(d) A Category III national bank or Federal savings association that is required to publicly disclose its supplementary leverage ratio pursuant to §3.172(d) is subject to the supplementary leverage ratio disclosure requirement at §3.173(a)(2).

(e) A Category III national bank or Federal savings association that is required to calculate a countercyclical capital buffer pursuant to §3.11 is subject to the disclosure requirement at Table 4 to §3.173, ''Capital Conservation and Countercyclical Capital Buffers,'' and not to the disclosure requirement at Table 4 to this section, ''Capital Conservation Buffer.''

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 84 FR 4238, Feb. 14, 2019; 84 FR 35256, July 22, 2019; 84 FR 59265, Nov. 1, 2019]

§§3.64–3.99 [Reserved]

Subpart E—Risk-Weighted Assets—Internal Ratings-Based and Advanced Measurement Approaches

SOURCE: 78 FR 62157, 62273, Oct. 11, 2013, unless otherwise noted.

§3.100 Purpose, applicability, and principle of conservatism.

(a) *Purpose.* This subpart E establishes:

(1) Minimum qualifying criteria for national banks or Federal savings associations using institution-specific internal risk measurement and management processes for calculating risk-based capital requirements; and

(2) Methodologies for such national banks or Federal savings associations to calculate their total risk-weighted assets.

(b) *Applicability.* (1) This subpart applies to a national bank or Federal savings association that:

(i) Is a subsidiary of a global systemically important BHC, as identified pursuant to 12 CFR 217.402;

(ii) Is a Category II national bank or Federal savings association;

(iii) Is a subsidiary of a depository institution that uses the advanced approaches pursuant to this subpart (OCC), 12 CFR part 217, subpart E (Board), or 12 CFR part 324 (FDIC), to calculate its risk-based capital requirements;

(iv) Is a subsidiary of a bank holding company or savings and loan holding company that uses the advanced approaches pursuant to subpart E of 12 CFR part 217 to calculate its risk-based capital requirements; or

(v) Elects to use this subpart to calculate its risk-based capital requirements.

(2) A market risk national bank or Federal savings association must exclude from its calculation of risk-weighted assets under this subpart the risk-weighted asset amounts of all covered positions, as defined in subpart F of this part (except foreign exchange positions that are not trading positions, over-the-counter derivative positions, cleared transactions, and unsettled transactions).

(c) *Principle of conservatism.* Notwithstanding the requirements of this subpart, a national bank or Federal savings association may choose not to apply a provision of this subpart to one or more exposures provided that:

(1) The national bank or Federal savings association can demonstrate on an ongoing basis to the satisfaction of the OCC 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 subpart;

(2) The national bank or Federal savings association appropriately manages the risk of each such exposure;

(3) The national bank or Federal savings association notifies the OCC in writing prior to applying this principle to each such exposure; and

(4) The exposures to which the national bank or Federal savings association applies this principle are not, in the aggregate, material to the national bank or Federal savings association.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 80 FR 41415, July 15, 2015; 84 FR 59265, Nov. 1, 2019]

§3.101 Definitions.

(a) Terms that are set forth in §3.2 and used in this subpart have the definitions assigned thereto in §3.2.

(b) For the purposes of this subpart, the following terms are defined as follows:

Advanced internal ratings-based (IRB) systems means an advanced approaches national bank's or Federal savings association'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 an advanced approaches national bank's or Federal savings association's advanced IRB systems, operational risk management processes, operational risk data and assessment systems, operational risk quantification systems, and, to the extent used by the national bank or Federal savings association, the internal models methodology, advanced CVA approach, double default excessive correlation detection process, and internal models approach (IMA) for equity exposures.

Backtesting means the comparison of a national bank's or Federal savings association'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.

Benchmarking means the comparison of a national bank's or Federal savings association's internal estimates with relevant internal and external data or with estimates based on other estimation techniques.

Bond option contract means a bond option, bond future, or any other instrument linked to a bond that gives rise to similar counterparty credit risk.

Business environment and internal control factors means the indicators of a national bank's or Federal savings association's operational risk profile that reflect a current and forward-looking assessment of the national bank's or Federal savings association's underlying business risk factors and internal control environment.

Credit default swap (CDS) means a financial contract executed under standard industry documentation that allows one party (the protection purchaser) to transfer the credit risk of one or more exposures (reference exposure(s)) to another party (the protection provider) for a certain period of time.

Credit valuation adjustment (CVA) means the fair value adjustment to reflect counterparty credit risk in valuation of OTC derivative contracts.

Default—For the purposes of calculating capital requirements under this subpart:

(1) *Retail.* (i) A retail exposure of a national bank or Federal savings association 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 retail exposures that are not residential mortgage exposures or revolving exposures; or

(C) The national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association may elect to use the definition of default that is used in that jurisdiction, provided that the national bank or Federal savings association has obtained prior approval from the OCC to use the definition of default in that jurisdiction.

(iii) A retail exposure in default remains in default until the national bank or Federal savings association has reasonable assurance of repayment and performance for all contractual principal and interest payments on the exposure.

(2) *Wholesale.* (i) A national bank's or Federal savings association's wholesale obligor is in default if:

(A) The national bank or Federal savings association determines that the

obligor is unlikely to pay its credit obligations to the national bank or Federal savings association in full, without recourse by the national bank or Federal savings association 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 national bank or Federal savings association.[29]

(ii) An obligor in default remains in default until the national bank or Federal savings association has reasonable assurance of repayment and performance for all contractual principal and interest payments on all exposures of the national bank or Federal savings association 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.

Economic downturn conditions means, with respect to an exposure held by the national bank or Federal savings association, 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 national bank or Federal savings association) in the exposure's national jurisdiction (or subdivision of such jurisdiction selected by the national bank or Federal savings association) 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 national bank or Federal savings association does not apply the internal models approach in section 132(d), 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 national bank or Federal savings association applies the internal models approach in §3.132(d), the value determined in §3.132(d)(4).

Eligible double default guarantor, with respect to a guarantee or credit derivative obtained by a national bank or Federal savings association, means:

(1) *U.S.-based entities.* A depository institution, a bank holding company, a savings and loan holding company, or a securities broker or dealer registered with the SEC under the Securities Exchange Act, if at the time the guarantee is issued or anytime thereafter, has issued and outstanding an unsecured debt security without credit enhancement that is investment grade.

(2) *Non-U.S.-based entities.* A foreign bank, or a non-U.S.-based securities firm if the national bank or Federal savings association demonstrates that the guarantor is subject to consolidated supervision and regulation comparable to that imposed on U.S. depository institutions, or securities broker-dealers) if at the time the guarantee is issued or anytime thereafter, has issued and outstanding an unsecured debt security without credit enhancement that is investment grade.

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.

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

Eligible purchased wholesale exposure means a purchased wholesale exposure that:

(1) The national bank or Federal savings association 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 national bank or Federal savings association 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.

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 fair values in the probability distribution of fair values to a counterparty at a specified future date are set to zero to convert the probability distribution of fair 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 national bank's or Federal savings association'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) means:

(1) For the on-balance sheet component of a wholesale exposure or segment of retail exposures (other than an OTC derivative contract, a repo-style transaction or eligible margin loan for which the national bank or Federal savings association determines EAD under § 3.132, a cleared transaction, or default fund contribution), EAD means the national bank's or Federal savings association'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, a repo-style transaction or eligible margin loan for which the national bank or Federal savings association determines EAD under § 3.132, cleared transaction, or default fund contribution) in the form of a loan commitment, line of credit, trade-related letter of credit, or transaction-related contingency, EAD means the national bank's or Federal savings association's best estimate of net additions to the outstanding amount owed the national bank or Federal savings association, 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. For the purposes of this definition:

(i) 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.

(ii) 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, a repo-style transaction, or eligible margin loan for which the national bank or Federal savings association determines EAD under § 3.132, cleared transaction, or default fund contribution) 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 §3.132. A national bank or Federal savings association also may determine EAD for repo-style transactions and eligible margin loans as described in §3.132.

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

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

IMM exposure means a repo-style transaction, eligible margin loan, or OTC derivative for which a national bank or Federal savings association calculates its EAD using the internal models methodology of §3.132(d).

Internal operational loss event data means, with respect to a national bank or Federal savings association, gross operational loss amounts, dates, recoveries, and relevant causal information for operational loss events occurring at the national bank or Federal savings association.

Loss given default (LGD) means:

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

(i) Zero;

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

(iii) The national bank's or Federal savings association's empirically based best estimate of the economic loss, per dollar of EAD, the national bank or Federal savings association would expect to incur if the obligor (or a typical obligor in the loss severity grade assigned by the national bank or Federal savings association 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 national bank's or Federal savings association's empirically based best estimate of the long-run default-weighted average economic loss, per dollar of EAD, the national bank or Federal savings association 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 national bank's or Federal savings association's empirically based best estimate of the economic loss, per dollar of EAD, the national bank or Federal savings association 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 drawdowns 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.

Obligor means the legal entity or natural person contractually obligated on a wholesale exposure, except that a national bank or Federal savings association 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 national bank or Federal savings association, 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 national bank's or Federal savings association's operational risk quantification system over a one-year horizon (and not incorporating eligible operational risk offsets or qualifying operational risk mitigants).

Other retail exposure means an exposure (other than a securitization exposure, an equity exposure, a residential mortgage exposure, a pre-sold construction loan, 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 national bank's or Federal savings association's consolidated business credit exposure to the individual or company is $1 million or less.

Probability of default (PD) means:

(1) For a wholesale exposure to a non-defaulted obligor, the national bank's or Federal savings association's empirically based best estimate of the long-run average one-year default rate for the rating grade assigned by the national bank or Federal savings association 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 national bank's or Federal savings association'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.

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

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 the underlying financial transactions are OTC derivative contracts, eligible margin loans, or repo-style transactions. In order to treat an agreement as a qualifying cross-product master netting agreement for purposes of this subpart, a national bank or Federal savings association must comply with the requirements of §3.3(c) of this part with respect to that 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 a borrower's decision to borrow and repay up to a pre-established maximum amount, except for an outstanding amount that the borrower is required to pay in full every month);

(2) Is unsecured and unconditionally cancelable by the national bank or Federal savings association to the fullest extent permitted by Federal law; and

(3)(i) Has a maximum contractual exposure amount (drawn plus undrawn) of up to $100,000; or

(ii) With respect to a product with an outstanding amount that the borrower is required to pay in full every month, the total outstanding amount does not in practice exceed $100,000.

(4) A segment of exposures that contains one or more exposures that fails to meet paragraph (3)(ii) of this definition must be treated as a segment of other retail exposures for the 24 month period following the month in which the total outstanding amount of one or more exposures individually exceeds $100,000.

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 national bank's or Federal savings association's operational risk profile and control structure.

Total wholesale and retail risk-weighted assets means the sum of:

(1) Risk-weighted assets for wholesale exposures that are not IMM exposures, cleared transactions, or default fund contributions to non-defaulted obligors and segments of non-defaulted retail exposures;

(2) Risk-weighted assets for wholesale exposures to defaulted obligors and segments of defaulted retail exposures;

(3) Risk-weighted assets for assets not defined by an exposure category;

(4) Risk-weighted assets for non-material portfolios of exposures;

(5) Risk-weighted assets for IMM exposures (as determined in § 3.132(d));

(6) Risk-weighted assets for cleared transactions and risk-weighted assets for default fund contributions (as determined in § 3.133); and

(7) Risk-weighted assets for unsettled transactions (as determined in § 3.136).

Unexpected operational loss (UOL) means the difference between the national bank's or Federal savings association's operational risk exposure and the national bank's or Federal savings association's expected operational loss.

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

Wholesale exposure means a credit exposure to a company, natural person, sovereign, or governmental entity (other than a securitization exposure, retail exposure, pre-sold construction loan, or equity exposure).

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

QUALIFICATION

§ 3.121 Qualification process.

(a) *Timing.* (1) A national bank or Federal savings association that is described in § 3.100(b)(1)(i) through (iv) must adopt a written implementation plan no later than six months after the date the national bank or Federal savings association meets a criterion in that section. The implementation plan must incorporate an explicit start date no later than 36 months after the date the national bank or Federal savings association meets at least one criterion under § 3.100(b)(1)(i) through (iv). The OCC may extend the start date.

(2) A national bank or Federal savings association that elects to be subject to this appendix under § 3.100(b)(1)(v) must adopt a written implementation plan.

(b) *Implementation plan.* (1) The national bank's or Federal savings association's implementation plan must address in detail how the national bank or Federal savings association complies, or plans to comply, with the qualification requirements in § 3.122. The national bank or Federal savings association 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 § 3.122 for the national bank or Federal savings association and each consolidated subsidiary (U.S. and foreign-based) of the national bank or Federal savings association with respect to all portfolios and exposures of the national bank or Federal savings association and each of its consolidated subsidiaries;

(ii) Justify and support any proposed temporary or permanent exclusion of business lines, portfolios, or exposures from the application of the advanced

approaches in this subpart (which business lines, portfolios, and exposures must be, in the aggregate, immaterial to the national bank or Federal savings association);

(iii) Include the national bank's or Federal savings association's self-assessment of:

(A) The national bank's or Federal savings association's current status in meeting the qualification requirements in § 3.122; and

(B) The consistency of the national bank's or Federal savings association's current practices with the OCC's supervisory guidance on the qualification requirements;

(iv) Based on the national bank's or Federal savings association's self-assessment, identify and describe the areas in which the national bank or Federal savings association proposes to undertake additional work to comply with the qualification requirements in § 3.122 or to improve the consistency of the national bank's or Federal savings association's current practices with the OCC's supervisory guidance on the qualification requirements (gap analysis);

(v) Describe what specific actions the national bank or Federal savings association 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 national bank's or Federal savings association's implementation of the methodologies described in this subpart will be fully operational;

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

(viii) Receive approval of the national bank's or Federal savings association's board of directors.

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

(c) *Parallel run.* Before determining its risk-weighted assets under this subpart and following adoption of the implementation plan, the national bank or Federal savings association must conduct a satisfactory parallel run. A satisfactory parallel run is a period of no less than four consecutive calendar quarters during which the national bank or Federal savings association complies with the qualification requirements in § 3.122 to the satisfaction of the OCC. During the parallel run, the national bank or Federal savings association must report to the OCC on a calendar quarterly basis its risk-based capital ratios determined in accordance with § 3.10(b)(1) through (3) and § 3.10(d)(1) through (3). During this period, the national bank's or Federal savings association's minimum risk-based capital ratios are determined as set forth in subpart D of this part.

(d) *Approval to calculate risk-based capital requirements under this subpart.* The OCC will notify the national bank or Federal savings association of the date that the national bank or Federal savings association must begin to use this subpart for purposes of § 3.10 if the OCC determines that:

(1) The national bank or Federal savings association fully complies with all the qualification requirements in § 3.122;

(2) The national bank or Federal savings association has conducted a satisfactory parallel run under paragraph (c) of this section; and

(3) The national bank or Federal savings association has an adequate process to ensure ongoing compliance with the qualification requirements in § 3.122.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 86 FR 731, Jan. 6, 2021]

§ 3.122 Qualification requirements.

(a) *Process and systems requirements.* (1) A national bank or Federal savings association 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 national bank or Federal savings association for risk-based capital purposes under this subpart must be consistent with the national bank's or Federal savings association's internal

risk management processes and management information reporting systems.

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

(b) *Risk rating and segmentation systems for wholesale and retail exposures.* (1)(i) A national bank or Federal savings association must have an internal risk rating and segmentation system that accurately, reliably, and meaningfully differentiates among degrees of credit risk for the national bank's or Federal savings association's wholesale and retail exposures. When assigning an internal risk rating, a national bank or Federal savings association may consider a third-party assessment of credit risk, provided that the national bank's or Federal savings association's internal risk rating assignment does not rely solely on the external assessment.

(ii) If a national bank or Federal savings association uses multiple rating or segmentation systems, the national bank's or Federal savings association's rationale for assigning an obligor or exposure to a particular system must be documented and applied in a manner that best reflects the obligor's or exposure's level of risk. A national bank or Federal savings association must not inappropriately allocate obligors or exposures across systems to minimize regulatory capital requirements.

(iii) In assigning ratings to wholesale obligors and exposures, including loss severity ratings grades to wholesale exposures, and assigning retail exposures to retail segments, a national bank or Federal savings association must use all relevant and material information and ensure that the information is current.

(iv) When assigning an obligor to a PD rating or retail exposure to a PD segment, a national bank or Federal savings association must assess the obligor or retail borrower's ability and willingness to contractually perform, taking a conservative view of projected information.

(2) For wholesale exposures:

(i) A national bank or Federal savings association 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 national bank or Federal savings association may elect, however, not to assign to a rating grade an obligor to whom the national bank or Federal savings association extends credit based solely on the financial strength of a guarantor, provided that all of the national bank's or Federal savings association's exposures to the obligor are fully covered by eligible guarantees, the national bank or Federal savings association applies the PD substitution approach in § 3.134(c)(1) to all exposures to that obligor, and the national bank or Federal savings association immediately assigns the obligor to a rating grade if a guarantee can no longer be recognized under this part. The national bank's or Federal savings association'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 national bank or Federal savings association has chosen to directly assign LGD estimates to each wholesale exposure, the national bank or Federal savings association must have an internal risk rating system that accurately and reliably assigns each wholesale exposure to a loss severity rating grade (reflecting the national bank's or Federal savings association's estimate of the LGD of the exposure). A national bank or Federal

savings association employing loss severity rating grades must have a sufficiently granular loss severity grading system to avoid grouping together exposures with widely ranging LGDs.

(iii) A national bank or Federal savings association must have an effective process to obtain and update in a timely manner relevant and material information on obligor and exposure characteristics that affect PD, LGD and EAD.

(3) For retail exposures:

(i) A national bank or Federal savings association must have an internal system that groups retail exposures into the appropriate retail exposure subcategory and groups the retail exposures in each retail exposure subcategory into separate segments with homogeneous risk characteristics that provide a meaningful differentiation of risk. The national bank's or Federal savings association's system must identify and group in separate segments by subcategories exposures identified in § 3.131(c)(2)(ii) and (iii).

(ii) A national bank or Federal savings association must have an internal system that captures all relevant exposure risk characteristics, including borrower credit score, product and collateral types, as well as exposure delinquencies, and must consider cross-collateral provisions, where present.

(iii) The national bank or Federal savings association must review and, if appropriate, update assignments of individual retail exposures to segments and the loss characteristics and delinquency status of each identified risk segment. These reviews must occur whenever the national bank or Federal savings association receives new material information, but generally no less frequently than quarterly, and, in all cases, at least annually.

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

(5) The national bank's or Federal savings association'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 national bank or Federal savings association obtains relevant and material information on the obligor or exposure that affects PD, LGD and EAD, but no less frequently than annually.

(c) *Quantification of risk parameters for wholesale and retail exposures.* (1) The national bank or Federal savings association must have a comprehensive risk parameter quantification process that produces accurate, timely, and reliable estimates of the risk parameters on a consistent basis for the national bank's or Federal savings association's wholesale and retail exposures.

(2) A national bank's or Federal savings association's estimates of PD, LGD, and EAD must incorporate all relevant, material, and available data that is reflective of the national bank's or Federal savings association's actual wholesale and retail exposures and of sufficient quality to support the determination of risk-based capital requirements for the exposures. In particular, the population of exposures in the data used for estimation purposes, the lending standards in use when the data were generated, and other relevant characteristics, should closely match or be comparable to the national bank's or Federal savings association's exposures and standards. In addition, a national bank or Federal savings association must:

(i) Demonstrate that its estimates are representative of long run experience, including periods of economic downturn conditions, whether internal or external data are used;

(ii) Take into account any changes in lending practice or the process for pursuing recoveries over the observation period;

(iii) Promptly reflect technical advances, new data, and other information as they become available;

(iv) Demonstrate that the data used to estimate risk parameters support the accuracy and robustness of those estimates; and

(v) Demonstrate that its estimation technique performs well in out-of-sample tests whenever possible.

(3) The national bank's or Federal savings association's risk parameter quantification process must produce appropriately conservative risk parameter estimates where the national bank or Federal savings association 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 national bank's or Federal savings association'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) The national bank or Federal savings association must be able to demonstrate which variables have been found to be statistically significant with regard to EAD. The national bank's or Federal savings association's EAD estimates must reflect its specific policies and strategies with regard to account management, including account monitoring and payment processing, and its ability and willingness to prevent further drawdowns in circumstances short of payment default. The national bank or Federal savings association must have adequate systems and procedures in place to monitor current outstanding amounts against committed lines, and changes in outstanding amounts per obligor and obligor rating grade and per retail segment. The national bank or Federal savings association must be able to monitor outstanding amounts on a daily basis.

(6) At a minimum, 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. If the national bank or Federal savings association has relevant and material reference data that span a longer period of time than the minimum time periods specified above, the national bank or Federal savings association must incorporate such data in its estimates, provided that it does not place undue weight on periods of favorable or benign economic conditions relative to periods of economic downturn conditions.

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

(8) The national bank's or Federal savings association's PD, LGD, and EAD estimates must be based on the definition of default in § 3.101.

(9) If a national bank or Federal savings association uses internal data obtained prior to becoming subject to this subpart E or external data to arrive at PD, LGD, or EAD estimates, the national bank or Federal savings association must demonstrate to the OCC that the national bank or Federal savings association has made appropriate adjustments if necessary to be consistent with the definition of default in § 3.101. Internal data obtained after the national bank or Federal savings association becomes subject to this subpart E must be consistent with the definition of default in § 3.101.

(10) The national bank or Federal savings association must review and update (as appropriate) its risk parameters and its risk parameter quantification process at least annually.

(11) The national bank or Federal savings association must, at least annually, conduct a comprehensive review and analysis of reference data to determine relevance of the reference data to the national bank's or Federal savings association's exposures, quality of reference data to support PD, LGD, and EAD estimates, and consistency of reference data to the definition of default in § 3.101.

(d) *Counterparty credit risk model.* A national bank or Federal savings association must obtain the prior written approval of the OCC under §3.132 to use the internal models methodology for counterparty credit risk and the advanced CVA approach for the CVA capital requirement.

(e) *Double default treatment.* A national bank or Federal savings association must obtain the prior written approval of the OCC under §3.135 to use the double default treatment.

(f) *Equity exposures model.* A national bank or Federal savings association must obtain the prior written approval of the OCC under §3.153 to use the internal models approach for equity exposures.

(g) *Operational risk.* (1) Operational risk management processes. A national bank or Federal savings association 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 national bank's or Federal savings association'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 national bank's or Federal savings association's operational risk profile) to identify, measure, monitor, and control operational risk in the national bank's or Federal savings association's 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 national bank or Federal savings association must have operational risk data and assessment systems that capture operational risks to which the national bank or Federal savings association is exposed. The national bank's or Federal savings association's operational risk data and assessment systems must:

(i) Be structured in a manner consistent with the national bank's or Federal savings association'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 national bank or Federal savings association must have a systematic process for capturing and using internal operational loss event data in its operational risk data and assessment systems.

(*1*) The national bank's or Federal savings association'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 OCC to address transitional situations, such as integrating a new business line).

(*2*) The national bank or Federal savings association must be able to map its internal operational loss event data into the seven operational loss event type categories.

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

(B) *External operational loss event data.* The national bank or Federal savings association 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 national bank or Federal savings association

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 national bank or Federal savings association must incorporate business environment and internal control factors into its operational risk data and assessment systems. The national bank or Federal savings association 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 national bank's or Federal savings association's operational risk quantification systems:

(A) Must generate estimates of the national bank's or Federal savings association's operational risk exposure using its operational risk data and assessment systems;

(B) Must employ a unit of measure that is appropriate for the national bank's or Federal savings association'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 (g)(2)(ii) of this section, that a national bank or Federal savings association 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 national bank or Federal savings association can demonstrate to the satisfaction of the OCC that its process for estimating dependence is sound, robust to a variety of scenarios, and implemented with integrity, and allows for uncertainty surrounding the estimates. If the national bank or Federal savings association 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 national bank or Federal savings association becomes aware of information that may have a material effect on the national bank's or Federal savings association's estimate of operational risk exposure, but the review and update must occur no less frequently than annually.

