted asset amount for an exposure type, or when the bank holding company makes any significant change to its modeling assumptions.

(b) *Failure to comply with qualification requirements.* (1) If the Federal Reserve determines that a bank holding company that uses this appendix and has conducted a satisfactory parallel run fails to comply with the qualification requirements in section 22 of this appendix, the Federal Reserve will notify the bank holding company in writing of the bank holding company's failure to comply.

(2) The bank holding company must establish and submit a plan satisfactory to the Federal Reserve to return to compliance with the qualification requirements.

(3) In addition, if the Federal Reserve determines that the bank holding company's risk-based capital requirements are not commensurate with the bank holding company's credit, market, operational, or other risks, the Federal Reserve may require such a bank holding company to calculate its risk-based capital requirements:

(i) Under 12 CFR part 225, appendix A; or

(ii) Under this appendix with any modifications provided by the Federal Reserve.

Section 24. Merger and Acquisition Transitional Arrangements

(a) *Mergers and acquisitions of companies without advanced systems.* If a bank holding company merges with or acquires a company that does not calculate its risk-based capital requirements using advanced systems, the bank holding company may use 12 CFR part 225, appendix A to determine the risk-weighted asset amounts for, and deductions from capital associated with, the merged or acquired company's exposures for up to 24 months after the calendar quarter during which the merger or acquisition consummates. The Federal Reserve may extend this transition period for up to an additional 12 months. Within 90 days of consummating the merger or acquisition, the bank holding company must submit to the Federal Reserve an implementation plan for using its advanced systems for the acquired company. During the period when 12 CFR part 225, appendix A apply to the merged or acquired company, any ALLL, net of allocated transfer risk reserves established pursuant to 12 U.S.C. 3904, associated with the merged or acquired company's exposures may be included in the acquiring bank holding company's tier 2 capital up to 1.25 percent of the acquired company's risk-weighted assets. All general allowances of the merged or acquired company must be excluded from the bank holding company's eligible credit reserves. In addition, the risk-weighted assets of the merged or acquired company are not included in the bank holding company's credit-risk-weighted assets but are included in total risk-weighted assets. If a bank holding company relies on this paragraph, the bank holding company must disclose publicly the amounts of risk-weighted assets and qualifying capital calculated under this appendix for the acquiring bank holding company and under 12 CFR part 225, appendix A for the acquired company.

(b) *Mergers and acquisitions of companies with advanced systems*—(1) If a bank holding company merges with or acquires a company that calculates its risk-based capital requirements using advanced systems, the bank holding company may use the acquired company's advanced systems to determine the risk-weighted asset amounts for, and deductions from capital associated with, the merged or acquired company's exposures for up to 24 months after the calendar quarter during which the acquisition or merger consummates. The Federal Reserve may extend this transition period for up to an additional 12 months. Within 90 days of consummating the merger or acquisition, the bank holding company must submit to the Federal Reserve an implementation plan for using its advanced systems for the merged or acquired company.

(2) If the acquiring bank holding company is not subject to the advanced approaches in this appendix at the time of acquisition or merger, during the period when 12 CFR part 225, appendix A apply to the acquiring bank holding company, the ALLL associated with the exposures of the merged or acquired company may not be directly included in tier 2 capital. Rather, any excess eligible credit reserves associated with the merged or acquired company's exposures may be included in the bank holding company's tier 2 capital up to 0.6 percent of the credit-risk-weighted assets associated with those exposures.

PART IV. RISK-WEIGHTED ASSETS FOR GENERAL CREDIT RISK

Section 31. Mechanics for Calculating Total Wholesale and Retail Risk-Weighted Assets

(a) *Overview.* A bank holding company must calculate its total wholesale and retail risk-weighted asset amount in four distinct phases:

(1) Phase 1—categorization of exposures;

(2) Phase 2—assignment of wholesale obligors and exposures to rating grades and segmentation of retail exposures;

(3) Phase 3—assignment of risk parameters to wholesale exposures and segments of retail exposures; and

(4) Phase 4—calculation of risk-weighted asset amounts.

(b) *Phase 1—Categorization.* The bank holding company must determine which of its exposures are wholesale exposures, retail exposures, securitization exposures, or equity exposures. The bank holding company must categorize each retail exposure as a residential mortgage exposure, a QRE, or an other retail exposure. The bank holding company must identify which wholesale exposures are HVCRE exposures, sovereign exposures, OTC derivative contracts, repo-style transactions, eligible margin loans, eligible purchased wholesale exposures, unsettled transactions to which section 35 of this appendix applies, and eligible guarantees or eligible credit derivatives that are used as credit risk mitigants. The bank holding company must identify any on-balance sheet asset that does not meet the definition of a wholesale, retail, equity, or securitization exposure, as well as any non-material portfolio of exposures described in paragraph (e)(4) of this section.

(c) *Phase 2—Assignment of wholesale obligors and exposures to rating grades and retail exposures to segments—(1) Assignment of wholesale obligors and exposures to rating grades.*

(i) The bank holding company must assign each obligor of a wholesale exposure to a single obligor rating grade and must assign each wholesale exposure to which it does not directly assign an LGD estimate to a loss severity rating grade.

(ii) The bank holding company must identify which of its wholesale obligors are in default.

(2) *Segmentation of retail exposures.* (i) The bank holding company must group the retail exposures in each retail subcategory into segments that have homogeneous risk characteristics.

(ii) The bank holding company must identify which of its retail exposures are in default. The bank holding company must segment defaulted retail exposures separately from non-defaulted retail exposures.

(iii) If the bank holding company determines the EAD for eligible margin loans using the approach in paragraph (b) of section 32 of this appendix, the bank holding company must identify which of its retail exposures are eligible margin loans for which the bank holding company uses this EAD approach and must segment such eligible margin loans separately from other retail exposures.

(3) *Eligible purchased wholesale exposures.* A bank holding company may group its eligible purchased wholesale exposures into segments that have homogeneous risk characteristics. A bank holding company must use the wholesale exposure formula in Table 2 in this section to determine the risk-based capital requirement for each segment of eligible purchased wholesale exposures.

(d) *Phase 3—Assignment of risk parameters to wholesale exposures and segments of retail exposures*—(1) *Quantification process.* Subject to the limitations in this paragraph (d), the bank holding company must:

(i) Associate a PD with each wholesale obligor rating grade;

(ii) Associate an LGD with each wholesale loss severity rating grade or assign an LGD to each wholesale exposure;

(iii) Assign an EAD and M to each wholesale exposure; and

(iv) Assign a PD, LGD, and EAD to each segment of retail exposures.

(2) *Floor on PD assignment.* The PD for each wholesale obligor or retail segment may not be less than 0.03 percent, except for exposures to or directly and unconditionally guaranteed by a sovereign entity, the Bank for International Settlements, the International Monetary Fund, the European Commission, the European Central Bank, or a multilateral development bank, to which the bank holding company assigns a rating grade associated with a PD of less than 0.03 percent.

(3) *Floor on LGD estimation.* The LGD for each segment of residential mortgage exposures (other than segments of residential mortgage exposures for which all or substantially all of the principal of each exposure is directly and unconditionally guaranteed by the full faith and credit of a sovereign entity) may not be less than 10 percent.

(4) *Eligible purchased wholesale exposures.* A bank holding company must assign a PD, LGD, EAD, and M to each segment of eligible purchased wholesale exposures. If the bank holding company can estimate ECL (but not PD or LGD) for a segment of eligible purchased wholesale exposures, the bank holding company must assume that the LGD of the segment equals 100 percent and that the PD of the segment equals ECL divided by EAD. The estimated ECL must be calculated for the exposures without regard to any assumption of recourse or guarantees from the seller or other parties.

(5) *Credit risk mitigation—credit derivatives, guarantees, and collateral.* (i) A bank holding company may take into account the risk reducing effects of eligible guarantees and eligible credit derivatives in support of a wholesale exposure by applying the PD substitution or LGD adjustment treatment to the exposure as provided in section 33 of this appendix or, if applicable, applying double default treatment to the exposure as provided in section 34 of this appendix. A bank holding company may decide separately for each wholesale exposure that qualifies for the double default treatment under section 34 of this appendix whether to apply the double default treatment or to use the PD substitution or LGD adjustment treatment without recognizing double default effects.

(ii) A bank holding company may take into account the risk reducing effects of guarantees and credit derivatives in support of retail exposures in a segment when quantifying the PD and LGD of the segment.

(iii) Except as provided in paragraph (d)(6) of this section, a bank holding company may take into account the risk reducing effects of collateral in support of a wholesale exposure when quantifying the LGD of the exposure and may take into account the risk reducing effects of collateral in support of retail exposures when quantifying the PD and LGD of the segment.

(6) *EAD for OTC derivative contracts, repo-style transactions, and eligible margin loans.* (i) A bank holding company must calculate its EAD for an OTC derivative contract as provided in paragraphs (c) and (d) of section 32 of this appendix. A bank holding company may take into account the risk-reducing effects of financial collateral in support of a repo-style transaction or eligible margin loan and of any collateral in support of a repo-style transaction that is included in the bank holding company's VaR-based measure under 12 CFR part 225, appendix E through an adjustment to EAD as provided in paragraphs (b) and (d) of section 32 of this appendix. A bank holding company that takes collateral into account through such an adjustment to EAD under section 32 of this appendix may not reflect such collateral in LGD.

(ii) A bank holding company may attribute an EAD of zero to:

(A) Derivative contracts that are publicly traded on an exchange that requires the daily receipt and payment of cash-variation margin;

(B) Derivative contracts and repo-style transactions that are outstanding with a qualifying central counterparty (but not for those transactions that a qualifying central counterparty has rejected); and

(C) Credit risk exposures to a qualifying central counterparty in the form of clearing deposits and posted collateral that arise from transactions described in paragraph (d)(6)(ii)(B) of this section.

(7) *Effective maturity.* An exposure's M must be no greater than five years and no less than one year, except that an exposure's M must be no less than one day if the exposure has an original maturity of less than one year and is not part of a bank holding company's ongoing financing of the obligor. An exposure is not part of a bank holding company's ongoing financing of the obligor if the bank holding company:

(i) Has a legal and practical ability not to renew or roll over the exposure in the event of credit deterioration of the obligor;

(ii) Makes an independent credit decision at the inception of the exposure and at every renewal or roll over; and

(iii) Has no substantial commercial incentive to continue its credit relationship with the obligor in the event of credit deterioration of the obligor.

(e) *Phase 4—Calculation of risk-weighted assets*—(1) *Non-defaulted exposures.* (i) A bank holding company must calculate the dollar risk-based capital requirement for each of its wholesale exposures to a non-defaulted obligor (except eligible guarantees and eligible credit derivatives that hedge another wholesale exposure and exposures to which the bank holding company applies the double default treatment in section 34 of this appendix) and segments of non-defaulted retail exposures by inserting the assigned risk parameters for the wholesale obligor and exposure or retail segment into the appropriate risk-based capital formula specified in Table 2 and multiplying the output of the formula (K) by the EAD of the exposure or segment. Alternatively, a bank holding company may apply a 300 percent risk weight to the EAD of an eligible margin loan if the bank holding company is not able to meet the agencies'' requirements for estimation of PD and LGD for the margin loan.

Table 2 – IRB Risk-Based Capital Formulas for Wholesale Exposures to Non-Defaulted Obligors and Segments of Non-Defaulted Retail Exposures[1]

Retail	**Capital Requirement (K) Non-Defaulted Exposures**	$K = \left[LGD \times N\left(\frac{N^{-1}(PD) + \sqrt{R} \times N^{-1}(0.999)}{\sqrt{1-R}} \right) - (LGD \times PD) \right]$
	Correlation Factor (R)	For residential mortgage exposures: $R = 0.15$
		For qualifying revolving exposures: $R = 0.04$
		For other retail exposures: $R = 0.03 + 0.13 \times e^{-35 \times PD}$
Wholesale	**Capital Requirement (K) Non-Defaulted Exposures**	$K = \left[LGD \times N\left(\frac{N^{-1}(PD) + \sqrt{R} \times N^{-1}(0.999)}{\sqrt{1-R}} \right) - (LGD \times PD) \right] \times \left(\frac{1 + (M - 2.5) \times b}{1 - 1.5 \times b} \right)$
	Correlation Factor (R)	For HVCRE exposures: $R = 0.12 + 0.18 \times e^{-50 \times PD}$
		For wholesale exposures other than HVCRE exposures: $R = 0.12 + 0.12 \times e^{-50 \times PD}$
	Maturity Adjustment (b)	$b = (0.11852 - 0.05478 \times \ln(PD))^2$

[1]N(.) means the cumulative distribution function for a standard normal random variable. N^{-1}(.) means the inverse cumulative distribution function for a standard normal random variable. The symbol e refers to the base of the natural logarithms, and the function ln(.) refers to the natural logarithm of the expression within parentheses. The formulas apply when PD is greater than zero. If PD equals zero, the capital requirement K is set equal to zero.

(ii) The sum of all the dollar risk-based capital requirements for each wholesale exposure to a non-defaulted obligor and segment of non-defaulted retail exposures calculated in paragraph (e)(1)(i) of this section and in paragraph (e) of section 34 of this appendix equals the total dollar risk-based capital requirement for those exposures and segments.

(iii) The aggregate risk-weighted asset amount for wholesale exposures to non-defaulted obligors and segments of non-defaulted retail exposures equals the total dollar risk-based capital requirement calculated in paragraph (e)(1)(ii) of this section multiplied by 12.5.

(2) *Wholesale exposures to defaulted obligors and segments of defaulted retail exposures.* (i) The dollar risk-based capital requirement for each wholesale exposure to a defaulted obligor equals 0.08 multiplied by the EAD of the exposure.

(ii) The dollar risk-based capital requirement for a segment of defaulted retail exposures equals 0.08 multiplied by the EAD of the segment.

(iii) The sum of all the dollar risk-based capital requirements for each wholesale exposure to a defaulted obligor calculated in paragraph (e)(2)(i) of this section plus the dollar risk-based capital requirements for each segment of defaulted retail exposures

calculated in paragraph (e)(2)(ii) of this section equals the total dollar risk-based capital requirement for those exposures and segments.

(iv) The aggregate risk-weighted asset amount for wholesale exposures to defaulted obligors and segments of defaulted retail exposures equals the total dollar risk-based capital requirement calculated in paragraph (e)(2)(iii) of this section multiplied by 12.5.

(3) *Assets not included in a defined exposure category.* (i) A bank holding company may assign a risk-weighted asset amount of zero to cash owned and held in all offices of subsidiary depository institutions or in transit and for gold bullion held in either a subsidiary depository institution's own vaults, or held in another depository institution's vaults on an allocated basis, to the extent the gold bullion assets are offset by gold bullion liabilities.

(ii) The risk-weighted asset amount for the residual value of a retail lease exposure equals such residual value.

(iii) The risk-weighted asset amount for any other on-balance-sheet asset that does not meet the definition of a wholesale, retail, securitization, or equity exposure equals the carrying value of the asset.

(4) *Non-material portfolios of exposures.* The risk-weighted asset amount of a portfolio of exposures for which the bank holding company has demonstrated to the Federal Reserve's satisfaction that the portfolio (when combined with all other portfolios of exposures that the bank holding company seeks to treat under this paragraph) is not material to the bank holding company is the sum of the carrying values of on-balance sheet exposures plus the notional amounts of off-balance sheet exposures in the portfolio. For purposes of this paragraph (e)(4), the notional amount of an OTC derivative contract that is not a credit derivative is the EAD of the derivative as calculated in section 32 of this appendix.

Section 32. Counterparty Credit Risk of Repo-Style Transactions, Eligible Margin Loans, and OTC Derivative Contracts

(a) *In General.* (1) This section describes two methodologies—a collateral haircut approach and an internal models methodology—that a bank holding company may use instead of an LGD estimation methodology to recognize the benefits of financial collateral in mitigating the counterparty credit risk of repo-style transactions, eligible margin loans, collateralized OTC derivative contracts, and single product netting sets of such transactions and to recognize the benefits of any collateral in mitigating the counterparty credit risk of repo-style transactions that are included in a bank holding company's VaR-based measure under 12 CFR part 225, appendix E. A third methodology, the simple VaR methodology, is available for single product netting sets of repo-style transactions and eligible margin loans.

(2) This section also describes the methodology for calculating EAD for an OTC derivative contract or a set of OTC derivative contracts subject to a qualifying master netting agreement. A bank holding company also may use the internal models methodology to estimate EAD for qualifying cross-product master netting agreements.

(3) A bank holding company may only use the standard supervisory haircut approach with a minimum 10-business-day holding period to recognize in EAD the benefits of conforming residential mortgage collateral that secures repo-style transactions (other than repo-style transactions included in the bank holding company's VaR-based measure under 12 CFR part 225, appendix E), eligible margin loans, and OTC derivative contracts.

(4) A bank holding company may use any combination of the three methodologies for collateral recognition; however, it must use the same methodology for similar exposures.

(b) *EAD for eligible margin loans and repo-style transactions*—(1) *General.* A bank holding company may recognize the credit risk mitigation benefits of financial collateral that secures an eligible margin loan, repo-style transaction, or single-product netting set of such transactions by factoring the collateral into its LGD estimates for the exposure. Alternatively, a bank holding company may estimate an unsecured LGD for the exposure, as well as for any repo-style transaction that is included in the bank holding company's VaR-based measure under 12 CFR part 225, appendix E, and determine the EAD of the exposure using:

(i) The collateral haircut approach described in paragraph (b)(2) of this section;

(ii) For netting sets only, the simple VaR methodology described in paragraph (b)(3) of this section; or

(iii) The internal models methodology described in paragraph (d) of this section.

