

**DEDUCTIONS FOR MARKET AND CREDIT RISK**  
**FOR CERTAIN BROKERS OR DEALERS**  
**SEA Rule 15c3-1e (Appendix E)**

PRELIMINARY NOTE: Appendices E and G to the net capital rule set forth a program that allows a broker or dealer to use an alternative approach to computing net capital deductions, subject to the conditions described in the Appendices, including supervision of the broker's or dealer's ultimate holding company under the program. The program is designed to reduce the likelihood that financial and operational weakness in the holding company will destabilize the broker or dealer, or the broader financial system. The focus of this supervision of the ultimate holding company is its financial and operational condition and its risk management controls and methodologies.

(a) APPLICATION

A broker or dealer may apply to the Commission for authorization to compute deductions for market risk pursuant to this Appendix E in lieu of computing deductions pursuant to §§ 240.15c3-1(c)(2)(vi) and (c)(2)(vii) and to compute deductions for credit risk pursuant to this Appendix E on credit exposures arising from transactions in derivatives instruments (if this Appendix E is used to calculate deductions for market risk on these instruments) in lieu of computing deductions pursuant to § 240.15c3-1(c)(2)(iv):

(1) A broker-dealer shall submit the following information to the Commission with its application:

(i) An executive summary of the information provided to the Commission with its application and an identification of the ultimate holding company of the broker or dealer;

(ii) A comprehensive description of the internal risk management control system of the broker or dealer and how that system satisfies the requirements set forth in §240.15c3-4;

(iii) A list of the categories of positions that the broker or dealer holds in its proprietary accounts and a brief description of the methods that the broker or dealer will use to calculate deductions for market and credit risk on those categories of positions;

SEA Rule 15c3-1e(a)(1)(iii)

(a)(1) APPLICATION (continued)

(iv) A description of the mathematical models to be used to price positions and to compute deductions for market risk, including those portions of the deductions attributable to specific risk, if applicable, and deductions for credit risk; a description of the creation, use, and maintenance of the mathematical models; a description of the broker's or dealer's internal risk management controls over those models, including a description of each category of persons who may input data into the models; if a mathematical model incorporates empirical correlations across risk categories, a description of the process for measuring correlations; a description of the backtesting procedures the broker or dealer will use to backtest the mathematical model used to calculate maximum potential exposure; a description of how each mathematical model satisfies the applicable qualitative and quantitative requirements set forth in paragraph (d) of this Appendix E; and a statement describing the extent to which each mathematical model used to compute deductions for market and credit risk will be used as part of the risk analyses and reports presented to senior management;

(v) If the broker or dealer is applying to the Commission for approval to use scenario analysis to calculate deductions for market risk for certain positions, a list of those types of positions, a description of how those deductions will be calculated using scenario analysis, and an explanation of why each scenario analysis is appropriate to calculate deductions for market risk on those types of positions;

(vi) A description of how the broker or dealer will calculate current exposure;

(vii) A description of how the broker or dealer will determine internal credit ratings of counterparties and internal credit risk weights of counterparties, if applicable;

(viii) A written undertaking by the ultimate holding company of the broker or dealer, if it is not an ultimate holding company that has a principal regulator, in a form acceptable to the Commission, signed by a duly authorized person at the ultimate holding company, to the effect that, as a condition of Commission approval of the application of the broker or dealer to compute deductions for market and credit risk pursuant to this Appendix E, the ultimate holding company agrees to:

(A) Comply with all applicable provisions of this Appendix E;

(B) Comply with all applicable provisions of §240.15c3-1g;

(C) Comply with the provisions of §240.15c3-4 with respect to an internal risk management control system for the affiliate group as though it were an OTC derivatives dealer with respect to all of its business activities, except that paragraphs (c)(5)(xiii), (c)(5)(xiv), (d)(8), and (d)(9) of §240.15c3-4 shall not apply;

