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Tier 1 capital to total assets is 4.0 percent. Banking organizations with supervisory, financial, operational, or managerial weaknesses, as well as organizations that are anticipating or experiencing significant growth, are expected to maintain capital ratios well above the minimum levels. Moreover, higher capital ratios may be required for any bank holding company if warranted by its particular circumstances or risk profile. In all cases, bank holding companies should hold capital commensurate with the level and nature of the risks, including the volume and severity of problem loans, to which they are exposed.

b. A banking organization’s tier 1 leverage ratio is calculated by dividing its tier 1 capital (the numerator of the ratio) by its average total consolidated assets (the denominator of the ratio). The ratio will also be calculated using period-end assets whenever necessary, on a case-by-case basis. For the purpose of this leverage ratio, the definition of tier 1 capital as set forth in the risk-based capital guidelines contained in appendix A of this part will be used. As a general matter, average total consolidated assets are defined as the quarterly average total assets (defined net of the allowance for loan and lease losses) reported on the organization’s Consolidated Financial Statements (FR Y–9C Report), less goodwill; amounts of mortgage servicing assets, nonmortgage servicing assets, and purchased credit card relationships that, in the aggregate, are in excess of 100 percent of Tier 1 capital; amounts of non-mortgage servicing assets and purchased credit card relationships that, in the aggregate, are in excess of 25 percent of Tier 1 capital; amounts of credit-enhancing interest-only strips that are in excess of 25 percent of Tier 1 capital; all other identifiable intangible assets; any investments in subsidiaries or associated companies that the Federal Reserve determines should be deducted from Tier 1 capital; deferred tax assets that are dependent upon future taxable income, net of their valuation allowance, in excess of the limitation set forth in section II.B.4 of appendix A of this part; and the amount of the total adjusted carrying value of nonfinancial equity investments that is subject to a deduction from Tier 1 capital.3

c. Whenever appropriate, including when an organization is undertaking expansion, seeking to engage in new activities or otherwise facing unusual or abnormal risks, the Board will continue to consider the level of an individual organization’s tangible tier 1 leverage ratio (after deducting all intangibles) in making an overall assessment of capital adequacy. This is consistent with the

Federal Reserve’s risk-based capital guidelines and long-standing Federal Reserve policy and practice with regard to leverage guidelines. Organizations experiencing growth, whether internally or by acquisition, are expected to maintain strong capital position substantially above minimum supervisory levels, without significant reliance on intangible assets.

d. Notwithstanding anything in this appendix to the contrary, a bank holding company may deduct from its average total consolidated assets the amount of any asset-backed commercial paper (i) purchased by the bank holding company on or after September 19, 2008, from an SEC-registered open-end investment company that holds itself out as a money market mutual fund under SEC Rule 2a–7 (17 CFR 270.2a–7) and (ii) pledged by the bank holding company to a Federal Reserve Bank to secure financing from the ABCP lending facility (AMLF) established by the Board on September 19, 2008.

3 Deductions from Tier 1 capital and other adjustments are discussed more fully in section II.B. of appendix A of this part.

APPENDIX E TO PART 225—CAPITAL ADEQUACY GUIDELINES FOR BANK HOLDING COMPANIES: MARKET RISK MEASURE

Section I. Purpose, Applicability, Scope, and Effective Date

(a) Purpose. The purpose of this appendix is to ensure that bank holding companies (organizations) with significant exposure to market risk maintain adequate capital to support that exposure. This appendix supplements and adjusts the risk-based capital ratio calculations under appendix A of this part with respect to those organizations.

(b) Applicability. (1) This appendix applies to any bank holding company whose trading activity2 (on a worldwide consolidated basis) equals:

1This appendix is based on a framework developed jointly by supervisory authorities from the countries represented on the Basle Committee on Banking Supervision and endorsed by the Group of Ten Central Bank Governors. The framework is described in a Basle Committee paper entitled “Amendment to the Capital Accord to Incorporate Market Risks,” January 1996. Also see modifications issued in September 1997.

2Trading activity means the gross sum of trading assets and liabilities as reported in

Continued
Section 2. Definitions

For purposes of this appendix, the following definitions apply:

(a) Covered positions means all positions in an organization’s trading account, and all foreign exchange and commodity positions, whether or not in the trading account. Positions include on-balance-sheet assets and liabilities and off-balance-sheet items. Securities subject to repurchase and lending agreements as included as if still owned by the lender. Covered positions exclude all positions in a banking organization’s trading account that, in form or in substance, act as liquidity facilities that provide liquidity support to asset-backed commercial paper. Such excluded positions are subject to the risk-based capital requirements set forth in appendix A of this part.