(ii) With the prior written approval of the OCC, a national bank or Federal savings association may generate an estimate of its operational risk exposure using an alternative approach to that specified in paragraph (g)(3)(i) of this section. A national bank or Federal savings association proposing to use such an alternative operational risk quantification system must submit a proposal to the OCC. In determining whether to approve a national bank's or Federal savings association's proposal to use an alternative operational risk quantification system, the OCC will consider the following principles:

(A) Use of the alternative operational risk quantification system will be allowed only on an exception basis, considering the size, complexity, and risk profile of the national bank or Federal savings association;

(B) The national bank or Federal savings association must demonstrate that its estimate of its operational risk exposure generated under the alternative operational risk quantification system is appropriate and can be supported empirically; and

(C) A national bank or Federal savings association must not use an allocation of operational risk capital requirements that includes entities other than depository institutions or the benefits of diversification across entities.

(h) *Data management and maintenance.* (1) A national bank or Federal savings association must have data management and maintenance systems that adequately support all aspects of its advanced systems and the timely and accurate reporting of risk-based capital requirements.

(2) A national bank or Federal savings association must retain data using

an electronic format that allows timely retrieval of data for analysis, validation, reporting, and disclosure purposes.

(3) A national bank or Federal savings association must retain sufficient data elements related to key risk drivers to permit adequate monitoring, validation, and refinement of its advanced systems.

(i) *Control, oversight, and validation mechanisms.* (1) The national bank's or Federal savings association's senior management must ensure that all components of the national bank's or Federal savings association's advanced systems function effectively and comply with the qualification requirements in this section.

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

(3) A national bank or Federal savings association 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 national bank's or Federal savings association's advanced systems; and

(iii) Includes adequate governance and project management processes.

(4) The national bank or Federal savings association must validate, on an ongoing basis, its advanced systems. The national bank's or Federal savings association'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 backtesting.

(5) The national bank or Federal savings association must have an internal audit function or equivalent function that is independent of business-line management that at least annually:

(i) Reviews the national bank's or Federal savings association's advanced systems and associated operations, including the operations of its credit function and estimations of PD, LGD, and EAD;

(ii) Assesses the effectiveness of the controls supporting the national bank's or Federal savings association's advanced systems; and

(iii) Documents and reports its findings to the national bank's or Federal savings association's board of directors (or a committee thereof).

(6) The national bank or Federal savings association 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).

(j) *Documentation.* The national bank or Federal savings association must adequately document all material aspects of its advanced systems.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 80 FR 41415, July 15, 2015]

§ 3.123 Ongoing qualification.

(a) *Changes to advanced systems.* A national bank or Federal savings association must meet all the qualification requirements in § 3.122 on an ongoing basis. A national bank or Federal savings association must notify the OCC when the national bank or Federal savings association makes any change to an advanced system that would result in a material change in the national bank's or Federal savings association's advanced approaches total risk-weighted asset amount for an exposure type or when the national bank or Federal savings association makes any significant change to its modeling assumptions.

(b) *Failure to comply with qualification requirements.* (1) If the OCC determines that a national bank or Federal savings association that uses this subpart and that has conducted a satisfactory

parallel run fails to comply with the qualification requirements in §3.122, the OCC will notify the national bank or Federal savings association in writing of the national bank's or Federal savings association's failure to comply.

(2) The national bank or Federal savings association must establish and submit a plan satisfactory to the OCC to return to compliance with the qualification requirements.

(3) In addition, if the OCC determines that the national bank's or Federal savings association's advanced approaches total risk-weighted assets are not commensurate with the national bank's or Federal savings association's credit, market, operational, or other risks, the OCC may require such a national bank or Federal savings association to calculate its advanced approaches total risk-weighted assets with any modifications provided by the OCC.

§ 3.124 Merger and acquisition transitional arrangements.

(a) *Mergers and acquisitions of companies without advanced systems.* If a national bank or Federal savings association merges with or acquires a company that does not calculate its risk-based capital requirements using advanced systems, the national bank or Federal savings association may use subpart D of this part to determine the risk-weighted asset amounts for the merged or acquired company's exposures for up to 24 months after the calendar quarter during which the merger or acquisition consummates. The OCC may extend this transition period for up to an additional 12 months. Within 90 days of consummating the merger or acquisition, the national bank or Federal savings association must submit to the OCC an implementation plan for using its advanced systems for the acquired company. During the period in which subpart D of this part applies to the merged or acquired company, any ALLL or AACL, as applicable, 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 national bank's or Federal savings association'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 national bank's or Federal savings association's eligible credit reserves. In addition, the risk-weighted assets of the merged or acquired company are not included in the national bank's or Federal savings association's credit-risk-weighted assets but are included in total risk-weighted assets. If a national bank or Federal savings association relies on this paragraph (a), the national bank or Federal savings association must disclose publicly the amounts of risk-weighted assets and qualifying capital calculated under this subpart for the acquiring national bank or Federal savings association and under subpart D of this part for the acquired company.

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

(2) If the acquiring national bank or Federal savings association is not subject to the advanced approaches in this subpart at the time of acquisition or merger, during the period when subpart D of this part applies to the acquiring national bank or Federal savings association, the ALLL or AACL, as applicable 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 national bank's or Federal savings association's tier 2 capital up to 0.6 percent of the credit-risk-weighted assets associated with those exposures.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 84 FR 4238, Feb. 14, 2019]

§§3.125–3.130 [Reserved]

RISK-WEIGHTED ASSETS FOR GENERAL CREDIT RISK

§3.131 Mechanics for calculating total wholesale and retail risk-weighted assets.

(a) *Overview.* A national bank or Federal savings association 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 national bank or Federal savings association must determine which of its exposures are wholesale exposures, retail exposures, securitization exposures, or equity exposures. The national bank or Federal savings association must categorize each retail exposure as a residential mortgage exposure, a QRE, or an other retail exposure. The national bank or Federal savings association must identify which wholesale exposures are HVCRE exposures, sovereign exposures, OTC derivative contracts, repo-style transactions, eligible margin loans, eligible purchased wholesale exposures, cleared transactions, default fund contributions, unsettled transactions to which §3.136 applies, and eligible guarantees or eligible credit derivatives that are used as credit risk mitigants. The national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association must identify which of its wholesale obligors are in default.

(2) *Segmentation of retail exposures.* (i) The national bank or Federal savings association must group the retail exposures in each retail subcategory into segments that have homogeneous risk characteristics.

(ii) The national bank or Federal savings association must identify which of its retail exposures are in default. The national bank or Federal savings association must segment defaulted retail exposures separately from non-defaulted retail exposures.

(iii) If the national bank or Federal savings association determines the EAD for eligible margin loans using the approach in §3.132(b), the national bank or Federal savings association must identify which of its retail exposures are eligible margin loans for which the national bank or Federal savings association uses this EAD approach and must segment such eligible margin loans separately from other retail exposures.

(3) *Eligible purchased wholesale exposures.* A national bank or Federal savings association may group its eligible purchased wholesale exposures into segments that have homogeneous risk characteristics. A national bank or Federal savings association must use the wholesale exposure formula in Table 1 of 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 national bank or Federal savings association 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, the European Stability Mechanism, the European Financial Stability Facility, or a multilateral development bank, to which the national bank or Federal savings association 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 may not be less than 10 percent, except for segments of residential mortgage exposures for which all or substantially all of the principal of each exposure is either:

(i) Directly and unconditionally guaranteed by the full faith and credit of a sovereign entity; or

(ii) Guaranteed by a contingent obligation of the U.S. government or its agencies, the enforceability of which is dependent upon some affirmative action on the part of the beneficiary of the guarantee or a third party (for example, meeting servicing requirements).

(4) *Eligible purchased wholesale exposures.* A national bank or Federal savings association must assign a PD, LGD, EAD, and M to each segment of eligible purchased wholesale exposures. If the national bank or Federal savings association can estimate ECL (but not PD or LGD) for a segment of eligible purchased wholesale exposures, the national bank or Federal savings association 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 national bank or Federal savings association 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 § 3.134 or, if applicable, applying double default treatment to the exposure as provided in § 3.135. A national bank or Federal savings association may decide separately for each wholesale exposure that qualifies for the double default treatment under § 3.135 whether to apply the double default treatment or to use the PD substitution or LGD adjustment treatment without recognizing double default effects.

(ii) A national bank or Federal savings association 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. In doing so, a national bank or Federal savings association must consider all relevant available information.

(iii) Except as provided in paragraph (d)(6) of this section, a national bank or Federal savings association 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. In order to do so, a national bank or Federal savings association must have established internal requirements for collateral management, legal certainty, and risk management processes.

(6) *EAD for OTC derivative contracts, repo-style transactions, and eligible margin loans.* A national bank or Federal savings association must calculate its EAD for an OTC derivative contract as

provided in §3.132 (c) and (d). A national bank or Federal savings association 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 national bank's or Federal savings association's VaR-based measure under subpart F of this part through an adjustment to EAD as provided in §3.132(b) and (d). A national bank or Federal savings association that takes collateral into account through such an adjustment to EAD under §3.132 may not reflect such collateral in LGD.

(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 is a trade related letter of credit, or if the exposure has an original maturity of less than one year and is not part of a national bank's or Federal savings association's ongoing financing of the obligor. An exposure is not part of a national bank's or Federal savings association's ongoing financing of the obligor if the national bank or Federal savings association:

(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.

(8) *EAD for exposures to certain central counterparties*. A national bank or Federal savings association may attribute an EAD of zero to exposures that arise from the settlement of cash transactions (such as equities, fixed income, spot foreign exchange, and spot commodities) with a central counterparty where there is no assumption of ongoing counterparty credit risk by the central counterparty after settlement of the trade and associated default fund contributions.

(e) *Phase 4—Calculation of risk-weighted assets*—(1) *Non-defaulted exposures*. (i) A national bank or Federal savings association must calculate the dollar risk-based capital requirement for each of its wholesale exposures to a non-defaulted obligor (except for eligible guarantees and eligible credit derivatives that hedge another wholesale exposure, IMM exposures, cleared transactions, default fund contributions, unsettled transactions, and exposures to which the national bank or Federal savings association applies the double default treatment in §3.135) 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 1 and multiplying the output of the formula (K) by the EAD of the exposure or segment. Alternatively, a national bank or Federal savings association may apply a 300 percent risk weight to the EAD of an eligible margin loan if the national bank or Federal savings association is not able to meet the OCC's requirements for estimation of PD and LGD for the margin loan.

TABLE 1 TO §__.131 – 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 to unregulated financial institutions:

$$R = 1.25 \times \left(0.12 + 0.12 \times e^{-50 \times PD}\right)$$

For wholesale exposures to regulated financial institutions with total assets greater than or equal to $100 billion:

$$R = 1.25 \times \left(0.12 + 0.12 \times e^{-50 \times PD}\right)$$

For wholesale exposures other than HVCRE exposures, unregulated financial institutions, and regulated financial institutions with total assets greater than or equal to $100 billion:

$$R = 0.12 + 0.12 \times e^{-50 \times PD}$$

Maturity Adjustment (b)

$$b = \left(0.11852 - 0.05478 \times \ln(PD)\right)^2$$

[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 §3.135(e) 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 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) *Not covered by an eligible U.S. government guarantee:* The dollar risk-based capital requirement for each wholesale exposure not covered by an eligible guarantee from the U.S. government to a defaulted obligor and each segment of defaulted retail exposures not covered by an eligible guarantee from the U.S. government equals 0.08 multiplied by the EAD of the exposure or segment.

(ii) *Covered by an eligible U.S. government guarantee:* The dollar risk-based capital requirement for each wholesale exposure to a defaulted obligor covered by an eligible guarantee from the U.S. government and each segment of defaulted retail exposures covered by an eligible guarantee from the U.S. government equals the sum of:

(A) The sum of the EAD of the portion of each wholesale exposure to a defaulted obligor covered by an eligible guarantee from the U.S. government plus the EAD of the portion of each segment of defaulted retail exposures that is covered by an eligible guarantee from the U.S. government and the resulting sum is multiplied by 0.016, and

(B) The sum of the EAD of the portion of each wholesale exposure to a defaulted obligor not covered by an eligible guarantee from the U.S. government plus the EAD of the portion of each segment of defaulted retail exposures that is not covered by an eligible guarantee from the U.S. government and the resulting sum is multiplied by 0.08.

(iii) The sum of all the dollar risk-based capital requirements for each wholesale exposure to a defaulted obligor and each segment of defaulted retail exposures calculated in paragraph (e)(2)(i) of this section plus the dollar risk-based capital requirements each wholesale exposure to a defaulted obligor and 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 national bank or Federal savings association may assign a risk-weighted asset amount of zero to cash owned and held in all offices of the national bank or Federal savings association or in transit and for gold bullion held in the national bank's or Federal savings association's own vaults, or held in another national bank's or Federal savings association's vaults on an allocated basis, to the extent the gold bullion assets are offset by gold bullion liabilities.

(ii) A national bank or Federal savings association must assign a risk-weighted asset amount equal to 20 percent of the carrying value of cash items in the process of collection.

(iii) A national bank or Federal savings association must assign a risk-weighted asset amount equal to 50 percent of the carrying value to a pre-sold construction loan unless the purchase contract is cancelled, in which case a national bank or Federal savings association must assign a risk-weighted asset amount equal to a 100 percent of the carrying value of the pre-sold construction loan.

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

(v) The risk-weighted asset amount for DTAs arising from temporary differences that the national bank or Federal savings association could realize through net operating loss carrybacks equals the carrying value, netted in accordance with § 3.22.

(vi) The risk-weighted asset amount for MSAs, DTAs arising from temporary timing differences that the national bank or Federal savings association could not realize through net operating loss carrybacks, and significant investments in the capital of unconsolidated financial institutions in the form of common stock that are not deducted pursuant to § 3.22(d) equals the amount not subject to deduction multiplied by 250 percent.

(vii) The risk-weighted asset amount for any other on-balance-sheet asset that does not meet the definition of a wholesale, retail, securitization, IMM, or equity exposure, cleared transaction, or default fund contribution and is not subject to deduction under § 3.22(a), (c), or (d) equals the carrying value of the asset.

(viii) The risk-weighted asset amount for a Paycheck Protection Program covered loan as defined in section 7(a)(36) of the Small Business Act (15 U.S.C. 636(a)(36)) equals zero.

(4) *Non-material portfolios of exposures*. The risk-weighted asset amount of a portfolio of exposures for which the national bank or Federal savings association has demonstrated to the OCC's satisfaction that the portfolio (when combined with all other portfolios of exposures that the national bank or Federal savings association seeks to treat under this paragraph (e)) is not material to the national bank or Federal savings association 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 § 3.132.

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§ 3.132 Counterparty credit risk of repo-style transactions, eligible margin loans, and OTC derivative contracts.

(a) *Methodologies for collateral recognition.* (1) Instead of an LGD estimation methodology, a national bank or Federal savings association may use the following methodologies 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 national bank's or Federal savings association's VaR-based measure under subpart F of this part:

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

(ii) The internal models methodology set forth in paragraph (d) of this section; and

(iii) For single product netting sets of repo-style transactions and eligible margin loans, the simple VaR methodology set forth in paragraph (b)(3) of this section.

(2) A national bank or Federal savings association may use any combination of the three methodologies for collateral recognition; however, it must use the same methodology for transactions in the same category.

(3) A national bank or Federal savings association must use the methodology in paragraph (c) of this section, or with prior written approval of the OCC, the internal model methodology in paragraph (d) of this section, to calculate EAD for an OTC derivative contract or a set of OTC derivative contracts subject to a qualifying master netting agreement. To estimate EAD for qualifying cross-product master netting agreements, a national bank or Federal savings association may only use the internal models methodology in paragraph (d) of this section.

(4) A national bank or Federal savings association must also use the methodology in paragraph (e) of this section to calculate the risk-weighted asset amounts for CVA for OTC derivatives.

(b) *EAD for eligible margin loans and repo-style transactions*—(1) *General.* A national bank or Federal savings association 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 national bank or Federal savings association may estimate an unsecured LGD for the exposure, as well as for any repo-style transaction that is included in the national bank's or Federal savings association's VaR-based measure under subpart F of this part, 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 national bank or Federal savings association may determine EAD for an eligible margin loan, repo-style transaction, or netting set by setting EAD equal to max

$$\{0, [(\Sigma E - \Sigma C) + \Sigma(E_s \times H_s) + \Sigma(E_{fx} \times H_{fx})]\},$$

where:

(A) ΣE equals the value of the exposure (the sum of the current fair values of all instruments, gold, and cash the national bank or Federal savings association 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 fair values of all instruments, gold, and cash the national bank or Federal savings association has borrowed, purchased subject to resale, or taken as collateral from the counterparty under the transaction (or netting set));

(C) E_s 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 fair values of the instrument or gold the national bank or Federal savings association has lent, sold subject to repurchase, or posted as collateral to the counterparty minus the sum of the current fair values of that same instrument or gold the national bank or Federal savings association has borrowed, purchased subject to resale, or taken as collateral from the counterparty);

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

(E) E_{fx} 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 fair values of any instruments or cash in the currency the national bank or Federal savings association has lent, sold subject to repurchase, or posted as collateral to the counterparty minus the sum of the current fair values of any instruments or cash in the currency the national bank or Federal savings association has borrowed, purchased subject to resale, or taken as collateral from the counterparty); and

(F) H_{fx} equals the haircut appropriate to the mismatch between the currency referenced in E_{fx} and the settlement currency.

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

(*1*) A national bank or Federal savings association must use the haircuts for market price volatility (H_s) in Table 1 to § 3.132, as adjusted in certain circumstances as provided in paragraphs (b)(2)(ii)(A)(*3*) and (*4*) of this section;

TABLE 1 TO § 3.132—STANDARD SUPERVISORY MARKET PRICE VOLATILITY HAIRCUTS [1]

Residual maturity	Haircut (in percent) assigned based on:						Investment grade securitization exposures (in percent)
	Sovereign issuers risk weight under § 3.32 [2] (in percent)			Non-sovereign issuers risk weight under § 3.32 (in percent)			
	Zero	20 or 50	100	20	50	100	
Less than or equal to 1 year	0.5	1.0	15.0	1.0	2.0	4.0	4.0
Greater than 1 year and less than or equal to 5 years	2.0	3.0	15.0	4.0	6.0	8.0	12.0
Greater than 5 years	4.0	6.0	15.0	8.0	12.0	16.0	24.0
Main index equities (including convertible bonds) and gold	15.0						
Other publicly traded equities (including convertible bonds)	25.0						
Mutual funds	Highest haircut applicable to any security in which the fund can invest.						
Cash collateral held	Zero						
Other exposure types	25.0						

[1] The market price volatility haircuts in Table 1 to § 3.132 are based on a 10 business-day holding period.
[2] Includes a foreign PSE that receives a zero percent risk weight.

(*2*) For currency mismatches, a national bank or Federal savings association must use a haircut for foreign exchange rate volatility (H_{fx}) of 8 percent, as adjusted in certain circumstances as provided in paragraphs (b)(2)(ii)(A)(*3*) and (*4*) of this section.

(*3*) For repo-style transactions and client-facing derivative transactions, a

national bank or Federal savings association 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). If the national bank or Federal savings association determines that a longer holding period is appropriate for client-facing derivative transactions, then it must use a larger scaling factor to adjust for the longer holding period pursuant to paragraph (b)(2)(ii)(A)(*6*) of this section.

(*4*) A national bank or Federal savings association 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), using the formula provided in paragraph (b)(2)(ii)(A)(*6*) of this section where the conditions in this paragraph (b)(2)(ii)(A)(*4*) apply. If the number of trades in a netting set exceeds 5,000 at any time during a quarter, a national bank or Federal savings association must adjust the supervisory haircuts upward on the basis of a minimum holding period of twenty business days for the following quarter (except when a national bank or Federal savings association is calculating EAD for a cleared transaction under §3.133). If a netting set contains one or more trades involving illiquid collateral, a national bank or Federal savings association must adjust the supervisory haircuts upward on the basis of a minimum holding period of twenty business days. If over the two previous quarters more than two margin disputes on a netting set have occurred that lasted longer than the holding period, then the national bank or Federal savings association must adjust the supervisory haircuts upward for that netting set on the basis of a minimum holding period that is at least two times the minimum holding period for that netting set.

(*5*)(*i*) A national bank or Federal savings association must adjust the supervisory haircuts upward on the basis of a holding period longer than ten business days for collateral associated with derivative contracts (five business days for client-facing derivative contracts) using the formula provided in paragraph (b)(2)(ii)(A)(*6*) of this section where the conditions in this paragraph (b)(2)(ii)(A)(*5*)(*i*) apply. For collateral associated with a derivative contract that is within a netting set that is composed of more than 5,000 derivative contracts that are not cleared transactions, a national bank or Federal savings association must use a minimum holding period of twenty business days. If a netting set contains one or more trades involving illiquid collateral or a derivative contract that cannot be easily replaced, a national bank or Federal savings association must use a minimum holding period of twenty business days.

(*ii*) Notwithstanding paragraph (b)(2)(ii)(A)(*1*) or (*3*) or (b)(2)(ii)(A)(*5*)(*i*) of this section, for collateral associated with a derivative contract in a netting set under which more than two margin disputes that lasted longer than the holding period occurred during the previous two quarters, the minimum holding period is twice the amount provided under paragraph (b)(2)(ii)(A)(*1*) or (*3*) or (b)(2)(ii)(A)(*5*)(*i*) of this section.

(*6*) A national bank or Federal savings association must adjust the standard supervisory haircuts upward, pursuant to the adjustments provided in paragraphs (b)(2)(ii)(A)(*3*) through (*5*) of this section, using the following formula:

$$H_A = H_S \sqrt{\frac{T_M}{T_S}}$$

Where:

T_M equals a holding period of longer than 10 business days for eligible margin loans and derivative contracts other than client-facing derivative transactions or longer than 5 business days for repo-style transactions and client-facing derivative transactions;

H_S equals the standard supervisory haircut; and

T_S equals 10 business days for eligible margin loans and derivative contracts other than client-facing derivative transactions or 5 business days for repo-style transactions and client-facing derivative transactions.

(*7*) If the instrument a national bank or Federal savings association has lent, sold subject to repurchase, or posted as collateral does not meet the definition of financial collateral, the national bank or Federal savings association must use a 25.0 percent haircut for market price volatility (H_S).

(iii) *Own internal estimates for haircuts.* With the prior written approval of the OCC, a national bank or Federal savings association may calculate haircuts (H_s and H_{fx}) using its own internal estimates of the volatilities of market prices and foreign exchange rates.

(A) To receive OCC approval to use its own internal estimates, a national bank or Federal savings association must satisfy the following minimum quantitative standards:

(*1*) A national bank or Federal savings association 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 except for transactions or netting sets for which paragraph (b)(2)(iii)(A)(*3*) of this section applies. When a national bank or Federal savings association 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 national bank or Federal savings association to derive H_N; and

(*iii*) H_N equals the haircut based on the holding period T_N

(*3*) If the number of trades in a netting set exceeds 5,000 at any time during a quarter, a national bank or Federal savings association must calculate the haircut using a minimum holding period of twenty business days for the following quarter (except when a national bank or Federal savings association is calculating EAD for a cleared transaction under § 3.133). If a netting set contains one or more trades involving illiquid collateral or an OTC derivative that cannot be easily replaced, a national bank or Federal savings association must calculate the haircut using a minimum holding period of twenty business days. If over the two previous quarters more than two margin disputes on a netting set have occurred that lasted more than the holding period, then the national bank or Federal savings association must calculate the haircut for transactions in that netting set on the basis of a holding period that is at least two times the minimum holding period for that netting set.

(*4*) A national bank or Federal savings association is required to calculate its own internal estimates with inputs calibrated to historical data from a continuous 12-month period that reflects a period of significant financial stress appropriate to the security or category of securities.

(*5*) A national bank or Federal savings association must have policies and procedures that describe how it determines the period of significant financial stress used to calculate the national bank's or Federal savings association's own internal estimates for

haircuts under this section and must be able to provide empirical support for the period used. The national bank or Federal savings association must obtain the prior approval of the OCC for, and notify the OCC if the national bank or Federal savings association makes any material changes to, these policies and procedures.

(*6*) Nothing in this section prevents the OCC from requiring a national bank or Federal savings association to use a different period of significant financial stress in the calculation of own internal estimates for haircuts.