(a)(1)(viii) APPLICATION (continued)

(D) As part of the internal risk management control system for the affiliate group, establish, document, and maintain procedures for the detection and prevention of money laundering and terrorist financing;

(E) Permit the Commission to examine the books and records of the ultimate holding company and any of its affiliates, if the affiliate is not an entity that has a principal regulator;

(F) If the disclosure to the Commission of any information required as a condition for the broker or dealer to compute deductions for market and credit risk pursuant to this Appendix E could be prohibited by law or otherwise, cooperate with the Commission, to the extent permissible, including by describing any secrecy laws or other impediments that could restrict the ability of material affiliates to provide information on their operations or activities and by discussing the manner in which the ultimate holding company and the broker or dealer propose to provide the Commission with adequate information or assurances of access to information;

(G) Make available to the Commission information about the ultimate holding company or any of its material affiliates that the Commission finds is necessary to evaluate the financial and operational risk within the ultimate holding company and its material affiliates and to evaluate compliance with the conditions of eligibility of the broker or dealer to compute deductions to net capital under the alternative method of this Appendix E;

(H) Make available examination reports of principal regulators for those affiliates of the ultimate holding company that are not subject to Commission examination; and

(I) Acknowledge that, if the ultimate holding company fails to comply in a material manner with any provision of its undertaking, the Commission may, in addition to any other conditions necessary or appropriate in the public interest or for the protection of investors, increase the multiplication factors the ultimate holding company uses to calculate allowances for market and credit risk, as defined in § 240.15c3-1g(a)(2) and (a)(3) or impose any condition with respect to the broker or dealer listed in paragraph (e) of this Appendix E; and

(a)(1) APPLICATION (continued)

(ix) A written undertaking by the ultimate holding company of the broker or dealer, if the ultimate holding company has a principal regulator, in a form acceptable to the Commission, signed by a duly authorized person at the ultimate holding company, to the effect that, as a condition of Commission approval of the application of the broker or dealer to compute deductions for market and credit risk pursuant to this Appendix E, the ultimate holding company agrees to:

(A) Comply with all applicable provisions of this Appendix E;

(B) Comply with all applicable provisions of § 240.15c3-1g;

(C) Make available to the Commission information about the ultimate holding company that the Commission finds is necessary to evaluate the financial and operational risk within the ultimate holding company and to evaluate compliance with the conditions of eligibility of the broker or dealer to compute net capital under the alternative method of this Appendix E; and

(D) Acknowledge that if the ultimate holding company fails to comply in a material manner with any provision of its undertaking, the Commission may, in addition to any other conditions necessary or appropriate in the public interest or for the protection of investors, impose any condition with respect to the broker or dealer listed in paragraph (e) of this Appendix E;

(2) As a condition of Commission approval, the ultimate holding company of the broker or dealer, if it is not an ultimate holding company that has a principal regulator, shall include the following information with the application:

(i) A narrative description of the business and organization of the ultimate holding company;

(ii) An alphabetical list of the affiliates of the ultimate holding company (referred to as the “affiliate group,” which shall include the ultimate holding company), with an identification of the financial regulator, if any, that regulates the affiliate, and a designation of the members of the affiliate group that are material to the ultimate holding company (“material affiliates”);

(iii) An organizational chart that identifies the ultimate holding company, the broker or dealer, and the material affiliates;

(iv) Consolidated and consolidating financial statements of the ultimate holding company as of the end of the quarter preceding the filing of the application;

(v) Sample computations for the ultimate holding company of allowable capital and allowances for market risk, credit risk, and operational risk, determined pursuant to § 240.15c3-1g(a)(1) – (a)(4);

SEA Rule 15c3-1e(a)(2)(v)

(a)(2) APPLICATION (continued)

(vi) A list of the categories of positions that the affiliate group holds in its proprietary accounts and a brief description of the method that the ultimate holding company proposes to use to calculate allowances for market and credit risk, pursuant to § 240.15c3-1g(a)(2) and (a)(3), on those categories of positions;