(2) *Collateral haircut approach*—(i) *EAD equation.* A bank holding company may determine EAD for an eligible margin loan, repo-style transaction, or netting set by setting EAD equal to max $\{0, [(\Sigma E - \Sigma C) + \Sigma(Es \times Hs) + \Sigma(Efx \times Hfx)]\}$, where:

(A) ΣE equals the value of the exposure (the sum of the current market values of all instruments, gold, and cash the bank holding company has lent, sold subject to repurchase, or posted as collateral to the counterparty under the transaction (or netting set));

(B) ΣC equals the value of the collateral (the sum of the current market values of all instruments, gold, and cash the bank holding company has borrowed, purchased subject to resale, or taken as collateral from the counterparty under the transaction (or netting set));

(C) Es equals the absolute value of the net position in a given instrument or in gold (where the net position in a given instrument or in gold equals the sum of the current market values of the instrument or gold the bank holding company has lent, sold subject to repurchase, or posted as collateral to the counterparty minus the sum of the current market values of that same instrument or gold the bank holding company has borrowed, purchased subject to resale, or taken as collateral from the counterparty);

(D) Hs equals the market price volatility haircut appropriate to the instrument or gold referenced in Es;

(E) Efx equals the absolute value of the net position of instruments and cash in a currency that is different from the settlement currency (where the net position in a given currency equals the sum of the current market values of any instruments or cash in the currency the bank holding company has lent, sold subject to repurchase, or posted as collateral to the counterparty minus the sum of the current market values of any instruments or cash in the currency the bank holding company has borrowed, purchased subject to resale, or taken as collateral from the counterparty); and

(F) Hfx equals the haircut appropriate to the mismatch between the currency referenced in Efx and the settlement currency.

(ii) *Standard supervisory haircuts.* (A) Under the standard supervisory haircuts approach:

(*1*) A bank holding company must use the haircuts for market price volatility (Hs) in Table 3, as adjusted in certain circumstances as provided in paragraph (b)(2)(ii)(A)(*3*) and (*4*) of this section;

TABLE 3—STANDARD SUPERVISORY MARKET PRICE VOLATILITY HAIRCUTS [1]

Applicable external rating grade category for debt securities	Residual maturity for debt securities	Issuers exempt from the 3 basis point floor	Other issuers
Two highest investment-grade rating categories for long-term ratings/highest investment-grade rating category for short-term ratings.	≤ 1 year	0.005	0.01
	>1 year, ≤ 5 years	0.02	0.04
	> 5 years	0.04	0.08
Two lowest investment-grade rating categories for both short- and long-term ratings.	≤ 1 year	0.01	0.02
	> 1 year, ≤ 5 years	0.03	0.06
	> 5 years	0.06	0.12
One rating category below investment grade	All	0.15	0.25
Main index equities (including convertible bonds) and gold		0.15	
Other publicly traded equities (including convertible bonds), conforming residential mortgages, and nonfinancial collateral.		0.25	
Mutual funds		Highest haircut applicable to any security in which the fund can invest.	
Cash on deposit with the bank holding company (including a certificate of deposit issued by the bank holding company).		0	

[1] The market price volatility haircuts in Table 3 are based on a ten-business-day holding period.

(*2*) For currency mismatches, a bank holding company must use a haircut for foreign exchange rate volatility (Hfx) of 8 percent, as adjusted in certain circumstances as provided in paragraph (b)(2)(ii)(A)(*3*) and (*4*) of this section.

(*3*) For repo-style transactions, a bank holding company may multiply the supervisory haircuts provided in paragraphs (b)(2)(ii)(A)(*1*) and (*2*) of this section by the square root of ½ (which equals 0.707107).

(*4*) A bank holding company must adjust the supervisory haircuts upward on the basis of a holding period longer than ten business days (for eligible margin loans) or five business days (for repo-style transactions) where and as appropriate to take into account the illiquidity of an instrument.

(iii) *Own internal estimates for haircuts.* With the prior written approval of the Federal Reserve, a bank holding company may calculate haircuts (Hs and Hfx) using its own internal estimates of the volatilities of market prices and foreign exchange rates.

(A) To receive Federal Reserve approval to use its own internal estimates, a bank holding company must satisfy the following minimum quantitative standards:

(*1*) A bank holding company must use a 99th percentile one-tailed confidence interval.

(*2*) The minimum holding period for a repo-style transaction is five business days and for an eligible margin loan is ten business days. When a bank holding company calculates an own-estimates haircut on a T_N-day holding period, which is different from the minimum holding period for the transaction type, the applicable haircut (H_M) is

calculated using the following square root of time formula:

$$H_M = H_N \sqrt{\frac{T_M}{T_N}}, \text{ where}$$

(*i*) T_M equals 5 for repo-style transactions and 10 for eligible margin loans;
(*ii*) T_N equals the holding period used by the bank holding company to derive H_N; and
(*iii*) H_N equals the haircut based on the holding period T_N.

(*3*) A bank holding company must adjust holding periods upwards where and as appropriate to take into account the illiquidity of an instrument.

(*4*) The historical observation period must be at least one year.

(*5*) A bank holding company must update its data sets and recompute haircuts no less frequently than quarterly and must also reassess data sets and haircuts whenever market prices change materially.

(B) With respect to debt securities that have an applicable external rating of investment grade, a bank holding company may calculate haircuts for categories of securities. For a category of securities, the bank holding company must calculate the haircut on the basis of internal volatility estimates for securities in that category that are representative of the securities in that category that the bank holding company has lent, sold subject to repurchase, posted as collateral, borrowed, purchased subject to resale, or taken as collateral. In determining relevant categories, the bank holding company must at a minimum take into account:

(*1*) The type of issuer of the security;

(*2*) The applicable external rating of the security;

(*3*) The maturity of the security; and

(*4*) The interest rate sensitivity of the security.

(C) With respect to debt securities that have an applicable external rating of below investment grade and equity securities, a bank holding company must calculate a separate haircut for each individual security.

(D) Where an exposure or collateral (whether in the form of cash or securities) is denominated in a currency that differs from the settlement currency, the bank holding company must calculate a separate currency mismatch haircut for its net position in each mismatched currency based on estimated volatilities of foreign exchange rates between the mismatched currency and the settlement currency.

(E) A bank holding company's own estimates of market price and foreign exchange rate volatilities may not take into account the correlations among securities and foreign exchange rates on either the exposure or collateral side of a transaction (or netting set) or the correlations among securities and foreign exchange rates between the exposure and collateral sides of the transaction (or netting set).

(3) *Simple VaR methodology*. With the prior written approval of the Federal Reserve, a bank holding company may estimate EAD for a netting set using a VaR model that meets the requirements in paragraph (b)(3)(iii) of this section. In such event, the bank holding company must set EAD equal to max {0, [(ΣE—ΣC) + PFE]}, where:

(i) ΣE equals the value of the exposure (the sum of the current market values of all instruments, gold, and cash the bank holding company has lent, sold subject to repurchase, or posted as collateral to the counterparty under the netting set);

(ii) ΣC equals the value of the collateral (the sum of the current market values of all instruments, gold, and cash the bank holding company has borrowed, purchased subject to resale, or taken as collateral from the counterparty under the netting set); and

(iii) PFE (potential future exposure) equals the bank holding company's empirically based best estimate of the 99th percentile, one-tailed confidence interval for an increase in the value of (ΣE—ΣC) over a five-business-day holding period for repo-style transactions or over a ten-business-day holding period for eligible margin loans using a minimum one-year historical observation period of price data representing the instruments that the bank holding company has lent, sold subject to repurchase, posted as collateral, borrowed, purchased subject to resale, or taken as collateral. The bank holding company must validate its VaR model, including by establishing and maintaining a rigorous and regular back-testing regime.

(c) *EAD for OTC derivative contracts.* (1) A bank holding company must determine the EAD for an OTC derivative contract that is not subject to a qualifying master netting agreement using the current exposure methodology in paragraph (c)(5) of this section or using the internal models methodology described in paragraph (d) of this section.

(2) A bank holding company must determine the EAD for multiple OTC derivative contracts that are subject to a qualifying master netting agreement using the current exposure methodology in paragraph (c)(6) of this section or using the internal models methodology described in paragraph (d) of this section.

(3) *Counterparty credit risk for credit derivatives.* Notwithstanding the above, (i) A bank holding company that purchases a credit derivative that is recognized under section 33 or 34 of this appendix as a credit risk mitigant for an exposure that is not a covered position under 12 CFR part 225, appendix E need not compute a separate counterparty credit risk capital requirement under this section so long as the bank holding company

does so consistently for all such credit derivatives and either includes all or excludes all such credit derivatives that are subject to a master netting agreement from any measure used to determine counterparty credit risk exposure to all relevant counterparties for risk-based capital purposes.

(ii) A bank holding company that is the protection provider in a credit derivative must treat the credit derivative as a wholesale exposure to the reference obligor and need not compute a counterparty credit risk capital requirement for the credit derivative under this section, so long as it does so consistently for all such credit derivatives and either includes all or excludes all such credit derivatives that are subject to a master netting agreement from any measure used to determine counterparty credit risk exposure to all relevant counterparties for risk-based capital purposes (unless the bank holding company is treating the credit derivative as a covered position under 12 CFR part 225, appendix E, in which case the bank holding company must compute a supplemental counterparty credit risk capital requirement under this section).

(4) *Counterparty credit risk for equity derivatives.* A bank holding company must treat an equity derivative contract as an equity exposure and compute a risk-weighted asset amount for the equity derivative contract under part VI (unless the bank holding company is treating the contract as a covered position under 12 CFR part 225, appendix E). In addition, if the bank holding company is treating the contract as a covered position under 12 CFR part 225, appendix E and in certain other cases described in section 55 of this appendix, the bank holding company must also calculate a risk-based capital requirement for the counterparty credit risk of an equity derivative contract under this part.

(5) *Single OTC derivative contract.* Except as modified by paragraph (c)(7) of this section, the EAD for a single OTC derivative contract that is not subject to a qualifying master netting agreement is equal to the sum of the bank holding company's current credit exposure and potential future credit exposure (PFE) on the derivative contract.

(i) *Current credit exposure.* The current credit exposure for a single OTC derivative contract is the greater of the mark-to-market value of the derivative contract or zero.

(ii) *PFE.* The PFE for a single OTC derivative contract, including an OTC derivative contract with a negative mark-to-market value, is calculated by multiplying the notional principal amount of the derivative contract by the appropriate conversion factor in Table 4. For purposes of calculating either the PFE under this paragraph or the gross PFE under paragraph (c)(6) of this section for exchange rate contracts and other similar contracts in which the notional principal amount is equivalent to the cash flows, notional principal amount is the net receipts to each party falling due on each value date in each currency. For any OTC derivative contract that does not fall within one of the specified categories in Table 4, the PFE must be calculated using the ''other'' conversion factors. A bank holding company must use an OTC derivative contract's effective notional principal amount (that is, its apparent or stated notional principal amount multiplied by any multiplier in the OTC derivative contract) rather than its apparent or stated notional principal amount in calculating PFE. PFE of the protection provider of a credit derivative is capped at the net present value of the amount of unpaid premiums.

TABLE 4—CONVERSION FACTOR MATRIX FOR OTC DERIVATIVE CONTRACTS [1]

Remaining maturity [2]	Interest rate	Foreign exchange rate and gold	Credit (investment-grade reference obligor) [3]	Credit (non-investment-grade reference obligor)	Equity	Precious metals (except gold)	Other
One year or less	0.00	0.01	0.05	0.10	0.06	0.07	0.10
Over one to five years	0.005	0.05	0.05	0.10	0.08	0.07	0.12
Over five years	0.015	0.075	0.05	0.10	0.10	0.08	0.15

[1] For an OTC derivative contract with multiple exchanges of principal, the conversion factor is multiplied by the number of remaining payments in the derivative contract.

[2] For an OTC derivative contract that is structured such that on specified dates any outstanding exposure is settled and the terms are reset so that the market value of the contract is zero, the remaining maturity equals the time until the next reset date. For an interest rate derivative contract with a remaining maturity of greater than one year that meets these criteria, the minimum conversion factor is 0.005.

[3] A bank holding company must use the column labeled ''Credit (investment-grade reference obligor)'' for a credit derivative whose reference obligor has an outstanding unsecured long-term debt security without credit enhancement that has a long-term applicable external rating of at least investment grade. A bank holding company must use the column labeled ''Credit (non-investment-grade reference obligor)'' for all other credit derivatives.

(6) *Multiple OTC derivative contracts subject to a qualifying master netting agreement.* Except as modified by paragraph (c)(7) of this section, the EAD for multiple OTC derivative contracts subject to a qualifying master netting agreement is equal to the sum of the net current credit exposure and the adjusted sum of the PFE exposure for all OTC derivative contracts subject to the qualifying master netting agreement.

(i) *Net current credit exposure.* The net current credit exposure is the greater of:

(A) The net sum of all positive and negative mark-to-market values of the individual OTC derivative contracts subject to the qualifying master netting agreement; or

(B) zero.

(ii) *Adjusted sum of the PFE.* The adjusted sum of the PFE, Anet, is calculated as Anet = (0.4×Agross)+(0.6×NGR×Agross), where:

(A) Agross = the gross PFE (that is, the sum of the PFE amounts (as determined under paragraph (c)(5)(ii) of this section) for each individual OTC derivative contract subject to the qualifying master netting agreement); and

(B) NGR = the net to gross ratio (that is, the ratio of the net current credit exposure to the gross current credit exposure). In calculating the NGR, the gross current credit exposure equals the sum of the positive current credit exposures (as determined under paragraph (c)(5)(i) of this section) of all individual OTC derivative contracts subject to the qualifying master netting agreement.

(7) *Collateralized OTC derivative contracts.* A bank holding company may recognize the credit risk mitigation benefits of financial collateral that secures an OTC derivative contract or single-product netting set of OTC derivatives by factoring the collateral into its LGD estimates for the contract or netting set. Alternatively, a bank holding company may recognize the credit risk mitigation benefits of financial collateral that secures such a contract or netting set that is marked to market on a daily basis and subject to a daily margin maintenance requirement by estimating an unsecured LGD for the contract or netting set and adjusting the EAD calculated under paragraph (c)(5) or (c)(6) of this section using the collateral haircut approach in paragraph (b)(2) of this section. The bank holding company must substitute the EAD calculated under paragraph (c)(5) or (c)(6) of this section for ΣE in the equation in paragraph (b)(2)(i) of this section and must use a ten-business-day minimum holding period ($T_M = 10$).

(d) *Internal models methodology.* (1) With prior written approval from the Federal Reserve, a bank holding company may use the internal models methodology in this paragraph (d) to determine EAD for counterparty credit risk for OTC derivative contracts (collateralized or uncollateralized) and single-product netting sets thereof, for eligible margin loans and single-product netting sets thereof, and for repo-style transactions and single-product netting sets thereof. A bank holding company that uses the internal models methodology for a particular transaction type (OTC derivative contracts, eligible margin loans, or repo-style transactions) must use the internal models methodology for all transactions of that transaction type. A bank holding company may choose to use the internal models methodology for one or two of these three types of exposures and not the other types. A bank holding company may also use the internal models methodology for OTC derivative contracts, eligible margin loans, and repo-style transactions subject to a qualifying cross-product netting agreement if:

(i) The bank holding company effectively integrates the risk mitigating effects of cross-product netting into its risk management and other information technology systems; and

(ii) The bank holding company obtains the prior written approval of the Federal Reserve. A bank holding company that uses the internal models methodology for a transaction type must receive approval from the Federal Reserve to cease using the methodology for that transaction type or to make a material change to its internal model.

(2) Under the internal models methodology, a bank holding company uses an internal model to estimate the expected exposure (EE) for a netting set and then calculates EAD based on that EE.

(i) The bank holding company must use its internal model's probability distribution for changes in the market value of a netting set that are attributable to changes in market variables to determine EE.

(ii) Under the internal models methodology, EAD = α x effective EPE, or, subject to Federal Reserve approval as provided in paragraph (d)(7), a more conservative measure of EAD.

$$\text{(A) EffectiveEPE}_{t_k} = \sum_{k=1}^{n} \text{EffectiveEE}_{t_k} \times \Delta t_k$$

(that is, effective EPE is the time-weighted average of effective EE where the weights are the proportion that an individual effective EE represents in a one-year time interval) where:

(*1*) Effective EE_{t_k} = max (Effective $EE_{t_{k-1}}$, EE_{t_k}) (that is, for a specific $date_{t_k}$, effective EE is the greater of EE at that date or the effective EE at the previous date); and

(*2*) $_{t_k}$ represents the kth future time period in the model and there are n time periods represented in the model over the first year; and

(B) α = 1.4 except as provided in paragraph (d)(6), or when the Federal Reserve has determined that the bank holding company must

set α higher based on the bank holding company's specific characteristics of counterparty credit risk.

(iii) A bank holding company may include financial collateral currently posted by the counterparty as collateral (but may not include other forms of collateral) when calculating EE.

(iv) If a bank holding company hedges some or all of the counterparty credit risk associated with a netting set using an eligible credit derivative, the bank holding company may take the reduction in exposure to the counterparty into account when estimating EE. If the bank holding company recognizes this reduction in exposure to the counterparty in its estimate of EE, it must also use its internal model to estimate a separate EAD for the bank holding company's exposure to the protection provider of the credit derivative.

(3) To obtain Federal Reserve approval to calculate the distributions of exposures upon which the EAD calculation is based, the bank holding company must demonstrate to the satisfaction of the Federal Reserve that it has been using for at least one year an internal model that broadly meets the following minimum standards, with which the bank holding company must maintain compliance:

(i) The model must have the systems capability to estimate the expected exposure to the counterparty on a daily basis (but is not expected to estimate or report expected exposure on a daily basis).

(ii) The model must estimate expected exposure at enough future dates to reflect accurately all the future cash flows of contracts in the netting set.

(iii) The model must account for the possible non-normality of the exposure distribution, where appropriate.

(iv) The bank holding company must measure, monitor, and control current counterparty exposure and the exposure to the counterparty over the whole life of all contracts in the netting set.

(v) The bank holding company must be able to measure and manage current exposures gross and net of collateral held, where appropriate. The bank holding company must estimate expected exposures for OTC derivative contracts both with and without the effect of collateral agreements.