(*7*) A national bank or Federal savings association must update its data sets and calculate 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 are investment grade, a national bank or Federal savings association may calculate haircuts for categories of securities. For a category of securities, the national bank or Federal savings association 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 national bank or Federal savings association has lent, sold subject to repurchase, posted as collateral, borrowed, purchased subject to resale, or taken as collateral. In determining relevant categories, the national bank or Federal savings association must at a minimum take into account:

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

(*2*) The credit quality 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 are not investment grade and equity securities, a national bank or Federal savings association 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 national bank or Federal savings association 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 national bank's or Federal savings association'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 OCC, a national bank or Federal savings association 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 national bank or Federal savings association must set EAD equal to max {0, [($\Sigma E - \Sigma C$) + PFE]}, where:

(i) ΣE equals the value of the exposure (the sum of the current fair values of all instruments, gold, and cash the national bank or Federal savings association 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 fair values of all instruments, gold, and cash the national bank or Federal savings association 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 national bank's or Federal savings association's empirically based best estimate of the 99th percentile, one-tailed confidence interval for an increase in the value of ($\Sigma E - \Sigma C$) over a five-business-day holding period for repo-style transactions, or over a ten-business-day holding period for eligible margin loans except for netting sets for which paragraph (b)(3)(iv) of this section applies using a minimum one-year historical observation period of price data representing the instruments that the national bank or Federal savings association has lent, sold subject to repurchase, posted as collateral, borrowed, purchased subject to resale, or

taken as collateral. The national bank or Federal savings association must validate its VaR model by establishing and maintaining a rigorous and regular backtesting regime.

(iv) If the number of trades in a netting set exceeds 5,000 at any time during a quarter, a national bank or Federal savings association must use a twenty-business-day holding period for the following quarter (except when a national bank or Federal savings association is calculating EAD for a cleared transaction under §3.133). If a netting set contains one or more trades involving illiquid collateral, a national bank or Federal savings association must use a twenty-business-day holding period. If over the two previous quarters more than two margin disputes on a netting set have occurred that lasted more than the holding period, then the national bank or Federal savings association must set its PFE for that netting set equal to an estimate over a holding period that is at least two times the minimum holding period for that netting set.

(c) *EAD for derivative contracts*—(1) *Options for determining EAD.* A national bank or Federal savings association must determine the EAD for a derivative contract using the standardized approach for counterparty credit risk (SA–CCR) under paragraph (c)(5) of this section or using the internal models methodology described in paragraph (d) of this section. If a national bank or Federal savings association elects to use SA–CCR for one or more derivative contracts, the exposure amount determined under SA–CCR is the EAD for the derivative contract or derivative contracts. A national bank or Federal savings association must use the same methodology to calculate the exposure amount for all its derivative contracts and may change its election only with prior approval of the OCC. A national bank or Federal savings association may reduce the EAD calculated according to paragraph (c)(5) of this section by the credit valuation adjustment that the national bank or Federal savings association has recognized in its balance sheet valuation of any derivative contracts in the netting set. For purposes of this paragraph (c)(1), the credit valuation adjustment does not include any adjustments to common equity tier 1 capital attributable to changes in the fair value of the national bank's or Federal savings association's liabilities that are due to changes in its own credit risk since the inception of the transaction with the counterparty.

(2) *Definitions.* For purposes of this paragraph (c) of this section, the following definitions apply:

(i) *End date* means the last date of the period referenced by an interest rate or credit derivative contract or, if the derivative contract references another instrument, by the underlying instrument, except as otherwise provided in paragraph (c) of this section.

(ii) *Start date* means the first date of the period referenced by an interest rate or credit derivative contract or, if the derivative contract references the value of another instrument, by underlying instrument, except as otherwise provided in paragraph (c) of this section.

(iii) *Hedging set* means:

(A) With respect to interest rate derivative contracts, all such contracts within a netting set that reference the same reference currency;

(B) With respect to exchange rate derivative contracts, all such contracts within a netting set that reference the same currency pair;

(C) With respect to credit derivative contract, all such contracts within a netting set;

(D) With respect to equity derivative contracts, all such contracts within a netting set;

(E) With respect to a commodity derivative contract, all such contracts within a netting set that reference one of the following commodity categories: Energy, metal, agricultural, or other commodities;

(F) With respect to basis derivative contracts, all such contracts within a netting set that reference the same pair of risk factors and are denominated in the same currency; or

(G) With respect to volatility derivative contracts, all such contracts within a netting set that reference one of interest rate, exchange rate, credit, equity, or commodity risk factors, separated according to the requirements

under paragraphs (c)(2)(iii)(A) through (E) of this section.

(H) If the risk of a derivative contract materially depends on more than one of interest rate, exchange rate, credit, equity, or commodity risk factors, the OCC may require a national bank or Federal savings association to include the derivative contract in each appropriate hedging set under paragraphs (c)(2)(iii)(A) through (E) of this section.

(3) *Credit derivatives.* Notwithstanding paragraphs (c)(1) and (c)(2) of this section:

(i) A national bank or Federal savings association that purchases a credit derivative that is recognized under §3.134 or §3.135 as a credit risk mitigant for an exposure that is not a covered position under subpart F of this part is not required to calculate a separate counterparty credit risk capital requirement under this section so long as the national bank or Federal savings association does so consistently for all such credit derivatives and either includes 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 national bank or Federal savings association that is the protection provider in a credit derivative must treat the credit derivative as a wholesale exposure to the reference obligor and is not required to calculate 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 national bank or Federal savings association is treating the credit derivative as a covered position under subpart F of this part, in which case the national bank or Federal savings association must calculate a supplemental counterparty credit risk capital requirement under this section).

(4) *Equity derivatives.* A national bank or Federal savings association must treat an equity derivative contract as an equity exposure and compute a risk-weighted asset amount for the equity derivative contract under §§3.151–3.155 (unless the national bank or Federal savings association is treating the contract as a covered position under subpart F of this part). In addition, if the national bank or Federal savings association is treating the contract as a covered position under subpart F of this part, and under certain other circumstances described in §3.155, the national bank or Federal savings association must also calculate a risk-based capital requirement for the counterparty credit risk of an equity derivative contract under this section.

(5) *Exposure amount.* (i) The exposure amount of a netting set, as calculated under paragraph (c) of this section, is equal to 1.4 multiplied by the sum of the replacement cost of the netting set, as calculated under paragraph (c)(6) of this section, and the potential future exposure of the netting set, as calculated under paragraph (c)(7) of this section.

(ii) Notwithstanding the requirements of paragraph (c)(5)(i) of this section, the exposure amount of a netting set subject to a variation margin agreement, excluding a netting set that is subject to a variation margin agreement under which the counterparty to the variation margin agreement is not required to post variation margin, is equal to the lesser of the exposure amount of the netting set calculated under paragraph (c)(5)(i) of this section and the exposure amount of the netting set calculated as if the netting set were not subject to a variation margin agreement.

(iii) Notwithstanding the requirements of paragraph (c)(5)(i) of this section, the exposure amount of a netting set that consists of only sold options in which the premiums have been fully paid by the counterparty to the options and where the options are not subject to a variation margin agreement is zero.

(iv) Notwithstanding the requirements of paragraph (c)(5)(i) of this section, the exposure amount of a netting

set in which the counterparty is a commercial end-user is equal to the sum of replacement cost, as calculated under paragraph (c)(6) of this section, and the potential future exposure of the netting set, as calculated under paragraph (c)(7) of this section.

(v) For purposes of the exposure amount calculated under paragraph (c)(5)(i) of this section and all calculations that are part of that exposure amount, a national bank or Federal savings association may elect, at the netting set level, to treat a derivative contract that is a cleared transaction that is not subject to a variation margin agreement as one that is subject to a variation margin agreement, if the derivative contract is subject to a requirement that the counterparties make daily cash payments to each other to account for changes in the fair value of the derivative contract and to reduce the net position of the contract to zero. If a national bank or Federal savings association makes an election under this paragraph (c)(5)(v) for one derivative contract, it must treat all other derivative contracts within the same netting set that are eligible for an election under this paragraph (c)(5)(v) as derivative contracts that are subject to a variation margin agreement.

(vi) For purposes of the exposure amount calculated under paragraph (c)(5)(i) of this section and all calculations that are part of that exposure amount, a national bank or Federal savings association may elect to treat a credit derivative contract, equity derivative contract, or commodity derivative contract that references an index as if it were multiple derivative contracts each referencing one component of the index.

(6) *Replacement cost of a netting set*—(i) *Netting set subject to a variation margin agreement under which the counterparty must post variation margin.* The replacement cost of a netting set subject to a variation margin agreement, excluding a netting set that is subject to a variation margin agreement under which the counterparty is not required to post variation margin, is the greater of:

(A) The sum of the fair values (after excluding any valuation adjustments) of the derivative contracts within the netting set less the sum of the net independent collateral amount and the variation margin amount applicable to such derivative contracts;

(B) The sum of the variation margin threshold and the minimum transfer amount applicable to the derivative contracts within the netting set less the net independent collateral amount applicable to such derivative contracts; or

(C) Zero.

(ii) *Netting sets not subject to a variation margin agreement under which the counterparty must post variation margin.* The replacement cost of a netting set that is not subject to a variation margin agreement under which the counterparty must post variation margin to the national bank or Federal savings association is the greater of:

(A) The sum of the fair values (after excluding any valuation adjustments) of the derivative contracts within the netting set less the sum of the net independent collateral amount and variation margin amount applicable to such derivative contracts; or

(B) Zero.

(iii) *Multiple netting sets subject to a single variation margin agreement.* Notwithstanding paragraphs (c)(6)(i) and (ii) of this section, the replacement cost for multiple netting sets subject to a single variation margin agreement must be calculated according to paragraph (c)(10)(i) of this section.

(iv) *Netting set subject to multiple variation margin agreements or a hybrid netting set.* Notwithstanding paragraphs (c)(6)(i) and (ii) of this section, the replacement cost for a netting set subject to multiple variation margin agreements or a hybrid netting set must be calculated according to paragraph (c)(11)(i) of this section.

(7) *Potential future exposure of a netting set.* The potential future exposure of a netting set is the product of the PFE multiplier and the aggregated amount.

(i) *PFE multiplier.* The PFE multiplier is calculated according to the following formula:

$$PFE\ multiplier = min\left\{1; 0.05 + 0.95 * e^{\left(\frac{V-C}{1.9*A}\right)}\right\}$$

Where:

V is the sum of the fair values (after excluding any valuation adjustments) of the derivative contracts within the netting set;

C is the sum of the net independent collateral amount and the variation margin amount applicable to the derivative contracts within the netting set; and

A is the aggregated amount of the netting set.

(ii) *Aggregated amount.* The aggregated amount is the sum of all hedging set amounts, as calculated under paragraph (c)(8) of this section, within a netting set.

(iii) *Multiple netting sets subject to a single variation margin agreement.* Notwithstanding paragraphs (c)(7)(i) and (ii) of this section and when calculating the potential future exposure for purposes of total leverage exposure under §3.10(c)(2)(ii)(B), the potential future exposure for multiple netting sets subject to a single variation margin agreement must be calculated according to paragraph (c)(10)(ii) of this section.

(iv) *Netting set subject to multiple variation margin agreements or a hybrid netting set.* Notwithstanding paragraphs (c)(7)(i) and (ii) of this section and when calculating the potential future exposure for purposes of total leverage exposure under §3.10(c)(2)(ii)(B), the potential future exposure for a netting set subject to multiple variation margin agreements or a hybrid netting set must be calculated according to paragraph (c)(11)(ii) of this section.

(8) *Hedging set amount*—(i) *Interest rate derivative contracts.* To calculate the hedging set amount of an interest rate derivative contract hedging set, a national bank or Federal savings association may use either of the formulas provided in paragraphs (c)(8)(i)(A) and (B) of this section:

(A) Formula 1 is as follows:

$$Hedging\ set\ amount = [(AddOn_{TB1}^{IR})^2 + (AddOn_{TB2}^{IR})^2 + (AddOn_{TB3}^{IR})^2 + 1.4 * AddOn_{TB1}^{IR} * AddOn_{TB2}^{IR} + 1.4 * AddOn_{TB2}^{IR} * AddOn_{TB3}^{IR} + 0.6 * AddOn_{TB1}^{IR} * AddOn_{TB3}^{IR})]^{\frac{1}{2}}$$; or

(B) Formula 2 is as follows:

$Hedging\ set\ amount = |AddOn_{TB1}{}^{IR}| + |AddOn_{TB2}{}^{IR}| + |AddOn_{TB3}{}^{IR}|$.

Where in paragraphs (c)(8)(i)(A) and (B) of this section:

$AddOn_{TB1}{}^{IR}$ is the sum of the adjusted derivative contract amounts, as calculated under paragraph (c)(9) of this section, within the hedging set with an end date of less than one year from the present date;

$AddOn_{TB2}{}^{IR}$ is the sum of the adjusted derivative contract amounts, as calculated under paragraph (c)(9) of this section, within the hedging set with an end date of one to five years from the present date; and

$AddOn_{TB3}{}^{IR}$ is the sum of the adjusted derivative contract amounts, as calculated under paragraph (c)(9) of this section, within the hedging set with an end date of more than five years from the present date.

(ii) *Exchange rate derivative contracts.* For an exchange rate derivative contract hedging set, the hedging set amount equals the absolute value of the sum of the adjusted derivative contract amounts, as calculated under paragraph (c)(9) of this section, within the hedging set.

(iii) *Credit derivative contracts and equity derivative contracts.* The hedging

set amount of a credit derivative contract hedging set or equity derivative contract hedging set within a netting set is calculated according to the following formula:

$$Hedging\ set\ amount = [(\sum_{k=1}^{K} \rho_k * AddOn(Ref_k))^2 + \sum_{k=1}^{K}(1 - (\rho_k)^2) * (AddOn(Ref_k))^2\ ]^{\frac{1}{2}}$$

Where:

k is each reference entity within the hedging set.

K is the number of reference entities within the hedging set.

$AddOn(Ref_k)$ equals the sum of the adjusted derivative contract amounts, as determined under paragraph (c)(9) of this section, for all derivative contracts within the hedging set that reference reference entity k.

ρ_k equals the applicable supervisory correlation factor, as provided in Table 3 to this section.

(iv) *Commodity derivative contracts.* The hedging set amount of a commodity derivative contract hedging set within a netting set is calculated according to the following formula:

$$Hedging\ set\ amount = \left[\left(\rho * \sum_{k=1}^{K} AddOn(Type_k)\right)^2 + (1 - (\rho)^2) * \sum_{k=1}^{K}(AddOn(Type_k))^2\right]^{\frac{1}{2}}$$

Where:

k is each commodity type within the hedging set.

K is the number of commodity types within the hedging set.

$AddOn(Type_k)$ equals the sum of the adjusted derivative contract amounts, as determined under paragraph (c)(9) of this section, for all derivative contracts within the hedging set that reference reference commodity type k.

ρ equals the applicable supervisory correlation factor, as provided in Table 3 to this section.

(v) *Basis derivative contracts and volatility derivative contracts.* Notwithstanding paragraphs (c)(8)(i) through (iv) of this section, a national bank or Federal savings association must calculate a separate hedging set amount for each basis derivative contract hedging set and each volatility derivative contract hedging set. A national bank or Federal savings association must calculate such hedging set amounts using one of the formulas under paragraphs (c)(8)(i) through (iv) of this section that corresponds to the primary risk factor of the hedging set being calculated.

(9) *Adjusted derivative contract amount*—(i) *Summary.* To calculate the adjusted derivative contract amount of a derivative contract, a national bank or Federal savings association must determine the adjusted notional amount of derivative contract, pursuant to paragraph (c)(9)(ii) of this section, and multiply the adjusted notional amount by each of the supervisory delta adjustment, pursuant to paragraph (c)(9)(iii) of this section, the maturity factor, pursuant to paragraph (c)(9)(iv) of this section, and the applicable supervisory

factor, as provided in Table 3 to this section.

(ii) *Adjusted notional amount.* (A)(*1*) For an interest rate derivative contract or a credit derivative contract, the adjusted notional amount equals the product of the notional amount of the derivative contract, as measured in U.S. dollars using the exchange rate on the date of the calculation, and the supervisory duration, as calculated by the following formula:

$$\text{Supervisory duration} = max\left\{\frac{e^{-0.05*\left(\frac{S}{250}\right)}-e^{-0.05*\left(\frac{E}{250}\right)}}{0.05}, 0.04\right\}$$

Where:

S is the number of business days from the present day until the start date of the derivative contract, or zero if the start date has already passed; and

E is the number of business days from the present day until the end date of the derivative contract.

(*2*) For purposes of paragraph (c)(9)(ii)(A)(*1*) of this section:

(*i*) For an interest rate derivative contract or credit derivative contract that is a variable notional swap, the notional amount is equal to the time-weighted average of the contractual notional amounts of such a swap over the remaining life of the swap; and

(*ii*) For an interest rate derivative contract or a credit derivative contract that is a leveraged swap, in which the notional amount of all legs of the derivative contract are divided by a factor and all rates of the derivative contract are multiplied by the same factor, the notional amount is equal to the notional amount of an equivalent unleveraged swap.

(B)(*1*) For an exchange rate derivative contract, the adjusted notional amount is the notional amount of the non-U.S. denominated currency leg of the derivative contract, as measured in U.S. dollars using the exchange rate on the date of the calculation. If both legs of the exchange rate derivative contract are denominated in currencies other than U.S. dollars, the adjusted notional amount of the derivative contract is the largest leg of the derivative contract, as measured in U.S. dollars using the exchange rate on the date of the calculation.

(*2*) Notwithstanding paragraph (c)(9)(ii)(B)(*1*) of this section, for an exchange rate derivative contract with multiple exchanges of principal, the national bank or Federal savings association must set the adjusted notional amount of the derivative contract equal to the notional amount of the derivative contract multiplied by the number of exchanges of principal under the derivative contract.

(C)(*1*) For an equity derivative contract or a commodity derivative contract, the adjusted notional amount is the product of the fair value of one unit of the reference instrument underlying the derivative contract and the number of such units referenced by the derivative contract.

(*2*) Notwithstanding paragraph (c)(9)(ii)(C)(*1*) of this section, when calculating the adjusted notional amount for an equity derivative contract or a commodity derivative contract that is a volatility derivative contract, the national bank or Federal savings association must replace the unit price with the underlying volatility referenced by the volatility derivative contract and replace the number of units with the notional amount of the volatility derivative contract.

(iii) *Supervisory delta adjustments.* (A) For a derivative contract that is not an option contract or collateralized debt obligation tranche, the supervisory delta adjustment is 1 if the fair value of the derivative contract increases when the value of the primary risk factor increases and −1 if the fair value of the derivative contract decreases when the value of the primary risk factor increases.

(B)(*1*) For a derivative contract that is an option contract, the supervisory delta adjustment is determined by the following formulas, as applicable:

Table 2 to §3.132--Supervisory Delta Adjustment for Options Contracts

	Bought	Sold
Call Options	$\Phi\left(\frac{\ln\left(\frac{P+\lambda}{K+\lambda}\right)+0.5*\sigma^2*T/250}{\sigma*\sqrt{T/250}}\right)$	$-\Phi\left(\frac{\ln\left(\frac{P+\lambda}{K+\lambda}\right)+0.5*\sigma^2*T/250}{\sigma*\sqrt{T/250}}\right)$
Put Options	$-\Phi\left(-\frac{\ln\left(\frac{P+\lambda}{K+\lambda}\right)+0.5*\sigma^2*T/250}{\sigma*\sqrt{T/250}}\right)$	$\Phi\left(-\frac{\ln\left(\frac{P+\lambda}{K+\lambda}\right)+0.5*\sigma^2*T/250}{\sigma*\sqrt{T/250}}\right)$

(*2*) As used in the formulas in Table 2 to this section:

(*i*) Φ is the standard normal cumulative distribution function;

(*ii*) P equals the current fair value of the instrument or risk factor, as applicable, underlying the option;

(*iii*) K equals the strike price of the option;

(*iv*) T equals the number of business days until the latest contractual exercise date of the option;

(*v*) λ equals zero for all derivative contracts except interest rate options for the currencies where interest rates have negative values. The same value of λ must be used for all interest rate options that are denominated in the same currency. To determine the value of λ for a given currency, a national bank or Federal savings association must find the lowest value L of P and K of all interest rate options in a given currency that the national bank or Federal savings association has with all counterparties. Then, λ is set according to this formula: $\lambda = max\{-L + 0.1\%, 0\}$; and

(*vi*) σ equals the supervisory option volatility, as provided in Table 3 to of this section.

(C)(*1*) For a derivative contract that is a collateralized debt obligation tranche, the supervisory delta adjustment is determined by the following formula:

$$\text{Supervisory delta adjustment} = \frac{15}{(1+14*A)*(1+14*D)}$$

(*2*) As used in the formula in paragraph (c)(9)(iii)(C)(*1*) of this section:

(*i*) A is the attachment point, which equals the ratio of the notional amounts of all underlying exposures that are subordinated to the national bank's or Federal savings association's exposure to the total notional amount of all underlying exposures, expressed as a decimal value between zero and one;[30]

(*ii*) D is the detachment point, which equals one minus the ratio of the notional amounts of all underlying exposures that are senior to the national bank's or Federal savings association's exposure to the total notional amount of all underlying exposures, expressed

[30] In the case of a first-to-default credit derivative, there are no underlying exposures that are subordinated to the national bank's or Federal savings association's exposure. In the case of a second-or-subsequent-to-default credit derivative, the smallest (n−1) notional amounts of the underlying exposures are subordinated to the national bank's or Federal savings association's exposure.

as a decimal value between zero and one; and

(*iii*) The resulting amount is designated with a positive sign if the collateralized debt obligation tranche was purchased by the national bank or Federal savings association and is designated with a negative sign if the collateralized debt obligation tranche was sold by the national bank or Federal savings association.

(iv) *Maturity factor*. (A)(*1*) The maturity factor of a derivative contract that is subject to a variation margin agreement, excluding derivative contracts that are subject to a variation margin agreement under which the counterparty is not required to post variation margin, is determined by the following formula:

$$\text{Maturity factor} = \frac{3}{2}\sqrt{\frac{MPOR}{250}}$$

Where MPOR refers to the period from the most recent exchange of collateral covering a netting set of derivative contracts with a defaulting counterparty until the derivative contracts are closed out and the resulting market risk is re-hedged.

(*2*) Notwithstanding paragraph (c)(9)(iv)(A)(*1*) of this section:

(*i*) For a derivative contract that is not a client-facing derivative transaction, MPOR cannot be less than ten business days plus the periodicity of re-margining expressed in business days minus one business day;

(*ii*) For a derivative contract that is a client-facing derivative transaction, MPOR cannot be less than five business days plus the periodicity of re-margining expressed in business days minus one business day; and

(*iii*) For a derivative contract that is within a netting set that is composed of more than 5,000 derivative contracts that are not cleared transactions, or a netting set that contains one or more trades involving illiquid collateral or a derivative contract that cannot be easily replaced, MPOR cannot be less than twenty business days.

(*3*) Notwithstanding paragraphs (c)(9)(iv)(A)(*1*) and (*2*) of this section, for a netting set subject to more than two outstanding disputes over margin that lasted longer than the MPOR over the previous two quarters, the applicable floor is twice the amount provided in paragraphs (c)(9)(iv)(A)(*1*) and (*2*) of this section.

(B) The maturity factor of a derivative contract that is not subject to a variation margin agreement, or derivative contracts under which the counterparty is not required to post variation margin, is determined by the following formula:

$$\text{Maturity factor} = \sqrt{\frac{\min\{M;250\}}{250}}$$

Where M equals the greater of 10 business days and the remaining maturity of the contract, as measured in business days.

(C) For purposes of paragraph (c)(9)(iv) of this section, if a national bank or Federal savings association has elected pursuant to paragraph (c)(5)(v) of this section to treat a derivative contract that is a cleared transaction that is not subject to a variation margin agreement as one that is subject to a variation margin agreement, the national bank or Federal savings association must treat the derivative contract as subject to a variation margin agreement with maturity factor as determined according to (c)(9)(iv)(A) of this section, and daily settlement does not change the end

date of the period referenced by the derivative contract.

(v) *Derivative contract as multiple effective derivative contracts.* A national bank or Federal savings association must separate a derivative contract into separate derivative contracts, according to the following rules:

(A) For an option where the counterparty pays a predetermined amount if the value of the underlying asset is above or below the strike price and nothing otherwise (binary option), the option must be treated as two separate options. For purposes of paragraph (c)(9)(iii)(B) of this section, a binary option with strike K must be represented as the combination of one bought European option and one sold European option of the same type as the original option (put or call) with the strikes set equal to 0.95 * K and 1.05 * K so that the payoff of the binary option is reproduced exactly outside the region between the two strikes. The absolute value of the sum of the adjusted derivative contract amounts of the bought and sold options is capped at the payoff amount of the binary option.