(vii) A description of the mathematical models to be used to price positions and to compute the allowance for market risk, including those portions of the allowance attributable to specific risk, if applicable, and the allowance for credit risk; a description of the creation, use, and maintenance of the mathematical models; a description of the ultimate holding company's internal risk management controls over those models, including a description of each category of persons who may input data into the models; if a mathematical model incorporates empirical correlations across risk categories, a description of the process for measuring correlations; a description of the backtesting procedures the ultimate holding company will use to backtest the mathematical model used to calculate maximum potential exposure; a description of how each mathematical model satisfies the applicable qualitative and quantitative requirements set forth in paragraph (d) of this Appendix E; a statement describing the extent to which each mathematical model used to compute allowances for market and credit risk is used as part of the risk analyses and reports presented to senior management; and a description of any positions for which the ultimate holding company proposes to use a method other than VaR to compute an allowance for market risk and a description of how that allowance would be determined;

(viii) A description of how the ultimate holding company will calculate current exposure;

(ix) A description of how the ultimate holding company will determine the credit risk weights of counterparties and internal credit ratings of counterparties, if applicable;

(x) A description of how the ultimate holding company will calculate an allowance for operational risk under §240.15c3-1g(a)(4);

(xi) For each instance in which a mathematical model used by the broker or dealer to calculate a deduction for market risk or to calculate maximum potential exposure for a particular product or counterparty differs from the mathematical model used by the ultimate holding company to calculate an allowance for market risk or to calculate maximum potential exposure for that same product or counterparty, a description of the difference(s) between the mathematical models;

(xii) A comprehensive description of the risk management control system for the affiliate group that the ultimate holding company has established to manage affiliate group-wide risk, including market, credit, liquidity and funding, legal and compliance, and operational risks, and how that system satisfies the requirements of §240.15c3-4; and

(xiii) Sample risk reports that are provided to the persons at the ultimate holding company who are responsible for managing group-wide risk and that will be provided to the Commission pursuant to §240.15c3-1g(b)(1)(i)(H);

SEA Rule 15c3-1e(a)(2)(xiii)

(a) APPLICATION (continued)

(3) As a condition of Commission approval, the ultimate holding company of the broker or dealer, if the ultimate holding company has a principal regulator, shall include the following information with the broker's or dealer's application:

(i) A narrative description of the business and organization of the ultimate holding company;

(ii) An alphabetical list of the affiliates of the ultimate holding company (referred to as the "affiliate group," which shall include the ultimate holding company), with an identification of the financial regulator, if any, that regulates the affiliate, and a designation of those affiliates that are material to the ultimate holding company ("material affiliates");

(iii) An organizational chart that identifies the ultimate holding company, the broker or dealer, and the material affiliates;

(iv) Consolidated and consolidating financial statements of the ultimate holding company as of the end of the quarter preceding the filing of the application;

(v) The most recent capital measurements of the ultimate holding company, as reported to its principal regulator, calculated in accordance with the standards published by the Basel Committee on Banking Supervision, as amended from time to time;

(vi) For each instance in which a mathematical model to be used by the broker or dealer to calculate a deduction for market risk or to calculate maximum potential exposure for a particular product or counterparty differs from the mathematical model used by the ultimate holding company to calculate an allowance for market risk or to calculate maximum potential exposure for that same product or counterparty, a description of the difference(s) between the mathematical models; and

(vii) Sample risk reports that are provided to the persons at the ultimate holding company who are responsible for managing group-wide risk and that will be provided to the Commission under §240.15c3-1g(b)(1)(i)(H);

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(a) APPLICATION (continued)

(4) The application of the broker or dealer shall be supplemented by other information relating to the internal risk management control system, mathematical models, and financial position of the broker or dealer or the ultimate holding company of the broker or dealer that the Commission may request to complete its review of the application;