(vi) The bank holding company must have procedures to identify, monitor, and control specific wrong-way risk throughout the life of an exposure. Wrong-way risk in this context is the risk that future exposure to a counterparty will be high when the counterparty's probability of default is also high.

(vii) The model must use current market data to compute current exposures. When estimating model parameters based on historical data, at least three years of historical data that cover a wide range of economic conditions must be used and must be updated quarterly or more frequently if market conditions warrant. The bank holding company should consider using model parameters based on forward-looking measures, where appropriate.

(viii) A bank holding company must subject its internal model to an initial validation and annual model review process. The model review should consider whether the inputs and risk factors, as well as the model outputs, are appropriate.

(4) *Maturity*. (i) If the remaining maturity of the exposure or the longest-dated contract in the netting set is greater than one year, the bank holding company must set M for the exposure or netting set equal to the lower of five years or M(EPE),[3] where:

$$\text{(A)}\quad M(EPE) = 1 + \frac{\sum_{t_k > 1\,year}^{maturity} EE_k \times \Delta t_k \times df_k}{\sum_{k=1}^{t_k \le 1\,year} effectiveEE_k \times \Delta t_k \times df_k}$$

(B) df_k is the risk-free discount factor for future time period t_k; and

(C) $\Delta t_k = t_k - t_{k-1}$.

(ii) If the remaining maturity of the exposure or the longest-dated contract in the netting set is one year or less, the bank holding company must set M for the exposure or netting set equal to one year, except as provided in paragraph (d)(7) of section 31 of this appendix.

[3] Alternatively, a bank holding company that uses an internal model to calculate a one-sided credit valuation adjustment may use the effective credit duration estimated by the model as M(EPE) in place of the formula in paragraph (d)(4).

(5) *Collateral agreements.* A bank holding company may capture the effect on EAD of a collateral agreement that requires receipt of collateral when exposure to the counterparty increases but may not capture the effect on EAD of a collateral agreement that requires receipt of collateral when counterparty credit quality deteriorates. For this purpose, a collateral agreement means a legal contract that specifies the time when, and circumstances under which, the counterparty is required to pledge collateral to the bank holding company for a single financial contract or for all financial contracts in a netting set and confers upon the bank holding company a perfected, first priority security interest (notwithstanding the prior security interest of any custodial agent), or the legal equivalent thereof, in the collateral posted by the counterparty under the agreement. This security interest must provide the bank holding company with a right to close out the financial positions and liquidate the collateral upon an event of default of, or failure to perform by, the counterparty under the collateral agreement. A contract would not satisfy this requirement if the bank holding company's exercise of rights under the agreement may be stayed or avoided under applicable law in the relevant jurisdictions. Two methods are available to capture the effect of a collateral agreement:

(i) With prior written approval from the Federal Reserve, a bank holding company may include the effect of a collateral agreement within its internal model used to calculate EAD. The bank holding company may set EAD equal to the expected exposure at the end of the margin period of risk. The margin period of risk means, with respect to a netting set subject to a collateral agreement, the time period from the most recent exchange of collateral with a counterparty until the next required exchange of collateral plus the period of time required to sell and realize the proceeds of the least liquid collateral that can be delivered under the terms of the collateral agreement and, where applicable, the period of time required to re-hedge the resulting market risk, upon the default of the counterparty. The minimum margin period of risk is five business days for repo-style transactions and ten business days for other transactions when liquid financial collateral is posted under a daily margin maintenance requirement. This period should be extended to cover any additional time between margin calls; any potential closeout difficulties; any delays in selling collateral, particularly if the collateral is illiquid; and any impediments to prompt re-hedging of any market risk.

(ii) A bank holding company that can model EPE without collateral agreements but cannot achieve the higher level of modeling sophistication to model EPE with collateral agreements can set effective EPE for a collateralized netting set equal to the lesser of:

(A) The threshold, defined as the exposure amount at which the counterparty is required to post collateral under the collateral agreement, if the threshold is positive, plus an add-on that reflects the potential increase in exposure of the netting set over the margin period of risk. The add-on is computed as the expected increase in the netting set's exposure beginning from current exposure of zero over the margin period of risk. The margin period of risk must be at least five business days for netting sets consisting only of repo-style transactions subject to daily remargining and daily marking-to-market, and ten business days for all other netting sets; or

(B) Effective EPE without a collateral agreement.

(6) *Own estimate of alpha.* With prior written approval of the Federal Reserve, a bank holding company may calculate alpha as the ratio of economic capital from a full simulation of counterparty exposure across counterparties that incorporates a joint simulation of market and credit risk factors (numerator) and economic capital based on EPE (denominator), subject to a floor of 1.2. For purposes of this calculation, economic capital is the unexpected losses for all counterparty credit risks measured at a 99.9 percent confidence level over a one-year horizon. To receive approval, the bank holding company must meet the following minimum standards to the satisfaction of the Federal Reserve:

(i) The bank holding company's own estimate of alpha must capture in the numerator the effects of:

(A) The material sources of stochastic dependency of distributions of market values of transactions or portfolios of transactions across counterparties;

(B) Volatilities and correlations of market risk factors used in the joint simulation, which must be related to the credit risk factor used in the simulation to reflect potential increases in volatility or correlation in an economic downturn, where appropriate; and

(C) The granularity of exposures (that is, the effect of a concentration in the proportion of each counterparty's exposure that is driven by a particular risk factor).

(ii) The bank holding company must assess the potential model uncertainty in its estimates of alpha.

(iii) The bank holding company must calculate the numerator and denominator of alpha in a consistent fashion with respect to modeling methodology, parameter specifications, and portfolio composition.

(iv) The bank holding company must review and adjust as appropriate its estimates of the numerator and denominator of alpha

on at least a quarterly basis and more frequently when the composition of the portfolio varies over time.

(7) *Other measures of counterparty exposure.* With prior written approval of the Federal Reserve, a bank holding company may set EAD equal to a measure of counterparty credit risk exposure, such as peak EAD, that is more conservative than an alpha of 1.4 (or higher under the terms of paragraph (d)(2)(ii)(B) of this section) times EPE for every counterparty whose EAD will be measured under the alternative measure of counterparty exposure. The bank holding company must demonstrate the conservatism of the measure of counterparty credit risk exposure used for EAD. For material portfolios of new OTC derivative products, the bank holding company may assume that the current exposure methodology in paragraphs (c)(5) and (c)(6) of this section meets the conservatism requirement of this paragraph for a period not to exceed 180 days. For immaterial portfolios of OTC derivative contracts, the bank holding company generally may assume that the current exposure methodology in paragraphs (c)(5) and (c)(6) of this section meets the conservatism requirement of this paragraph.

Section 33. Guarantees and Credit Derivatives: PD Substitution and LGD Adjustment Approaches

(a) *Scope.* (1) This section applies to wholesale exposures for which:

(i) Credit risk is fully covered by an eligible guarantee or eligible credit derivative; or

(ii) Credit risk is covered on a pro rata basis (that is, on a basis in which the bank holding company and the protection provider share losses proportionately) by an eligible guarantee or eligible credit derivative.

(2) Wholesale exposures on which there is a tranching of credit risk (reflecting at least two different levels of seniority) are securitization exposures subject to the securitization framework in part V.

(3) A bank holding company may elect to recognize the credit risk mitigation benefits of an eligible guarantee or eligible credit derivative covering an exposure described in paragraph (a)(1) of this section by using the PD substitution approach or the LGD adjustment approach in paragraph (c) of this section or, if the transaction qualifies, using the double default treatment in section 34 of this appendix. A bank holding company's PD and LGD for the hedged exposure may not be lower than the PD and LGD floors described in paragraphs (d)(2) and (d)(3) of section 31 of this appendix.

(4) If multiple eligible guarantees or eligible credit derivatives cover a single exposure described in paragraph (a)(1) of this section, a bank holding company may treat the hedged exposure as multiple separate exposures each covered by a single eligible guarantee or eligible credit derivative and may calculate a separate risk-based capital requirement for each separate exposure as described in paragraph (a)(3) of this section.

(5) If a single eligible guarantee or eligible credit derivative covers multiple hedged wholesale exposures described in paragraph (a)(1) of this section, a bank holding company must treat each hedged exposure as covered by a separate eligible guarantee or eligible credit derivative and must calculate a separate risk-based capital requirement for each exposure as described in paragraph (a)(3) of this section.

(6) A bank holding company must use the same risk parameters for calculating ECL as it uses for calculating the risk-based capital requirement for the exposure.

(b) *Rules of recognition.* (1) A bank holding company may only recognize the credit risk mitigation benefits of eligible guarantees and eligible credit derivatives.

(2) A bank holding company may only recognize the credit risk mitigation benefits of an eligible credit derivative to hedge an exposure that is different from the credit derivative's reference exposure used for determining the derivative's cash settlement value, deliverable obligation, or occurrence of a credit event if:

(i) The reference exposure ranks pari passu (that is, equally) with or is junior to the hedged exposure; and

(ii) The reference exposure and the hedged exposure are exposures to the same legal entity, and legally enforceable cross-default or cross-acceleration clauses are in place to assure payments under the credit derivative are triggered when the obligor fails to pay under the terms of the hedged exposure.

(c) *Risk parameters for hedged exposures*—(1) *PD substitution approach*—(i) *Full coverage.* If an eligible guarantee or eligible credit derivative meets the conditions in paragraphs (a) and (b) of this section and the protection amount (P) of the guarantee or credit derivative is greater than or equal to the EAD of the hedged exposure, a bank holding company may recognize the guarantee or credit derivative in determining the bank holding company's risk-based capital requirement for the hedged exposure by substituting the PD associated with the rating grade of the protection provider for the PD associated with the rating grade of the obligor in the risk-based capital formula applicable to the guarantee or credit derivative in Table 2 and using the appropriate LGD as described in paragraph (c)(1)(iii) of this section. If the bank holding company determines that full substitution of the protection provider's PD leads to an inappropriate degree of risk mitigation, the bank holding company may substitute a higher PD than that of the protection provider.

(ii) *Partial coverage.* If an eligible guarantee or eligible credit derivative meets the conditions in paragraphs (a) and (b) of this section and the protection amount (P) of the guarantee or credit derivative is less than the EAD of the hedged exposure, the bank holding company must treat the hedged exposure as two separate exposures (protected and unprotected) in order to recognize the credit risk mitigation benefit of the guarantee or credit derivative.

(A) The bank holding company must calculate its risk-based capital requirement for the protected exposure under section 31 of this appendix, where PD is the protection provider's PD, LGD is determined under paragraph (c)(1)(iii) of this section, and EAD is P. If the bank holding company determines that full substitution leads to an inappropriate degree of risk mitigation, the bank holding company may use a higher PD than that of the protection provider.

(B) The bank holding company must calculate its risk-based capital requirement for the unprotected exposure under section 31 of this appendix, where PD is the obligor's PD, LGD is the hedged exposure's LGD (not adjusted to reflect the guarantee or credit derivative), and EAD is the EAD of the original hedged exposure minus P.

(C) The treatment in this paragraph (c)(1)(ii) is applicable when the credit risk of a wholesale exposure is covered on a partial pro rata basis or when an adjustment is made to the effective notional amount of the guarantee or credit derivative under paragraph (d), (e), or (f) of this section.

(iii) *LGD of hedged exposures.* The LGD of a hedged exposure under the PD substitution approach is equal to:

(A) The lower of the LGD of the hedged exposure (not adjusted to reflect the guarantee or credit derivative) and the LGD of the guarantee or credit derivative, if the guarantee or credit derivative provides the bank holding company with the option to receive immediate payout upon triggering the protection; or

(B) The LGD of the guarantee or credit derivative, if the guarantee or credit derivative does not provide the bank holding company with the option to receive immediate payout upon triggering the protection.

(2) *LGD adjustment approach*—(i) *Full coverage.* If an eligible guarantee or eligible credit derivative meets the conditions in paragraphs (a) and (b) of this section and the protection amount (P) of the guarantee or credit derivative is greater than or equal to the EAD of the hedged exposure, the bank holding company's risk-based capital requirement for the hedged exposure is the greater of:

(A) The risk-based capital requirement for the exposure as calculated under section 31 of this appendix, with the LGD of the exposure adjusted to reflect the guarantee or credit derivative; or

(B) The risk-based capital requirement for a direct exposure to the protection provider as calculated under section 31 of this appendix, using the PD for the protection provider, the LGD for the guarantee or credit derivative, and an EAD equal to the EAD of the hedged exposure.

(ii) *Partial coverage.* If an eligible guarantee or eligible credit derivative meets the conditions in paragraphs (a) and (b) of this section and the protection amount (P) of the guarantee or credit derivative is less than the EAD of the hedged exposure, the bank holding company must treat the hedged exposure as two separate exposures (protected and unprotected) in order to recognize the credit risk mitigation benefit of the guarantee or credit derivative.

(A) The bank holding company's risk-based capital requirement for the protected exposure would be the greater of:

(*1*) The risk-based capital requirement for the protected exposure as calculated under section 31 of this appendix, with the LGD of the exposure adjusted to reflect the guarantee or credit derivative and EAD set equal to P; or

(*2*) The risk-based capital requirement for a direct exposure to the guarantor as calculated under section 31 of this appendix, using the PD for the protection provider, the LGD for the guarantee or credit derivative, and an EAD set equal to P.

(B) The bank holding company must calculate its risk-based capital requirement for the unprotected exposure under section 31 of this appendix, where PD is the obligor's PD, LGD is the hedged exposure's LGD (not adjusted to reflect the guarantee or credit derivative), and EAD is the EAD of the original hedged exposure minus P.

(3) *M of hedged exposures.* The M of the hedged exposure is the same as the M of the exposure if it were unhedged.

(d) *Maturity mismatch.* (1) A bank holding company that recognizes an eligible guarantee or eligible credit derivative in determining its risk-based capital requirement for a hedged exposure must adjust the effective notional amount of the credit risk mitigant to reflect any maturity mismatch between the hedged exposure and the credit risk mitigant.

(2) A maturity mismatch occurs when the residual maturity of a credit risk mitigant is less than that of the hedged exposure(s).

(3) The residual maturity of a hedged exposure is the longest possible remaining time before the obligor is scheduled to fulfill its obligation on the exposure. If a credit risk mitigant has embedded options that may reduce its term, the bank holding company (protection purchaser) must use the shortest possible residual maturity for the credit risk mitigant. If a call is at the discretion of the

protection provider, the residual maturity of the credit risk mitigant is at the first call date. If the call is at the discretion of the bank holding company (protection purchaser), but the terms of the arrangement at origination of the credit risk mitigant contain a positive incentive for the bank holding company to call the transaction before contractual maturity, the remaining time to the first call date is the residual maturity of the credit risk mitigant. For example, where there is a step-up in cost in conjunction with a call feature or where the effective cost of protection increases over time even if credit quality remains the same or improves, the residual maturity of the credit risk mitigant will be the remaining time to the first call.

(4) A credit risk mitigant with a maturity mismatch may be recognized only if its original maturity is greater than or equal to one year and its residual maturity is greater than three months.

(5) When a maturity mismatch exists, the bank holding company must apply the following adjustment to the effective notional amount of the credit risk mitigant: $Pm = E \times (t - 0.25)/(T - 0.25)$, where:

(i) Pm = effective notional amount of the credit risk mitigant, adjusted for maturity mismatch;

(ii) E = effective notional amount of the credit risk mitigant;

(iii) t = the lesser of T or the residual maturity of the credit risk mitigant, expressed in years; and

(iv) T = the lesser of five or the residual maturity of the hedged exposure, expressed in years.

(e) *Credit derivatives without restructuring as a credit event.* If a bank holding company recognizes an eligible credit derivative that does not include as a credit event a restructuring of the hedged exposure involving forgiveness or postponement of principal, interest, or fees that results in a credit loss event (that is, a charge-off, specific provision, or other similar debit to the profit and loss account), the bank holding company must apply the following adjustment to the effective notional amount of the credit derivative: $Pr = Pm \times 0.60$, where:

(1) Pr = effective notional amount of the credit risk mitigant, adjusted for lack of restructuring event (and maturity mismatch, if applicable); and

(2) Pm = effective notional amount of the credit risk mitigant adjusted for maturity mismatch (if applicable).

(f) *Currency mismatch.* (1) If a bank holding company recognizes an eligible guarantee or eligible credit derivative that is denominated in a currency different from that in which the hedged exposure is denominated, the bank holding company must apply the following formula to the effective notional amount of the guarantee or credit derivative: $Pc = Pr \times (1 - H_{FX})$, where:

(i) Pc = effective notional amount of the credit risk mitigant, adjusted for currency mismatch (and maturity mismatch and lack of restructuring event, if applicable);

(ii) Pr = effective notional amount of the credit risk mitigant (adjusted for maturity mismatch and lack of restructuring event, if applicable); and

(iii) H_{FX} = haircut appropriate for the currency mismatch between the credit risk mitigant and the hedged exposure.

(2) A bank holding company must set H_{FX} equal to 8 percent unless it qualifies for the use of and uses its own internal estimates of foreign exchange volatility based on a ten-business-day holding period and daily marking-to-market and remargining. A bank holding company qualifies for the use of its own internal estimates of foreign exchange volatility if it qualifies for:

(i) The own-estimates haircuts in paragraph (b)(2)(iii) of section 32 of this appendix;

(ii) The simple VaR methodology in paragraph (b)(3) of section 32 of this appendix; or

(iii) The internal models methodology in paragraph (d) of section 32 of this appendix.

(3) A bank holding company must adjust H_{FX} calculated in paragraph (f)(2) of this section upward if the bank holding company revalues the guarantee or credit derivative less frequently than once every ten business days using the square root of time formula provided in paragraph (b)(2)(iii)(A)(*2*) of section 32 of this appendix.