(B) For a derivative contract that can be represented as a combination of standard option payoffs (such as collar, butterfly spread, calendar spread, straddle, and strangle), a national bank or Federal savings association must treat each standard option component as a separate derivative contract.

(C) For a derivative contract that includes multiple-payment options, (such as interest rate caps and floors), a national bank or Federal savings association may represent each payment option as a combination of effective single-payment options (such as interest rate caplets and floorlets).

(D) A national bank or Federal savings association may not decompose linear derivative contracts (such as swaps) into components.

(10) *Multiple netting sets subject to a single variation margin agreement*—(i) *Calculating replacement cost.* Notwithstanding paragraph (c)(6) of this section, a national bank or Federal savings association shall assign a single replacement cost to multiple netting sets that are subject to a single variation margin agreement under which the counterparty must post variation margin, calculated according to the following formula:

$$\textit{Replacement Cost} = max\{\Sigma_{NS}\ max\{V_{NS};\ 0\} - max\{C_{MA};\ 0\};\ 0\} + max\{\Sigma_{NS}\ min\{V_{NS};\ 0\} - min\{C_{MA};\ 0\};\ 0\}$$

Where:

NS is each netting set subject to the variation margin agreement MA.

V_{NS} is the sum of the fair values (after excluding any valuation adjustments) of the derivative contracts within the netting set NS.

C_{MA} is the sum of the net independent collateral amount and the variation margin amount applicable to the derivative contracts within the netting sets subject to the single variation margin agreement.

(ii) *Calculating potential future exposure.* Notwithstanding paragraph (c)(5) of this section, a national bank or Federal savings association shall assign a single potential future exposure to multiple netting sets that are subject to a single variation margin agreement under which the counterparty must post variation margin equal to the sum of the potential future exposure of each such netting set, each calculated according to paragraph (c)(7) of this section as if such nettings sets were not subject to a variation margin agreement.

(11) *Netting set subject to multiple variation margin agreements or a hybrid netting set*—(i) *Calculating replacement cost.* To calculate replacement cost for either a netting set subject to multiple variation margin agreements under which the counterparty to each variation margin agreement must post variation margin, or a netting set composed of at least one derivative contract subject to variation margin agreement under which the counterparty must post variation margin and at least one derivative contract that is not subject to such a variation margin agreement, the calculation for replacement cost is provided under paragraph (c)(6)(i) of this section, except that the variation margin threshold equals the sum of the variation margin thresholds of all variation margin agreements within the netting set and the minimum transfer amount equals the sum of the minimum transfer amounts of all the variation margin agreements within the netting set.

(ii) *Calculating potential future exposure.* (A) To calculate potential future exposure for a netting set subject to multiple variation margin agreements under which the counterparty to each variation margin agreement must post variation margin, or a netting set composed of at least one derivative contract subject to variation margin agreement under which the counterparty to the derivative contract must post variation margin and at least one derivative contract that is not subject to such a variation margin agreement, a national bank or Federal savings association must divide the netting set into sub-netting sets (as described in paragraph (c)(11)(ii)(B) of this section) and calculate the aggregated amount for each sub-netting set. The aggregated amount for the netting set is calculated as the sum of the aggregated amounts for the sub-netting sets. The multiplier is calculated for the entire netting set.

(B) For purposes of paragraph (c)(11)(ii)(A) of this section, the netting set must be divided into sub-netting sets as follows:

(*1*) All derivative contracts within the netting set that are not subject to a variation margin agreement or that are subject to a variation margin agreement under which the counterparty is not required to post variation margin form a single sub-netting set. The aggregated amount for this sub-netting set is calculated as if the netting set is not subject to a variation margin agreement.

(*2*) All derivative contracts within the netting set that are subject to variation margin agreements in which the counterparty must post variation margin and that share the same value of the MPOR form a single sub-netting set. The aggregated amount for this sub-netting set is calculated as if the netting set is subject to a variation margin agreement, using the MPOR value shared by the derivative contracts within the netting set.

TABLE 3 TO § 3.132—SUPERVISORY OPTION VOLATILITY, SUPERVISORY CORRELATION PARAMETERS, AND SUPERVISORY FACTORS FOR DERIVATIVE CONTRACTS

Asset class	Category	Type	Supervisory option volatility (percent)	Supervisory correlation factor (percent)	Supervisory factor [1] (percent)
Interest rate	N/A	N/A	50	N/A	0.50
Exchange rate	N/A	N/A	15	N/A	4.0
Credit, single name	Investment grade	N/A	100	50	0.46
	Speculative grade	N/A	100	50	1.3
	Sub-speculative grade	N/A	100	50	6.0
Credit, index	Investment Grade	N/A	80	80	0.38
	Speculative Grade	N/A	80	80	1.06
Equity, single name	N/A	N/A	120	50	32
Equity, index	N/A	N/A	75	80	20
Commodity	Energy	Electricity	150	40	40
		Other	70	40	18
	Metals	N/A	70	40	18
	Agricultural	N/A	70	40	18
	Other	N/A	70	40	18

[1] The applicable supervisory factor for basis derivative contract hedging sets is equal to one-half of the supervisory factor provided in this Table 3, and the applicable supervisory factor for volatility derivative contract hedging sets is equal to 5 times the supervisory factor provided in this Table 3.

(d) *Internal models methodology.* (1)(i) With prior written approval from the OCC, a national bank or Federal savings association may use the internal models methodology in this paragraph (d) to determine EAD for counterparty credit risk for 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.

(ii) A national bank or Federal savings association that uses the internal models methodology for a particular transaction type (derivative contracts, eligible margin loans, or repo-style transactions) must use the internal

models methodology for all transactions of that transaction type. A national bank or Federal savings association may choose to use the internal models methodology for one or two of these three types of exposures and not the other types.

(iii) A national bank or Federal savings association may also use the internal models methodology for derivative contracts, eligible margin loans, and repo-style transactions subject to a qualifying cross-product netting agreement if:

(A) The national bank or Federal savings association effectively integrates the risk mitigating effects of cross-product netting into its risk management and other information technology systems; and

(B) The national bank or Federal savings association obtains the prior written approval of the OCC.

(iv) A national bank or Federal savings association that uses the internal models methodology for a transaction type must receive approval from the OCC to cease using the methodology for that transaction type or to make a material change to its internal model.

(2) *Risk-weighted assets using IMM.* Under the IMM, a national bank or Federal savings association uses an internal model to estimate the expected exposure (EE) for a netting set and then calculates EAD based on that EE. A national bank or Federal savings association must calculate two EEs and two EADs (one stressed and one unstressed) for each netting set as follows:

(i) $EAD_{unstressed}$ is calculated using an EE estimate based on the most recent data meeting the requirements of paragraph (d)(3)(vii) of this section;

(ii) $EAD_{stressed}$ is calculated using an EE estimate based on a historical period that includes a period of stress to the credit default spreads of the national bank's or Federal savings association's counterparties according to paragraph (d)(3)(viii) of this section;

(iii) The national bank or Federal savings association must use its internal model's probability distribution for changes in the fair value of a netting set that are attributable to changes in market variables to determine EE; and

(iv) Under the internal models methodology, EAD = Max (0, $\alpha \times$ effective EPE − CVA), or, subject to the prior written approval of OCC as provided in paragraph (d)(10) of this section, a more conservative measure of EAD.

(A) CVA equals the credit valuation adjustment that the national bank or Federal savings association has recognized in its balance sheet valuation of any OTC derivative contracts in the netting set. For purposes of this paragraph (d), CVA does not include any adjustments to common equity tier 1 capital attributable to changes in the fair value of the national bank's or Federal savings association's liabilities that are due to changes in its own credit risk since the inception of the transaction with the counterparty.

(B) $$Effective\ EPE_{t_k} = \sum_{k=1}^{n} Effective\ EE_k \times \Delta t_k$$

(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) $Effective EE_{t_k} = \max\left(Effective EE_{t_{k-1}}, EE_{t_k}\right)$ (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 k^{th} future time period in the model and there are n time periods represented in the model over the first year, and

(C) $\alpha = 1.4$ except as provided in paragraph (d)(6) of this section, or when the OCC has determined that the national bank or Federal savings association must set α higher based on the national bank's or Federal savings association's specific characteristics of counterparty credit risk or model performance.

(v) A national bank or Federal savings association may include financial collateral currently posted by the counterparty as collateral (but may not include other forms of collateral) when calculating EE.

(vi) If a national bank or Federal savings association hedges some or all of the counterparty credit risk associated with a netting set using an eligible credit derivative, the national bank or Federal savings association may take the reduction in exposure to the counterparty into account when estimating EE. If the national bank or Federal savings association 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 national bank's or Federal savings association's exposure to the protection provider of the credit derivative.

(3) *Prior approval relating to EAD calculation.* To obtain OCC approval to calculate the distributions of exposures upon which the EAD calculation is based, the national bank or Federal savings association must demonstrate to the satisfaction of the OCC that it has been using for at least one year an internal model that broadly meets the following minimum standards, with which the national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association must be able to measure and manage current exposures gross and net of collateral held, where appropriate. The national bank or Federal savings association must estimate expected exposures for OTC derivative contracts both with and without the effect of collateral agreements;

(vi) The national bank or Federal savings association must have procedures to identify, monitor, and control wrong-way risk throughout the life of an exposure. The procedures must include stress testing and scenario analysis;

(vii) The model must use current market data to compute current exposures. The national bank or Federal savings association must estimate model parameters using historical data from the most recent three-year period and update the data quarterly or more frequently if market conditions warrant. The national bank or Federal savings association should consider using model parameters based on forward-looking measures, where appropriate;

(viii) When estimating model parameters based on a stress period, the national bank or Federal savings association must use at least three years of historical data that include a period of stress to the credit default spreads of the national bank's or Federal savings association's counterparties. The national bank or Federal savings association must review the data set and update the data as necessary, particularly for any material changes in its counterparties. The national bank or Federal savings association must demonstrate, at least quarterly, and maintain documentation of such demonstration, that the stress period coincides with increased CDS or other credit spreads of the national bank's or Federal savings association's counterparties. The national bank or Federal savings association must have procedures to evaluate the effectiveness of its stress calibration that include a process for using benchmark portfolios that are vulnerable to the same risk factors as the national bank's or Federal savings association's portfolio. The OCC may require the national bank or Federal savings association to modify its stress calibration to better reflect actual historic losses of the portfolio;

(ix) A national bank or Federal savings association 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. As part of the model review process, the national bank or Federal savings association must have a backtesting program for its model that includes a process by which unacceptable model performance will be determined and remedied;

(x) A national bank or Federal savings association must have policies for the measurement, management and control of collateral and margin amounts; and

(xi) A national bank or Federal savings association must have a comprehensive stress testing program that captures all credit exposures to counterparties, and incorporates stress testing of principal market risk factors and creditworthiness of counterparties.

(4) *Calculating the maturity of exposures.* (i) If the remaining maturity of the exposure or the longest-dated contract in the netting set is greater than one year, the national bank or Federal savings association must set M for the exposure or netting set equal to the lower of five years or M(EPE), where:

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

(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 national bank or Federal savings association must set M for the exposure or netting set equal to one year, except as provided in §3.131(d)(7).

(iii) Alternatively, a national bank or Federal savings association 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)(i) of this section.

(5) *Effects of collateral agreements on EAD.* A national bank or Federal savings association 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. Two methods are available to capture the effect of a collateral agreement, as set forth in paragraphs (d)(5)(i) and (ii) of this section:

(i) With prior written approval from the OCC, a national bank or Federal savings association may include the effect of a collateral agreement within its internal model used to calculate EAD. The national bank or Federal savings association 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 set according to paragraph (d)(5)(iii) of this section; or

(ii) As an alternative to paragraph (d)(5)(i) of this section, a national bank or Federal savings association 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) An add-on that reflects the potential increase in exposure of the netting set over the margin period of risk, plus the larger of:

(*1*) The current exposure of the netting set reflecting all collateral held or posted by the national bank or Federal savings association excluding any collateral called or in dispute; or

(*2*) The largest net exposure including all collateral held or posted under the margin agreement that would not trigger a collateral call. For purposes of this section, the add-on is computed as the expected increase in the netting set's exposure over the margin period of risk (set in accordance with paragraph (d)(5)(iii) of this section); or

(B) Effective EPE without a collateral agreement plus any collateral the national bank or Federal savings association posts to the counterparty that exceeds the required margin amount.

(iii) For purposes of this part, including paragraphs (d)(5)(i) and (ii) of this section, the margin period of risk for a netting set subject to a collateral agreement is:

(A) Five business days for repo-style transactions subject to daily remargining and daily marking-to-market, and ten business days for other transactions when liquid financial collateral is posted under a daily margin maintenance requirement, or

(B) Twenty business days if the number of trades in a netting set exceeds 5,000 at any time during the previous quarter (except if the national bank or Federal savings association is calculating EAD for a cleared transaction under §3.133) or contains one or more trades involving illiquid collateral or any derivative contract that cannot be easily replaced. If over the two previous quarters more than two margin disputes on a netting set have occurred that lasted more than the margin period of risk, then the national bank or Federal savings association must use a margin period of risk for that netting set that is at least two times the minimum margin period of risk for that

netting set. If the periodicity of the receipt of collateral is N-days, the minimum margin period of risk is the minimum margin period of risk under this paragraph (d) plus N minus 1. This period should be extended to cover any impediments to prompt re-hedging of any market risk.

(C) Five business days for an OTC derivative contract or netting set of OTC derivative contracts where the national bank or Federal savings association is either acting as a financial intermediary and enters into an offsetting transaction with a CCP or where the national bank or Federal savings association provides a guarantee to the CCP on the performance of the client. A national bank or Federal savings association must use a longer holding period if the national bank or Federal savings association determines that a longer period is appropriate. Additionally, the OCC may require the national bank or Federal savings association to set a longer holding period if the OCC determines that a longer period is appropriate due to the nature, structure, or characteristics of the transaction or is commensurate with the risks associated with the transaction.

(6) *Own estimate of alpha.* With prior written approval of the OCC, a national bank or Federal savings association 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 national bank or Federal savings association must meet the following minimum standards to the satisfaction of the OCC:

(i) The national bank's or Federal savings association's own estimate of alpha must capture in the numerator the effects of:

(A) The material sources of stochastic dependency of distributions of fair 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 national bank or Federal savings association must assess the potential model uncertainty in its estimates of alpha.

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

(iv) The national bank or Federal savings association 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) *Risk-based capital requirements for transactions with specific wrong-way risk.* A national bank or Federal savings association must determine if a repo-style transaction, eligible margin loan, bond option, or equity derivative contract or purchased credit derivative to which the national bank or Federal savings association applies the internal models methodology under this paragraph (d) has specific wrong-way risk. If a transaction has specific wrong-way risk, the national bank or Federal savings association must treat the transaction as its own netting set and exclude it from the model described in § 3.132(d)(2) and instead calculate the risk-based capital requirement for the transaction as follows:

(i) For an equity derivative contract, by multiplying:

(A) K, calculated using the appropriate risk-based capital formula specified in Table 1 of § 3.131 using the PD of the counterparty and LGD equal to 100 percent, by

(B) The maximum amount the national bank or Federal savings association could lose on the equity derivative.

(ii) For a purchased credit derivative by multiplying:

(A) K, calculated using the appropriate risk-based capital formula specified in Table 1 of §3.131 using the PD of the counterparty and LGD equal to 100 percent, by

(B) The fair value of the reference asset of the credit derivative.

(iii) For a bond option, by multiplying:

(A) K, calculated using the appropriate risk-based capital formula specified in Table 1 of §3.131 using the PD of the counterparty and LGD equal to 100 percent, by

(B) The smaller of the notional amount of the underlying reference asset and the maximum potential loss under the bond option contract.

(iv) For a repo-style transaction or eligible margin loan by multiplying:

(A) K, calculated using the appropriate risk-based capital formula specified in Table 1 of §3.131 using the PD of the counterparty and LGD equal to 100 percent, by

(B) The EAD of the transaction determined according to the EAD equation in §3.132(b)(2), substituting the estimated value of the collateral assuming a default of the counterparty for the value of the collateral in Σc of the equation.

(8) *Risk-weighted asset amount for IMM exposures with specific wrong-way risk.* The aggregate risk-weighted asset amount for IMM exposures with specific wrong-way risk is the sum of a national bank's or Federal savings association's risk-based capital requirement for purchased credit derivatives that are not bond options with specific wrong-way risk as calculated under paragraph (d)(7)(ii) of this section, a national bank's or Federal savings association's risk-based capital requirement for equity derivatives with specific wrong-way risk as calculated under paragraph (d)(7)(i) of this section, a national bank's or Federal savings association's risk-based capital requirement for bond options with specific wrong-way risk as calculated under paragraph (d)(7)(iii) of this section, and a national bank's or Federal savings association's risk-based capital requirement for repo-style transactions and eligible margin loans with specific wrong-way risk as calculated under paragraph (d)(7)(iv) of this section, multiplied by 12.5.

(9) *Risk-weighted assets for IMM exposures.* (i) The national bank or Federal savings association must insert the assigned risk parameters for each counterparty and netting set into the appropriate formula specified in Table 1 of §3.131 and multiply the output of the formula by the $EAD_{unstressed}$ of the netting set to obtain the unstressed capital requirement for each netting set. A national bank or Federal savings association that uses an advanced CVA approach that captures migrations in credit spreads under paragraph (e)(3) of this section must set the maturity adjustment (b) in the formula equal to zero. The sum of the unstressed capital requirement calculated for each netting set equals $K_{unstressed}$.

(ii) The national bank or Federal savings association must insert the assigned risk parameters for each wholesale obligor and netting set into the appropriate formula specified in Table 1 of §3.131 and multiply the output of the formula by the $EAD_{stressed}$ of the netting set to obtain the stressed capital requirement for each netting set. A national bank or Federal savings association that uses an advanced CVA approach that captures migrations in credit spreads under paragraph (e)(6) of this section must set the maturity adjustment (b) in the formula equal to zero. The sum of the stressed capital requirement calculated for each netting set equals $K_{stressed}$.

(iii) The national bank's or Federal savings association's dollar risk-based capital requirement under the internal models methodology equals the larger of $K_{unstressed}$ and $K_{stressed}$. A national bank's or Federal savings association's risk-weighted assets amount for IMM exposures is equal to the capital requirement multiplied by 12.5, plus risk-weighted assets for IMM exposures with specific wrong-way risk in paragraph (d)(8) of this section and those in paragraph (d)(10) of this section.

(10) *Other measures of counterparty exposure.* (i) With prior written approval

of the OCC, a national bank or Federal savings association 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 times the larger of $EPE_{unstressed}$ and $EPE_{stressed}$ for every counterparty whose EAD will be measured under the alternative measure of counterparty exposure. The national bank or Federal savings association must demonstrate the conservatism of the measure of counterparty credit risk exposure used for EAD. With respect to paragraph (d)(10)(i) of this section:

(A) For material portfolios of new OTC derivative products, the national bank or Federal savings association may assume that the standardized approach for counterparty credit risk pursuant to paragraph (c) of this section meets the conservatism requirement of this section for a period not to exceed 180 days.

(B) For immaterial portfolios of OTC derivative contracts, the national bank or Federal savings association generally may assume that the standardized approach for counterparty credit risk pursuant to paragraph (c) of this section meets the conservatism requirement of this section.

(ii) To calculate risk-weighted assets for purposes of the approach in paragraph (d)(10)(i) of this section, the national bank or Federal savings association must insert the assigned risk parameters for each counterparty and netting set into the appropriate formula specified in Table 1 of § 3.131, multiply the output of the formula by the EAD for the exposure as specified above, and multiply by 12.5.

(e) *Credit valuation adjustment (CVA) risk-weighted assets*—(1) *In general.* With respect to its OTC derivative contracts, a national bank or Federal savings association must calculate a CVA risk-weighted asset amount for its portfolio of OTC derivative transactions that are subject to the CVA capital requirement using the simple CVA approach described in paragraph (e)(5) of this section or, with prior written approval of the OCC, the advanced CVA approach described in paragraph (e)(6) of this section. A national bank or Federal savings association that receives prior OCC approval to calculate its CVA risk-weighted asset amounts for a class of counterparties using the advanced CVA approach must continue to use that approach for that class of counterparties until it notifies the OCC in writing that the national bank or Federal savings association expects to begin calculating its CVA risk-weighted asset amount using the simple CVA approach. Such notice must include an explanation of the national bank's or Federal savings association's rationale and the date upon which the national bank or Federal savings association will begin to calculate its CVA risk-weighted asset amount using the simple CVA approach.

(2) *Market risk national banks or Federal savings associations.* Notwithstanding the prior approval requirement in paragraph (e)(1) of this section, a market risk national bank or Federal savings association may calculate its CVA risk-weighted asset amount using the advanced CVA approach if the national bank or Federal savings association has OCC approval to:

(i) Determine EAD for OTC derivative contracts using the internal models methodology described in paragraph (d) of this section; and

(ii) Determine its specific risk add-on for debt positions issued by the counterparty using a specific risk model described in § 3.207(b).

(3) *Recognition of hedges.* (i) A national bank or Federal savings association may recognize a single name CDS, single name contingent CDS, any other equivalent hedging instrument that references the counterparty directly, and index credit default swaps (CDS_{ind}) as a CVA hedge under paragraph (e)(5)(ii) of this section or paragraph (e)(6) of this section, provided that the position is managed as a CVA hedge in accordance with the national bank's or Federal savings association's hedging policies.

(ii) A national bank or Federal savings association shall not recognize as a CVA hedge any tranched or n^{th}-to-default credit derivative.

(4) *Total CVA risk-weighted assets.* Total CVA risk-weighted assets is the CVA capital requirement, K_{CVA}, calculated for a national bank's or Federal savings association's entire portfolio of OTC derivative counterparties

that are subject to the CVA capital requirement, multiplied by 12.5.

(5) *Simple CVA approach.* (i) Under the simple CVA approach, the CVA capital requirement, K_{CVA}, is calculated according to the following formula:

$$K_{CVA} = 2.33 \times \sqrt{\left(\sum_i 0.5 \times w_i \times \left(M_i \times EAD_i^{total} - M_i^{hedge} \times B_i \right) - \sum_{ind} w_{ind} \times M_{ind} \times B_{ind} \right)^2 + A}$$

Where:

$$A = \sum_i 0.75 \times w_i^2 \times \left(M_i \times EAD_i^{total} - M_i^{hedge} \times B_i \right)^2$$

(A) w_i = the weight applicable to counterparty i under Table 4 to this section;

(B) M_i = the EAD-weighted average of the effective maturity of each netting set with counterparty i (where each netting set's effective maturity can be no less than one year.)

(C) EAD_i^{total} = the sum of the EAD for all netting sets of OTC derivative contracts with counterparty i calculated using the standardized approach for counterparty credit risk methodology described in paragraph (c) of this section or the internal models methodology described in paragraph (d) of this section. When the national bank or Federal savings association calculates EAD under paragraph (c) of this section, such EAD may be adjusted for purposes of calculating EAD_i^{total} by multiplying EAD by $(1\text{-}\exp(-0.05 \times M_i))/(0.05 \times M_i)$, where ''exp'' is the exponential function. When the national bank or Federal savings association calculates EAD under paragraph (d) of this section, EAD_i^{total} equals $EAD_{unstressed}$.

(D) M_i^{hedge} = the notional weighted average maturity of the hedge instrument.

(E) B_i = the sum of the notional amounts of any purchased single name CDS referencing counterparty i that is used to hedge CVA risk to counterparty i multiplied by $(1\text{-}\exp(-0.05 \times M_i^{hedge}))/(0.05 \times M_i^{hedge})$.

(F) M_{ind} = the maturity of the CDS_{ind} or the notional weighted average maturity of any CDS_{ind} purchased to hedge CVA risk of counterparty i.

(G) B_{ind} = the notional amount of one or more CDS_{ind} purchased to hedge CVA risk for counterparty i multiplied by $(1\text{-}\exp(-0.05 \times M_{ind}))/(0.05 \times M_{ind})$

(H) w_{ind} = the weight applicable to the CDS_{ind} based on the average weight of the underlying reference names that comprise the index under Table 4 to this section.