(5) The application shall be considered filed when received at the Commission's principal office in Washington, DC. A person who files an application pursuant to this section for which it seeks confidential treatment may clearly mark each page or segregable portion of each page with the words "Confidential Treatment Requested." All information submitted in connection with the application will be accorded confidential treatment, to the extent permitted by law;

(6) If any of the information filed with the Commission as part of the application of the broker or dealer is found to be or becomes inaccurate before the Commission approves the application, the broker or dealer must notify the Commission promptly and provide the Commission with a description of the circumstances in which the information was found to be or has become inaccurate along with updated, accurate information;

(7) The Commission may approve the application or an amendment to the application, in whole or in part, subject to any conditions or limitations the Commission may require, if the Commission finds the approval to be necessary or appropriate in the public interest or for the protection of investors, after determining, among other things, whether the broker or dealer has met the requirements of this Appendix E and is in compliance with other applicable rules promulgated under the Act and by self-regulatory organizations, and whether the ultimate holding company of the broker or dealer is in compliance with the terms of its undertakings, as provided to the Commission;

(8) A broker or dealer shall amend its application to calculate certain deductions for market and credit risk under this Appendix E and submit the amendment to the Commission for approval before it may change materially a mathematical model used to calculate market or credit risk or before it may change materially its internal risk management control system;

(a) APPLICATION (continued)

(9) As a condition to the broker's or dealer's calculation of deductions for market and credit risk under this Appendix E, an ultimate holding company that does not have a principal regulator shall submit to the Commission, as an amendment to the broker's or dealer's application, any material changes to a mathematical model or other methods used to calculate allowances for market, credit, and operational risk, and any material changes to the internal risk management control system for the affiliate group. The ultimate holding company must submit these material changes to the Commission before making them;

(10) As a condition for the broker or dealer to compute deductions for market and credit risk under this Appendix E, the broker or dealer agrees that:

(i) It will notify the Commission 45 days before it ceases to compute deductions for market and credit risk under this Appendix E; and

(ii) The Commission may determine by order that the notice will become effective after a shorter or longer period of time if the broker or dealer consents or if the Commission determines that a shorter or longer period of time is necessary or appropriate in the public interest or for the protection of investors; and

(11) Notwithstanding paragraph (a)(10) of this section, the Commission, by order, may revoke a broker's or dealer's exemption that allows it to use the market risk standards of this Appendix E to calculate deductions for market risk, instead of the provisions of § 240.15c3-1(c)(2)(vi) and (c)(2)(vii), and the exemption to use the credit risk standards of this Appendix E to calculate deductions for credit risk on certain credit exposures arising from transactions in derivatives instruments, instead of the provisions of § 240.15c3-1(c)(2)(iv), if the Commission finds that such exemption is no longer necessary or appropriate in the public interest or for the protection of investors. In making its finding, the Commission will consider the compliance history of the broker or dealer related to its use of models, the financial and operational strength of the broker or dealer and its ultimate holding company, the broker's or dealer's compliance with its internal risk management controls, and the ultimate holding company's compliance with its undertakings.

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(b) MARKET RISK

A broker or dealer whose application, including amendments, has been approved under paragraph (a) of this Appendix E shall compute a deduction for market risk in an amount equal to the sum of the following:

(1) For positions for which the Commission has approved the broker's or dealer's use of value-at risk ("VaR") models, the VaR of the positions multiplied by the appropriate multiplication factor determined according to paragraph (d)(1)(iii) of this Appendix E, except that the initial multiplication factor shall be three, unless the Commission determines, based on a review of the broker's or dealer's application or an amendment to the application under paragraph (a) of this Appendix E, including a review of its internal risk management control system and practices and VaR models, that another multiplication factor is appropriate;

(2) For positions for which the VaR model does not incorporate specific risk, a deduction for specific risk to be determined by the Commission based on a review of the broker's or dealer's application or an amendment to the application under paragraph (a) of this Appendix E and the positions involved;