Section 34. Guarantees and Credit Derivatives: Double Default Treatment

(a) *Eligibility and operational criteria for double default treatment.* A bank holding company may recognize the credit risk mitigation benefits of a guarantee or credit derivative covering an exposure described in paragraph (a)(1) of section 33 of this appendix by applying the double default treatment in this section if all the following criteria are satisfied.

(1) The hedged exposure is fully covered or covered on a pro rata basis by:

(i) An eligible guarantee issued by an eligible double default guarantor; or

(ii) An eligible credit derivative that meets the requirements of paragraph (b)(2) of section 33 of this appendix and is issued by an eligible double default guarantor.

(2) The guarantee or credit derivative is:

(i) An uncollateralized guarantee or uncollateralized credit derivative (for example, a credit default swap) that provides protection with respect to a single reference obligor; or

(ii) An nth-to-default credit derivative (subject to the requirements of paragraph (m) of section 42 of this appendix).

(3) The hedged exposure is a wholesale exposure (other than a sovereign exposure).

(4) The obligor of the hedged exposure is not:

(i) An eligible double default guarantor or an affiliate of an eligible double default guarantor; or

(ii) An affiliate of the guarantor.

(5) The bank holding company does not recognize any credit risk mitigation benefits of the guarantee or credit derivative for the hedged exposure other than through application of the double default treatment as provided in this section.

(6) The bank holding company has implemented a process (which has received the prior, written approval of the Federal Reserve) to detect excessive correlation between the creditworthiness of the obligor of the hedged exposure and the protection provider. If excessive correlation is present, the bank holding company may not use the double default treatment for the hedged exposure.

(b) *Full coverage.* If the transaction meets the criteria in paragraph (a) of this section and the protection amount (P) of the guarantee or credit derivative is at least equal to the EAD of the hedged exposure, the bank holding company may determine its risk-weighted asset amount for the hedged exposure under paragraph (e) of this section.

(c) *Partial coverage.* If the transaction meets the criteria in paragraph (a) of this section and the protection amount (P) of the guarantee or credit derivative is less than the EAD of the hedged exposure, the bank holding company must treat the hedged exposure as two separate exposures (protected and unprotected) in order to recognize double default treatment on the protected portion of the exposure.

(1) For the protected exposure, the bank holding company must set EAD equal to P and calculate its risk-weighted asset amount as provided in paragraph (e) of this section.

(2) For the unprotected exposure, the bank holding company must set EAD equal to the EAD of the original exposure minus P and then calculate its risk-weighted asset amount as provided in section 31 of this appendix.

(d) *Mismatches.* For any hedged exposure to which a bank holding company applies double default treatment, the bank holding company must make applicable adjustments to the protection amount as required in paragraphs (d), (e), and (f) of section 33 of this appendix.

(e) *The double default dollar risk-based capital requirement.* The dollar risk-based capital requirement for a hedged exposure to which a bank holding company has applied double default treatment is K_{DD} multiplied by the EAD of the exposure. K_{DD} is calculated according to the following formula: $K_{DD} = K_o \times (0.15 + 160 \times PD_g)$,

Where:

(1)

$$K_O = LGD_g \times \left[N\left(\frac{N^{-1}(PD_o) + N^{-1}(0.999)\sqrt{\rho_{os}}}{\sqrt{1-\rho_{os}}} \right) - PD_o \right] \times \left[\frac{1+(M-2.5)\times b}{1-1.5\times b} \right]$$

(2) PD_g = PD of the protection provider.

(3) PD_o = PD of the obligor of the hedged exposure.

(4) LGD_g = (i) The lower of the LGD of the hedged exposure (not adjusted to reflect the guarantee or credit derivative) and the LGD of the guarantee or credit derivative, if the guarantee or credit derivative provides the bank holding company with the option to receive immediate payout on triggering the protection; or

(ii) The LGD of the guarantee or credit derivative, if the guarantee or credit derivative does not provide the bank holding company with the option to receive immediate payout on triggering the protection.

(5) ρ_{OS} (asset value correlation of the obligor) is calculated according to the appropriate formula for (R) provided in Table 2 in section 31 of this appendix, with PD equal to PD_o.

(6) b (maturity adjustment coefficient) is calculated according to the formula for b provided in Table 2 in section 31 of this appendix, with PD equal to the lesser of PD_o and PD_g.

(7) M (maturity) is the effective maturity of the guarantee or credit derivative, which may not be less than one year or greater than five years.

Section 35. Risk-Based Capital Requirement for Unsettled Transactions

(a) *Definitions.* For purposes of this section:

(1) *Delivery-versus-payment (DvP) transaction* means a securities or commodities transaction in which the buyer is obligated to make payment only if the seller has made delivery of the securities or commodities and the seller is obligated to deliver the securities or commodities only if the buyer has made payment.

(2) *Payment-versus-payment (PvP) transaction* means a foreign exchange transaction in which each counterparty is obligated to make a final transfer of one or more currencies only if the other counterparty has

made a final transfer of one or more currencies.

(3) *Normal settlement period.* A transaction has a *normal settlement period* if the contractual settlement period for the transaction is equal to or less than the market standard for the instrument underlying the transaction and equal to or less than five business days.

(4) *Positive current exposure.* The positive current exposure of a bank holding company for a transaction is the difference between the transaction value at the agreed settlement price and the current market price of the transaction, if the difference results in a credit exposure of the bank holding company to the counterparty.

(b) *Scope.* This section applies to all transactions involving securities, foreign exchange instruments, and commodities that have a risk of delayed settlement or delivery. This section does not apply to:

(1) Transactions accepted by a qualifying central counterparty that are subject to daily marking-to-market and daily receipt and payment of variation margin;

(2) Repo-style transactions, including unsettled repo-style transactions (which are addressed in sections 31 and 32 of this appendix);

(3) One-way cash payments on OTC derivative contracts (which are addressed in sections 31 and 32 of this appendix); or

(4) Transactions with a contractual settlement period that is longer than the normal settlement period (which are treated as OTC derivative contracts and addressed in sections 31 and 32 of this appendix).

(c) *System-wide failures.* In the case of a system-wide failure of a settlement or clearing system, the Federal Reserve may waive risk-based capital requirements for unsettled and failed transactions until the situation is rectified.

(d) *Delivery-versus-payment (DvP) and payment-versus-payment (PvP) transactions.* A bank holding company must hold risk-based capital against any DvP or PvP transaction with a normal settlement period if the bank holding company's counterparty has not made delivery or payment within five business days after the settlement date. The bank holding company must determine its risk-weighted asset amount for such a transaction by multiplying the positive current exposure of the transaction for the bank holding company by the appropriate risk weight in Table 5.

TABLE 5—RISK WEIGHTS FOR UNSETTLED DVP AND PVP TRANSACTIONS

Number of business days after contractual settlement date	Risk weight to be applied to positive current exposure (percent)
From 5 to 15	100
From 16 to 30	625
From 31 to 45	937.5
46 or more	1,250

(e) *Non-DvP/non-PvP (non-delivery-versus-payment/non-payment-versus-payment) transactions.* (1) A bank holding company must hold risk-based capital against any non-DvP/non-PvP transaction with a normal settlement period if the bank holding company has delivered cash, securities, commodities, or currencies to its counterparty but has not received its corresponding deliverables by the end of the same business day. The bank holding company must continue to hold risk-based capital against the transaction until the bank holding company has received its corresponding deliverables.

(2) From the business day after the bank holding company has made its delivery until five business days after the counterparty delivery is due, the bank holding company must calculate its risk-based capital requirement for the transaction by treating the current market value of the deliverables owed to the bank holding company as a wholesale exposure.

(i) A bank holding company may assign an obligor rating to a counterparty for which it is not otherwise required under this appendix to assign an obligor rating on the basis of the applicable external rating of any outstanding unsecured long-term debt security without credit enhancement issued by the counterparty.

(ii) A bank holding company may use a 45 percent LGD for the transaction rather than estimating LGD for the transaction provided the bank holding company uses the 45 percent LGD for all transactions described in paragraphs (e)(1) and (e)(2) of this section.

(iii) A bank holding company may use a 100 percent risk weight for the transaction provided the bank holding company uses this risk weight for all transactions described in paragraphs (e)(1) and (e)(2) of this section.

(3) If the bank holding company has not received its deliverables by the fifth business day after the counterparty delivery was due, the bank holding company must deduct the current market value of the deliverables owed to the bank holding company 50 percent from tier 1 capital and 50 percent from tier 2 capital.

(f) *Total risk-weighted assets for unsettled transactions.* Total risk-weighted assets for unsettled transactions is the sum of the risk-weighted asset amounts of all DvP, PvP, and non-DvP/non-PvP transactions.

PART V. RISK-WEIGHTED ASSETS FOR SECURITIZATION EXPOSURES

Section 41. Operational Criteria for Recognizing the Transfer of Risk

(a) *Operational criteria for traditional securitizations.* A bank holding company that transfers exposures it has originated or purchased to a securitization SPE or other third party in connection with a traditional securitization may exclude the exposures from the calculation of its risk-weighted assets only if each of the conditions in this paragraph (a) is satisfied. A bank holding company that meets these conditions must hold risk-based capital against any securitization exposures it retains in connection with the securitization. A bank holding company that fails to meet these conditions must hold risk-based capital against the transferred exposures as if they had not been securitized and must deduct from tier 1 capital any after-tax gain-on-sale resulting from the transaction. The conditions are:

(1) The transfer is considered a sale under GAAP;

(2) The bank holding company has transferred to third parties credit risk associated with the underlying exposures; and

(3) Any clean-up calls relating to the securitization are eligible clean-up calls.

(b) *Operational criteria for synthetic securitizations.* For synthetic securitizations, a bank holding company may recognize for risk-based capital purposes the use of a credit risk mitigant to hedge underlying exposures only if each of the conditions in this paragraph (b) is satisfied. A bank holding company that fails to meet these conditions must hold risk-based capital against the underlying exposures as if they had not been synthetically securitized. The conditions are:

(1) The credit risk mitigant is financial collateral, an eligible credit derivative from an eligible securitization guarantor or an eligible guarantee from an eligible securitization guarantor;

(2) The bank holding company transfers credit risk associated with the underlying exposures to third parties, and the terms and conditions in the credit risk mitigants employed do not include provisions that:

(i) Allow for the termination of the credit protection due to deterioration in the credit quality of the underlying exposures;

(ii) Require the bank holding company to alter or replace the underlying exposures to improve the credit quality of the pool of underlying exposures;

(iii) Increase the bank holding company's cost of credit protection in response to deterioration in the credit quality of the underlying exposures;

(iv) Increase the yield payable to parties other than the bank holding company in response to a deterioration in the credit quality of the underlying exposures; or

(v) Provide for increases in a retained first loss position or credit enhancement provided by the bank holding company after the inception of the securitization;

(3) The bank holding company obtains a well-reasoned opinion from legal counsel that confirms the enforceability of the credit risk mitigant in all relevant jurisdictions; and

(4) Any clean-up calls relating to the securitization are eligible clean-up calls.

Section 42. Risk-Based Capital Requirement for Securitization Exposures

(a) *Hierarchy of approaches.* Except as provided elsewhere in this section:

(1) A bank holding company must deduct from tier 1 capital any after-tax gain-on-sale resulting from a securitization and must deduct from total capital in accordance with paragraph (c) of this section the portion of any CEIO that does not constitute gain-on-sale.

(2) If a securitization exposure does not require deduction under paragraph (a)(1) of this section and qualifies for the Ratings-Based Approach in section 43 of this appendix, a bank holding company must apply the Ratings-Based Approach to the exposure.

(3) If a securitization exposure does not require deduction under paragraph (a)(1) of this section and does not qualify for the Ratings-Based Approach, the bank holding company may either apply the Internal Assessment Approach in section 44 of this appendix to the exposure (if the bank holding company, the exposure, and the relevant ABCP program qualify for the Internal Assessment Approach) or the Supervisory Formula Approach in section 45 of this appendix to the exposure (if the bank holding company and the exposure qualify for the Supervisory Formula Approach).

(4) If a securitization exposure does not require deduction under paragraph (a)(1) of this section and does not qualify for the Ratings-Based Approach, the Internal Assessment Approach, or the Supervisory Formula Approach, the bank holding company must deduct the exposure from total capital in accordance with paragraph (c) of this section.

(5) If a securitization exposure is an OTC derivative contract (other than a credit derivative) that has a first priority claim on the cash flows from the underlying exposures (notwithstanding amounts due under interest rate or currency derivative contracts, fees due, or other similar payments), with approval of the Federal Reserve, a bank holding company may choose to set the risk-weighted asset amount of the exposure equal to the amount of the exposure as determined in paragraph (e) of this section rather than apply the hierarchy of approaches described

in paragraphs (a) (1) through (4) of this section.

(b) *Total risk-weighted assets for securitization exposures.* A bank holding company's total risk-weighted assets for securitization exposures is equal to the sum of its risk-weighted assets calculated using the Ratings-Based Approach in section 43 of this appendix, the Internal Assessment Approach in section 44 of this appendix, and the Supervisory Formula Approach in section 45 of this appendix, and its risk-weighted assets amount for early amortization provisions calculated in section 47 of this appendix.

(c) *Deductions.* (1) If a bank holding company must deduct a securitization exposure from total capital, the bank holding company must take the deduction 50 percent from tier 1 capital and 50 percent from tier 2 capital. If the amount deductible from tier 2 capital exceeds the bank holding company's tier 2 capital, the bank holding company must deduct the excess from tier 1 capital.

(2) A bank holding company may calculate any deduction from tier 1 capital and tier 2 capital for a securitization exposure net of any deferred tax liabilities associated with the securitization exposure.

(d) *Maximum risk-based capital requirement.* Regardless of any other provisions of this part, unless one or more underlying exposures does not meet the definition of a wholesale, retail, securitization, or equity exposure, the total risk-based capital requirement for all securitization exposures held by a single bank holding company associated with a single securitization (including any risk-based capital requirements that relate to an early amortization provision of the securitization but excluding any risk-based capital requirements that relate to the bank holding company's gain-on-sale or CEIOs associated with the securitization) may not exceed the sum of:

(1) The bank holding company's total risk-based capital requirement for the underlying exposures as if the bank holding company directly held the underlying exposures; and

(2) The total ECL of the underlying exposures.

(e) *Amount of a securitization exposure.* (1) The amount of an on-balance sheet securitization exposure that is not a repo-style transaction, eligible margin loan, or OTC derivative contract (other than a credit derivative) is:

(i) The bank holding company's carrying value minus any unrealized gains and plus any unrealized losses on the exposure, if the exposure is a security classified as available-for-sale; or

(ii) The bank holding company's carrying value, if the exposure is not a security classified as available-for-sale.

(2) The amount of an off-balance sheet securitization exposure that is not an OTC derivative contract (other than a credit derivative) is the notional amount of the exposure. For an off-balance-sheet securitization exposure to an ABCP program, such as a liquidity facility, the notional amount may be reduced to the maximum potential amount that the bank holding company could be required to fund given the ABCP program's current underlying assets (calculated without regard to the current credit quality of those assets).

(3) The amount of a securitization exposure that is a repo-style transaction, eligible margin loan, or OTC derivative contract (other than a credit derivative) is the EAD of the exposure as calculated in section 32 of this appendix.

(f) *Overlapping exposures.* If a bank holding company has multiple securitization exposures that provide duplicative coverage of the underlying exposures of a securitization (such as when a bank holding company provides a program-wide credit enhancement and multiple pool-specific liquidity facilities to an ABCP program), the bank holding company is not required to hold duplicative risk-based capital against the overlapping position. Instead, the bank holding company may apply to the overlapping position the applicable risk-based capital treatment that results in the highest risk-based capital requirement.

(g) *Securitizations of non-IRB exposures.* If a bank holding company has a securitization exposure where any underlying exposure is not a wholesale exposure, retail exposure, securitization exposure, or equity exposure, the bank holding company must:

(1) If the bank holding company is an originating bank holding company, deduct from tier 1 capital any after-tax gain-on-sale resulting from the securitization and deduct from total capital in accordance with paragraph (c) of this section the portion of any CEIO that does not constitute gain-on-sale;

(2) If the securitization exposure does not require deduction under paragraph (g)(1), apply the RBA in section 43 of this appendix to the securitization exposure if the exposure qualifies for the RBA;

(3) If the securitization exposure does not require deduction under paragraph (g)(1) and does not qualify for the RBA, apply the IAA in section 44 of this appendix to the exposure (if the bank holding company, the exposure, and the relevant ABCP program qualify for the IAA); and

(4) If the securitization exposure does not require deduction under paragraph (g)(1) and does not qualify for the RBA or the IAA, deduct the exposure from total capital in accordance with paragraph (c) of this section.

(h) *Implicit support.* If a bank holding company provides support to a securitization in excess of the bank holding company's contractual obligation to provide credit support to the securitization (implicit support):

(1) The bank holding company must hold regulatory capital against all of the underlying exposures associated with the securitization as if the exposures had not been securitized and must deduct from tier 1 capital any after-tax gain-on-sale resulting from the securitization; and

(2) The bank holding company must disclose publicly:

(i) That it has provided implicit support to the securitization; and

(ii) The regulatory capital impact to the bank holding company of providing such implicit support.

(i) *Eligible servicer cash advance facilities.* Regardless of any other provisions of this part, a bank holding company is not required to hold risk-based capital against the undrawn portion of an eligible servicer cash advance facility.

(j) *Interest-only mortgage-backed securities.* Regardless of any other provisions of this part, the risk weight for a non-credit-enhancing interest-only mortgage-backed security may not be less than 100 percent.

(k) *Small-business loans and leases on personal property transferred with recourse.* (1) Regardless of any other provisions of this appendix, a bank holding company that has transferred small-business loans and leases on personal property (small-business obligations) with recourse must include in risk-weighted assets only the contractual amount of retained recourse if all the following conditions are met:

(i) The transaction is a sale under GAAP.

(ii) The bank holding company establishes and maintains, pursuant to GAAP, a non-capital reserve sufficient to meet the bank holding company's reasonably estimated liability under the recourse arrangement.