(ii) The national bank or Federal savings association may treat the notional amount of the index attributable to a counterparty as a single name hedge of counterparty i (B_i,) when calculating K_{CVA}, and subtract the notional amount of B_i from the notional amount of the $CDS_{ind.}$ A national bank or Federal savings association must treat the CDS_{ind} hedge with the notional amount reduced by B_i as a CVA hedge.

TABLE 4 TO §3.132—ASSIGNMENT OF COUNTERPARTY WEIGHT

Internal PD (in percent)	Weight w_i (in percent)
0.00–0.07	0.70
>0.070–0.15	0.80
>0.15–0.40	1.00
>0.40–2.00	2.00
>2.00–6.00	3.00
>6.00	10.00

(6) *Advanced CVA approach.* (i) A national bank or Federal savings association may use the VaR model that it uses to determine specific risk under §3.207(b) or another VaR model that meets the quantitative requirements of §§3.205(b) and 3.207(b)(1) to calculate its CVA capital requirement for a counterparty by modeling the impact of changes in the counterparties' credit spreads, together with any recognized CVA hedges, on the CVA for the

counterparties, subject to the following requirements:

(A) The VaR model must incorporate only changes in the counterparties' credit spreads, not changes in other risk factors. The VaR model does not need to capture jump-to-default risk;

(B) A national bank or Federal savings association that qualifies to use the advanced CVA approach must include in that approach any immaterial OTC derivative portfolios for which it uses the standardized approach for counterparty credit risk methodology in paragraph (c) of this section according to paragraph (e)(6)(viii) of this section; and

(C) A national bank or Federal savings association must have the systems capability to calculate the CVA capital requirement for a counterparty on a daily basis (but is not required to calculate the CVA capital requirement on a daily basis).

(ii) Under the advanced CVA approach, the CVA capital requirement, K_{CVA}, is calculated according to the following formulas:

$$K_{CVA} = 3 \times \left(VaR^{CVA}_{Unstressed} + VaR^{CVA}_{Stressed}\right)$$

where VaR^{CVA}_{j} is the 99% VaR reflecting changes of CVA_j and fair value of eligible hedges (aggregated across all counterparties and eligible hedges) resulting from simulated changes of credit spreads over a 10-day time horizon. CVA_j for a given counterparty must be calculated according to

$$CVA_j = \left(LGD_{MKT}\right) \times \sum_{i=1}^{T} Max\left(0; \exp\left(-\frac{s_{i-1} \times t_{i-1}}{LGD_{MKT}}\right) - \exp\left(-\frac{s_i \times t_i}{LGD_{MKT}}\right)\right) \times \left(\frac{EE_{i-1} \times D_{i-1} + EE_i \times D_i}{2}\right)$$

Where

(A) t_i = the time of the i-th revaluation time bucket starting from $t_0 = 0$.

(B) t_T = the longest contractual maturity across the OTC derivative contracts with the counterparty.

(C) s_i = the CDS spread for the counterparty at tenor t_i used to calculate the CVA for the counterparty. If a CDS spread is not available, the national bank or Federal savings association must use a proxy spread based on the credit quality, industry and region of the counterparty.

(D) LGD_{MKT} = the loss given default of the counterparty based on the spread of a publicly traded debt instrument of the counterparty, or, where a publicly traded debt instrument spread is not available, a proxy spread based on the credit quality, industry, and region of the counterparty. Where no market information and no reliable proxy based on the credit quality, industry, and region of the counterparty are available to determine LGD_{MKT}, a national bank or Federal savings association may use a conservative estimate when determining LGD_{MKT}, subject to approval by the OCC.

(E) EE_i = the sum of the expected exposures for all netting sets with the counterparty at revaluation time t_i, calculated according to paragraphs (e)(6)(iv)(A) and (e)(6)(v)(A) of this section.

(F) D_i = the risk-free discount factor at time t_i, where $D_0 = 1$.

(G) Exp is the exponential function.

(H) The subscript j refers either to a stressed or an unstressed calibration as described in paragraphs (e)(6)(iv) and (v) of this section.

(iii) Notwithstanding paragraphs (e)(6)(i) and (e)(6)(ii) of this section, a national bank or Federal savings association must use the formulas in paragraphs (e)(6)(iii)(A) or (e)(6)(iii)(B) of

this section to calculate credit spread sensitivities if its VaR model is not based on full repricing.

(A) If the VaR model is based on credit spread sensitivities for specific tenors, the national bank or Federal savings association must calculate each credit spread sensitivity according to the following formula:

$$\text{Regulatory CS01} = 0.0001 \times t_i \times exp\left(-\frac{s_i \times t_i}{LGD_{MKT}}\right) \times \left(\frac{EE_{i-1} \times D_{i-1} - EE_{i+1} \times D_{i+1}}{2}\right)$$

For the final time bucket i = T, the corresponding formula is

$$\text{Regulatory CS01} = 0.0001 \times t_i \times \exp\left(-\frac{s_i \times t_i}{LGD_{MKT}}\right) \times \left(\frac{EE_{i-1} \times D_{i-1} + EE_T \times D_T}{2}\right)$$

(B) If the VaR model uses credit spread sensitivities to parallel shifts in credit spreads,

the [BANK] must calculate each credit spread sensitivity according to the following formula:

$$\text{Regulatory CS01} = 0.0001 \times \sum_{i=1}^{T}\left(t_i \times \exp\left(-\frac{s_i \times t_i}{LGD_{MKT}}\right) - t_{i-1} \times \exp\left(-\frac{s_{i-1} \times t_{i-1}}{LGD_{MKT}}\right)\right) \times \left(\frac{EE_{i-1} \times D_{i-1} + EE_i \times D_i}{2}\right)$$

(iv) To calculate the $CVA_{\text{Unstressed}}$ measure for purposes of paragraph (e)(6)(ii) of this section, the national bank or Federal savings association must:

(A) Use the EE_i calculated using the calibration of paragraph (d)(3)(vii) of this section, except as provided in §3.132(e)(6)(vi), and

(B) Use the historical observation period required under §3.205(b)(2).

(v) To calculate the CVA_{Stressed} measure for purposes of paragraph (e)(6)(ii) of this section, the national bank or Federal savings association must:

(A) Use the EE_i calculated using the stress calibration in paragraph (d)(3)(viii) of this section except as provided in paragraph (e)(6)(vi) of this section.

(B) Calibrate VaR model inputs to historical data from the most severe twelve-month stress period contained within the three-year stress period used to calculate EE_i. The OCC may require a national bank or Federal savings association to use a different period of significant financial stress in the calculation of the CVA_{Stressed} measure.

(vi) If a national bank or Federal savings association captures the effect of a collateral agreement on EAD using the method described in paragraph (d)(5)(ii) of this section, for purposes of paragraph (e)(6)(ii) of this section, the national bank or Federal savings association must calculate EE_i using the method in paragraph (d)(5)(ii) of this section and keep that EE constant with the maturity equal to the maximum of:

(A) Half of the longest maturity of a transaction in the netting set, and

(B) The notional weighted average maturity of all transactions in the netting set.

(vii) For purposes of paragraph (e)(6) of this section, the national bank's or Federal savings association's VaR model must capture the basis between the spreads of any CDS_{ind} that is used as the hedging instrument and the hedged counterparty exposure over various time periods, including benign and stressed environments. If the VaR

model does not capture that basis, the national bank or Federal savings association must reflect only 50 percent of the notional amount of the CDS_{ind} hedge in the VaR model.

(viii) If a national bank or Federal savings association uses the standardized approach for counterparty credit risk pursuant to paragraph (c) of this section to calculate the EAD for any immaterial portfolios of OTC derivative contracts, the national bank or Federal savings association must use that EAD as a constant EE in the formula for the calculation of CVA with the maturity equal to the maximum of:

(A) Half of the longest maturity of a transaction in the netting set; and

(B) The notional weighted average maturity of all transactions in the netting set.

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§ 3.133 Cleared transactions.

(a) *General requirements*—(1) *Clearing member clients.* A national bank or Federal savings association that is a clearing member client must use the methodologies described in paragraph (b) of this section to calculate risk-weighted assets for a cleared transaction.

(2) *Clearing members.* A national bank or Federal savings association that is a clearing member must use the methodologies described in paragraph (c) of this section to calculate its risk-weighted assets for a cleared transaction and paragraph (d) of this section to calculate its risk-weighted assets for its default fund contribution to a CCP.

(b) *Clearing member client national banks or Federal savings associations*—(1) *Risk-weighted assets for cleared transactions.* (i) To determine the risk-weighted asset amount for a cleared transaction, a national bank or Federal savings association that is a clearing member client must multiply the trade exposure amount for the cleared transaction, calculated in accordance with paragraph (b)(2) of this section, by the risk weight appropriate for the cleared transaction, determined in accordance with paragraph (b)(3) of this section.

(ii) A clearing member client national bank's or Federal savings association's total risk-weighted assets for cleared transactions is the sum of the risk-weighted asset amounts for all of its cleared transactions.

(2) *Trade exposure amount.* (i) For a cleared transaction that is a derivative contract or a netting set of derivative contracts, trade exposure amount equals the EAD for the derivative contract or netting set of derivative contracts calculated using the methodology used to calculate EAD for derivative contracts set forth in § 3.132(c) or (d), plus the fair value of the collateral posted by the clearing member client national bank or Federal savings association and held by the CCP or a clearing member in a manner that is not bankruptcy remote. When the national bank or Federal savings association calculates EAD for the cleared transaction using the methodology in § 3.132(d), EAD equals $EAD_{unstressed}$.

(ii) For a cleared transaction that is a repo-style transaction or netting set of repo-style transactions, trade exposure amount equals the EAD for the repo-style transaction calculated using the methodology set forth in § 3.132(b)(2) or (3) or (d), plus the fair value of the collateral posted by the clearing member client national bank or Federal savings association and held by the CCP or a clearing member in a manner that is not bankruptcy remote. When the national bank or Federal savings association calculates EAD for the cleared transaction under § 3.132(d), EAD equals $EAD_{unstressed}$.

(3) *Cleared transaction risk weights.* (i) For a cleared transaction with a QCCP, a clearing member client national bank or Federal savings association must apply a risk weight of:

(A) 2 percent if the collateral posted by the national bank or Federal savings association to the QCCP or clearing member is subject to an arrangement that prevents any loss to the clearing member client national bank or Federal savings association due to the joint default or a concurrent insolvency, liquidation, or receivership proceeding of the clearing member and any other clearing member clients of the clearing member; and the clearing member client national bank or Federal savings association has conducted sufficient legal review to conclude with

a well-founded basis (and maintains sufficient written documentation of that legal review) that in the event of a legal challenge (including one resulting from an event of default or from liquidation, insolvency, or receivership proceedings) the relevant court and administrative authorities would find the arrangements to be legal, valid, binding, and enforceable under the law of the relevant jurisdictions.

(B) 4 percent, if the requirements of paragraph (b)(3)(i)(A) of this section are not met.

(ii) For a cleared transaction with a CCP that is not a QCCP, a clearing member client national bank or Federal savings association must apply the risk weight applicable to the CCP under subpart D of this part.

(4) *Collateral.* (i) Notwithstanding any other requirement of this section, collateral posted by a clearing member client national bank or Federal savings association that is held by a custodian (in its capacity as a custodian) in a manner that is bankruptcy remote from the CCP, clearing member, and other clearing member clients of the clearing member, is not subject to a capital requirement under this section.

(ii) A clearing member client national bank or Federal savings association must calculate a risk-weighted asset amount for any collateral provided to a CCP, clearing member or a custodian in connection with a cleared transaction in accordance with requirements under subparts E or F of this part, as applicable.

(c) *Clearing member national bank or Federal savings association*—(1) *Risk-weighted assets for cleared transactions.* (i) To determine the risk-weighted asset amount for a cleared transaction, a clearing member national bank or Federal savings association must multiply the trade exposure amount for the cleared transaction, calculated in accordance with paragraph (c)(2) of this section by the risk weight appropriate for the cleared transaction, determined in accordance with paragraph (c)(3) of this section.

(ii) A clearing member national bank's or Federal savings association's total risk-weighted assets for cleared transactions is the sum of the risk-weighted asset amounts for all of its cleared transactions.

(2) *Trade exposure amount.* A clearing member national bank or Federal savings association must calculate its trade exposure amount for a cleared transaction as follows:

(i) For a cleared transaction that is a derivative contract or a netting set of derivative contracts, trade exposure amount equals the EAD calculated using the methodology used to calculate EAD for derivative contracts set forth in §3.132(c) or (d), plus the fair value of the collateral posted by the clearing member national bank or Federal savings association and held by the CCP in a manner that is not bankruptcy remote. When the clearing member national bank or Federal savings association calculates EAD for the cleared transaction using the methodology in §3.132(d), EAD equals $EAD_{unstressed}$.

(ii) For a cleared transaction that is a repo-style transaction or netting set of repo-style transactions, trade exposure amount equals the EAD calculated under §3.132(b)(2) or (3) or (d), plus the fair value of the collateral posted by the clearing member national bank or Federal savings association and held by the CCP in a manner that is not bankruptcy remote. When the clearing member national bank or Federal savings association calculates EAD for the cleared transaction under §3.132(d), EAD equals $EAD_{unstressed}$.

(3) *Cleared transaction risk weights.* (i) A clearing member national bank or Federal savings association must apply a risk weight of 2 percent to the trade exposure amount for a cleared transaction with a QCCP.

(ii) For a cleared transaction with a CCP that is not a QCCP, a clearing member national bank or Federal savings association must apply the risk weight applicable to the CCP according to subpart D of this part.

(iii) Notwithstanding paragraphs (c)(3)(i) and (ii) of this section, a clearing member national bank or Federal savings association may apply a risk weight of zero percent to the trade exposure amount for a cleared transaction with a QCCP where the clearing member national bank or Federal savings association is acting as a financial

intermediary on behalf of a clearing member client, the transaction offsets another transaction that satisfies the requirements set forth in §3.3(a), and the clearing member national bank or Federal savings association is not obligated to reimburse the clearing member client in the event of the QCCP default.

(4) *Collateral.* (i) Notwithstanding any other requirement of this section, collateral posted by a clearing member national bank or Federal savings association that is held by a custodian (in its capacity as a custodian) in a manner that is bankruptcy remote from the CCP, clearing member, and other clearing member clients of the clearing member, is not subject to a capital requirement under this section.

(ii) A clearing member national bank or Federal savings association must calculate a risk-weighted asset amount for any collateral provided to a CCP, clearing member or a custodian in connection with a cleared transaction in accordance with requirements under subparts E or F of this part, as applicable

(d) *Default fund contributions*—(1) *General requirement.* A clearing member national bank or Federal savings association must determine the risk-weighted asset amount for a default fund contribution to a CCP at least quarterly, or more frequently if, in the opinion of the national bank or Federal savings association or the OCC, there is a material change in the financial condition of the CCP.

(2) *Risk-weighted asset amount for default fund contributions to nonqualifying CCPs.* A clearing member national bank's or Federal savings association's risk-weighted asset amount for default fund contributions to CCPs that are not QCCPs equals the sum of such default fund contributions multiplied by 1,250 percent, or an amount determined by the OCC, based on factors such as size, structure, and membership characteristics of the CCP and riskiness of its transactions, in cases where such default fund contributions may be unlimited.

(3) *Risk-weighted asset amount for default fund contributions to QCCPs.* A clearing member national bank's or Federal savings association's risk-weighted asset amount for default fund contributions to QCCPs equals the sum of its capital requirement, K_{CM} for each QCCP, as calculated under the methodology set forth in paragraph (d)(4) of this section, multiplied by 12.5.

(4) *Capital requirement for default fund contributions to a QCCP.* A clearing member national bank's or Federal savings association's capital requirement for its default fund contribution to a QCCP (K_{CM}) is equal to:

$$K_{CM} = \max\{K_{CCP} * \left(\frac{DF^{pref}}{DF_{CCP}+DF^{pref}_{CCPCM}}\right); 0.16\ percent * DF^{pref}\}$$

Where:

K_{CCP} is the hypothetical capital requirement of the QCCP, as determined under paragraph (d)(5) of this section;

DF^{pref} is the prefunded default fund contribution of the clearing member national bank or Federal savings association to the QCCP;

DF_{CCP} is the QCCP's own prefunded amount that are contributed to the default waterfall and are junior or pari passu with prefunded default fund contributions of clearing members of the QCCP; and

DF^{pref}_{CCPCM} is the total prefunded default fund contributions from clearing members of the QCCP to the QCCP.

(5) *Hypothetical capital requirement of a QCCP.* Where a QCCP has provided its K_{CCP}, a national bank or Federal savings association must rely on such disclosed figure instead of calculating K_{CCP} under this paragraph (d)(5), unless the national bank or Federal savings association determines that a more conservative figure is appropriate based on the nature, structure, or characteristics of the QCCP. The hypothetical capital requirement of a QCCP (K_{CCP}), as determined by the national bank or Federal savings association, is equal to:

$K_{CCP} = \Sigma_{CM_i} EAD_i * 1.6\ percent$

Where:

CM_i is each clearing member of the QCCP; and

EAD_i is the exposure amount of the QCCP to each clearing member of the QCCP, as determined under paragraph (d)(6) of this section.

(6) *EAD of a QCCP to a clearing member.* (i) The EAD of a QCCP to a clearing member is equal to the sum of the EAD for derivative contracts determined under paragraph (d)(6)(ii) of this section and the EAD for repo-style transactions determined under paragraph (d)(6)(iii) of this section.

(ii) With respect to any derivative contracts between the QCCP and the clearing member that are cleared transactions and any guarantees that the clearing member has provided to the QCCP with respect to performance of a clearing member client on a derivative contract, the EAD is equal to the exposure amount of the QCCP to the clearing member for all such derivative contracts and guarantees of derivative contracts calculated under SA–CCR in §3.132(c) (or, with respect to a QCCP located outside the United States, under a substantially identical methodology in effect in the jurisdiction) using a value of 10 business days for purposes of §3.132(c)(9)(iv); less the value of all collateral held by the QCCP posted by the clearing member or a client of the clearing member in connection with a derivative contract for which the clearing member has provided a guarantee to the QCCP and the amount of the prefunded default fund contribution of the clearing member to the QCCP.

(iii) With respect to any repo-style transactions between the QCCP and a clearing member that are cleared transactions, EAD is equal to:

$EAD_i = \max\{EBRM_i - IM_i - DF_i; 0\}$

Where:

$EBRM_i$ is the exposure amount of the QCCP to each clearing member for all repo-style transactions between the QCCP and the clearing member, as determined under §3.132(b)(2) and without recognition of the initial margin collateral posted by the clearing member to the QCCP with respect to the repo-style transactions or the prefunded default fund contribution of the clearing member institution to the QCCP;

IM_i is the initial margin collateral posted by each clearing member to the QCCP with respect to the repo-style transactions; and

DF_i is the prefunded default fund contribution of each clearing member to the QCCP that is not already deducted in paragraph (d)(6)(ii) of this section.

(iv) EAD must be calculated separately for each clearing member's sub-client accounts and sub-house account (*i.e.*, for the clearing member's proprietary activities). If the clearing member's collateral and its client's collateral are held in the same default fund contribution account, then the EAD of that account is the sum of the EAD for the client-related transactions within the account and the EAD of the house-related transactions within the account. For purposes of determining such EADs, the independent collateral of the clearing member and its client must be allocated in proportion to the respective total amount of independent collateral posted by the clearing member to the QCCP.

(v) If any account or sub-account contains both derivative contracts and repo-style transactions, the EAD of that account is the sum of the EAD for the derivative contracts within the account and the EAD of the repo-style transactions within the account. If independent collateral is held for an account containing both derivative contracts and repo-style transactions, then such collateral must be allocated to the derivative contracts and repo-style transactions in proportion to the respective product specific exposure amounts, calculated, excluding the effects of collateral, according to §3.132(b) for repo-style transactions and to §3.132(c)(5) for derivative contracts.

(vi) Notwithstanding any other provision of paragraph (d) of this section, with the prior approval of the OCC, a national bank or Federal savings association may determine the risk-weighted asset amount for a default fund contribution to a QCCP according to §3.35(d)(3)(ii).

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 80 FR 41417, July 15, 2015; 84 FR 35258, July 22, 2019; 85 FR 4411, Jan. 24, 2020; 85 FR 57960, Sept. 17, 2020]

§ 3.134 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 national bank or Federal savings association 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 §§3.141 through 3.145.

(3) A national bank or Federal savings association 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 §3.135. A national bank's or Federal savings association's PD and LGD for the hedged exposure may not be lower than the PD and LGD floors described in §3.131(d)(2) and (d)(3).

(4) If multiple eligible guarantees or eligible credit derivatives cover a single exposure described in paragraph (a)(1) of this section, a national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association may only recognize the credit risk mitigation benefits of eligible guarantees and eligible credit derivatives.

(2) A national bank or Federal savings association 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 national bank or Federal savings association may recognize the guarantee or credit derivative in determining the national bank's or Federal savings association'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 1 of §3.131 and using the appropriate LGD as described in paragraph (c)(1)(iii) of this section. If the national bank or Federal savings association determines that full substitution of the protection provider's PD leads to an inappropriate degree of risk mitigation, the national bank or Federal savings association 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 P of the guarantee or credit derivative is less than the EAD of the hedged exposure, the national bank or Federal savings association 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 national bank or Federal savings association must calculate its risk-based capital requirement for the protected exposure under §3.131, 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 national bank or Federal savings association determines that full substitution leads to an inappropriate degree of risk mitigation, the national bank or Federal savings association may use a higher PD than that of the protection provider.

(B) The national bank or Federal savings association must calculate its risk-based capital requirement for the unprotected exposure under §3.131, 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 paragraph (c)(1)(ii) of this section 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 paragraphs (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 national bank or Federal savings association 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 national bank or Federal savings association 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 national bank's or Federal savings association'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 § 3.131, 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 § 3.131, 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 national bank or Federal savings association 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 national bank's or Federal savings association'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 § 3.131, 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 § 3.131, using the PD for the protection provider, the LGD for the guarantee or credit derivative, and an EAD set equal to P.

(B) The national bank or Federal savings association must calculate its risk-based capital requirement for the unprotected exposure under § 3.131, 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.* For purposes of this paragraph (c), the M of the hedged exposure is the same as the M of the exposure if it were unhedged.

(d) *Maturity mismatch.* (1) A national bank or Federal savings association 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 fulfil its obligation on the exposure. If a credit risk mitigant has embedded options that may reduce its term, the national bank or Federal savings association (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 national bank or Federal savings association (protection purchaser), but the terms of the arrangement at origination of the credit risk mitigant contain a positive incentive for the national bank or Federal savings association to call the transaction before contractual maturity, the remaining time to the first call date is the residual maturity of the credit risk mitigant.[31]

(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 national bank or Federal savings association must apply the following adjustment to the effective notional amount of the credit risk mitigant:

$$P_m = E \times (t - 0.25)/(T - 0.25),$$

where:

(i) P_m = 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 national bank or Federal savings association 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 national bank or Federal savings association must apply the following adjustment to the effective notional amount of the credit derivative:

$$P_r = P_m \times 0.60,$$

where:

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

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

(f) *Currency mismatch.* (1) If a national bank or Federal savings association 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 national bank or Federal savings association must apply the following formula to the effective notional amount of the guarantee or credit derivative:

$$P_c = P_{r\,x} (1 - H_{FX}),$$

where:

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

(ii) P_r = 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 national bank or Federal savings association 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 national bank or Federal savings association qualifies for the use of its own internal estimates of foreign exchange volatility if it qualifies for:

(i) The own-estimates haircuts in § 3.132(b)(2)(iii);

(ii) The simple VaR methodology in § 3.132(b)(3); or

(iii) The internal models methodology in § 3.132(d).

[31] 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.

(3) A national bank or Federal savings association must adjust H_{FX} calculated in paragraph (f)(2) of this section upward if the national bank or Federal savings association revalues the guarantee or credit derivative less frequently than once every ten business days using the square root of time formula provided in §3.132(b)(2)(iii)(A)(*2*).

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 85 FR 4405, Jan. 24, 2020]

§ 3.135 Guarantees and credit derivatives: double default treatment.