(b) Market risk means the risk of loss resulting from movements in market prices. Market risk consists of general market risk and specific risk components.

(1) General market risk means changes in the market value of covered positions resulting from broad market movements, such as changes in the general level of interest rates, equity prices, foreign exchange rates, or commodity prices.

(2) Specific risk means changes in the market value of specific positions due to factors other than broad market movements and includes event and default risk as well as idiosyncratic variations.

(c) Tier 1 and Tier 2 capital are defined in appendix A of this part.

(d) Tier 3 capital is subordinated debt that is unsecured; is fully paid up; has an original maturity of at least two years; is not redeemable before maturity without prior approval by the Federal Reserve; includes a lock-in clause precluding payment of either interest or principal (even at maturity) if the payment would cause the issuing organization’s risk-based capital ratio to fall or remain below the minimum required under appendix A of this part; and does not contain restrictions that are inconsistent with safe and sound banking practices.

(e) Value-at-risk (VAR) means the estimate of the maximum amount that the value of covered positions could decline due to market price or rate movements during a fixed holding period within a stated confidence level, measured in accordance with section 4 of this appendix.

Section 3. Adjustments to the Risk-Based Capital Ratio Calculations

(a) Risk-based capital ratio denominator. An organization subject to this appendix shall calculate its risk-based capital ratio denominator as follows:

(i) Adjusted risk-weighted assets. Calculate adjusted risk-weighted assets, which equals risk-weighted assets (as determined in accordance with appendix A of this part) excluding the risk-weighted amounts of all covered positions (except foreign-exchange positions outside the trading account and over-the-counter derivative positions) and receivables arising from the posting of cash collateral that is associated with securities borrowing transactions to the extent the receivables are collateralized by the market value of the borrowed securities, provided that the following conditions are met:

(i) The transaction is based on securities includable in the trading book that are liquid and readily marketable,

(ii) The transaction is marked to market daily.

7 Foreign-exchange positions outside the trading account and all over-the-counter derivative positions, whether or not in the trading account, must be included in adjusted risk-weighted assets as determined in appendix A of this part.
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(3) **Market risk equivalent assets.** Calculate market risk equivalent assets by multiplying the measure for market risk (as calculated in paragraph (a)(2) of this section) by 12.5.

(4) **Denominator calculation.** Add market risk equivalent assets (as calculated in paragraph (a)(3) of this section) to adjusted risk-weighted assets (as calculated in paragraph (a)(1) of this section). The resulting sum is the organization’s risk-based capital ratio denominator.

(b) **Risk-based capital ratio numerator.** An organization subject to this appendix shall calculate its risk-based capital ratio numerator by allocating capital as follows:

(1) **Credit risk allocation.** Allocate Tier 1 and Tier 2 capital equal to 8.0 percent of adjusted risk-weighted assets (as calculated in paragraph (a)(1) of this section). 9

(2) **Market risk allocation.** Allocate Tier 1, Tier 2, and Tier 3 capital equal to the measure for market risk as calculated in paragraph (a)(2) of this section. The sum of Tier 2 and Tier 3 capital allocated for market risk must not exceed 250 percent of Tier 1 capital allocated for market risk. (This requirement means that Tier 1 capital allocated in this paragraph (b)(2) must equal at least 28.6 percent of the measure for market risk.)

(3) **Restrictions.** (i) The sum of Tier 2 capital (both allocated and excess) and Tier 3 capital (allocated in paragraph (b)(2) of this section) may not exceed 100 percent of Tier 1 capital (both allocated and excess). 9

(ii) Term subordinated debt (and intermediate-term preferred stock and related surplus) included in Tier 2 capital (both allocated and excess) may not exceed 50 percent of Tier 1 capital (both allocated and excess).

(4) **Numerator calculation.** Add Tier 1 capital (both allocated and excess), Tier 2 capital (both allocated and excess), and Tier 3 capital (allocated under paragraph (b)(2) of this section). The resulting sum is the organization’s risk-based capital ratio numerator.