(iii) The loans and leases are to businesses that meet the criteria for a small-business concern established by the Small Business Administration under section 3(a) of the Small Business Act (15 U.S.C. 632).

(iv) The bank holding company is well capitalized, as defined in the Federal Reserve's prompt corrective action regulation at 12 CFR part 208, subpart D. For purposes of determining whether a bank holding company is well capitalized for purposes of this paragraph, the bank holding company's capital ratios must be calculated without regard to the capital treatment for transfers of small-business obligations with recourse specified in paragraph (k)(1) of this section.

(2) The total outstanding amount of recourse retained by a bank holding company on transfers of small-business obligations receiving the capital treatment specified in paragraph (k)(1) of this section cannot exceed 15 percent of the bank holding company's total qualifying capital.

(3) If a bank holding company ceases to be well capitalized or exceeds the 15 percent capital limitation, the preferential capital treatment specified in paragraph (k)(1) of this section will continue to apply to any transfers of small-business obligations with recourse that occurred during the time that the bank holding company was well capitalized and did not exceed the capital limit.

(4) The risk-based capital ratios of the bank holding company must be calculated without regard to the capital treatment for transfers of small-business obligations with recourse specified in paragraph (k)(1) of this section as provided in 12 CFR part 225, appendix A.

(l) *Consolidated ABCP programs.* (1) A bank holding company that qualifies as a primary beneficiary and must consolidate an ABCP program as a variable interest entity under GAAP may exclude the consolidated ABCP program assets from risk-weighted assets if the bank holding company is the sponsor of the ABCP program. If a bank holding company excludes such consolidated ABCP program assets from risk-weighted assets, the bank holding company must hold risk-based capital against any securitization exposures of the bank holding company to the ABCP program in accordance with this part.

(2) If a bank holding company either is not permitted, or elects not, to exclude consolidated ABCP program assets from its risk-weighted assets, the bank holding company must hold risk-based capital against the consolidated ABCP program assets in accordance with this appendix but is not required to hold risk-based capital against any securitization exposures of the bank holding company to the ABCP program.

(m) *N^{th}-to-default credit derivatives*—(1) *First-to-default credit derivatives*—(i) *Protection purchaser.* A bank holding company that obtains credit protection on a group of underlying exposures through a first-to-default credit derivative must determine its risk-based capital requirement for the underlying exposures as if the bank holding company synthetically securitized the underlying exposure with the lowest risk-based capital requirement and had obtained no credit risk mitigant on the other underlying exposures.

(ii) *Protection provider.* A bank holding company that provides credit protection on a group of underlying exposures through a first-to-default credit derivative must determine its risk-weighted asset amount for the derivative by applying the RBA in section 43 of this appendix (if the derivative qualifies for the RBA) or, if the derivative does not qualify for the RBA, by setting its risk-weighted asset amount for the derivative equal to the product of:

(A) The protection amount of the derivative;

(B) 12.5; and

(C) The sum of the risk-based capital requirements of the individual underlying exposures, up to a maximum of 100 percent.

(2) *Second-or-subsequent-to-default credit derivatives*—(i) *Protection purchaser.* (A) A bank holding company that obtains credit protection on a group of underlying exposures through a nth-to-default credit derivative (other than a first-to-default credit derivative) may recognize the credit risk mitigation benefits of the derivative only if:

(*1*) The bank holding company also has obtained credit protection on the same underlying exposures in the form of first-through-(n-1)-to-default credit derivatives; or

(*2*) If n-1 of the underlying exposures have already defaulted.

(B) If a bank holding company satisfies the requirements of paragraph (m)(2)(i)(A) of this section, the bank holding company must determine its risk-based capital requirement for the underlying exposures as if the bank holding company had only synthetically securitized the underlying exposure with the nth lowest risk-based capital requirement and had obtained no credit risk mitigant on the other underlying exposures.

(ii) *Protection provider.* A bank holding company that provides credit protection on a group of underlying exposures through a nth-to-default credit derivative (other than a first-to-default credit derivative) must determine its risk-weighted asset amount for the derivative by applying the RBA in section 43 of this appendix (if the derivative qualifies for the RBA) or, if the derivative does not qualify for the RBA, by setting its risk-weighted asset amount for the derivative equal to the product of:

(A) The protection amount of the derivative;

(B) 12.5; and

(C) The sum of the risk-based capital requirements of the individual underlying exposures (excluding the n-1 underlying exposures with the lowest risk-based capital requirements), up to a maximum of 100 percent.

Section 43. Ratings-Based Approach (RBA)

(a) *Eligibility requirements for use of the RBA*—(1) *Originating bank holding company.* An originating bank holding company must use the RBA to calculate its risk-based capital requirement for a securitization exposure if the exposure has two or more external ratings or inferred ratings (and may not use the RBA if the exposure has fewer than two external ratings or inferred ratings).

(2) *Investing bank holding company.* An investing bank holding company must use the RBA to calculate its risk-based capital requirement for a securitization exposure if the exposure has one or more external or inferred ratings (and may not use the RBA if the exposure has no external or inferred rating).

(b) *Ratings-based approach.* (1) A bank holding company must determine the risk-weighted asset amount for a securitization exposure by multiplying the amount of the exposure (as defined in paragraph (e) of section 42 of this appendix) by the appropriate risk weight provided in Table 6 and Table 7.

(2) A bank holding company must apply the risk weights in Table 6 when the securitization exposure's applicable external or applicable inferred rating represents a long-term credit rating, and must apply the risk weights in Table 7 when the securitization exposure's applicable external or applicable inferred rating represents a short-term credit rating.

(i) A bank holding company must apply the risk weights in column 1 of Table 6 or Table 7 to the securitization exposure if:

(A) N (as calculated under paragraph (e)(6) of section 45 of this appendix) is six or more (for purposes of this section only, if the notional number of underlying exposures is 25 or more or if all of the underlying exposures are retail exposures, a bank holding company may assume that N is six or more unless the bank holding company knows or has reason to know that N is less than six); and

(B) The securitization exposure is a senior securitization exposure.

(ii) A bank holding company must apply the risk weights in column 3 of Table 6 or Table 7 to the securitization exposure if N is less than six, regardless of the seniority of the securitization exposure.

(iii) Otherwise, a bank holding company must apply the risk weights in column 2 of Table 6 or Table 7.

TABLE 6—LONG-TERM CREDIT RATING RISK WEIGHTS UNDER RBA AND IAA

Applicable external or inferred rating (Illustrative rating example)	Column 1	Column 2	Column 3
	Risk weights for senior securitization exposures backed by granular pools	Risk weights for non-senior securitization exposures backed by granular pools	Risk weights for securitization exposures backed by non-granular pools
Highest investment grade (for example, AAA)	7%	12%	20%
Second highest investment grade (for example, AA)	8%	15%	25%
Third-highest investment grade—positive designation (for example, A+)	10%	18%	35%
Third-highest investment grade (for example, A)	12%	20%	

TABLE 6—LONG-TERM CREDIT RATING RISK WEIGHTS UNDER RBA AND IAA—Continued

Applicable external or inferred rating (Illustrative rating example)	Column 1	Column 2	Column 3
	Risk weights for senior securitization exposures backed by granular pools	Risk weights for non-senior securitization exposures backed by granular pools	Risk weights for securitization exposures backed by non-granular pools
Third-highest investment grade—negative designation (for example, A–)	20%	35%	
Lowest investment grade—positive designation (for example, BBB+)	35%	50%	
Lowest investment grade (for example, BBB)	60%	75%	
Lowest investment grade—negative designation (for example, BBB–)	100%		
One category below investment grade—positive designation (for example, BB+)	250%		
One category below investment grade (for example, BB)	425%		
One category below investment grade—negative designation (for example, BB–)	650%		
More than one category below investment grade	Deduction from tier 1 and tier 2 capital.		

TABLE 7—SHORT-TERM CREDIT RATING RISK WEIGHTS UNDER RBA AND IAA

Applicable external or inferred rating (Illustrative rating example)	Column 1	Column 2	Column 3
	Risk weights for senior securitization exposures backed by granular pools	Risk weights for non-senior securitization exposures backed by granular pools	Risk weights for securitization exposures backed by non-granular pools
Highest investment grade (for example, A1)	7%	12%	20%
Second highest investment grade (for example, A2)	12%	20%	35%
Third highest investment grade (for example, A3)	60%	75%	75%
All other ratings	Deduction from tier 1 and tier 2 capital.		

Section 44. Internal Assessment Approach (IAA)

(a) *Eligibility requirements.* A bank holding company may apply the IAA to calculate the risk-weighted asset amount for a securitization exposure that the bank holding company has to an ABCP program (such as a liquidity facility or credit enhancement) if the bank holding company, the ABCP program, and the exposure qualify for use of the IAA.

(1) *Bank holding company qualification criteria.* A bank holding company qualifies for use of the IAA if the bank holding company has received the prior written approval of the Federal Reserve. To receive such approval, the bank holding company must demonstrate to the Federal Reserve's satisfaction that the bank holding company's internal assessment process meets the following criteria:

(i) The bank holding company's internal credit assessments of securitization exposures must be based on publicly available rating criteria used by an NRSRO.

(ii) The bank holding company's internal credit assessments of securitization exposures used for risk-based capital purposes must be consistent with those used in the bank holding company's internal risk management process, management information reporting systems, and capital adequacy assessment process.

(iii) The bank holding company's internal credit assessment process must have sufficient granularity to identify gradations of risk. Each of the bank holding company's internal credit assessment categories must correspond to an external rating of an NRSRO.

(iv) The bank holding company's internal credit assessment process, particularly the stress test factors for determining credit enhancement requirements, must be at least as conservative as the most conservative of the publicly available rating criteria of the NRSROs that have provided external ratings to the commercial paper issued by the ABCP program.

(A) Where the commercial paper issued by an ABCP program has an external rating from two or more NRSROs and the different NRSROs'' benchmark stress factors require different levels of credit enhancement to achieve the same external rating equivalent, the bank holding company must apply the NRSRO stress factor that requires the highest level of credit enhancement.

(B) If any NRSRO that provides an external rating to the ABCP program's commercial paper changes its methodology (including stress factors), the bank holding company must evaluate whether to revise its internal assessment process.

(v) The bank holding company must have an effective system of controls and oversight that ensures compliance with these operational requirements and maintains the integrity and accuracy of the internal credit assessments. The bank holding company must have an internal audit function independent from the ABCP program business line and internal credit assessment process that assesses at least annually whether the controls over the internal credit assessment process function as intended.

(vi) The bank holding company must review and update each internal credit assessment whenever new material information is available, but no less frequently than annually.

(vii) The bank holding company must validate its internal credit assessment process on an ongoing basis and at least annually.

(2) *ABCP-program qualification criteria.* An ABCP program qualifies for use of the IAA if all commercial paper issued by the ABCP program has an external rating.

(3) *Exposure qualification criteria.* A securitization exposure qualifies for use of the IAA if the exposure meets the following criteria:

(i) The bank holding company initially rated the exposure at least the equivalent of investment grade.

(ii) The ABCP program has robust credit and investment guidelines (that is, underwriting standards) for the exposures underlying the securitization exposure.

(iii) The ABCP program performs a detailed credit analysis of the sellers of the exposures underlying the securitization exposure.

(iv) The ABCP program's underwriting policy for the exposures underlying the securitization exposure establishes minimum asset eligibility criteria that include the prohibition of the purchase of assets that are significantly past due or of assets that are defaulted (that is, assets that have been charged off or written down by the seller prior to being placed into the ABCP program or assets that would be charged off or written down under the program's governing contracts), as well as limitations on concentration to individual obligors or geographic areas and the tenor of the assets to be purchased.

(v) The aggregate estimate of loss on the exposures underlying the securitization exposure considers all sources of potential risk, such as credit and dilution risk.

(vi) Where relevant, the ABCP program incorporates structural features into each purchase of exposures underlying the securitization exposure to mitigate potential credit deterioration of the underlying exposures. Such features may include wind-down triggers specific to a pool of underlying exposures.

(b) *Mechanics.* A bank holding company that elects to use the IAA to calculate the risk-based capital requirement for any securitization exposure must use the IAA to calculate the risk-based capital requirements for all securitization exposures that qualify for the IAA approach. Under the IAA, a bank holding company must map its internal assessment of such a securitization exposure to an equivalent external rating from an NRSRO. Under the IAA, a bank holding company must determine the risk-weighted asset amount for such a securitization exposure by multiplying the amount of the exposure (as defined in paragraph (e) of section 42 of this appendix) by the appropriate risk weight in Table 6 and Table 7 in paragraph (b) of section 43 of this appendix.

Section 45. Supervisory Formula Approach (SFA)

(a) *Eligibility requirements.* A bank holding company may use the SFA to determine its risk-based capital requirement for a securitization exposure only if the bank holding company can calculate on an ongoing basis each of the SFA parameters in paragraph (e) of this section.

(b) *Mechanics.* Under the SFA, a securitization exposure incurs a deduction from total capital (as described in paragraph (c) of section 42 of this appendix) and/or an SFA risk-based capital requirement, as determined in paragraph (c) of this section. The risk-weighted asset amount for the securitization exposure equals the SFA risk-based capital requirement for the exposure multiplied by 12.5.

(c) *The SFA risk-based capital requirement.* (1) If K_{IRB} is greater than or equal to L + T, the entire exposure must be deducted from total capital.

(2) If K_{IRB} is less than or equal to L, the exposure's SFA risk-based capital requirement is UE multiplied by TP multiplied by the greater of:

(i) 0.0056 * T; or

(ii) S[L + T] − S[L].

(3) If K_{IRB} is greater than L and less than L + T, the bank holding company must deduct from total capital an amount equal to $UE*TP*(K_{IRB} - L)$, and the exposure's SFA risk-based capital requirement is UE multiplied by TP multiplied by the greater of:

(i) $0.0056 * (T - (K_{IRB} - L))$; or

(ii) $S[L + T] - S[K_{IRB}]$.

(d) *The supervisory formula:*

$$(1)\ S[Y] = \begin{cases} Y & when\ Y \le K_{IRB} \\ K_{IRB} + K[Y] - K[K_{IRB}] + \dfrac{d \cdot K_{IRB}}{20}\left(1 - e^{\frac{20 \cdot (K_{IRB} - Y)}{K_{IRB}}}\right) & when\ Y > K_{IRB} \end{cases}$$

$$(2)\ K[Y] = (1-h) \cdot \left[\left(1 - \beta[Y; a, b]\right) \cdot Y + \beta[Y; a+1, b] \cdot c\right]$$

$$(3)\ h = \left(1 - \frac{K_{IRB}}{EWALGD}\right)^{N}$$

$$(4)\ a = g \cdot c$$

$$(5)\ b = g \cdot (1-c)$$

$$(6)\ c = \frac{K_{IRB}}{1-h}$$

$$(7)\ g = \frac{(1-c) \cdot c}{f} - 1$$

$$(8)\ f = \frac{v + K_{IRB}^{\ 2}}{1-h} - c^2 + \frac{(1 - K_{IRB}) \cdot K_{IRB} - v}{(1-h) \cdot 1000}$$

$$(9)\ v = K_{IRB} \cdot \frac{(EWALGD - K_{IRB}) + .25 \cdot (1 - EWALGD)}{N}$$

$$(10)\ d = 1 - (1-h) \cdot (1 - \beta[K_{IRB}; a, b])\,.$$

(11) In these expressions, β[Y; a, b] refers to the cumulative beta distribution with parameters a and b evaluated at Y. In the case where N = 1 and EWALGD = 100 percent, S[Y] in formula (1) must be calculated with K[Y] set equal to the product of K_{IRB} and Y, and d set equal to 1 − K_{IRB}.

(e) *SFA parameters*—(1) *Amount of the underlying exposures (UE).* UE is the EAD of any underlying exposures that are wholesale and retail exposures (including the amount of any funded spread accounts, cash collateral accounts, and other similar funded credit enhancements) plus the amount of any underlying exposures that are securitization exposures (as defined in paragraph (e) of section 42 of this appendix) plus the adjusted carrying value of any underlying exposures that are equity exposures (as defined in paragraph (b) of section 51 of this appendix).

(2) *Tranche percentage (TP).* TP is the ratio of the amount of the bank holding company's securitization exposure to the amount of the tranche that contains the securitization exposure.

(3) *Capital requirement on underlying exposures (K_{IRB}).* (i) K_{IRB} is the ratio of:

(A) The sum of the risk-based capital requirements for the underlying exposures plus the expected credit losses of the underlying exposures (as determined under this appendix as if the underlying exposures were directly held by the bank holding company); to

(B) UE.

(ii) The calculation of K_{IRB} must reflect the effects of any credit risk mitigant applied to the underlying exposures (either to an individual underlying exposure, to a group of underlying exposures, or to the entire pool of underlying exposures).

(iii) All assets related to the securitization are treated as underlying exposures, including assets in a reserve account (such as a cash collateral account).

(4) *Credit enhancement level (L).* (i) L is the ratio of:

(A) The amount of all securitization exposures subordinated to the tranche that contains the bank holding company's securitization exposure; to

(B) UE.

(ii) A bank holding company must determine L before considering the effects of any tranche-specific credit enhancements.

(iii) Any gain-on-sale or CEIO associated with the securitization may not be included in L.

(iv) Any reserve account funded by accumulated cash flows from the underlying exposures that is subordinated to the tranche that contains the bank holding company's securitization exposure may be included in the numerator and denominator of L to the extent cash has accumulated in the account. Unfunded reserve accounts (that is, reserve accounts that are to be funded from future cash flows from the underlying exposures) may not be included in the calculation of L.

(v) In some cases, the purchase price of receivables will reflect a discount that provides credit enhancement (for example, first loss protection) for all or certain tranches of the securitization. When this arises, L should be calculated inclusive of this discount if the discount provides credit enhancement for the securitization exposure.

(5) *Thickness of tranche (T).* T is the ratio of:

(i) The amount of the tranche that contains the bank holding company's securitization exposure; to

(ii) UE.