(a) *Eligibility and operational criteria for double default treatment.* A national bank or Federal savings association may recognize the credit risk mitigation benefits of a guarantee or credit derivative covering an exposure described in §3.134(a)(1) 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 §3.134(b)(2) and that 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 n^{th}-to-default credit derivative (subject to the requirements of §3.142(m).

(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 national bank or Federal savings association 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 national bank or Federal savings association has implemented a process (which has received the prior, written approval of the OCC) to detect excessive correlation between the creditworthiness of the obligor of the hedged exposure and the protection provider. If excessive correlation is present, the national bank or Federal savings association may not use the double default treatment for the hedged exposure.

(b) *Full coverage.* If a 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 national bank or Federal savings association may determine its risk-weighted asset amount for the hedged exposure under paragraph (e) of this section.

(c) *Partial coverage.* If a 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 national bank or Federal savings association 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 national bank or Federal savings association must set EAD equal to P and calculate its risk-weighted asset amount as provided in paragraph (e) of this section; and

(2) For the unprotected exposure, the national bank or Federal savings association must set EAD equal to the EAD of the original exposure minus P and then calculate its risk-weighted asset amount as provided in §3.131.

(d) *Mismatches.* For any hedged exposure to which a national bank or Federal savings association applies double default treatment under this part, the national bank or Federal savings association must make applicable adjustments to the protection amount as required in §3.134(d), (e), and (f).

(e) *The double default dollar risk-based capital requirement.* The dollar risk-based capital requirement for a hedged exposure to which a national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association with the option to receive immediate payout on triggering the protection; and

(5) ρ_{os} (asset value correlation of the obligor) is calculated according to the appropriate formula for (R) provided in Table 1 in §3.131, with PD equal to PD_o.

(6) b (maturity adjustment coefficient) is calculated according to the formula for b provided in Table 1 in §3.131, with PD equal to the lesser of PD_o and PD_g; and

(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.

§3.136 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) 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) The positive current exposure of a national bank or Federal savings association 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 national bank or Federal savings association 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) Cleared transactions 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 §§3.131 and 132);

(3) One-way cash payments on OTC derivative contracts (which are addressed in §§3. 131 and 132); 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 §§3.131 and 132).

(c) *System-wide failures.* In the case of a system-wide failure of a settlement or clearing system, or a central counterparty, the OCC 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 national bank or Federal savings association must hold risk-based capital against any DvP or PvP transaction with a normal settlement period if the national bank's or Federal savings association's counterparty has not made delivery or payment within five business days after the settlement date. The national bank or Federal savings association must determine its risk-weighted asset amount for such a transaction by multiplying the positive current exposure of the transaction for the national bank or Federal savings association by the appropriate risk weight in Table 1 to §3.136.

TABLE 1 TO §3.136—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 (in 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 national bank or Federal savings association must hold risk-based capital against any non-DvP/non-PvP transaction with a normal settlement period if the national bank or Federal savings association 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 national bank or Federal savings association must continue to hold risk-based capital against the transaction until the national bank or Federal savings association has received its corresponding deliverables.

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

(i) A national bank or Federal savings association may use a 45 percent LGD for the transaction rather than estimating LGD for the transaction provided the national bank or Federal savings association uses the 45 percent LGD for all transactions described in paragraphs (e)(1) and (2) of this section.

(ii) A national bank or Federal savings association may use a 100 percent risk weight for the transaction provided the national bank or Federal savings association uses this risk weight for all transactions described in paragraphs (e)(1) and (2) of this section.

(3) If the national bank or Federal savings association has not received its deliverables by the fifth business day after the counterparty delivery was due, the national bank or Federal savings association must apply a 1,250 percent risk weight to the current fair value of the deliverables owed to the national bank or Federal savings association.

(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.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 80 FR 41417, July 15, 2015]

§§ 3.137–3.140 [Reserved]

RISK-WEIGHTED ASSETS FOR SECURITIZATION EXPOSURES

§ 3.141 Operational criteria for recognizing the transfer of risk.

(a) *Operational criteria for traditional securitizations.* A national bank or Federal savings association 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 national bank or Federal savings association that meets these conditions must hold risk-based capital against any securitization exposures it retains in connection with the securitization. A national bank or Federal savings association 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 common equity tier 1 capital any after-tax gain-on-sale resulting from the transaction. The conditions are:

(1) The exposures are not reported on the national bank's or Federal savings association's consolidated balance sheet under GAAP;

(2) The national bank or Federal savings association has transferred to one or more third parties credit risk associated with the underlying exposures;

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

(4) The securitization does not:

(i) Include 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) Contain an early amortization provision.

(b) *Operational criteria for synthetic securitizations.* For synthetic securitizations, a national bank or Federal savings association may recognize for risk-based capital purposes under this subpart the use of a credit risk mitigant to hedge underlying exposures only if each of the conditions in this paragraph (b) is satisfied. A national bank or Federal savings association that meets these conditions must hold risk-based capital against any credit risk of the exposures it retains in connection with the synthetic securitization. A national bank or Federal savings association that fails to meet these conditions or chooses not to recognize the credit risk mitigant for purposes of this section must hold risk-based capital under this subpart against the underlying exposures as if they had not been synthetically securitized. The conditions are:

(1) The credit risk mitigant is:

(i) Financial collateral; or

(ii) A guarantee that meets all of the requirements of an eligible guarantee in §3.2 except for paragraph (3) of the definition; or

(iii) A credit derivative that meets all of the requirements of an eligible credit derivative except for paragraph (3) of the definition of eligible guarantee in §3.2.

(2) The national bank or Federal savings association 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 national bank or Federal savings association to alter or replace the underlying exposures to improve the credit quality of the underlying exposures;

(iii) Increase the national bank's or Federal savings association'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 national bank or Federal savings association 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 national bank or Federal savings association after the inception of the securitization;

(3) The national bank or Federal savings association 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.

(c) *Due diligence requirements for securitization exposures.* (1) Except for exposures that are deducted from common equity tier 1 capital and exposures subject to §3.142(k), if a national bank or Federal savings association is unable to demonstrate to the satisfaction of the OCC a comprehensive understanding of the features of a

securitization exposure that would materially affect the performance of the exposure, the national bank or Federal savings association must assign a 1,250 percent risk weight to the securitization exposure. The national bank's or Federal savings association's analysis must be commensurate with the complexity of the securitization exposure and the materiality of the position in relation to regulatory capital according to this part.

(2) A national bank or Federal savings association must demonstrate its comprehensive understanding of a securitization exposure under paragraph (c)(1) of this section, for each securitization exposure by:

(i) Conducting an analysis of the risk characteristics of a securitization exposure prior to acquiring the exposure and document such analysis within three business days after acquiring the exposure, considering:

(A) Structural features of the securitization that would materially impact the performance of the exposure, for example, the contractual cash flow waterfall, waterfall-related triggers, credit enhancements, liquidity enhancements, fair value triggers, the performance of organizations that service the position, and deal-specific definitions of default;

(B) Relevant information regarding the performance of the underlying credit exposure(s), for example, the percentage of loans 30, 60, and 90 days past due; default rates; prepayment rates; loans in foreclosure; property types; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographic diversification data on the underlying exposure(s);

(C) Relevant market data of the securitization, for example, bid-ask spreads, most recent sales price and historical price volatility, trading volume, implied market rating, and size, depth and concentration level of the market for the securitization; and

(D) For resecuritization exposures, performance information on the underlying securitization exposures, for example, the issuer name and credit quality, and the characteristics and performance of the exposures underlying the securitization exposures; and

(ii) On an on-going basis (no less frequently than quarterly), evaluating, reviewing, and updating as appropriate the analysis required under this section for each securitization exposure.

§ 3.142 Risk-weighted assets for securitization exposures.

(a) *Hierarchy of approaches.* Except as provided elsewhere in this section and in § 3.141:

(1) A national bank or Federal savings association must deduct from common equity tier 1 capital any after-tax gain-on-sale resulting from a securitization and must apply a 1,250 percent risk weight to the portion of any CEIO that does not constitute after tax gain-on-sale;

(2) If a securitization exposure does not require deduction or a 1,250 percent risk weight under paragraph (a)(1) of this section, the national bank or Federal savings association must apply the supervisory formula approach in § 3.143 to the exposure if the national bank or Federal savings association and the exposure qualify for the supervisory formula approach according to § 3.143(a);

(3) If a securitization exposure does not require deduction or a 1,250 percent risk weight under paragraph (a)(1) of this section and does not qualify for the supervisory formula approach, the national bank or Federal savings association may apply the simplified supervisory formula approach under § 3.144;

(4) If a securitization exposure does not require deduction or a 1,250 percent risk weight under paragraph (a)(1) of this section, does not qualify for the supervisory formula approach in § 3.143, and the national bank or Federal savings association does not apply the simplified supervisory formula approach in § 3.144, the national bank or Federal savings association must apply a 1,250 percent risk weight to the exposure; and

(5) If a securitization exposure is a derivative contract (other than protection provided by a national bank or Federal savings association in the form of 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), a

national bank or Federal savings association 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 national bank's or Federal savings association's total risk-weighted assets for securitization exposures is equal to the sum of its risk-weighted assets calculated using §§ 3.141 through 146.

(c) *Deductions.* A national bank or Federal savings association may calculate any deduction from common equity tier 1 capital for a securitization exposure net of any DTLs associated with the securitization exposure.

(d) *Maximum risk-based capital requirement.* Except as provided in § 3.141(c), 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 national bank or Federal savings association associated with a single securitization (excluding any risk-based capital requirements that relate to the national bank's or Federal savings association's gain-on-sale or CEIOs associated with the securitization) may not exceed the sum of:

(1) The national bank's or Federal savings association's total risk-based capital requirement for the underlying exposures calculated under this subpart as if the national bank or Federal savings association directly held the underlying exposures; and

(2) The total ECL of the underlying exposures calculated under this subpart.

(e) *Exposure amount of a securitization exposure.* (1) The exposure amount of an on-balance sheet securitization exposure that is not a repo-style transaction, eligible margin loan, OTC derivative contract, or cleared transaction is the national bank's or Federal savings association's carrying value.

(2) Except as provided in paragraph (m) of this section, the exposure amount of an off-balance sheet securitization exposure that is not an OTC derivative contract (other than a credit derivative), repo-style transaction, eligible margin loan, or cleared transaction (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 an eligible ABCP liquidity facility, the notional amount may be reduced to the maximum potential amount that the national bank or Federal savings association 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 exposure amount of a securitization exposure that is a repo-style transaction, eligible margin loan, or OTC derivative contract (other than a credit derivative) or cleared transaction (other than a credit derivative) is the EAD of the exposure as calculated in § 3.132 or § 3.133.

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

(g) *Securitizations of non-IRB exposures.* Except as provided in § 3.141(c), if a national bank or Federal savings association has a securitization exposure where any underlying exposure is not a wholesale exposure, retail exposure, securitization exposure, or equity exposure, the national bank or Federal savings association:

(1) Must deduct from common equity tier 1 capital any after-tax gain-on-sale resulting from the securitization and apply a 1,250 percent risk weight to the

portion of any CEIO that does not constitute gain-on-sale, if the national bank or Federal savings association is an originating national bank or Federal savings association;

(2) May apply the simplified supervisory formula approach in §3.144 to the exposure, if the securitization exposure does not require deduction or a 1,250 percent risk weight under paragraph (g)(1) of this section;

(3) Must assign a 1,250 percent risk weight to the exposure if the securitization exposure does not require deduction or a 1,250 percent risk weight under paragraph (g)(1) of this section, does not qualify for the supervisory formula approach in §3.143, and the national bank or Federal savings association does not apply the simplified supervisory formula approach in §3.144 to the exposure.

(h) *Implicit support.* If a national bank or Federal savings association provides support to a securitization in excess of the national bank's or Federal savings association's contractual obligation to provide credit support to the securitization (implicit support):

(1) The national bank or Federal savings association must calculate a risk-weighted asset amount for underlying exposures associated with the securitization as if the exposures had not been securitized and must deduct from common equity tier 1 capital any after-tax gain-on-sale resulting from the securitization; and

(2) The national bank or Federal savings association must disclose publicly:

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

(ii) The regulatory capital impact to the national bank or Federal savings association of providing such implicit support.

(i) *Undrawn portion of a servicer cash advance facility.* (1) Notwithstanding any other provision of this subpart, a national bank or Federal savings association that is a servicer under an eligible servicer cash advance facility is not required to hold risk-based capital against potential future cash advance payments that it may be required to provide under the contract governing the facility.

(2) For a national bank or Federal savings association that acts as a servicer, the exposure amount for a servicer cash advance facility that is not an eligible servicer cash advance facility is equal to the amount of all potential future cash advance payments that the national bank or Federal savings association may be contractually required to provide during the subsequent 12 month period under the contract governing the facility.

(j) *Interest-only mortgage-backed securities.* Regardless of any other provisions in 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) Notwithstanding any other provisions of this subpart E, a national bank or Federal savings association 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 national bank or Federal savings association establishes and maintains, pursuant to GAAP, a non-capital reserve sufficient to meet the national bank's or Federal savings association'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 *et seq.*); and

(iv) The national bank or Federal savings association is well-capitalized, as defined in 12 CFR 6.4. For purposes of determining whether a national bank or Federal savings association is well capitalized for purposes of this paragraph (k), the national bank's or Federal savings association'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 national bank or

Federal savings association on transfers of small-business obligations subject to paragraph (k)(1) of this section cannot exceed 15 percent of the national bank's or Federal savings association's total capital.

(3) If a national bank or Federal savings association ceases to be well capitalized or exceeds the 15 percent capital limitation in paragraph (k)(2) of this section, 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 national bank or Federal savings association was well capitalized and did not exceed the capital limit.

(4) The risk-based capital ratios of a national bank or Federal savings association 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.

(l) *N^{th}-to-default credit derivatives*—(1) *Protection provider.* A national bank or Federal savings association must determine a risk weight using the supervisory formula approach (SFA) pursuant to §3.143 or the simplified supervisory formula approach (SSFA) pursuant to §3.144 for an n^{th}-to-default credit derivative in accordance with this paragraph (l). In the case of credit protection sold, a national bank or Federal savings association must determine its exposure in the n^{th}-to-default credit derivative as the largest notional amount of all the underlying exposures.

(2) For purposes of determining the risk weight for an n^{th}-to-default credit derivative using the SFA or the SSFA, the national bank or Federal savings association must calculate the attachment point and detachment point of its exposure as follows:

(i) The attachment point (parameter A) is the ratio of the sum of the notional amounts of all underlying exposures that are subordinated to the national bank's or Federal savings association's exposure to the total notional amount of all underlying exposures. For purposes of the SSFA, parameter A is expressed as a decimal value between zero and one. For purposes of using the SFA to calculate the risk weight for its exposure in an n^{th}-to-default credit derivative, parameter A must be set equal to the credit enhancement level (L) input to the SFA formula. In the case of a first-to-default credit derivative, there are no underlying exposures that are subordinated to the national bank's or Federal savings association's exposure. In the case of a second-or-subsequent-to-default credit derivative, the smallest (n-1) risk-weighted asset amounts of the underlying exposure(s) are subordinated to the national bank's or Federal savings association's exposure.

(ii) The detachment point (parameter D) equals the sum of parameter A plus the ratio of the notional amount of the national bank's or Federal savings association's exposure in the n^{th}-to-default credit derivative to the total notional amount of all underlying exposures. For purposes of the SSFA, parameter W is expressed as a decimal value between zero and one. For purposes of the SFA, parameter D must be set to equal L plus the thickness of tranche T input to the SFA formula.

(3) A national bank or Federal savings association that does not use the SFA or the SSFA to determine a risk weight for its exposure in an n^{th}-to-default credit derivative must assign a risk weight of 1,250 percent to the exposure.

(4) *Protection purchaser*—(i) *First-to-default credit derivatives.* A national bank or Federal savings association that obtains credit protection on a group of underlying exposures through a first-to-default credit derivative that meets the rules of recognition of §3.134(b) must determine its risk-based capital requirement under this subpart for the underlying exposures as if the national bank or Federal savings association synthetically securitized the underlying exposure with the lowest risk-based capital requirement and had obtained no credit risk mitigant on the other underlying exposures. A national bank or Federal savings association must calculate a risk-based capital requirement for counterparty credit risk according to §3.132 for a first-to-default credit derivative that does not meet the rules of recognition of §3.134(b).

(ii) *Second-or-subsequent-to-default credit derivatives.* (A) A national bank or Federal savings association that obtains credit protection on a group of underlying exposures through a n^{th}-to-default credit derivative that meets the rules of recognition of § 3.134(b) (other than a first-to-default credit derivative) may recognize the credit risk mitigation benefits of the derivative only if:

(*1*) The national bank or Federal savings association 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 national bank or Federal savings association satisfies the requirements of paragraph (l)(3)(ii)(A) of this section, the national bank or Federal savings association must determine its risk-based capital requirement for the underlying exposures as if the bank had only synthetically securitized the underlying exposure with the n^{th} smallest risk-based capital requirement and had obtained no credit risk mitigant on the other underlying exposures.

(C) A national bank or Federal savings association must calculate a risk-based capital requirement for counterparty credit risk according to § 3.132 for a n^{th}-to-default credit derivative that does not meet the rules of recognition of § 3.134(b).

(m) *Guarantees and credit derivatives other than n^{th}-to-default credit derivatives*—(1) *Protection provider.* For a guarantee or credit derivative (other than an n^{th}-to-default credit derivative) provided by a national bank or Federal savings association that covers the full amount or a pro rata share of a securitization exposure's principal and interest, the national bank or Federal savings association must risk weight the guarantee or credit derivative as if it holds the portion of the reference exposure covered by the guarantee or credit derivative.

(2) *Protection purchaser.* (i) A national bank or Federal savings association that purchases an OTC credit derivative (other than an n^{th}-to-default credit derivative) that is recognized under § 3.145 as a credit risk mitigant (including via recognized collateral) is not required to compute a separate counterparty credit risk capital requirement under § 3.131 in accordance with § 3.132(c)(3).

(ii) If a national bank or Federal savings association cannot, or chooses not to, recognize a purchased credit derivative as a credit risk mitigant under § 3.145, the national bank or Federal savings association must determine the exposure amount of the credit derivative under § 3.132(c).

(A) If the national bank or Federal savings association purchases credit protection from a counterparty that is not a securitization SPE, the national bank or Federal savings association must determine the risk weight for the exposure according § 3.131.

(B) If the national bank or Federal savings association purchases the credit protection from a counterparty that is a securitization SPE, the national bank or Federal savings association must determine the risk weight for the exposure according to this section, including paragraph (a)(5) of this section for a credit derivative that has a first priority claim on the cash flows from the underlying exposures of the securitization SPE (notwithstanding amounts due under interest rate or currency derivative contracts, fees due, or other similar payments.

§ 3.143 Supervisory formula approach (SFA).

(a) *Eligibility requirements.* A national bank or Federal savings association must use the SFA to determine its risk-weighted asset amount for a securitization exposure if the national bank or Federal savings association can calculate on an ongoing basis each of the SFA parameters in paragraph (e) of this section.

(b) *Mechanics.* The risk-weighted asset amount for a securitization exposure equals its SFA risk-based capital requirement as calculated under paragraph (c) and (d) of this section, multiplied by 12.5.

(c) *The SFA risk-based capital requirement.* (1) If K_{IRB} is greater than or equal to L + T, an exposure's SFA risk-based capital requirement equals the exposure amount.

(2) If K_{IRB} is less than or equal to L, an exposure's SFA risk-based capital

requirement is UE multiplied by TP multiplied by the greater of:

(i) F · T (where F is 0.016 for all securitization exposures); or

(ii) S[L + T] − S[L].

(3) If K_{IRB} is greater than L and less than L + T, the national bank or Federal savings association must apply a 1,250 percent risk weight to 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) F · (T − (K_{IRB} − L)) (where F is 0.016 for all other securitization exposures); or

(ii) S[L + T] − S[K_{IRB}].

(d) *The supervisory formula:*

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

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

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

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

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

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

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

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

$$(9)\quad v = K_{IRB} \cdot \frac{(EWALGD - K_{IRB}) + .25 \cdot (1 - EWALGD)}{N}$$

$$(10)\quad d = 1 - (1 - h) \cdot (1 - \beta[K_{IRB}; a, b]).$$

(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.* For purposes of the calculations in paragraphs (c) and (d) of this section:

(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 §3.142(e)) plus the adjusted carrying value of any underlying exposures that are equity exposures (as defined in §3.151(b)).

(2) *Tranche percentage (TP)*. TP is the ratio of the amount of the national bank's or Federal savings association'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 subpart E as if the underlying exposures were directly held by the national bank or Federal savings association); 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 all of the 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 national bank's or Federal savings association's securitization exposure; to

(B) UE.

(ii) A national bank or Federal savings association 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 national bank's or Federal savings association'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 national bank's or Federal savings association's securitization exposure; to

(ii) UE.

(6) *Effective number of exposures (N)*. (i) Unless the national bank or Federal savings association 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 underlying exposures.

(ii) Multiple exposures to one obligor must be treated as a single underlying exposure.

(iii) In the case of a resecuritization, the national bank or Federal savings association 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 resecuritization, 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 national bank or Federal savings association may apply the SFA using the following simplifications:

(i) h = 0; and

(ii) v = 0.

(2) Under the conditions in §§ 3.143(f)(3) and (f)(4), a national bank or Federal savings association may employ a simplified method for calculating N and EWALGD.

(3) If C_1 is no more than 0.03, a national bank or Federal savings association may set EWALGD = 0.50 if none of the underlying exposures is a securitization exposure, or may set 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 national bank or Federal savings association.

(4) Alternatively, if only C_1 is available and C_1 is no more than 0.03, the national bank or Federal savings association may set EWALGD = 0.50 if none of the underlying exposures is a securitization exposure, or may set EWALGD = 1 if one or more of the underlying exposures is a securitization exposure and may set $N = 1/C_1$.

§ 3.144 Simplified supervisory formula approach (SSFA).

(a) *General requirements for the SSFA.* To use the SSFA to determine the risk weight for a securitization exposure, a national bank or Federal savings association must have data that enables it to assign accurately the parameters described in paragraph (b) of this section. Data used to assign the parameters described in paragraph (b) of this section must be the most currently available data; if the contracts governing the underlying exposures of the securitization require payments on a monthly or quarterly basis, the data used to assign the parameters described in paragraph (b) of this section must be no more than 91 calendar days old. A national bank or Federal savings association

that does not have the appropriate data to assign the parameters described in paragraph (b) of this section must assign a risk weight of 1,250 percent to the exposure.

(b) *SSFA parameters.* To calculate the risk weight for a securitization exposure using the SSFA, a national bank or Federal savings association must have accurate information on the following five inputs to the SSFA calculation:

(1) K_G is the weighted-average (with unpaid principal used as the weight for each exposure) total capital requirement of the underlying exposures calculated using subpart D of this part. K_G is expressed as a decimal value between zero and one (that is, an average risk weight of 100 percent represents a value of K_G equal to 0.08).

(2) Parameter W is expressed as a decimal value between zero and one. Parameter W is the ratio of the sum of the dollar amounts of any underlying exposures of the securitization that meet any of the criteria as set forth in paragraphs (b)(2)(i) through (vi) of this section to the balance, measured in dollars, of underlying exposures:

(i) Ninety days or more past due;

(ii) Subject to a bankruptcy or insolvency proceeding;

(iii) In the process of foreclosure;

(iv) Held as real estate owned;

(v) Has contractually deferred payments for 90 days or more, other than principal or interest payments deferred on:

(A) Federally-guaranteed student loans, in accordance with the terms of those guarantee programs; or

(B) Consumer loans, including non-federally-guaranteed student loans, provided that such payments are deferred pursuant to provisions included in the contract at the time funds are disbursed that provide for period(s) of deferral that are not initiated based on changes in the creditworthiness of the borrower; or

(vi) Is in default.

(3) Parameter A is the attachment point for the exposure, which represents the threshold at which credit losses will first be allocated to the exposure. Except as provided in section 142(l) for n^{th}-to-default credit derivatives, parameter A equals the ratio of the current dollar amount of underlying exposures that are subordinated to the exposure of the national bank or Federal savings association to the current dollar amount of underlying exposures. Any reserve account funded by the accumulated cash flows from the underlying exposures that is subordinated to the national bank's or Federal savings association's securitization exposure may be included in the calculation of parameter A to the extent that cash is present in the account. Parameter A is expressed as a decimal value between zero and one.