(3) For positions for which the Commission has approved the broker's or dealer's application to use scenario analysis, the greatest loss resulting from a range of adverse movements in relevant risk factors, prices, or spreads designed to represent a negative movement greater than, or equal to, the worst ten-day movement over the four years preceding calculation of the greatest loss, or some multiple of the greatest loss based on the liquidity of the positions subject to scenario analysis. If historical data is insufficient, the deduction shall be the largest loss within a three standard deviation movement in those risk factors, prices, or spreads over a ten-day period, multiplied by an appropriate liquidity adjustment factor. Irrespective of the deduction otherwise indicated under scenario analysis, the resulting deduction for market risk must be at least \$25 per 100 share equivalent contract for equity positions, or one-half of one percent of the face value of the contract for all other types of contracts, even if the scenario analysis indicates a lower amount. A qualifying scenario must include the following:

(i) A set of pricing equations for the positions based on, for example, arbitrage relations, statistical analysis, historic relationships, merger evaluation, or fundamental valuation of an offering of securities;

(ii) Auxiliary relationships mapping risk factors to prices; and

(iii) Data demonstrating the effectiveness of the scenario in capturing market risk, including specific risk; and

(4) For all remaining positions, the deductions specified in §§ 240.15c3-1(c)(2)(vi), (c)(2)(vii), and applicable appendices to §240.15c3-1.

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(c) CREDIT RISK

A broker or dealer whose application, including amendments, has been approved under paragraph (a) of this Appendix E shall compute a deduction for credit risk on transactions in derivative instruments (if this Appendix E is used to calculate a deduction for market risk on those instruments) in an amount equal to the sum of the following:

- (1) A counterparty exposure charge in an amount equal to the sum of the following:
  - (i) The net replacement value in the account of each counterparty that is insolvent, or in bankruptcy, or that has senior unsecured long-term debt in default; and
  - (ii) For a counterparty not otherwise described in paragraph (c)(1)(i) of this Appendix E, the credit equivalent amount of the broker's or dealer's exposure to the counterparty, as defined in paragraph (c)(4)(i) of this Appendix E, multiplied by the credit risk weight of the counterparty, as defined in paragraph (c)(4)(vi) of this Appendix E, multiplied by 8%;
- (2) A concentration charge by counterparty in an amount equal to the sum of the following:
  - (i) For each counterparty with a credit risk weight of 20% or less, 5% of the amount of the current exposure to the counterparty in excess of 5% of the tentative net capital of the broker or dealer;
  - (ii) For each counterparty with a credit risk weight of greater than 20% but less than 50%, 20% of the amount of the current exposure to the counterparty in excess of 5% of the tentative net capital of the broker or dealer; and
  - (iii) For each counterparty with a credit risk weight of greater than 50%, 50% of the amount of the current exposure to the counterparty in excess of 5% of the tentative net capital of the broker or dealer; and
- (3) A portfolio concentration charge of 100% of the amount of the broker's or dealer's aggregate current exposure for all counterparties in excess of 50% of the tentative net capital of the broker or dealer;

(c) CREDIT RISK (continued)(4) *Terms.*

(i) The *credit equivalent amount* of the broker's or dealer's exposure to a counterparty is the sum of the broker's or dealer's maximum potential exposure to the counterparty, as defined in paragraph (c)(4)(ii) of this Appendix E, multiplied by the appropriate multiplication factor, and the broker's or dealer's current exposure to the counterparty, as defined in paragraph (c)(4)(iii) of this Appendix E. The broker or dealer must use the multiplication factor determined according to paragraph (d)(1)(v) of this Appendix E, except that the initial multiplication factor shall be one, unless the Commission determines, based on a review of the broker's or dealer's application or an amendment to the application approved under paragraph (a) of this Appendix E, including a review of its internal risk management control system and practices and VaR models, that another multiplication factor is appropriate;