(6) *Effective number of exposures (N).* (i) Unless the bank holding company elects to use the formula provided in paragraph (f) of this section,

$$N = \frac{(\sum_i EAD_i)^2}{\sum_i EAD_i^2}$$

where EAD_i represents the EAD associated with the ith instrument in the pool of underlying exposures.

(ii) Multiple exposures to one obligor must be treated as a single underlying exposure.

(iii) In the case of a re-securitization (that is, a securitization in which some or all of the underlying exposures are themselves securitization exposures), the bank holding company must treat each underlying exposure as a single underlying exposure and must not look through to the originally securitized underlying exposures.

(7) *Exposure-weighted average loss given default (EWALGD).* EWALGD is calculated as:

$$EWALGD = \frac{\sum_i LGD_i \cdot EAD_i}{\sum_i EAD_i}$$

where LGD_i represents the average LGD associated with all exposures to the ith obligor. In the case of a re-securitization, an LGD of 100 percent must be assumed for the underlying exposures that are themselves securitization exposures.

(f) *Simplified method for computing N and EWALGD.* (1) If all underlying exposures of a securitization are retail exposures, a bank holding company may apply the SFA using the following simplifications:

(i) h = 0; and

(ii) v = 0.

(2) Under the conditions in paragraphs (f)(3) and (f)(4) of this section, a bank holding company may employ a simplified method for calculating N and EWALGD.

(3) If C_1 is no more than 0.03, a bank holding company may set EWALGD = 0.50 if none of the underlying exposures is a securitization exposure or EWALGD = 1 if one or more of the underlying exposures is a securitization exposure, and may set N equal to the following amount:

$$N = \frac{1}{C_1 C_m + \left(\frac{C_m - C_1}{m-1}\right)\max(1 - mC_1, 0)}$$

where:

(i) C_m is the ratio of the sum of the amounts of the 'm' largest underlying exposures to UE; and

(ii) The level of m is to be selected by the bank holding company.

(4) Alternatively, if only C_1 is available and C_1 is no more than 0.03, the bank holding company may set EWALGD = 0.50 if none of the underlying exposures is a securitization exposure or EWALGD = 1 if one or more of the underlying exposures is a securitization exposure and may set $N = 1/C_1$.

Section 46. Recognition of Credit Risk Mitigants for Securitization Exposures

(a) *General.* An originating bank holding company that has obtained a credit risk mitigant to hedge its securitization exposure to a synthetic or traditional securitization that satisfies the operational criteria in section 41 of this appendix may recognize the credit risk mitigant, but only as provided in this section. An investing bank holding company that has obtained a credit risk mitigant to hedge a securitization exposure may recognize the credit risk mitigant, but only as provided in this section. A bank holding company that has used the RBA in section 43 of this appendix or the IAA in section 44 of this appendix to calculate its risk-based capital requirement for a securitization exposure whose external or inferred rating (or equivalent internal rating under the IAA) reflects the benefits of a credit risk mitigant provided to the associated securitization or that supports some or all of the underlying exposures may not use the credit risk mitigation rules in this section to further reduce its risk-based capital requirement for the exposure to reflect that credit risk mitigant.

(b) *Collateral*—(1) *Rules of recognition.* A bank holding company may recognize financial collateral in determining the bank holding company's risk-based capital requirement for a securitization exposure (other than a repo-style transaction, an eligible margin loan, or an OTC derivative contract for which the bank holding company has reflected collateral in its determination of exposure amount under section 32 of this appendix) as follows. The bank holding company's risk-based capital requirement for the collateralized securitization exposure is equal to the risk-based capital requirement for the securitization exposure as calculated under the RBA in section 43 of this appendix or under the SFA in section 45 of this appendix multiplied by the ratio of adjusted exposure amount (SE*) to original exposure amount (SE), where:

(i) SE* = max {0, [SE—C x (1−Hs−Hfx)]};

(ii) SE = the amount of the securitization exposure calculated under paragraph (e) of section 42 of this appendix;

(iii) C = the current market value of the collateral;

(iv) Hs = the haircut appropriate to the collateral type; and

(v) Hfx = the haircut appropriate for any currency mismatch between the collateral and the exposure.

(2) *Mixed collateral.* Where the collateral is a basket of different asset types or a basket of assets denominated in different currencies, the haircut on the basket will be

$$H = \sum_i a_i H_i,$$

where a_i is the current market value of the asset in the basket divided by the current market value of all assets in the basket and H_i is the haircut applicable to that asset.

(3) *Standard supervisory haircuts.* Unless a bank holding company qualifies for use of and uses own-estimates haircuts in paragraph (b)(4) of this section:

(i) A bank holding company must use the collateral type haircuts (Hs) in Table 3;

(ii) A bank holding company must use a currency mismatch haircut (Hfx) of 8 percent if the exposure and the collateral are denominated in different currencies;

(iii) A bank holding company must multiply the supervisory haircuts obtained in paragraphs (b)(3)(i) and (ii) by the square root of 6.5 (which equals 2.549510); and

(iv) A bank holding company must adjust the supervisory haircuts upward on the basis of a holding period longer than 65 business days where and as appropriate to take into account the illiquidity of the collateral.

(4) *Own estimates for haircuts.* With the prior written approval of the Federal Reserve, a bank holding company may calculate haircuts using its own internal estimates of market price volatility and foreign exchange volatility, subject to paragraph (b)(2)(iii) of section 32 of this appendix. The minimum holding period (TM) for securitization exposures is 65 business days.

(c) *Guarantees and credit derivatives*—(1) *Limitations on recognition.* A bank holding

company may only recognize an eligible guarantee or eligible credit derivative provided by an eligible securitization guarantor in determining the bank holding company's risk-based capital requirement for a securitization exposure.

(2) *ECL for securitization exposures.* When a bank holding company recognizes an eligible guarantee or eligible credit derivative provided by an eligible securitization guarantor in determining the bank holding company's risk-based capital requirement for a securitization exposure, the bank holding company must also:

(i) Calculate ECL for the protected portion of the exposure using the same risk parameters that it uses for calculating the risk-weighted asset amount of the exposure as described in paragraph (c)(3) of this section; and

(ii) Add the exposure's ECL to the bank holding company's total ECL.

(3) *Rules of recognition.* A bank holding company may recognize an eligible guarantee or eligible credit derivative provided by an eligible securitization guarantor in determining the bank holding company's risk-based capital requirement for the securitization exposure as follows:

(i) *Full coverage.* If the protection amount of the eligible guarantee or eligible credit derivative equals or exceeds the amount of the securitization exposure, the bank holding company may set the risk-weighted asset amount for the securitization exposure equal to the risk-weighted asset amount for a direct exposure to the eligible securitization guarantor (as determined in the wholesale risk weight function described in section 31 of this appendix), using the bank holding company's PD for the guarantor, the bank holding company's LGD for the guarantee or credit derivative, and an EAD equal to the amount of the securitization exposure (as determined in paragraph (e) of section 42 of this appendix).

(ii) *Partial coverage.* If the protection amount of the eligible guarantee or eligible credit derivative is less than the amount of the securitization exposure, the bank holding company may set the risk-weighted asset amount for the securitization exposure equal to the sum of:

(A) *Covered portion.* The risk-weighted asset amount for a direct exposure to the eligible securitization guarantor (as determined in the wholesale risk weight function described in section 31 of this appendix), using the bank holding company's PD for the guarantor, the bank holding company's LGD for the guarantee or credit derivative, and an EAD equal to the protection amount of the credit risk mitigant; and

(B) *Uncovered portion.* (1) 1.0 minus the ratio of the protection amount of the eligible guarantee or eligible credit derivative to the amount of the securitization exposure); multiplied by

(*2*) The risk-weighted asset amount for the securitization exposure without the credit risk mitigant (as determined in sections 42–45 of this appendix).

(4) *Mismatches.* The bank holding company must make applicable adjustments to the protection amount as required in paragraphs (d), (e), and (f) of section 33 of this appendix for any hedged securitization exposure and any more senior securitization exposure that benefits from the hedge. In the context of a synthetic securitization, when an eligible guarantee or eligible credit derivative covers multiple hedged exposures that have different residual maturities, the bank holding company must use the longest residual maturity of any of the hedged exposures as the residual maturity of all the hedged exposures.

Section 47. Risk-Based Capital Requirement for Early Amortization Provisions

(a) *General.* (1) An originating bank holding company must hold risk-based capital against the sum of the originating bank holding company's interest and the investors' interest in a securitization that:

(i) Includes one or more underlying exposures in which the borrower is permitted to vary the drawn amount within an agreed limit under a line of credit; and

(ii) Contains an early amortization provision.

(2) For securitizations described in paragraph (a)(1) of this section, an originating bank holding company must calculate the risk-based capital requirement for the originating bank holding company's interest under sections 42–45 of this appendix, and the risk-based capital requirement for the investors' interest under paragraph (b) of this section.

(b) *Risk-weighted asset amount for investors' interest.* The originating bank holding company's risk-weighted asset amount for the investors' interest in the securitization is equal to the product of the following 5 quantities:

(1) The investors' interest EAD;

(2) The appropriate conversion factor in paragraph (c) of this section;

(3) K_{IRB} (as defined in paragraph (e)(3) of section 45 of this appendix);

(4) 12.5; and

(5) The proportion of the underlying exposures in which the borrower is permitted to vary the drawn amount within an agreed limit under a line of credit.

(c) *Conversion factor.* (1) (i) Except as provided in paragraph (c)(2) of this section, to calculate the appropriate conversion factor, a bank holding company must use Table 8 for a securitization that contains a controlled early amortization provision and must use Table 9 for a securitization that contains a

non-controlled early amortization provision. In circumstances where a securitization contains a mix of retail and nonretail exposures or a mix of committed and uncommitted exposures, a bank holding company may take a pro rata approach to determining the conversion factor for the securitization's early amortization provision. If a pro rata approach is not feasible, a bank holding company must treat the mixed securitization as a securitization of nonretail exposures if a single underlying exposure is a nonretail exposure and must treat the mixed securitization as a securitization of committed exposures if a single underlying exposure is a committed exposure.

(ii) To find the appropriate conversion factor in the tables, a bank holding company must divide the three-month average annualized excess spread of the securitization by the excess spread trapping point in the securitization structure. In securitizations that do not require excess spread to be trapped, or that specify trapping points based primarily on performance measures other than the three-month average annualized excess spread, the excess spread trapping point is 4.5 percent.

TABLE 8—CONTROLLED EARLY AMORTIZATION PROVISIONS

	Uncommitted	Committed
Retail Credit Lines	Three-month average annualized excess spread Conversion Factor (CF). 133.33% of trapping point or more, 0% CF. less than 133.33% to 100% of trapping point, 1% CF. less than 100% to 75% of trapping point, 2% CF. less than 75% to 50% of trapping point, 10% CF. less than 50% to 25% of trapping point, 20% CF. less than 25% of trapping point, 40% CF.	90% CF
Non-retail Credit Lines	90% CF	90% CF

TABLE 9—NON-CONTROLLED EARLY AMORTIZATION PROVISIONS

	Uncommitted	Committed
Retail Credit Lines	Three-month average annualized excess spread Conversion Factor (CF). 133.33% of trapping point or more, 0% CF. less than 133.33% to 100% of trapping point, 5% CF. less than 100% to 75% of trapping point, 15% CF. less than 75% to 50% of trapping point, 50% CF. less than 50% of trapping point, 100% CF.	100% CF
Non-retail Credit Lines	100% CF	100% CF

(2) For a securitization for which all or substantially all of the underlying exposures are residential mortgage exposures, a bank holding company may calculate the appropriate conversion factor using paragraph (c)(1) of this section or may use a conversion factor of 10 percent. If the bank holding company chooses to use a conversion factor of 10 percent, it must use that conversion factor for all securitizations for which all or substantially all of the underlying exposures are residential mortgage exposures.

PART VI. RISK-WEIGHTED ASSETS FOR EQUITY EXPOSURES

Section 51. Introduction and Exposure Measurement

(a) *General.* To calculate its risk-weighted asset amounts for equity exposures that are not equity exposures to investment funds, a bank holding company may apply either the Simple Risk Weight Approach (SRWA) in section 52 of this appendix or, if it qualifies to do so, the Internal Models Approach (IMA) in section 53 of this appendix. A bank holding company must use the look-through approaches in section 54 of this appendix to calculate its risk-weighted asset amounts for equity exposures to investment funds.

(b) *Adjusted carrying value.* For purposes of this part, the adjusted carrying value of an equity exposure is:

(1) For the on-balance sheet component of an equity exposure, the bank holding company's carrying value of the exposure reduced by any unrealized gains on the exposure that are reflected in such carrying value but excluded from the bank holding company's tier 1 and tier 2 capital; and

(2) For the off-balance sheet component of an equity exposure, the effective notional principal amount of the exposure, the size of which is equivalent to a hypothetical on-balance sheet position in the underlying equity instrument that would evidence the same change in fair value (measured in dollars) for a given small change in the price of the underlying equity instrument, minus the adjusted carrying value of the on-balance sheet

component of the exposure as calculated in paragraph (b)(1) of this section. For unfunded equity commitments that are unconditional, the effective notional principal amount is the notional amount of the commitment. For unfunded equity commitments that are conditional, the effective notional principal amount is the bank holding company's best estimate of the amount that would be funded under economic downturn conditions.

Section 52. Simple Risk Weight Approach (SRWA)

(a) *General.* Under the SRWA, a bank holding company's aggregate risk-weighted asset amount for its equity exposures is equal to the sum of the risk-weighted asset amounts for each of the bank holding company's individual equity exposures (other than equity exposures to an investment fund) as determined in this section and the risk-weighted asset amounts for each of the bank holding company's individual equity exposures to an investment fund as determined in section 54 of this appendix.

(b) *SRWA computation for individual equity exposures.* A bank holding company must determine the risk-weighted asset amount for an individual equity exposure (other than an equity exposure to an investment fund) by multiplying the adjusted carrying value of the equity exposure or the effective portion and ineffective portion of a hedge pair (as defined in paragraph (c) of this section) by the lowest applicable risk weight in this paragraph (b).

(1) *0 percent risk weight equity exposures.* An equity exposure to an entity whose credit exposures are exempt from the 0.03 percent PD floor in paragraph (d)(2) of section 31 of this appendix is assigned a 0 percent risk weight.

(2) *20 percent risk weight equity exposures.* An equity exposure to a Federal Home Loan Bank or Farmer Mac is assigned a 20 percent risk weight.

(3) *100 percent risk weight equity exposures.* The following equity exposures are assigned a 100 percent risk weight:

(i) *Community development equity exposures.* An equity exposure that qualifies as a community development investment under 12 U.S.C. 24 (Eleventh), excluding equity exposures to an unconsolidated small business investment company and equity exposures held through a consolidated small business investment company described in section 302 of the Small Business Investment Act of 1958 (15 U.S.C. 682).

(ii) *Effective portion of hedge pairs.* The effective portion of a hedge pair.

(iii) *Non-significant equity exposures.* Equity exposures, excluding exposures to an investment firm that would meet the definition of a traditional securitization were it not for the Federal Reserve's application of paragraph (8) of that definition and has greater than immaterial leverage, to the extent that the aggregate adjusted carrying value of the exposures does not exceed 10 percent of the bank holding company's tier 1 capital plus tier 2 capital.

(A) To compute the aggregate adjusted carrying value of a bank holding company's equity exposures for purposes of this paragraph (b)(3)(iii), the bank holding company may exclude equity exposures described in paragraphs (b)(1), (b)(2), (b)(3)(i), and (b)(3)(ii) of this section, the equity exposure in a hedge pair with the smaller adjusted carrying value, and a proportion of each equity exposure to an investment fund equal to the proportion of the assets of the investment fund that are not equity exposures or that meet the criterion of paragraph (b)(3)(i) of this section. If a bank holding company does not know the actual holdings of the investment fund, the bank holding company may calculate the proportion of the assets of the fund that are not equity exposures based on the terms of the prospectus, partnership agreement, or similar contract that defines the fund's permissible investments. If the sum of the investment limits for all exposure classes within the fund exceeds 100 percent, the bank holding company must assume for purposes of this paragraph (b)(3)(iii) that the investment fund invests to the maximum extent possible in equity exposures.

(B) When determining which of a bank holding company's equity exposures qualify for a 100 percent risk weight under this paragraph, a bank holding company first must include equity exposures to unconsolidated small business investment companies or held through consolidated small business investment companies described in section 302 of the Small Business Investment Act of 1958 (15 U.S.C. 682), then must include publicly traded equity exposures (including those held indirectly through investment funds), and then must include non-publicly traded equity exposures (including those held indirectly through investment funds).

(4) *300 percent risk weight equity exposures.* A publicly traded equity exposure (other than an equity exposure described in paragraph (b)(6) of this section and including the ineffective portion of a hedge pair) is assigned a 300 percent risk weight.

(5) *400 percent risk weight equity exposures.* An equity exposure (other than an equity exposure described in paragraph (b)(6) of this section) that is not publicly traded is assigned a 400 percent risk weight.

(6) *600 percent risk weight equity exposures.* An equity exposure to an investment firm that:

(i) Would meet the definition of a traditional securitization were it not for the Federal Reserve's application of paragraph (8) of that definition; and

(ii) Has greater than immaterial leverage is assigned a 600 percent risk weight.

(c) *Hedge transactions*—(1) *Hedge pair.* A hedge pair is two equity exposures that form an effective hedge so long as each equity exposure is publicly traded or has a return that is primarily based on a publicly traded equity exposure.