(4) Parameter D is the detachment point for the exposure, which represents the threshold at which credit losses of principal allocated to the exposure would result in a total loss of principal. Except as provided in section 142(l) for n^{th}-to-default credit derivatives, parameter D equals parameter A plus the ratio of the current dollar amount of the securitization exposures that are *pari passu* with the exposure (that is, have equal seniority with respect to credit risk) to the current dollar amount of the underlying exposures. Parameter D is expressed as a decimal value between zero and one.

(5) A supervisory calibration parameter, p, is equal to 0.5 for securitization exposures that are not resecuritization exposures and equal to 1.5 for resecuritization exposures.

(c) *Mechanics of the SSFA.* K_G and W are used to calculate K_A, the augmented value of K_G, which reflects the observed credit quality of the underlying exposures. K_A is defined in paragraph (d) of this section. The values of parameters A and D, relative to K_A determine the risk weight assigned to a securitization exposure as described in paragraph (d) of this section. The risk weight assigned to a securitization exposure, or portion of a securitization exposure, as appropriate, is the larger of the risk weight determined in accordance with this paragraph (c), paragraph (d) of this section, and a risk weight of 20 percent.

(1) When the detachment point, parameter D, for a securitization exposure is less than or equal to K_A, the exposure must be assigned a risk weight of 1,250 percent;

(2) When the attachment point, parameter A, for a securitization exposure is greater than or equal to K_A, the national bank or Federal savings association must calculate the risk weight in accordance with paragraph (d) of this section;

(3) When A is less than K_A and D is greater than K_A, the risk weight is a weighted-average of 1,250 percent and 1,250 percent times K_{SSFA} calculated in accordance with paragraph (d) of this section. For the purpose of this weighted-average calculation:

(i) The weight assigned to 1,250 percent equals $\frac{K_A - A}{D - A}$; and

(ii) The weight assigned to 1,250 percent times K_{SSFA} equals $\frac{D - K_A}{D - A}$. The risk weight will be set equal to:

$$Risk\ Weight = \left[\left(\frac{K_A - A}{D - A}\right) \cdot 1{,}250\ percent\right] + \left[\left(\frac{D - K_A}{D - A}\right) \cdot 1{,}250\ percent \cdot K_{SSFA}\right]$$

(d) SSFA equation. (1) The [BANK] must define the following parameters:

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

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

$$u = D - K_A$$

$$l = \max(A - K_A, 0)$$

$e = 2.71828$, the base of the natural logarithms.

(2) Then the [BANK] must calculate K_{SSFA} according to the following equation:

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

(3) The risk weight for the exposure (expressed as a percent) is equal to $K_{SSFA} \times 1{,}250$.

§3.145 Recognition of credit risk mitigants for securitization exposures.

(a) *General.* An originating national bank or Federal savings association that has obtained a credit risk mitigant to hedge its securitization exposure to a synthetic or traditional securitization that satisfies the operational criteria in §3.141 may recognize the credit risk mitigant, but only as provided in this section. An investing

national bank or Federal savings association 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.

(b) *Collateral*—(1) *Rules of recognition*. A national bank or Federal savings association may recognize financial collateral in determining the national bank's or Federal savings association's risk-weighted asset amount for a securitization exposure (other than a repo-style transaction, an eligible margin loan, or an OTC derivative contract for which the national bank or Federal savings association has reflected collateral in its determination of exposure amount under §3.132) as follows. The national bank's or Federal savings association's risk-weighted asset amount for the collateralized securitization exposure is equal to the risk-weighted asset amount for the securitization exposure as calculated under the SSFA in §3.144 or under the SFA in §3.143 multiplied by the ratio of adjusted exposure amount (SE*) to original exposure amount (SE),

Where:

(i) $SE^* = \max\{0, [SE - C \times (1 - H_s - H_{fx})]\}$;

(ii) SE = the amount of the securitization exposure calculated under §3.142(e);

(iii) C = the current fair value of the collateral;

(iv) H_s = the haircut appropriate to the collateral type; and

(v) H_{fx} = 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 fair value of the asset in the basket divided by the current fair value of all assets in the basket and H_i is the haircut applicable to that asset.

(3) *Standard supervisory haircuts*. Unless a national bank or Federal savings association qualifies for use of and uses own-estimates haircuts in paragraph (b)(4) of this section:

(i) A national bank or Federal savings association must use the collateral type haircuts (H_s) in Table 1 to §3.132 of this subpart;

(ii) A national bank or Federal savings association must use a currency mismatch haircut (H_{fx}) of 8 percent if the exposure and the collateral are denominated in different currencies;

(iii) A national bank or Federal savings association must multiply the supervisory haircuts obtained in paragraphs (b)(3)(i) and (ii) of this section by the square root of 6.5 (which equals 2.549510); and

(iv) A national bank or Federal savings association 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 OCC, a national bank or Federal savings association may calculate haircuts using its own internal estimates of market price volatility and foreign exchange volatility, subject to §3.132(b)(2)(iii). The minimum holding period (T_M) for securitization exposures is 65 business days.

(c) *Guarantees and credit derivatives*—(1) *Limitations on recognition*. A national bank or Federal savings association may only recognize an eligible guarantee or eligible credit derivative provided by an eligible guarantor in determining the national bank's or Federal savings association's risk-weighted asset amount for a securitization exposure.

(2) *ECL for securitization exposures.* When a national bank or Federal savings association recognizes an eligible guarantee or eligible credit derivative provided by an eligible guarantor in determining the national bank's or Federal savings association's risk-weighted asset amount for a securitization exposure, the national bank or Federal savings association 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 national bank's or Federal savings association's total ECL.

(3) *Rules of recognition.* A national bank or Federal savings association may recognize an eligible guarantee or eligible credit derivative provided by an eligible guarantor in determining the national bank's or Federal savings association's risk-weighted asset amount 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 national bank or Federal savings association 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 guarantor (as determined in the wholesale risk weight function described in §3.131), using the national bank's or Federal savings association's PD for the guarantor, the national bank's or Federal savings association's LGD for the guarantee or credit derivative, and an EAD equal to the amount of the securitization exposure (as determined in §3.142(e)).

(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 national bank or Federal savings association 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 guarantor (as determined in the wholesale risk weight function described in §3.131), using the national bank's or Federal savings association's PD for the guarantor, the national bank's or Federal savings association'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 §§3.142 through 146).

(4) *Mismatches.* The national bank or Federal savings association must make applicable adjustments to the protection amount as required in §3.134(d), (e), and (f) 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 national bank or Federal savings association must use the longest residual maturity of any of the hedged exposures as the residual maturity of all the hedged exposures.

§§3.146–3.150 [Reserved]

RISK-WEIGHTED ASSETS FOR EQUITY EXPOSURES

§3.151 Introduction and exposure measurement.

(a) *General.* (1) To calculate its risk-weighted asset amounts for equity exposures that are not equity exposures to investment funds, a national bank or Federal savings association may apply either the Simple Risk Weight Approach (SRWA) in §3.152 or, if it qualifies to do so, the Internal Models Approach (IMA) in §3.153. A national bank or Federal savings association must use the look-through approaches provided in §3.154 to calculate its risk-weighted asset amounts for equity exposures to investment funds.

(2) A national bank or Federal savings association must treat an investment in a separate account (as defined

in §3.2), as if it were an equity exposure to an investment fund as provided in §3.154.

(3) *Stable value protection.* (i) Stable value protection means a contract where the provider of the contract is obligated to pay:

(A) The policy owner of a separate account an amount equal to the shortfall between the fair value and cost basis of the separate account when the policy owner of the separate account surrenders the policy, or

(B) The beneficiary of the contract an amount equal to the shortfall between the fair value and book value of a specified portfolio of assets.

(ii) A national bank or Federal savings association that purchases stable value protection on its investment in a separate account must treat the portion of the carrying value of its investment in the separate account attributable to the stable value protection as an exposure to the provider of the protection and the remaining portion of the carrying value of its separate account as an equity exposure to an investment fund.

(iii) A national bank or Federal savings association that provides stable value protection must treat the exposure as an equity derivative with an adjusted carrying value determined as the sum of §3.151(b)(1) and (2).

(b) *Adjusted carrying value.* For purposes of this subpart, the adjusted carrying value of an equity exposure is:

(1) For the on-balance sheet component of an equity exposure, the national bank's or Federal savings association's carrying value of the exposure;

(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.

(3) 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 national bank's or Federal savings association's best estimate of the amount that would be funded under economic downturn conditions.

§3.152 Simple risk weight approach (SRWA).

(a) *General.* Under the SRWA, a national bank's or Federal savings association'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 national bank's or Federal savings association'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 national bank's or Federal savings association's individual equity exposures to an investment fund as determined in §3.154.

(b) *SRWA computation for individual equity exposures.* A national bank or Federal savings association 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 section.

(1) *Zero percent risk weight equity exposures.* An equity exposure to an entity whose credit exposures are exempt from the 0.03 percent PD floor in §3.131(d)(2) is assigned a zero percent risk weight.

(2) *20 percent risk weight equity exposures.* An equity exposure to a Federal Home Loan Bank or the Federal Agricultural Mortgage Corporation (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 section 24 (Eleventh) of the

National Bank Act, 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.

(ii) *Effective portion of hedge pairs.* The effective portion of a hedge pair.

(iii) *Non-significant equity exposures.* Equity exposures, excluding significant investments in the capital of an unconsolidated institution in the form of common stock and exposures to an investment firm that would meet the definition of a traditional securitization were it not for the OCC's application of paragraph (8) of that definition in §3.2 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 national bank's or Federal savings association's total capital.

(A) To compute the aggregate adjusted carrying value of a national bank's or Federal savings association's equity exposures for purposes of this section, the national bank or Federal savings association 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 national bank or Federal savings association does not know the actual holdings of the investment fund, the national bank or Federal savings association 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 national bank or Federal savings association must assume for purposes of this section that the investment fund invests to the maximum extent possible in equity exposures.

(B) When determining which of a national bank's or Federal savings association's equity exposures qualifies for a 100 percent risk weight under this section, a national bank or Federal savings association 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, 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) *250 percent risk weight equity exposures.* Significant investments in the capital of unconsolidated financial institutions in the form of common stock that are not deducted from capital pursuant to §3.22(b)(4) are assigned a 250 percent risk weight.

(5) *300 percent risk weight equity exposures.* A publicly traded equity exposure (other than an equity exposure described in paragraph (b)(7) of this section and including the ineffective portion of a hedge pair) is assigned a 300 percent risk weight.

(6) *400 percent risk weight equity exposures.* An equity exposure (other than an equity exposure described in paragraph (b)(7) of this section) that is not publicly traded is assigned a 400 percent risk weight.

(7) *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 OCC's application of paragraph (8) of that definition in §3.2; 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 national bank or Federal savings association acquires at least one of the equity exposures); the documentation specifies the measure of effectiveness (E) the national bank or Federal savings association 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 national bank or Federal savings association 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 national bank or Federal savings association 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 zero. 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.

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 84 FR 35258, July 22, 2019]

§ 3.153 Internal models approach (IMA).

(a) *General.* A national bank or Federal savings association 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 paragraphs (c) and (d) of this section).

(b) *Qualifying criteria.* To qualify to use the IMA to calculate risk-weighted

assets for equity exposures, a national bank or Federal savings association must receive prior written approval from the OCC. To receive such approval, the national bank or Federal savings association must demonstrate to the OCC's satisfaction that the national bank or Federal savings association meets the following criteria:

(1) The national bank or Federal savings association 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 national bank's or Federal savings association's modeled equity exposures; and

(iii) Adequately capture both general market risk and idiosyncratic risk.

(2) The national bank's or Federal savings association'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 99th percentile one-tailed confidence interval of the distribution of quarterly returns for a benchmark portfolio of equity exposures comparable to the national bank's or Federal savings association'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 national bank's or Federal savings association's model and benchmarking exercise must be sufficient to provide confidence in the accuracy and robustness of the national bank's or Federal savings association's estimates.

(4) The national bank's or Federal savings association's model and benchmarking process must incorporate data that are relevant in representing the risk profile of the national bank's or Federal savings association'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 national bank's or Federal savings association's modeled equity exposures. In addition, the national bank's or Federal savings association's benchmarking exercise must be based on daily market prices for the benchmark portfolio. If the national bank's or Federal savings association's model uses a scenario methodology, the national bank or Federal savings association must demonstrate that the model produces a conservative estimate of potential losses on the national bank's or Federal savings association's modeled equity exposures over a relevant long-term market cycle. If the national bank or Federal savings association employs risk factor models, the national bank or Federal savings association must demonstrate through empirical analysis the appropriateness of the risk factors used.

(5) The national bank or Federal savings association must be able to demonstrate, using theoretical arguments and empirical evidence, that any proxies used in the modeling process are comparable to the national bank's or Federal savings association's modeled equity exposures and that the national bank or Federal savings association has made appropriate adjustments for differences. The national bank or Federal savings association must derive any proxies for its modeled equity exposures and benchmark portfolio using historical market data that are relevant to the national bank's or Federal savings association'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 national bank's or Federal savings association's modeled equity exposures.

(c) *Risk-weighted assets calculation for a national bank or Federal savings association using the IMA for publicly traded and non-publicly traded equity exposures.* If a national bank or Federal savings association models publicly traded and non-publicly traded equity exposures, the national bank's or Federal savings association'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 §3.152(b)(1) through (b)(3)(i) (as determined under §3.152)

and each equity exposure to an investment fund (as determined under § 3.154); and

(2) The greater of:

(i) The estimate of potential losses on the national bank's or Federal savings association's equity exposures (other than equity exposures referenced in paragraph (c)(1) of this section) generated by the national bank's or Federal savings association'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 national bank's or Federal savings association'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 § 3.152(b)(1) through (b)(3)(i), 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 national bank's or Federal savings association's equity exposures that are not publicly traded, do not qualify for a 0 percent, 20 percent, or 100 percent risk weight under § 3.152(b)(1) through (b)(3)(i), and are not equity exposures to an investment fund.

(d) *Risk-weighted assets calculation for a national bank or Federal savings association using the IMA only for publicly traded equity exposures.* If a national bank or Federal savings association models only publicly traded equity exposures, the national bank's or Federal savings association'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 §§ 3.152(b)(1) through (b)(3)(i) (as determined under § 3.152), each equity exposure that qualifies for a 400 percent risk weight under § 3.152(b)(5) or a 600 percent risk weight under § 3.152(b)(6) (as determined under § 3.152), and each equity exposure to an investment fund (as determined under § 3.154); and

(2) The greater of:

(i) The estimate of potential losses on the national bank's or Federal savings association's equity exposures (other than equity exposures referenced in paragraph (d)(1) of this section) generated by the national bank's or Federal savings association'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 national bank's or Federal savings association'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 § 3.152(b)(1) through (b)(3)(i), and are not equity exposures to an investment fund; and

(B) 200 percent multiplied by the aggregate ineffective portion of all hedge pairs.

§ 3.154 Equity exposures to investment funds.

(a) *Available approaches.* (1) Unless the exposure meets the requirements for a community development equity exposure in § 3.152(b)(3)(i), a national bank or Federal savings association 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, or the alternative modified look-through approach in paragraph (d) 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 § 3.152(b)(3)(i) is its adjusted carrying value.

(3) If an equity exposure to an investment fund is part of a hedge pair and the national bank or Federal savings association does not use the full look-through approach, the national bank or Federal savings association may use the ineffective portion of the hedge pair as determined under § 3.152(c) 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 national bank or Federal savings association 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 subpart E of this part as if the proportional ownership share of each exposure were held directly by the national bank or Federal savings association) may either:

(1) Set the risk-weighted asset amount of the national bank's or Federal savings association'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 national bank or Federal savings association; and

(ii) The national bank's or Federal savings association's proportional ownership share of the fund; or

(2) Include the national bank's or Federal savings association's proportional ownership share of each exposure held by the fund in the national bank's or Federal savings association's IMA.

(c) *Simple modified look-through approach.* Under this approach, the risk-weighted asset amount for a national bank's or Federal savings association's equity exposure to an investment fund equals the adjusted carrying value of the equity exposure multiplied by the highest risk weight assigned according to subpart D of this part 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).

(d) *Alternative modified look-through approach.* Under this approach, a national bank or Federal savings association may assign the adjusted carrying value of an equity exposure to an investment fund on a pro rata basis to different risk weight categories assigned according to subpart D of this part 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 national bank's or Federal savings association'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 all exposure types within the fund exceeds 100 percent, the national bank or Federal savings association must assume that the fund invests to the maximum extent permitted under its investment limits in the exposure type with the highest risk weight under subpart D of this part, and continues to make investments in order of the exposure type with the next highest risk weight under subpart D of this part until the maximum total investment level is reached. If more than one exposure type applies to an exposure, the national bank or Federal savings association must use the highest applicable risk weight. A national bank or Federal savings association 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.

§ 3.155 Equity derivative contracts.

(a) Under the IMA, in addition to holding risk-based capital against an equity derivative contract under this part, a national bank or Federal savings association 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 § 3.132.

(b) Under the SRWA, a national bank or Federal savings association 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 national bank or Federal savings association using the SRWA must either include all or exclude all of the contracts from any measure used to determine counterparty credit risk exposure.

§§ 3.156–3.160 [Reserved]

RISK-WEIGHTED ASSETS FOR OPERATIONAL RISK

§ 3.161 Qualification requirements for incorporation of operational risk mitigants.

(a) *Qualification to use operational risk mitigants.* A national bank or Federal savings association may adjust its estimate of operational risk exposure to reflect qualifying operational risk mitigants if:

(1) The national bank's or Federal savings association's operational risk quantification system is able to generate an estimate of the national bank's or Federal savings association's operational risk exposure (which does not incorporate qualifying operational risk mitigants) and an estimate of the national bank's or Federal savings association's operational risk exposure adjusted to incorporate qualifying operational risk mitigants; and

(2) The national bank's or Federal savings association's methodology for incorporating the effects of insurance, if the national bank or Federal savings association 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 the national bank or Federal savings association deems to have strong capacity to meet its claims payment obligations and the obligor rating category to which the national bank or Federal savings association assigns the company is assigned a PD equal to or less than 10 basis points;

(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;

(2) Operational risk mitigants other than insurance for which the OCC has given prior written approval. In evaluating an operational risk mitigant other than insurance, the OCC will consider whether the operational risk mitigant covers potential operational losses in a manner equivalent to holding total capital.

§ 3.162 Mechanics of risk-weighted asset calculation.

(a) If a national bank or Federal savings association does not qualify to use or does not have qualifying operational risk mitigants, the national bank's or Federal savings association's dollar risk-based capital requirement for operational risk is its operational risk exposure minus eligible operational risk offsets (if any).

(b) If a national bank or Federal savings association qualifies to use operational risk mitigants and has qualifying operational risk mitigants, the national bank's or Federal savings association's dollar risk-based capital requirement for operational risk is the greater of:

(1) The national bank's or Federal savings association'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 national bank's or Federal savings association's operational risk exposure; and

(ii) Eligible operational risk offsets (if any).

(c) The national bank's or Federal savings association's risk-weighted asset amount for operational risk equals the national bank's or Federal savings association's dollar risk-based capital requirement for operational

risk determined under sections 162(a) or (b) multiplied by 12.5.

§§ 3.163–3.170 [Reserved]

DISCLOSURES

§ 3.171 Purpose and scope.

§§ 3.171 through 3.173 establish public disclosure requirements related to the capital requirements of a national bank or Federal savings association that is an advanced approaches national bank or Federal savings association.

§ 3.172 Disclosure requirements.

(a) A national bank or Federal savings association that is an advanced approaches national bank or Federal savings association that has completed the parallel run process and that has received notification from the OCC pursuant to section 121(d) of subpart E of this part must publicly disclose each quarter its total and tier 1 risk-based capital ratios and their components as calculated under this subpart (that is, common equity tier 1 capital, additional tier 1 capital, tier 2 capital, total qualifying capital, and total risk-weighted assets).

(b) A national bank or Federal savings association that is an advanced approaches national bank or Federal savings association that has completed the parallel run process and that has received notification from the OCC pursuant to section 121(d) of subpart E of this part must comply with paragraph (c) of this section unless it is a consolidated subsidiary of a bank holding company, savings and loan holding company, or depository institution that is subject to these disclosure requirements or a subsidiary of a non-U.S. banking organization that is subject to comparable public disclosure requirements in its home jurisdiction.

(c)(1) A national bank or Federal savings association described in paragraph (b) of this section must provide timely public disclosures each calendar quarter of the information in the applicable tables in § 3.173. If a significant change occurs, such that the most recent reported amounts are no longer reflective of the national bank's or Federal savings association's capital adequacy and risk profile, then a brief discussion of this change and its likely impact must be disclosed as soon as practicable thereafter. Qualitative disclosures that typically do not change each quarter (for example, a general summary of the national bank's or Federal savings association's risk management objectives and policies, reporting system, and definitions) may be disclosed annually after the end of the fourth calendar quarter, provided that any significant changes to these are disclosed in the interim. Management may provide all of the disclosures required by this subpart in one place on the national bank's or Federal savings association's public Web site or may provide the disclosures in more than one public financial report or other regulatory reports, provided that the national bank or Federal savings association publicly provides a summary table specifically indicating the location(s) of all such disclosures.

(2) A national bank or Federal savings association described in paragraph (b) of this section must 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 subpart, and must ensure that appropriate review of the disclosures takes place. One or more senior officers of the national bank or Federal savings association must attest that the disclosures meet the requirements of this subpart.

(3) If a national bank or Federal savings association described in paragraph (b) of this section 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 national bank or Federal savings association is not required to 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.

(d)(1) A national bank or Federal savings association that meets any of the criteria in § 3.100(b)(1) before January 1, 2015, must publicly disclose each quarter its supplementary leverage ratio and the components thereof (that is, tier 1 capital and total leverage exposure) as calculated under subpart B of this part, beginning with the first quarter in 2015. This disclosure requirement applies without regard to whether the national bank or Federal savings association has completed the parallel run process and received notification from the OCC pursuant to § 3.121(d).

(2) A national bank or Federal savings association that meets any of the criteria in § 3.100(b)(1) on or after January 1, 2015, or a Category III national bank or Federal savings association must publicly disclose each quarter its supplementary leverage ratio and the components thereof (that is, tier 1 capital and total leverage exposure) as calculated under subpart B of this part beginning with the calendar quarter immediately following the quarter in which the national bank or Federal savings association becomes an advanced approaches national bank or Federal savings association or a Category III national bank or Federal savings association. This disclosure requirement applies without regard to whether the national bank or Federal savings association has completed the parallel run process and has received notification from the OCC pursuant to § 3.121(d).

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 79 FR 57743, Sept. 26, 2014; 80 FR 41417, July 15, 2015; 84 FR 59265, Nov. 1, 2019]

§ 3.173 Disclosures by certain advanced approaches national banks or Federal savings associations and Category III national banks or Federal savings associations.

(a)(1) An advanced approaches national bank or Federal savings association described in § 3.172(b) must make the disclosures described in Tables 1 through 12 to § 3.173.

(2) An advanced approaches national bank or Federal savings association and a Category III national bank or Federal savings association that is required to publicly disclose its supplementary leverage ratio pursuant to § 3.172(d) must make the disclosures required under Table 13 to this section unless the national bank or Federal savings association is a consolidated subsidiary of a bank holding company, savings and loan holding company, or depository institution that is subject to these disclosure requirements or a subsidiary of a non-U.S. banking organization that is subject to comparable public disclosure requirements in its home jurisdiction.

(3) The disclosures described in Tables 1 through 12 to § 3.173 must be made publicly available for twelve consecutive quarters beginning on January 1, 2014, or a shorter period, as applicable, for the quarters after the national bank or Federal savings association has completed the parallel run process and received notification from the OCC pursuant to § 3.121(d). The disclosures described in Table 13 to § 3.173 must be made publicly available for twelve consecutive quarters beginning on January 1, 2015, or a shorter period, as applicable, for the quarters after the national bank or Federal savings association becomes subject to the disclosure of the supplementary leverage ratio pursuant to §§ 3.172(d) and 3.173(a)(2).

TABLE 1 TO § 3.173—SCOPE OF APPLICATION

Qualitative disclosures	(a)	The name of the top corporate entity in the group to which subpart E of this part applies.
	(b)	A brief description of the differences in the basis for consolidating entities[1] for accounting and regulatory purposes, with a description of those entities: (1) That are fully consolidated; (2) That are deconsolidated and deducted from total capital; (3) For which the total capital requirement is deducted; and (4) That are neither consolidated nor deducted (for example, where the investment in the entity is assigned a risk weight in accordance with this subpart).