**Section 4. Internal Models**

(a) **General.** For risk-based capital purposes, a bank holding company subject to this appendix must use its internal model to measure its daily VAR, in accordance with

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*An institution may not allocate Tier 3 capital to support credit risk (as calculated under appendix A of this part).

*Excess Tier 1 capital means Tier 1 capital that has not been allocated in paragraphs (b)(1) and (b)(2) of this section. Excess Tier 2 capital means Tier 2 capital that has not been allocated in paragraphs (b)(1) and (b)(2) of this section, subject to the restrictions in paragraph (b)(3) of this section.
the requirements of this section. The Federal Reserve may permit an organization to use alternative techniques to measure the market risk of de minimis exposures so long as the techniques adequately measure associated market risk.

(b) Qualitative requirements. A bank holding company subject to this appendix must have a risk management system that meets the following minimum qualitative requirements:

(1) The organization must have a risk control unit that reports directly to senior management and is independent from business trading units.

(2) The organization’s internal risk measurement model must be integrated into the daily management process.

(3) The organization’s policies and procedures must identify, and the organization must conduct, appropriate stress tests and backtests. The organization’s policies and procedures must identify the procedures to follow in response to the results of such tests.

(4) The organization must conduct independent reviews of its risk measurement and risk management systems at least annually.

(c) Market risk factors. The organization’s internal model must use risk factors sufficient to measure the market risk inherent in all covered positions. The risk factors must address interest rate risk, equity price risk, foreign exchange rate risk, and commodity price risk.

An organization’s internal model may use any generally accepted measurement techniques, such as variance-covariance models, historical simulations, or Monte Carlo simulations. However, the level of sophistication and accuracy of an organization’s internal model must be commensurate with the nature and size of its covered positions. An organization that modifies its existing modeling procedures to comply with the requirements of this appendix for risk-based capital purposes should, nonetheless, continue to use the internal model it considers most appropriate in evaluating risks for other purposes.

Stress tests provide information about the impact of adverse market events on a bank’s covered positions. Backtests provide information about the accuracy of an internal model by comparing an organization’s daily VAR measures to its corresponding daily trading profits and losses.

For material exposures in the major currencies and markets, modeling techniques must capture spread risk and must incorporate enough segments of the yield curve—at least six—to capture differences in volatility and less than perfect correlation of rates along the yield curve.

(d) Quantitative requirements. For regulatory capital purposes, VAR measures must meet the following quantitative requirements:

(1) The VAR measures must be calculated on a daily basis using a 99 percent, one-tailed confidence level with a price shock equivalent to a ten-business day movement in rates and prices. In order to calculate VAR measures based on a ten-day price shock, the organization may either calculate ten-day figures directly or convert VAR figures based on holding periods other than ten days to the equivalent of a ten-day holding period (for instance, by multiplying a one-day VAR measure by the square root of ten).

(2) The VAR measures must be based on an historical observation period (or effective observation period for an organization using a weighting scheme or other similar method) of at least one year. The organization must update data sets at least once every three months or more frequently as market conditions warrant.

(3) The VAR measures must include the risks arising from the non-linear price characteristics of options positions and the sensitivity of the market value of the positions to changes in the volatility of the underlying rates or prices. An organization with a large or complex options portfolio must measure the volatility of options positions by different maturities.

(4) The VAR measures may incorporate empirical correlations within and across risk categories, provided that the organization’s process for measuring correlations is sound. In the event that the VAR measures do not incorporate empirical correlations across risk categories, then the organization must add the separate VAR measures for the four major risk categories to determine its aggregate VAR measure.

(e) Backtesting. (1) Beginning one year after a bank holding company starts to comply with this appendix, it must conduct backtesting by comparing each of its most recent 250 business days’ actual net trading profit or loss with the corresponding daily VAR measures generated for internal risk measurement purposes and calibrated to a one-day holding period and a 99th percentile, one-tailed confidence level.

(2) Once each quarter, the organization must identify the number of exceptions, that is, the number of business days for which the magnitude of the actual daily net trading loss, if any, exceeds the corresponding daily VAR measure.

Actual net trading profits and losses typically include such things as realized and unrealized gains and losses on portfolio positions as well as fee income and commissions associated with trading activities.
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(3) A bank holding company must use the multiplication factor indicated in Table 1 of this appendix in determining its capital charge for market risk under section 3(a)(2)(i)(B) of this appendix until it obtains the next quarter’s backtesting results, unless the Federal Reserve determines that a different adjustment or other action is appropriate.