(2) *Effective hedge.* Two equity exposures form an effective hedge if the exposures either have the same remaining maturity or each has a remaining maturity of at least three months; the hedge relationship is formally documented in a prospective manner (that is, before the bank holding company acquires at least one of the equity exposures); the documentation specifies the measure of effectiveness (E) the bank holding company will use for the hedge relationship throughout the life of the transaction; and the hedge relationship has an E greater than or equal to 0.8. A bank holding company must measure E at least quarterly and must use one of three alternative measures of E:

(i) Under the dollar-offset method of measuring effectiveness, the bank holding company must determine the ratio of value change (RVC). The RVC is the ratio of the cumulative sum of the periodic changes in value of one equity exposure to the cumulative sum of the periodic changes in the value of the other equity exposure. If RVC is positive, the hedge is not effective and E equals 0. If RVC is negative and greater than or equal to −1 (that is, between zero and −1), then E equals the absolute value of RVC. If RVC is negative and less than −1, then E equals 2 plus RVC.

(ii) Under the variability-reduction method of measuring effectiveness:

$$E = 1 - \frac{\sum_{t=1}^{T} \left(X_t - X_{t-1}\right)^2}{\sum_{t=1}^{T} \left(A_t - A_{t-1}\right)^2}, \text{ where}$$

(A) $X_t = A_t - B_t$;

(B) A_t = the value at time t of one exposure in a hedge pair; and

(C) B_t = the value at time t of the other exposure in a hedge pair.

(iii) Under the regression method of measuring effectiveness, E equals the coefficient of determination of a regression in which the change in value of one exposure in a hedge pair is the dependent variable and the change in value of the other exposure in a hedge pair is the independent variable. However, if the estimated regression coefficient is positive, then the value of E is zero.

(3) The effective portion of a hedge pair is E multiplied by the greater of the adjusted carrying values of the equity exposures forming a hedge pair.

(4) The ineffective portion of a hedge pair is (1–E) multiplied by the greater of the adjusted carrying values of the equity exposures forming a hedge pair.

Section 53. Internal Models Approach (IMA)

(a) *General.* A bank holding company may calculate its risk-weighted asset amount for equity exposures using the IMA by modeling publicly traded and non-publicly traded equity exposures (in accordance with paragraph (c) of this section) or by modeling only publicly traded equity exposures (in accordance with paragraph (d) of this section).

(b) *Qualifying criteria.* To qualify to use the IMA to calculate risk-based capital requirements for equity exposures, a bank holding company must receive prior written approval from the Federal Reserve. To receive such approval, the bank holding company must demonstrate to the Federal Reserve's satisfaction that the bank holding company meets the following criteria:

(1) The bank holding company must have one or more models that:

(i) Assess the potential decline in value of its modeled equity exposures;

(ii) Are commensurate with the size, complexity, and composition of the bank holding company's modeled equity exposures; and

(iii) Adequately capture both general market risk and idiosyncratic risk.

(2) The bank holding company's model must produce an estimate of potential losses for its modeled equity exposures that is no less than the estimate of potential losses produced by a VaR methodology employing a 99.0 percent, one-tailed confidence interval of the distribution of quarterly returns for a benchmark portfolio of equity exposures comparable to the bank holding company's modeled equity exposures using a long-term sample period.

(3) The number of risk factors and exposures in the sample and the data period used for quantification in the bank holding company's model and benchmarking exercise must be sufficient to provide confidence in

the accuracy and robustness of the bank holding company's estimates.

(4) The bank holding company's model and benchmarking process must incorporate data that are relevant in representing the risk profile of the bank holding company's modeled equity exposures, and must include data from at least one equity market cycle containing adverse market movements relevant to the risk profile of the bank holding company's modeled equity exposures. In addition, the bank holding company's benchmarking exercise must be based on daily market prices for the benchmark portfolio. If the bank holding company's model uses a scenario methodology, the bank holding company must demonstrate that the model produces a conservative estimate of potential losses on the bank holding company's modeled equity exposures over a relevant long-term market cycle. If the bank holding company employs risk factor models, the bank holding company must demonstrate through empirical analysis the appropriateness of the risk factors used.

(5) The bank holding company must be able to demonstrate, using theoretical arguments and empirical evidence, that any proxies used in the modeling process are comparable to the bank holding company's modeled equity exposures and that the bank holding company has made appropriate adjustments for differences. The bank holding company must derive any proxies for its modeled equity exposures and benchmark portfolio using historical market data that are relevant to the bank holding company's modeled equity exposures and benchmark portfolio (or, where not, must use appropriately adjusted data), and such proxies must be robust estimates of the risk of the bank holding company's modeled equity exposures.

(c) *Risk-weighted assets calculation for a bank holding company modeling publicly traded and non-publicly traded equity exposures.* If a bank holding company models publicly traded and non-publicly traded equity exposures, the bank holding company's aggregate risk-weighted asset amount for its equity exposures is equal to the sum of:

(1) The risk-weighted asset amount of each equity exposure that qualifies for a 0 percent, 20 percent, or 100 percent risk weight under paragraphs (b)(1) through (b)(3)(i) of section 52 (as determined under section 52 of this appendix) and each equity exposure to an investment fund (as determined under section 54 of this appendix); and

(2) The greater of:

(i) The estimate of potential losses on the bank holding company's equity exposures (other than equity exposures referenced in paragraph (c)(1) of this section) generated by the bank holding company's internal equity exposure model multiplied by 12.5; or

(ii) The sum of:

(A) 200 percent multiplied by the aggregate adjusted carrying value of the bank holding company's publicly traded equity exposures that do not belong to a hedge pair, do not qualify for a 0 percent, 20 percent, or 100 percent risk weight under paragraphs (b)(1) through (b)(3)(i) of section 52 of this appendix, and are not equity exposures to an investment fund;

(B) 200 percent multiplied by the aggregate ineffective portion of all hedge pairs; and

(C) 300 percent multiplied by the aggregate adjusted carrying value of the bank holding company's equity exposures that are not publicly traded, do not qualify for a 0 percent, 20 percent, or 100 percent risk weight under paragraphs (b)(1) through (b)(3)(i) of section 52 of this appendix, and are not equity exposures to an investment fund.

(d) *Risk-weighted assets calculation for a bank holding company using the IMA only for publicly traded equity exposures.* If a bank holding company models only publicly traded equity exposures, the bank holding company's aggregate risk-weighted asset amount for its equity exposures is equal to the sum of:

(1) The risk-weighted asset amount of each equity exposure that qualifies for a 0 percent, 20 percent, or 100 percent risk weight under paragraphs (b)(1) through (b)(3)(i) of section 52 (as determined under section 52 of this appendix), each equity exposure that qualifies for a 400 percent risk weight under paragraph (b)(5) of section 52 or a 600 percent risk weight under paragraph (b)(6) of section 52 (as determined under section 52 of this appendix), and each equity exposure to an investment fund (as determined under section 54 of this appendix); and

(2) The greater of:

(i) The estimate of potential losses on the bank holding company's equity exposures (other than equity exposures referenced in paragraph (d)(1) of this section) generated by the bank holding company's internal equity exposure model multiplied by 12.5; or

(ii) The sum of:

(A) 200 percent multiplied by the aggregate adjusted carrying value of the bank holding company's publicly traded equity exposures that do not belong to a hedge pair, do not qualify for a 0 percent, 20 percent, or 100 percent risk weight under paragraphs (b)(1) through (b)(3)(i) of section 52 of this appendix, and are not equity exposures to an investment fund; and

(B) 200 percent multiplied by the aggregate ineffective portion of all hedge pairs.

Section 54. Equity Exposures to Investment Funds

(a) *Available approaches.* (1) Unless the exposure meets the requirements for a community development equity exposure in paragraph (b)(3)(i) of section 52 of this appendix, a bank holding company must determine the

risk-weighted asset amount of an equity exposure to an investment fund under the Full Look-Through Approach in paragraph (b) of this section, the Simple Modified Look-Through Approach in paragraph (c) of this section, the Alternative Modified Look-Through Approach in paragraph (d) of this section, or, if the investment fund qualifies for the Money Market Fund Approach, the Money Market Fund Approach in paragraph (e) of this section.

(2) The risk-weighted asset amount of an equity exposure to an investment fund that meets the requirements for a community development equity exposure in paragraph (b)(3)(i) of section 52 of this appendix is its adjusted carrying value.

(3) If an equity exposure to an investment fund is part of a hedge pair and the bank holding company does not use the Full Look-Through Approach, the bank holding company may use the ineffective portion of the hedge pair as determined under paragraph (c) of section 52 of this appendix as the adjusted carrying value for the equity exposure to the investment fund. The risk-weighted asset amount of the effective portion of the hedge pair is equal to its adjusted carrying value.

(b) *Full Look-Through Approach.* A bank holding company that is able to calculate a risk-weighted asset amount for its proportional ownership share of each exposure held by the investment fund (as calculated under this appendix as if the proportional ownership share of each exposure were held directly by the bank holding company) may either:

(1) Set the risk-weighted asset amount of the bank holding company's exposure to the fund equal to the product of:

(i) The aggregate risk-weighted asset amounts of the exposures held by the fund as if they were held directly by the bank holding company; and

(ii) The bank holding company's proportional ownership share of the fund; or

(2) Include the bank holding company's proportional ownership share of each exposure held by the fund in the bank holding company's IMA.

(c) *Simple Modified Look-Through Approach.* Under this approach, the risk-weighted asset amount for a bank holding company's equity exposure to an investment fund equals the adjusted carrying value of the equity exposure multiplied by the highest risk weight in Table 10 that applies to any exposure the fund is permitted to hold under its prospectus, partnership agreement, or similar contract that defines the fund's permissible investments (excluding derivative contracts that are used for hedging rather than speculative purposes and that do not constitute a material portion of the fund's exposures).

TABLE 10—MODIFIED LOOK-THROUGH APPROACHES FOR EQUITY EXPOSURES TO INVESTMENT FUNDS

Risk weight	Exposure class
0 percent	Sovereign exposures with a long-term applicable external rating in the highest investment-grade rating category and sovereign exposures of the United States.
20 percent	Non-sovereign exposures with a long-term applicable external rating in the highest or second-highest investment-grade rating category; exposures with a short-term applicable external rating in the highest investment-grade rating category; and exposures to, or guaranteed by, depository institutions, foreign banks (as defined in 12 CFR 211.2), or securities firms subject to consolidated supervision and regulation comparable to that imposed on U.S. securities broker-dealers that are repo-style transactions or bankers' acceptances.
50 percent	Exposures with a long-term applicable external rating in the third-highest investment-grade rating category or a short-term applicable external rating in the second-highest investment-grade rating category.
100 percent	Exposures with a long-term or short-term applicable external rating in the lowest investment-grade rating category.
200 percent	Exposures with a long-term applicable external rating one rating category below investment grade.
300 percent	Publicly traded equity exposures.
400 percent	Non-publicly traded equity exposures; exposures with a long-term applicable external rating two rating categories or more below investment grade; and exposures without an external rating (excluding publicly traded equity exposures).
1,250 percent	OTC derivative contracts and exposures that must be deducted from regulatory capital or receive a risk weight greater than 400 percent under this appendix.

(d) *Alternative Modified Look-Through Approach.* Under this approach, a bank holding company may assign the adjusted carrying value of an equity exposure to an investment fund on a pro rata basis to different risk weight categories in Table 10 based on the investment limits in the fund's prospectus, partnership agreement, or similar contract that defines the fund's permissible investments. The risk-weighted asset amount for the bank holding company's equity exposure to the investment fund equals the sum of each portion of the adjusted carrying value assigned to an exposure class multiplied by the applicable risk weight. If the sum of the

investment limits for exposure classes within the fund exceeds 100 percent, the bank holding company must assume that the fund invests to the maximum extent permitted under its investment limits in the exposure class with the highest risk weight under Table 10, and continues to make investments in order of the exposure class with the next highest risk weight under Table 10 until the maximum total investment level is reached. If more than one exposure class applies to an exposure, the bank holding company must use the highest applicable risk weight. A bank holding company may exclude derivative contracts held by the fund that are used for hedging rather than for speculative purposes and do not constitute a material portion of the fund's exposures.

(e) *Money Market Fund Approach.* The risk-weighted asset amount for a bank holding company's equity exposure to an investment fund that is a money market fund subject to 17 CFR 270.2a–7 and that has an applicable external rating in the highest investment-grade rating category equals the adjusted carrying value of the equity exposure multiplied by 7 percent.

Section 55. Equity Derivative Contracts

Under the IMA, in addition to holding risk-based capital against an equity derivative contract under this part, a bank holding company must hold risk-based capital against the counterparty credit risk in the equity derivative contract by also treating the equity derivative contract as a wholesale exposure and computing a supplemental risk-weighted asset amount for the contract under part IV. Under the SRWA, a bank holding company may choose not to hold risk-based capital against the counterparty credit risk of equity derivative contracts, as long as it does so for all such contracts. Where the equity derivative contracts are subject to a qualified master netting agreement, a bank holding company using the SRWA must either include all or exclude all of the contracts from any measure used to determine counterparty credit risk exposure.

PART VII. RISK-WEIGHTED ASSETS FOR OPERATIONAL RISK

Section 61. Qualification Requirements for Incorporation of Operational Risk Mitigants

(a) *Qualification to use operational risk mitigants.* A bank holding company may adjust its estimate of operational risk exposure to reflect qualifying operational risk mitigants if:

(1) The bank holding company's operational risk quantification system is able to generate an estimate of the bank holding company's operational risk exposure (which does not incorporate qualifying operational risk mitigants) and an estimate of the bank holding company's operational risk exposure adjusted to incorporate qualifying operational risk mitigants; and

(2) The bank holding company's methodology for incorporating the effects of insurance, if the bank holding company uses insurance as an operational risk mitigant, captures through appropriate discounts to the amount of risk mitigation:

(i) The residual term of the policy, where less than one year;

(ii) The cancellation terms of the policy, where less than one year;

(iii) The policy's timeliness of payment;

(iv) The uncertainty of payment by the provider of the policy; and

(v) Mismatches in coverage between the policy and the hedged operational loss event.

(b) *Qualifying operational risk mitigants.* Qualifying operational risk mitigants are:

(1) Insurance that:

(i) Is provided by an unaffiliated company that has a claims payment ability that is rated in one of the three highest rating categories by a NRSRO;

(ii) Has an initial term of at least one year and a residual term of more than 90 days;

(iii) Has a minimum notice period for cancellation by the provider of 90 days;

(iv) Has no exclusions or limitations based upon regulatory action or for the receiver or liquidator of a failed depository institution; and

(v) Is explicitly mapped to a potential operational loss event; and

(2) Operational risk mitigants other than insurance for which the Federal Reserve has given prior written approval. In evaluating an operational risk mitigant other than insurance, the Federal Reserve will consider whether the operational risk mitigant covers potential operational losses in a manner equivalent to holding regulatory capital.

Section 62. Mechanics of Risk-Weighted Asset Calculation

(a) If a bank holding company does not qualify to use or does not have qualifying operational risk mitigants, the bank holding company's dollar risk-based capital requirement for operational risk is its operational risk exposure minus eligible operational risk offsets (if any).

(b) If a bank holding company qualifies to use operational risk mitigants and has qualifying operational risk mitigants, the bank holding company's dollar risk-based capital requirement for operational risk is the greater of:

(1) The bank holding company's operational risk exposure adjusted for qualifying operational risk mitigants minus eligible operational risk offsets (if any); or

(2) 0.8 multiplied by the difference between:

(i) The bank holding company's operational risk exposure; and

(ii) Eligible operational risk offsets (if any).

(c) The bank holding company's risk-weighted asset amount for operational risk equals the bank holding company's dollar risk-based capital requirement for operational risk determined under paragraph (a) or (b) of this section multiplied by 12.5.

PART VIII. DISCLOSURE

Section 71. Disclosure Requirements

(a) Each bank holding company must publicly disclose each quarter its total and tier 1 risk-based capital ratios and their components (that is, tier 1 capital, tier 2 capital, total qualifying capital, and total risk-weighted assets).[4]

(b)(1) Each consolidated bank holding company that is not a subsidiary of a non-U.S. banking organization that is subject to comparable public disclosure requirements in its home jurisdiction and has successfully completed its parallel run must provide timely public disclosures each calendar quarter of the information in tables 11.1–11.11 below. If a significant change occurs, such that the most recent reported amounts are no longer reflective of the bank holding company'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 (for example, a general summary of the bank holding company's risk management objectives and policies, reporting system, and definitions) may be disclosed annually, provided any significant changes to these are disclosed in the interim. Management is encouraged to provide all of the disclosures required by this appendix in one place on the bank holding company's public Web site.[5] The bank holding company must make these disclosures publicly available for each of the last three years (that is, twelve quarters) or such shorter period since it began its first floor period.

(2) Each bank holding company is required to have a formal disclosure policy approved by the board of directors that addresses its approach for determining the disclosures it makes. The policy must address the associated internal controls and disclosure controls and procedures. The board of directors and senior management are responsible for establishing and maintaining an effective internal control structure over financial reporting, including the disclosures required by this appendix, and must ensure that appropriate review of the disclosures takes place. One or more senior officers of the bank holding company must attest that the disclosures meet the requirements of this appendix.

(3) If a bank holding company believes that disclosure of specific commercial or financial information would prejudice seriously its position by making public information that is either proprietary or confidential in nature, the bank holding company need not disclose those 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.

[4] Other public disclosure requirements continue to apply—for example, Federal securities law and regulatory reporting requirements.

[5] Alternatively, a bank holding company may provide the disclosures in more than one place, as some of them may be included in public financial reports (for example, in Management's Discussion and Analysis included in SEC filings) or other regulatory reports. The bank holding company must provide a summary table on its public Web site that specifically indicates where all the disclosures may be found (for example, regulatory report schedules, page numbers in annual reports).

TABLE 11.1—SCOPE OF APPLICATION

Qualitative Disclosures	(a) The name of the top corporate entity in the group to which the appendix applies. (b) An outline of differences in the basis of consolidation for accounting and regulatory purposes, with a brief description of the entities[6] within the group that are fully consolidated; that are deconsolidated and deducted; for which the regulatory capital requirement is deducted; and that are neither consolidated nor deducted (for example, where the investment is risk-weighted). (c) Any restrictions, or other major impediments, on transfer of funds or regulatory capital within the group.
Quantitative Disclosures	(d) The aggregate amount of surplus capital of insurance subsidiaries (whether deducted or subjected to an alternative method) included in the regulatory capital of the consolidated group. (e) The aggregate amount by which actual regulatory capital is less than the minimum regulatory capital requirement in all subsidiaries with regulatory capital requirements and the name(s) of the subsidiaries with such deficiencies.