TABLE 1 TO §3.173—SCOPE OF APPLICATION—Continued

	(c)	Any restrictions, or other major impediments, on transfer of funds or total capital within the group.
Quantitative disclosures	(d)	The aggregate amount of surplus capital of insurance subsidiaries included in the total capital of the consolidated group.
	(e)	The aggregate amount by which actual total capital is less than the minimum total capital requirement in all subsidiaries, with total capital requirements and the name(s) of the subsidiaries with such deficiencies.

[1] Such entities include securities, insurance and other financial subsidiaries, commercial subsidiaries (where permitted), and significant minority equity investments in insurance, financial and commercial entities.

TABLE 2 TO §3.173—CAPITAL STRUCTURE

Qualitative disclosures	(a)	Summary information on the terms and conditions of the main features of all regulatory capital instruments.
Quantitative disclosures	(b)	The amount of common equity tier 1 capital, with separate disclosure of: (1) Common stock and related surplus; (2) Retained earnings; (3) Common equity minority interest; (4) AOCI (net of tax) and other reserves; and (5) Regulatory adjustments and deductions made to common equity tier 1 capital.
	(c)	The amount of tier 1 capital, with separate disclosure of: (1) Additional tier 1 capital elements, including additional tier 1 capital instruments and tier 1 minority interest not included in common equity tier 1 capital; and (2) Regulatory adjustments and deductions made to tier 1 capital.
	(d)	The amount of total capital, with separate disclosure of: (1) Tier 2 capital elements, including tier 2 capital instruments and total capital minority interest not included in tier 1 capital; and (2) Regulatory adjustments and deductions made to total capital.
	(e)	(1) Whether the national bank or Federal savings association has elected to phase in recognition of the transitional amounts as defined in §3.301. (2) The national bank's or Federal savings association's common equity tier 1 capital, tier 1 capital, and total capital without including the transitional amounts.

TABLE 3 TO §3.173—CAPITAL ADEQUACY

Qualitative disclosures	(a)	A summary discussion of the national bank's or Federal savings association'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: (1) Wholesale exposures; (2) Residential mortgage exposures; (3) Qualifying revolving exposures; (4) Other retail exposures; (5) Securitization exposures; (6) Equity exposures: (7) Equity exposures subject to the simple risk weight approach; and (8) Equity exposures subject to the internal models approach.
	(c)	Standardized market risk-weighted assets and advanced market risk-weighted assets as calculated under subpart F of this part: (1) Standardized approach for specific risk; and (2) Internal models approach for specific risk.
	(d)	Risk-weighted assets for operational risk.
	(e)	(1) Common equity tier 1, tier 1 and total risk-based capital ratios reflecting the transition provisions described in §3.301: (A) For the top consolidated group; and (2) For each depository institution subsidiary.
	(f)	Common equity tier 1, tier 1 and total risk-based capital ratios reflecting the full adoption of CECL: (1) For the top consolidated group; and (2) For each depository institution subsidiary.
	(g)	Total risk-weighted assets.

TABLE 4 TO § 3.173—CAPITAL CONSERVATION AND COUNTERCYCLICAL CAPITAL BUFFERS

Qualitative disclosures	(a)	The national bank or Federal savings association must publicly disclose the geographic breakdown of its private sector credit exposures used in the calculation of the countercyclical capital buffer.
Quantitative disclosures	(b)	At least quarterly, the national bank or Federal savings association must calculate and publicly disclose the capital conservation buffer and the countercyclical capital buffer as described under § 3.11 of subpart B.
	(c)	At least quarterly, the national bank or Federal savings association must calculate and publicly disclose the buffer retained income of the national bank or Federal savings association, as described under § 3.11 of subpart B.
	(d)	At least quarterly, the national bank or Federal savings association must calculate and publicly disclose any limitations it has on distributions and discretionary bonus payments resulting from the capital conservation buffer and the countercyclical capital buffer framework described under § 3.11 of subpart B, including the maximum payout amount for the quarter.

(b) *General qualitative disclosure requirement*. For each separate risk area described in Tables 5 through 12 to § 3.173, the national bank or Federal savings association must describe its risk management objectives and policies, including:

(1) Strategies and processes;

(2) The structure and organization of the relevant risk management function;

(3) The scope and nature of risk reporting and/or measurement systems; and

(4) Policies for hedging and/or mitigating risk and strategies and processes for monitoring the continuing effectiveness of hedges/mitigants.

TABLE 5[1] TO § 3.173—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 7 to § 3.173), including: (1) Policy for determining past due or delinquency status; (2) Policy for placing loans on nonaccrual; (3) Policy for returning loans to accrual status; (4) Definition of and policy for identifying impaired loans (for financial accounting purposes). (5) Description of the methodology that the entity uses to estimate its allowance for loan and lease losses or adjusted allowance for credit losses, as applicable, including statistical methods used where applicable; (6) Policy for charging-off uncollectible amounts; and (7) Discussion of the national bank's or Federal savings association's credit risk management policy
Quantitative disclosures	(b)	Total credit risk exposures and average credit risk exposures, after accounting offsets in accordance with GAAP,[2] without taking into account the effects of credit risk mitigation techniques (for example, collateral and netting not permitted under GAAP), over the period categorized by major types of credit exposure. For example, national banks or Federal savings associations could use categories similar to that used for financial statement purposes. Such categories might include, for instance: (1) Loans, off-balance sheet commitments, and other non-derivative off-balance sheet exposures; (2) Debt securities; and (3) OTC derivatives.
	(c)	Geographic[3] distribution of exposures, categorized in significant areas by major types of credit exposure.
	(d)	Industry or counterparty type distribution of exposures, categorized by major types of credit exposure.
	(e)	By major industry or counterparty type: (1) Amount of impaired loans for which there was a related allowance under GAAP; (2) Amount of impaired loans for which there was no related allowance under GAAP; (3) Amount of loans past due 90 days and on nonaccrual;

TABLE 5[1] TO §3.173—CREDIT RISK: GENERAL DISCLOSURES—Continued

		(4) Amount of loans past due 90 days and still accruing;[4]
		(5) The balance in the allowance for loan and lease losses at the end of each period, disaggregated on the basis of the entity's impairment method. To disaggregate the information required on the basis of impairment methodology, an entity shall separately disclose the amounts based on the requirements in GAAP; and
		(6) Charge-offs during the period.
	(f)	Amount of impaired loans and, if available, the amount of past due loans categorized by significant geographic areas including, if practical, the amounts of allowances related to each geographical area,[5] further categorized as required by GAAP.
	(g)	Reconciliation of changes in ALLL or AACL, as applicable.[6]
	(h)	Remaining contractual maturity breakdown (for example, one year or less) of the whole portfolio, categorized by credit exposure.

[1] Table 5 to §3.173 does not cover equity exposures, which should be reported in Table 9.
[2] *See,* for example, ASC Topic 815–10 and 210–20 as they may be amended from time to time.
[3] Geographical areas may comprise individual countries, groups of countries, or regions within countries. A national bank or Federal savings association 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.
[4] A national bank or Federal savings association is encouraged also to provide an analysis of the aging of past-due loans.
[5] The portion of the general allowance that is not allocated to a geographical area should be disclosed separately.
[6] 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.

TABLE 6 TO §3.173—CREDIT RISK: DISCLOSURES FOR PORTFOLIOS SUBJECT TO IRB RISK-BASED CAPITAL FORMULAS

Qualitative disclosures	(a)	Explanation and review of the: (1) Structure of internal rating systems and if the national bank or Federal savings association considers external ratings, the relation between internal and external ratings; (2) Use of risk parameter estimates other than for regulatory capital purposes; (3) Process for managing and recognizing credit risk mitigation (see Table 8 to §3.173); and (4) 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: (1) Wholesale category; (2) Retail subcategories; (i) Residential mortgage exposures; (ii) Qualifying revolving exposures; and (iii) Other retail exposures. For each category and subcategory above the description should include: (A) The types of exposure included in the category/subcategories; and (B) The definitions, methods and data for estimation and validation of PD, LGD, and EAD, including assumptions employed in the derivation of these variables.[1]
Quantitative disclosures: risk assessment.	(c)	(1) 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:[2] (i) Total EAD;[3] (ii) Exposure-weighted average LGD (percentage); (iii) Exposure-weighted average risk weight; and (iv) Amount of undrawn commitments and exposure-weighted average EAD including average drawdowns prior to default for wholesale exposures. (2) 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 national bank or Federal savings association experienced higher than average default rates, loss rates or EADs.

TABLE 6 TO § 3.173—CREDIT RISK: DISCLOSURES FOR PORTFOLIOS SUBJECT TO IRB RISK-BASED CAPITAL FORMULAS—Continued

	(e)	The national bank's or Federal savings association's estimates compared against actual outcomes over a longer period.[4] 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.[5] Where appropriate, the national bank or Federal savings association should further decompose this to provide analysis of PD, LGD, and EAD outcomes against estimates provided in the quantitative risk assessment disclosures above.[6]

[1] This disclosure item 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 national bank or Federal savings association must disclose any significant differences in approach to estimating these variables within each category/subcategories.

[2] The PD, LGD and EAD disclosures in Table 6 (c) to § 3.173 should reflect the effects of collateral, qualifying master netting agreements, eligible guarantees and eligible credit derivatives as defined under this part. Disclosure of each PD grade should include the exposure-weighted average PD for each grade. Where a national bank or Federal savings association 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.

[3] Outstanding loans and EAD on undrawn commitments can be presented on a combined basis for these disclosures.

[4] 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 national bank or Federal savings association sufficient time to build up a longer run of data that will make these disclosures meaningful.

[5] This disclosure item is not intended to be prescriptive about the period used for this assessment. Upon implementation, it is expected that a national bank or Federal savings association would provide these disclosures for as long a set of data as possible—for example, if a national bank or Federal savings association 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.

[6] A national bank or Federal savings association must 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 must 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 national bank or Federal savings association must also provide explanations for such differences.

TABLE 7 TO § 3.173—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: (1) Discussion of methodology used to assign economic capital and credit limits for counterparty credit exposures; (2) Discussion of policies for securing collateral, valuing and managing collateral, and establishing credit reserves; (3) Discussion of the primary types of collateral taken; (4) Discussion of policies with respect to wrong-way risk exposures; and (5) Discussion of the impact of the amount of collateral the national bank or Federal savings association would have to provide if the national bank or Federal savings association 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.[1] 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 national banks or Federal savings associations not using the internal models methodology in § 3.132(d) , the distribution of current credit exposure by types of credit exposure.[2]
	(c)	Notional amount of purchased and sold credit derivatives, segregated between use for the national bank's or Federal savings association's own credit portfolio and for its intermediation activities, including the distribution of the credit derivative products used, categorized further by protection bought and sold within each product group.
	(d)	The estimate of alpha if the national bank or Federal savings association has received supervisory approval to estimate alpha.

[1] 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.

[2] 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.

TABLE 8 TO §3.173—CREDIT RISK MITIGATION [1] [2]

Qualitative disclosures	(a)	The general qualitative disclosure requirement with respect to credit risk mitigation, including: (1) Policies and processes for, and an indication of the extent to which the national bank or Federal savings association uses, on- or off-balance sheet netting; (2) Policies and processes for collateral valuation and management; (3) A description of the main types of collateral taken by the national bank or Federal savings association; (4) The main types of guarantors/credit derivative counterparties and their creditworthiness; and (5) 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.

[1] At a minimum, a national bank or Federal savings association must provide the disclosures in Table 8 in relation to credit risk mitigation that has been recognized for the purposes of reducing capital requirements under this subpart. Where relevant, national banks or Federal savings associations are encouraged to give further information about mitigants that have not been recognized for that purpose.

[2] Credit derivatives and other credit mitigation that are treated for the purposes of this subpart as synthetic securitization exposures should be excluded from the credit risk mitigation disclosures (in Table 8 to §3.173) and included within those relating to securitization (in Table 9 to §3.173).

TABLE 9 TO §3.173—SECURITIZATION

Qualitative disclosures	(a)	The general qualitative disclosure requirement with respect to securitization (including synthetic securitizations), including a discussion of: (1) The national bank's or Federal savings association's objectives for securitizing assets, including the extent to which these activities transfer credit risk of the underlying exposures away from the national bank or Federal savings association to other entities and including the type of risks assumed and retained with resecuritization activity; [1] (2) The nature of the risks (e.g. liquidity risk) inherent in the securitized assets; (3) The roles played by the national bank or Federal savings association in the securitization process [2] and an indication of the extent of the national bank's or Federal savings association's involvement in each of them; (4) The processes in place to monitor changes in the credit and market risk of securitization exposures including how those processes differ for resecuritization exposures; (5) The national bank's or Federal savings association's policy for mitigating the credit risk retained through securitization and resecuritization exposures; and (6) The risk-based capital approaches that the national bank or Federal savings association follows for its securitization exposures including the type of securitization exposure to which each approach applies.
	(b)	A list of: (1) The type of securitization SPEs that the national bank or Federal savings association, as sponsor, uses to securitize third-party exposures. The national bank or Federal savings association must indicate whether it has exposure to these SPEs, either on- or off-balance sheet; and (2) Affiliated entities: (i) That the national bank or Federal savings association manages or advises; and (ii) That invest either in the securitization exposures that the national bank or Federal savings association has securitized or in securitization SPEs that the national bank or Federal savings association sponsors.[3]
	(c)	Summary of the national bank's or Federal savings association's accounting policies for securitization activities, including: (1) Whether the transactions are treated as sales or financings; (2) Recognition of gain-on-sale; (3) Methods and key assumptions and inputs applied in valuing retained or purchased interests; (4) Changes in methods and key assumptions and inputs from the previous period for valuing retained interests and impact of the changes; (5) Treatment of synthetic securitizations;

TABLE 9 TO § 3.173—SECURITIZATION—Continued

		(6) How exposures intended to be securitized are valued and whether they are recorded under subpart E of this part; and (7) Policies for recognizing liabilities on the balance sheet for arrangements that could require the national bank or Federal savings association to provide financial support for securitized assets.
	(d)	An explanation of significant changes to any of the quantitative information set forth below since the last reporting period.
Quantitative disclosures	(e)	The total outstanding exposures securitized[4] by the national bank or Federal savings association in securitizations that meet the operational criteria in § 3.141 (categorized into traditional/synthetic), by underlying exposure type[5] separately for securitizations of third-party exposures for which the bank acts only as sponsor.
	(f)	For exposures securitized by the national bank or Federal savings association in securitizations that meet the operational criteria in § 3.141: (1) Amount of securitized assets that are impaired[6]/past due categorized by exposure type; and (2) Losses recognized by the national bank or Federal savings association during the current period categorized by exposure type.[7]
	(g)	The total amount of outstanding exposures intended to be securitized categorized by exposure type.
	(h)	Aggregate amount of: (1) On-balance sheet securitization exposures retained or purchased categorized by exposure type; and (2) Off-balance sheet securitization exposures categorized by exposure type.
	(i)	(1) Aggregate amount of securitization exposures retained or purchased and the associated capital requirements for these exposures, categorized between securitization and resecuritization exposures, further categorized into a meaningful number of risk weight bands and by risk-based capital approach (e.g. SA, SFA, or SSFA). (2) Aggregate amount disclosed separately by type of underlying exposure in the pool of any: (i) After-tax gain-on-sale on a securitization that has been deducted from common equity tier 1 capital: And (ii) Credit-enhancing interest-only strip that is assigned a 1,250 percent risk weight.
	(j)	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.
	(k)	Aggregate amount of resecuritization exposures retained or purchased categorized according to: (1) Exposures to which credit risk mitigation is applied and those not applied; and (2) Exposures to guarantors categorized according to guarantor creditworthiness categories or guarantor name.

[1] The national bank or Federal savings association must describe the structure of resecuritizations in which it participates; this description must be provided for the main categories of resecuritization products in which the national bank or Federal savings association is active.

[2] For example, these roles would include originator, investor, servicer, provider of credit enhancement, sponsor, liquidity provider, or swap provider.

[3] For example, money market mutual funds should be listed individually, and personal and private trusts, should be noted collectively.

[4] ''Exposures securitized'' include underlying exposures originated by the bank, whether generated by them or purchased, and recognized in the balance sheet, from third parties, and third-party exposures included in sponsored transactions. Securitization transactions (including underlying exposures originally on the bank's balance sheet and underlying exposures acquired by the bank from third-party entities) in which the originating bank does not retain any securitization exposure should be shown separately but need only be reported for the year of inception.

[5] A national bank or Federal savings association is required to disclose exposures regardless of whether there is a capital charge under this part.

[6] A national bank or Federal savings association must include credit-related other than temporary impairment (OTTI).

[7] For example, charge-offs/allowances (if the assets remain on the bank's balance sheet) or credit-related OTTI of I/O strips and other retained residual interests, as well as recognition of liabilities for probable future financial support required of the bank with respect to securitized assets.

TABLE 10 TO § 3.173—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 national bank's or Federal savings association's measurement approach.
	(c)	A description of the use of insurance for the purpose of mitigating operational risk.

TABLE 11 TO §3.173—EQUITIES NOT SUBJECT TO SUBPART F OF THIS PART

Qualitative disclosures	(a)	The general qualitative disclosure requirement with respect to the equity risk of equity holdings not subject to subpart F of this part, including: (1) Differentiation between holdings on which capital gains are expected and those held for other objectives, including for relationship and strategic reasons; and (2) Discussion of important policies covering the valuation of and accounting for equity holdings not subject to subpart F of this part. This includes the accounting methodology and valuation methodologies used, including key assumptions and practices affecting valuation as well as significant changes in these practices.
Quantitative disclosures	(b)	Carrying value on the balance sheet of equity investments, as well as the fair value of those investments.
	(c)	The types and nature of investments, including the amount that is: (1) Publicly traded; and (2) Non-publicly traded.
	(d)	The cumulative realized gains (losses) arising from sales and liquidations in the reporting period.
	(e)	(1) Total unrealized gains (losses) [1] (2) Total latent revaluation gains (losses) [2] (3) Any amounts of the above included in tier 1 and/or tier 2 capital.
	(f)	Capital requirements categorized by appropriate equity groupings, consistent with the national bank's or Federal savings association's methodology, as well as the aggregate amounts and the type of equity investments subject to any supervisory transition regarding total capital requirements.[3]

[1] Unrealized gains (losses) recognized in the balance sheet but not through earnings.
[2] Unrealized gains (losses) not recognized either in the balance sheet or through earnings.
[3] This disclosure must 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.

TABLE 12 TO §3.173—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, categorized by currency (as appropriate).

(c) Except as provided in §3.172(b), a national bank or Federal savings association described in §3.172(d) must make the disclosures described in Table 13 to §3.173; provided, however, the disclosures required under this paragraph are required without regard to whether the national bank or Federal savings association has completed the parallel run process and has received notification from the OCC pursuant to §3.121(d). The national bank or Federal savings association must make these disclosures publicly available beginning on January 1, 2015.

TABLE 13 TO §3.173—SUPPLEMENTARY LEVERAGE RATIO

	Dollar amounts in thousands			
	Tril	Bil	Mil	Thou
Part 1: Summary comparison of accounting assets and total leverage exposure				
1 Total consolidated assets as reported in published financial statements.				
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation.				
3 Adjustment for fiduciary assets recognized on balance sheet but excluded from total leverage exposure.				

TABLE 13 TO § 3.173—SUPPLEMENTARY LEVERAGE RATIO—Continued

	Dollar amounts in thousands			
	Tril	Bil	Mil	Thou
4 Adjustment for derivative exposures.				
5 Adjustment for repo-style transactions.				
6 Adjustment for off-balance sheet exposures (that is, conversion to credit equivalent amounts of off-balance sheet exposures).				
7 Other adjustments.				
8 Total leverage exposure.				
Part 2: Supplementary leverage ratio				
On-balance sheet exposures				
1 On-balance sheet assets (excluding on-balance sheet assets for repo-style transactions and derivative exposures, but including cash collateral received in derivative transactions).				
2 LESS: Amounts deducted from tier 1 capital.				
3 Total on-balance sheet exposures (excluding on-balance sheet assets for repo-style transactions and derivative exposures, but including cash collateral received in derivative transactions) (sum of lines 1 and 2).				
Derivative exposures				
4 Current exposure for derivative exposures (that is, net of cash variation margin).				
5 Add-on amounts for potential future exposure (PFE) for derivative exposures.				
6 Gross-up for cash collateral posted if deducted from the on-balance sheet assets, except for cash variation margin.				
7 LESS: Deductions of receivable assets for cash variation margin posted in derivative transactions, if included in on-balance sheet assets.				
8 LESS: Exempted CCP leg of client-cleared transactions.				
9 Effective notional principal amount of sold credit protection.				
10 LESS: Effective notional principal amount offsets and PFE adjustments for sold credit protection.				
11 Total derivative exposures (sum of lines 4 to 10).				
Repo-style transactions				
12 On-balance sheet assets for repo-style transactions, except include the gross value of receivables for reverse repurchase transactions. Exclude from this item the value of securities received in a security-for-security repo-style transaction where the securities lender has not sold or re-hypothecated the securities received. Include in this item the value of securities that qualified for sales treatment that must be reversed.				
13 LESS: Reduction of the gross value of receivables in reverse repurchase transactions by cash payables in repurchase transactions under netting agreements.				
14 Counterparty credit risk for all repo-style transactions.				
15 Exposure for repo-style transactions where a banking organization acts as an agent.				
16 Total exposures for repo-style transactions (sum of lines 12 to 15).				
Other off-balance sheet exposures				
17 Off-balance sheet exposures at gross notional amounts.				
18 LESS: Adjustments for conversion to credit equivalent amounts.				
19 Off-balance sheet exposures (sum of lines 17 and 18).				
Capital and total leverage exposure				
20 Tier 1 capital.				
21 Total leverage exposure (sum of lines 3, 11, 16 and 19).				
Supplementary leverage ratio				
22 Supplementary leverage ratio	(in percent)			

[78 FR 62157, 62273, Oct. 11, 2013, as amended at 79 FR 57743, Sept. 26, 2014; 80 FR 41418, July 15, 2015; 84 FR 4238, Feb. 14, 2019; 84 FR 59265, Nov. 1, 2019; 85 FR 4413, Jan. 24, 2020]

§§ 3.174–3.200 [Reserved]

Subpart F—Risk-Weighted Assets—Market Risk

SOURCE: 78 FR 62157, 62273, Oct. 11, 2013, unless otherwise noted.

§ 3.201 Purpose, applicability, and reservation of authority.

(a) *Purpose.* This subpart F establishes risk-based capital requirements for national banks or Federal savings associations with significant exposure to market risk, provides methods for these national banks or Federal savings associations to calculate their standardized measure for market risk and, if applicable, advanced measure for market risk, and establishes public disclosure requirements.

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

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

(ii) $1 billion or more.

(2) The OCC may apply this subpart to any national bank or Federal savings association if the OCC deems it necessary or appropriate because of the level of market risk of the national bank or Federal savings association or to ensure safe and sound banking practices.

(3) The OCC may exclude a national bank or Federal savings association that meets the criteria of paragraph (b)(1) of this section from application of this subpart if the OCC determines that the exclusion is appropriate based on the level of market risk of the national bank or Federal savings association and is consistent with safe and sound banking practices.

(c) *Reservation of authority.* (1) The OCC may require a national bank or Federal savings association to hold an amount of capital greater than otherwise required under this subpart if the OCC determines that the national bank's or Federal savings association's capital requirement for market risk as calculated under this subpart is not commensurate with the market risk of the national bank's or Federal savings association's covered positions. In making determinations under paragraphs (c)(1) through (c)(3) of this section, the OCC will apply notice and response procedures generally in the same manner as the notice and response procedures set forth in 12 CFR 3.404.

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

(3) The OCC may also require a national bank or Federal savings association to calculate risk-based capital requirements for specific positions or portfolios under this subpart, or under subpart D or subpart E of this part, as appropriate, to more accurately reflect the risks of the positions.

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

§ 3.202 Definitions.

(a) Terms set forth in § 3.2 and used in this subpart have the definitions assigned thereto in § 3.2.

(b) For the purposes of this subpart, the following terms are defined as follows:

Backtesting means the comparison of a national bank's or Federal savings