(ii) The *maximum potential exposure* is the VaR of the counterparty's positions with the broker or dealer, after applying netting agreements with the counterparty meeting the requirements of paragraph (c)(4)(iv) of this Appendix E, taking into account the value of collateral from the counterparty held by the broker or dealer in accordance with paragraph (c)(4)(v) of this Appendix E, and taking into account the current replacement value of the counterparty's positions with the broker or dealer;

(iii) The *current exposure* of the broker or dealer to a counterparty is the current replacement value of the counterparty's positions with the broker or dealer, after applying netting agreements with the counterparty meeting the requirements of paragraph (c)(4)(iv) of this Appendix E and taking into account the value of collateral from the counterparty held by the broker or dealer in accordance with paragraph (c)(4)(v) of this Appendix E;

(iv) *Netting agreements.* A broker or dealer may include the effect of a netting agreement that allows the broker or dealer to net gross receivables from and gross payables to a counterparty upon default of the counterparty if:

(A) The netting agreement is legally enforceable in each relevant jurisdiction, including in insolvency proceedings;

(B) The gross receivables and gross payables that are subject to the netting agreement with a counterparty can be determined at any time; and

(C) For internal risk management purposes, the broker-dealer monitors and controls its exposure to the counterparty on a net basis;

(c)(4) CREDIT RISK; TERMS (continued)

(v) *Collateral.* When calculating maximum potential exposure and current exposure to a counterparty, the fair market value of collateral pledged and held may be taken into account provided:

(A) The collateral is marked to market each day and is subject to a daily margin maintenance requirement;

(B) The collateral is subject to the broker's or dealer's physical possession or control;

(C) The collateral is liquid and transferable;

(D) The collateral may be liquidated promptly by the firm without intervention by any other party;

(E) The collateral agreement is legally enforceable by the broker or dealer against the counterparty and any other parties to the agreement;

(F) The collateral does not consist of securities issued by the counterparty or a party related to the broker or dealer or to the counterparty;

(G) The Commission has approved the broker's or dealer's use of a VaR model to calculate deductions for market risk for the type of collateral in accordance with this Appendix E; and

(H) The collateral is not used in determining the credit rating of the counterparty;

(vi) *Credit risk weights of counterparties.* A broker or dealer that computes its deductions for credit risk pursuant to this Appendix E shall determine the credit risk weight of a counterparty as follows:

(A) 20% credit risk weight for transactions with counterparties with ratings for senior unsecured long-term debt or commercial paper in one of the two highest rating categories by an NRSRO or equivalent internal rating, if applicable;

(B) 50% credit risk weight for transactions with counterparties with ratings for senior unsecured long-term debt in the third and fourth highest rating categories by an NRSRO or equivalent internal rating, if applicable;

(c)(4)(vi) CREDIT RISK; TERMS (continued)

(C) 150% credit risk weight for transactions with counterparties with ratings for senior unsecured long-term debt below the fourth highest rating category by an NRSRO or equivalent internal rating, if applicable;

(D) As part of its initial application or in an amendment, the broker or dealer may request Commission approval to determine credit ratings using internal calculations for counterparties that are not rated by an NRSRO, and the broker or dealer may use these internal credit ratings in lieu of ratings issued by an NRSRO for purposes of determining credit risk weights. Based on the strength of the broker's or dealer's internal credit risk management system, the Commission may approve the application. The broker or dealer must make and keep current a record of the basis for the credit rating for each counterparty;

(E) As part of its initial application or in an amendment, the broker or dealer may request Commission approval to determine credit risk weights based on internal calculations, including internal estimates of the maturity adjustment. Based on the strength of the broker's or dealer's internal credit risk management system, the Commission may approve the application. The broker or dealer must make and keep current a record of the basis for the credit risk weight of each counterparty;

(F) For the portion of a current exposure covered by a written guarantee where that guarantee is an unconditional and irrevocable guarantee of the due and punctual payment and performance of the obligation and the broker or dealer can demand immediate payment from the guarantor after any payment is missed without having to make collection efforts, the broker or dealer may substitute the credit risk weight of the guarantor for the credit risk weight of the counterparty; and

(G) As part of its initial application or in an amendment, the broker or dealer may request Commission approval to reduce deductions for credit risk through the use of credit derivatives.