TABLE 11.2—CAPITAL STRUCTURE

Qualitative Disclosures	(a) Summary information on the terms and conditions of the main features of all capital instruments, especially in the case of innovative, complex or hybrid capital instruments.
Quantitative Disclosures	(b) The amount of tier 1 capital, with separate disclosure of: • Common stock/surplus; • Retained earnings; • Minority interests in the equity of subsidiaries; • Restricted core capital elements as defined in 12 CFR part 225, Appendix A; • Regulatory calculation differences deducted from tier 1 capital;[7] and • Other amounts deducted from tier 1 capital, including goodwill and certain intangibles. (c) The total amount of tier 2 capital. (d) Other deductions from capital.[8] (e) Total eligible capital.

[6] Entities include securities, insurance and other financial subsidiaries, commercial subsidiaries (where permitted), and significant minority equity investments in insurance, financial and commercial entities.

[7] Representing 50 percent of the amount, if any, by which total expected credit losses as calculated within the IRB approach exceed eligible credit reserves, which must be deducted from tier 1 capital.

[8] Including 50 percent of the amount, if any, by which total expected credit losses as calculated within the IRB approach exceed eligible credit reserves, which must be deducted from tier 2 capital.

TABLE 11.3—CAPITAL ADEQUACY

Qualitative disclosures	(a) A summary discussion of the bank holding company's approach to assessing the adequacy of its capital to support current and future activities.
Quantitative disclosures	(b) Risk-weighted assets for credit risk from: • Wholesale exposures; • Residential mortgage exposures; • Qualifying revolving exposures; • Other retail exposures; • Securitization exposures; • Equity exposures • Equity exposures subject to the simple risk weight approach; and • Equity exposures subject to the internal models approach. (c) Risk-weighted assets for market risk as calculated under [the market risk rule]: [9] • Standardized approach for specific risk; and • Internal models approach for specific risk. (d) Risk-weighted assets for operational risk. (e) Total and tier 1 risk-based capital ratios: [10] • For the top consolidated group; and • For each DI subsidiary.

GENERAL QUALITATIVE DISCLOSURE REQUIREMENT

For each separate risk area described in tables 11.4 through 11.11, the bank holding company must describe its risk management objectives and policies, including:

- Strategies and processes;
- The structure and organization of the relevant risk management function;
- The scope and nature of risk reporting and/or measurement systems;
- Policies for hedging and/or mitigating risk and strategies and processes for monitoring the continuing effectiveness of hedges/mitigants.

TABLE 11.4[11]—CREDIT RISK: GENERAL DISCLOSURES

Qualitative Disclosures	(a) The general qualitative disclosure requirement with respect to credit risk (excluding counterparty credit risk disclosed in accordance with Table 11.6), including: • Definitions of past due and impaired (for accounting purposes); • Description of approaches followed for allowances, including statistical methods used where applicable; and • Discussion of the bank holding company's credit risk management policy.
Quantitative Disclosures	(b) Total credit risk exposures and average credit risk exposures, after accounting offsets in accordance with GAAP,[12] and without taking into account the effects of credit risk mitigation techniques (for example, collateral and netting), over the period broken down by major types of credit exposure.[13] (c) Geographic [14] distribution of exposures, broken down in significant areas by major types of credit exposure.

[9] Risk-weighted assets determined under [the market risk rule] are to be disclosed only for the approaches used.

[10] Total risk-weighted assets should also be disclosed.

[11] Table 4 does not include equity exposures.

[12] For example, FASB Interpretations 39 and 41.

[13] For example, bank holding companies could apply a breakdown similar to that used for accounting purposes. Such a breakdown might, for instance, be (a) loans, off-balance sheet commitments, and other non-derivative off-balance sheet exposures, (b) debt securities, and (c) OTC derivatives.

[14] Geographical areas may comprise individual countries, groups of countries, or regions within countries. A bank holding company might choose to define the geographical areas based on the way the company's portfolio is geographically managed. The criteria used to allocate the loans to geographical areas must be specified.

TABLE 11.4[11]—CREDIT RISK: GENERAL DISCLOSURES—Continued

	(d) Industry or counterparty type distribution of exposures, broken down by major types of credit exposure. (e) Remaining contractual maturity breakdown (for example, one year or less) of the whole portfolio, broken down by major types of credit exposure. (f) By major industry or counterparty type: • Amount of impaired loans; • Amount of past due loans;[15] • Allowances; and • Charge-offs during the period. (g) Amount of impaired loans and, if available, the amount of past due loans broken down by significant geographic areas including, if practical, the amounts of allowances related to each geographical area.[16] (h) Reconciliation of changes in the allowance for loan and lease losses.[17]

TABLE 11.5—CREDIT RISK: DISCLOSURES FOR PORTFOLIOS SUBJECT TO IRB RISK-BASED CAPITAL FORMULAS

Qualitative disclosures	(a) Explanation and review of the: • Structure of internal rating systems and relation between internal and external ratings; • Use of risk parameter estimates other than for regulatory capital purposes; • Process for managing and recognizing credit risk mitigation (see table 11.7); and • Control mechanisms for the rating system, including discussion of independence, accountability, and rating systems review. (b) Description of the internal ratings process, provided separately for the following: • Wholesale category; • Retail subcategories; • Residential mortgage exposures; • Qualifying revolving exposures; and • Other retail exposures. For each category and subcategory the description should include: • The types of exposure included in the category/subcategories; and • The definitions, methods and data for estimation and validation of PD, LGD, and EAD, including assumptions employed in the derivation of these variables.[18]

[15] A bank holding company is encouraged also to provide an analysis of the aging of past-due loans.

[16] The portion of general allowance that is not allocated to a geographical area should be disclosed separately.

[17] The reconciliation should include the following: A description of the allowance; the opening balance of the allowance; charge-offs taken against the allowance during the period; amounts provided (or reversed) for estimated probable loan losses during the period; any other adjustments (for example, exchange rate differences, business combinations, acquisitions and disposals of subsidiaries), including transfers between allowances; and the closing balance of the allowance. Charge-offs and recoveries that have been recorded directly to the income statement should be disclosed separately.

[18] This disclosure does not require a detailed description of the model in full—it should provide the reader with a broad overview of the model approach, describing definitions of the variables and methods for estimating and validating those variables set out in the quantitative risk disclosures below. This should be done for each of the four category/subcategories. The bank holding company should disclose any significant differences in approach to estimating these variables within each category/subcategories.

TABLE 11.5—CREDIT RISK: DISCLOSURES FOR PORTFOLIOS SUBJECT TO IRB RISK-BASED CAPITAL FORMULAS—Continued

Quantitative disclosures: Risk assessment.	(c) For wholesale exposures, present the following information across a sufficient number of PD grades (including default) to allow for a meaningful differentiation of credit risk: [19] • Total EAD; [20] • Exposure-weighted average LGD (percentage); • Exposure-weighted average risk weight; and • Amount of undrawn commitments and exposure-weighted average EAD for wholesale exposures. For each retail subcategory, present the disclosures outlined above across a sufficient number of segments to allow for a meaningful differentiation of credit risk.
Quantitative disclosures: Historical results.	(d) Actual losses in the preceding period for each category and subcategory and how this differs from past experience. A discussion of the factors that impacted the loss experience in the preceding period—for example, has the bank holding company experienced higher than average default rates, loss rates or EADs. (e) Bank holding company's estimates compared against actual outcomes over a longer period.[21] At a minimum, this should include information on estimates of losses against actual losses in the wholesale category and each retail subcategory over a period sufficient to allow for a meaningful assessment of the performance of the internal rating processes for each category/subcategory.[22] Where appropriate, the bank holding company should further decompose this to provide analysis of PD, LGD, and EAD outcomes against estimates provided in the quantitative risk assessment disclosures above.[23]

[19] The PD, LGD and EAD disclosures in Table 11.5(c) should reflect the effects of collateral, qualifying master netting agreements, eligible guarantees and eligible credit derivatives as defined in part I. Disclosure of each PD grade should include the exposure-weighted average PD for each grade. Where a bank holding company aggregates PD grades for the purposes of disclosure, this should be a representative breakdown of the distribution of PD grades used for regulatory capital purposes.

[20] Outstanding loans and EAD on undrawn commitments can be presented on a combined basis for these disclosures.

[21] These disclosures are a way of further informing the reader about the reliability of the information provided in the ''quantitative disclosures: risk assessment'' over the long run. The disclosures are requirements from year-end 2010; in the meantime, early adoption is encouraged. The phased implementation is to allow a bank holding company sufficient time to build up a longer run of data that will make these disclosures meaningful.

[22] This regulation is not prescriptive about the period used for this assessment. Upon implementation, it might be expected that a bank holding company would provide these disclosures for as long run of data as possible—for example, if a bank holding company has 10 years of data, it might choose to disclose the average default rates for each PD grade over that 10-year period. Annual amounts need not be disclosed.

[23] A bank holding company should provide this further decomposition where it will allow users greater insight into the reliability of the estimates provided in the ''quantitative disclosures: risk assessment.'' In particular, it should provide this information where there are material differences between its estimates of PD, LGD or EAD compared to actual outcomes over the long run. The bank holding company should also provide explanations for such differences.

TABLE 11.6—GENERAL DISCLOSURE FOR COUNTERPARTY CREDIT RISK OF OTC DERIVATIVE CONTRACTS, REPO-STYLE TRANSACTIONS, AND ELIGIBLE MARGIN LOANS

Qualitative Disclosures	(a) The general qualitative disclosure requirement with respect to OTC derivatives, eligible margin loans, and repo-style transactions, including: • Discussion of methodology used to assign economic capital and credit limits for counterparty credit exposures; • Discussion of policies for securing collateral, valuing and managing collateral, and establishing credit reserves; • Discussion of the primary types of collateral taken; • Discussion of policies with respect to wrong-way risk exposures; and • Discussion of the impact of the amount of collateral the bank holding company would have to provide if the bank holding company were to receive a credit rating downgrade.
Quantitative Disclosures	(b) Gross positive fair value of contracts, netting benefits, netted current credit exposure, collateral held (including type, for example, cash, government securities), and net unsecured credit exposure.[24] Also report measures for EAD used for regulatory capital for these transactions, the notional value of credit derivative hedges purchased for counterparty credit risk protection, and, for bank holding companies not using the internal models methodology in section 32(d) of this appendix, the distribution of current credit exposure by types of credit exposure.[25] (c) Notional amount of purchased and sold credit derivatives, segregated between use for the bank holding company's own credit portfolio and for its intermediation activities, including the distribution of the credit derivative products used, broken down further by protection bought and sold within each product group. (d) The estimate of alpha if the bank holding company has received supervisory approval to estimate alpha.

TABLE 11.7—CREDIT RISK MITIGATION [26] [27] [28]

Qualitative Disclosures	(a) The general qualitative disclosure requirement with respect to credit risk mitigation including: • Policies and processes for, and an indication of the extent to which the bank holding company uses, on- and off-balance sheet netting; • Policies and processes for collateral valuation and management; • A description of the main types of collateral taken by the bank holding company; • The main types of guarantors/credit derivative counterparties and their creditworthiness; and • Information about (market or credit) risk concentrations within the mitigation taken.
Quantitative Disclosures	(b) For each separately disclosed portfolio, the total exposure (after, where applicable, on-or off-balance sheet netting) that is covered by guarantees/credit derivatives.

[24] Net unsecured credit exposure is the credit exposure after considering the benefits from legally enforceable netting agreements and collateral arrangements, without taking into account haircuts for price volatility, liquidity, etc.

[25] This may include interest rate derivative contracts, foreign exchange derivative contracts, equity derivative contracts, credit derivatives, commodity or other derivative contracts, repo-style transactions, and eligible margin loans.

[26] At a minimum, a bank holding company must provide the disclosures in Table 11.7 in relation to credit risk mitigation that has been recognized for the purposes of reducing capital requirements under this appendix. Where relevant, bank holding companies are encouraged to give further information about mitigants that have not been recognized for that purpose.

[27] Credit derivatives that are treated, for the purposes of this appendix, as synthetic securitization exposures should be excluded from the credit risk mitigation disclosures and included within those relating to securitization.

[28] Counterparty credit risk-related exposures disclosed pursuant to Table 11.6 should be excluded from the credit risk mitigation disclosures in Table 11.7.

TABLE 11.8—SECURITIZATION

Qualitative disclosures	(a) The general qualitative disclosure requirement with respect to securitization (including synthetics), including a discussion of: • The bank holding company's objectives relating to securitization activity, including the extent to which these activities transfer credit risk of the underlying exposures away from the bank holding company to other entities; • The roles played by the bank holding company in the securitization process[29] and an indication of the extent of the bank holding company's involvement in each of them; and • The regulatory capital approaches (for example, RBA, IAA and SFA) that the bank holding company follows for its securitization activities. (b) Summary of the bank holding company's accounting policies for securitization activities, including: • Whether the transactions are treated as sales or financings; • Recognition of gain-on-sale; • Key assumptions for valuing retained interests, including any significant changes since the last reporting period and the impact of such changes; and • Treatment of synthetic securitizations. (c) Names of NRSROs used for securitizations and the types of securitization exposure for which each agency is used.
Quantitative disclosures	(d) The total outstanding exposures securitized by the bank holding company in securitizations that meet the operational criteria in section 41 of this appendix (broken down into traditional/synthetic), by underlying exposure type.[30] [31] [32] (e) For exposures securitized by the bank holding company in securitizations that meet the operational criteria in Section 41 of this appendix: • Amount of securitized assets that are impaired/past due; and • Losses recognized by the bank holding company during the current period[33] broken down by exposure type. (f) Aggregate amount of securitization exposures broken down by underlying exposure type. (g) Aggregate amount of securitization exposures and the associated IRB capital requirements for these exposures broken down into a meaningful number of risk weight bands. Exposures that have been deducted from capital should be disclosed separately by type of underlying asset. (h) For securitizations subject to the early amortization treatment, the following items by underlying asset type for securitized facilities: • The aggregate drawn exposures attributed to the seller's and investors' interests; and • The aggregate IRB capital charges incurred by the bank holding company against the investors' shares of drawn balances and undrawn lines. (i) Summary of current year's securitization activity, including the amount of exposures securitized (by exposure type), and recognized gain or loss on sale by asset type.

[29] For example: originator, investor, servicer, provider of credit enhancement, sponsor of asset backed commercial paper facility, liquidity provider, or swap provider.

[30] Underlying exposure types may include, for example, one- to four-family residential loans, home equity lines, credit card receivables, and auto loans.

[31] Securitization transactions in which the originating bank holding company does not retain any securitization exposure should be shown separately but need only be reported for the year of inception.

[32] Where relevant, a bank holding company is encouraged to differentiate between exposures resulting from activities in which they act only as sponsors, and exposures that result from all other bank holding company securitization activities.

[33] For example, charge-offs/allowances (if the assets remain on the bank holding company's balance sheet) or write-downs of I/O strips and other residual interests.

TABLE 11.9—OPERATIONAL RISK

Qualitative disclosures	(a) The general qualitative disclosure requirement for operational risk. (b) Description of the AMA, including a discussion of relevant internal and external factors considered in the bank holding company's measurement approach. (c) A description of the use of insurance for the purpose of mitigating operational risk.

TABLE 11.10—EQUITIES NOT SUBJECT TO MARKET RISK RULE

Qualitative Disclosures	(a) The general qualitative disclosure requirement with respect to equity risk, including: • Differentiation between holdings on which capital gains are expected and those held for other objectives, including for relationship and strategic reasons; and • Discussion of important policies covering the valuation of and accounting for equity holdings in the banking book. This includes the accounting techniques and valuation methodologies used, including key assumptions and practices affecting valuation as well as significant changes in these practices.
Quantitative Disclosures	(b) Value disclosed in the balance sheet of investments, as well as the fair value of those investments; for quoted securities, a comparison to publicly-quoted share values where the share price is materially different from fair value. (c) The types and nature of investments, including the amount that is: • Publicly traded; and • Non-publicly traded. (d) The cumulative realized gains (losses) arising from sales and liquidations in the reporting period. (e) • Total unrealized gains (losses)[34] • Total latent revaluation gains (losses)[35] • Any amounts of the above included in tier 1 and/or tier 2 capital. (f) Capital requirements broken down by appropriate equity groupings, consistent with the bank holding company's methodology, as well as the aggregate amounts and the type of equity investments subject to any supervisory transition regarding regulatory capital requirements.[36]

TABLE 11.11—INTEREST RATE RISK FOR NON-TRADING ACTIVITIES

Qualitative disclosures	(a) The general qualitative disclosure requirement, including the nature of interest rate risk for non-trading activities and key assumptions, including assumptions regarding loan prepayments and behavior of non-maturity deposits, and frequency of measurement of interest rate risk for non-trading activities.
Quantitative disclosures	(b) The increase (decline) in earnings or economic value (or relevant measure used by management) for upward and downward rate shocks according to management's method for measuring interest rate risk for non-trading activities, broken down by currency (as appropriate).

[Reg. Y, 72 FR 69397 and 69431-69432, Dec. 7, 2007]

EFFECTIVE DATE NOTES: By Reg. Y, 72 FR 69397 and 69431-69432, Dec. 7, 2007, part 225 was amended by adding and amending appendix G, effective Apr. 1, 2008.

[34] Unrealized gains (losses) recognized in the balance sheet but not through earnings.

[35] Unrealized gains (losses) not recognized either in the balance sheet or through earnings.

[36] This disclosure should include a breakdown of equities that are subject to the 0 percent, 20 percent, 100 percent, 300 percent, 400 percent, and 600 percent risk weights, as applicable.