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(d) VaR MODELS

To be approved, each VaR model must meet the following minimum qualitative and quantitative requirements:

(1) *Qualitative requirements.*

(i) The VaR model used to calculate market or credit risk for a position must be integrated into the daily internal risk management system of the broker or dealer;

(ii) The VaR model must be reviewed both periodically and annually. The periodic review may be conducted by the broker's or dealer's internal audit staff, but the annual review must be conducted by a registered public accounting firm, as that term is defined in section 2(a)(12) of the Sarbanes-Oxley Act of 2002 (15 U.S.C. 7201 et seq.); and

(iii) For purposes of computing market risk, the broker or dealer must determine the appropriate multiplication factor as follows:

(A) Beginning three months after the broker or dealer begins using the VaR model to calculate market risk, the broker or dealer must conduct backtesting of the model by comparing its actual daily net trading profit or loss with the corresponding VaR measure generated by the VaR model, using a 99 percent, one-tailed confidence level with price changes equivalent to a one business-day movement in rates and prices, for each of the past 250 business days, or other period as may be appropriate for the first year of its use;

(B) On the last business day of each quarter, the broker or dealer must identify the number of backtesting exceptions of the VaR model, that is, the number of business days in the past 250 business days, or other period as may be appropriate for the first year of its use, for which the actual net trading loss, if any, exceeds the corresponding VaR measure; and

(C) The broker or dealer must use the multiplication factor indicated in Table 1 of this Appendix E in determining its market risk until it obtains the next quarter's backtesting results;

Table 1. Multiplication factor based on the number of backtesting exceptions of the VaR model	
Number of exceptions	Multiplication factor
4 or fewer	3.00
5	3.40
6	3.50
7	3.65
8	3.75
9	3.85
10 or more	4.00

(d)(1) VaR MODELS (continued)

(iv) For purposes of incorporating specific risk into a VaR model, a broker or dealer must demonstrate that it has methodologies in place to capture liquidity, event, and default risk adequately for each position. Furthermore, the models used to calculate deductions for specific risk must:

- (A) Explain the historical price variation in the portfolio;
- (B) Capture concentration (magnitude and changes in composition);
- (C) Be robust to an adverse environment; and
- (D) Be validated through backtesting; and

(v) For purposes of computing the credit equivalent amount of the broker's or dealer's exposures to a counterparty, the broker or dealer must determine the appropriate multiplication factor as follows:

(A) Beginning three months after it begins using the VaR model to calculate maximum potential exposure, the broker or dealer must conduct backtesting of the model by comparing, for at least 80 counterparties with widely varying types and sizes of positions with the firm, the ten-business day change in its current exposure to the counterparty based on its positions held at the beginning of the ten-business day period with the corresponding ten-business day maximum potential exposure for the counterparty generated by the VaR model;

(B) As of the last business day of each quarter, the broker or dealer must identify the number of backtesting exceptions of the VaR model, that is, the number of ten-business day periods in the past 250 business days, or other period as may be appropriate for the first year of its use, for which the change in current exposure to a counterparty exceeds the corresponding maximum potential exposure; and

(C) The broker or dealer will propose, as part of its application, a schedule of multiplication factors, which must be approved by the Commission based on the number of backtesting exceptions of the VaR model. The broker or dealer must use the multiplication factor indicated in the approved schedule in determining the credit equivalent amount of its exposures to a counterparty until it obtains the next quarter's backtesting results, unless the Commission determines, based on, among other relevant factors, a review of the broker's or dealer's internal risk management control system, including a review of the VaR model, that a different adjustment or other action is appropriate;



(d) VaR MODELS (continued)

(2) *Quantitative requirements.*

(i) For purposes of determining market risk, the VaR model must use a 99 percent, one-tailed confidence level with price changes equivalent to a ten business-day movement in rates and prices;

(ii) For purposes of determining maximum potential exposure, the VaR model must use a 99 percent, one-tailed confidence level with price changes equivalent to a one-year movement in rates and prices; or based on a review of the broker's or dealer's procedures for managing collateral and if the collateral is marked to market daily and the broker or dealer has the ability to call for additional collateral daily, the Commission may approve a time horizon of not less than ten business days;

(iii) The VaR model must use an effective historical observation period of at least one year. The broker or dealer must consider the effects of market stress in its construction of the model. Historical data sets must be updated at least monthly and reassessed whenever market prices or volatilities change significantly; and

(iv) The VaR model must take into account and incorporate all significant, identifiable market risk factors applicable to positions in the accounts of the broker or dealer, including:

(A) Risks arising from the non-linear price characteristics of derivatives and the sensitivity of the market value of those positions to changes in the volatility of the derivatives' underlying rates and prices;

(B) Empirical correlations with and across risk factors or, alternatively, risk factors sufficient to cover all the market risk inherent in the positions in the proprietary or other trading accounts of the broker or dealer, including interest rate risk, equity price risk, foreign exchange risk, and commodity price risk;

(C) Spread risk, where applicable, and segments of the yield curve sufficient to capture differences in volatility and imperfect correlation of rates along the yield curve for securities and derivatives that are sensitive to different interest rates; and

(D) Specific risk for individual positions.

(e) ADDITIONAL CONDITIONS

As a condition for the broker or dealer to use this Appendix E to calculate certain of its capital charges, the Commission may impose additional conditions on the broker or dealer, which may include, but are not limited to restricting the broker's or dealer's business on a product-specific, category-specific, or general basis; submitting to the Commission a plan to increase the broker's or dealer's net capital or tentative net capital; filing more frequent reports with the Commission; modifying the broker's or dealer's internal risk management control procedures; or computing the broker's or dealer's deductions for market and credit risk in accordance with § 240.15c3-1(c)(2)(vi), (c)(2)(vii), and (c)(2)(iv), as appropriate. If it is not an ultimate holding company that has a principal regulator, the Commission also may require, as a condition of continuation of the exemption, the ultimate holding company of the broker or dealer to file more frequent reports or to modify its group-wide internal risk management control procedures. If the Commission finds it is necessary or appropriate in the public interest or for the protection of investors, the Commission may impose additional conditions on either the broker-dealer, or the ultimate holding company, if it is an ultimate holding company that does not have a principal regulator, if:

- (1) The broker or dealer is required by §240.15c3-1(a)(7)(ii) to provide notice to the Commission that the broker's or dealer's tentative net capital is less than \$5 billion;
- (2) The broker or dealer or the ultimate holding company of the broker or dealer fails to meet the reporting requirements set forth in § 240.17a-5 or 240.15c3-1g(b), as applicable;
- (3) Any event specified in § 240.17a-11 occurs;
- (4) There is a material deficiency in the internal risk management control system or in the mathematical models used to price securities or to calculate deductions for market and credit risk or allowances for market and credit risk, as applicable, of the broker or dealer or the ultimate holding company of the broker or dealer;
- (5) The ultimate holding company of the broker or dealer fails to comply with its undertakings that the broker or dealer has filed with its application pursuant to paragraph (a)(1)(viii) or (a)(1)(ix) of this Appendix E;
- (6) The broker or dealer fails to comply with this Appendix E; or
- (7) The Commission finds that imposition of other conditions is necessary or appropriate in the public interest or for the protection of investors.

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