**TABLE 1—MULTIPLICATION FACTOR BASED ON RESULTS OF BACKTESTING**

<table>
<thead>
<tr>
<th>Number of exceptions</th>
<th>Multiplication factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 or fewer</td>
<td>3.00</td>
</tr>
<tr>
<td>5</td>
<td>3.40</td>
</tr>
<tr>
<td>6</td>
<td>3.50</td>
</tr>
<tr>
<td>7</td>
<td>3.65</td>
</tr>
<tr>
<td>8</td>
<td>3.75</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10 or more</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Section 5. Specific Risk

(a) Modeled specific risk. A bank holding company may use its internal model to measure specific risk. If the organization has demonstrated to the Federal Reserve that its internal model measures the specific risk, including event and default risk as well as idiosyncratic variation, of covered debt and equity positions and includes the specific risk measures in the VAR-based capital charge in section 3(a)(2)(i) of this appendix, then the organization has no specific risk add-on for purposes of section 3(a)(2)(ii) of this appendix. The model should explain the historical price variation in the trading portfolio and capture concentration, both magnitude and changes in composition. The model should also be robust to an adverse environment and have been validated through backtesting which assesses whether specific risk is being accurately captured.

(b) Partially modeled specific risk. (1) A bank holding company that incorporates specific risk in its internal model but fails to demonstrate to the Federal Reserve that its internal model adequately measures all aspects of specific risk for covered debt and equity positions, including event and default risk, as provided by section 5(a) of this appendix, must calculate its specific risk add-on in accordance with one of the following methods:

(i) If the model is susceptible to valid separation of the VAR measure into a specific risk portion and a general market risk portion, then the specific risk add-on is equal to the previous day’s specific risk portion.

(ii) If the model does not separate the VAR measure into a specific risk portion and a general market risk portion, then the specific risk add-on is the sum of the previous day’s VAR measures for subportfolios of covered debt and equity positions that contain specific risk.

(2) If a bank holding company models the specific risk of covered debt positions but not covered equity positions (or vice versa), then the bank holding company may determine its specific risk charge for the included positions under section 5(a) or 5(b)(1) of this appendix, as appropriate. The specific risk charge for the positions not included equals the standard specific risk capital charge under paragraph (c) of this section.

(c) Specific risk not modeled. If a bank holding company does not model specific risk in accordance with section 5(a) or 5(b) of this appendix, then the organization’s specific risk capital charge shall equal the standard specific risk capital charge, calculated as follows:

(1) Covered debt positions. (i) For purposes of this section 5, covered debt positions means fixed-rate or floating-rate debt instruments located in the trading account or instruments located in the trading account with values that react primarily to changes in interest rates, including certain non-convertible preferred stock, convertible bonds, and instruments subject to repurchase and lending agreements. Also included are derivatives (including written and purchased options) for which the underlying instrument is a covered debt instrument that is subject to a non-zero specific risk capital charge.

(A) For covered debt positions that are derivatives, an organization must risk-weight (as described in paragraph (c)(1)(ii) of this section) the market value of the effective notional amount of the underlying debt instrument or index portfolio. Swaps must be included as the notional position in the underlying debt instrument or index portfolio, with a receiving side treated as a long position and a paying side treated as a short position; and

(B) For covered debt positions that are options, whether long or short, an organization must risk-weight (as described in paragraph (c)(1)(ii) of this section) the market value of the effective notional amount of the underlying debt instrument or index multiplied by the option’s delta.

(ii) An organization may net long and short covered debt positions (including derivatives) in identical debt issues or indices.

(iii) An organization must multiply the absolute value of the current market value of each net long or short covered debt position by the appropriate specific risk weighting factor indicated in Table 2 of this appendix. The specific risk capital charge component for covered debt positions is the sum of the weighted values.

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(A) The government category includes all debt instruments of central governments of OECD-based countries including bonds, Treasury bills, and other short-term instruments, as well as local currency instruments of non-OECD central governments to the extent the organization has liabilities booked in that currency.

(B) The qualifying category includes debt instruments of U.S. government-sponsored agencies, general obligation debt instruments issued by states and other political subdivisions of OECD-based countries, multilateral development banks, and debt instruments issued by U.S. depository institutions or OECD banks that do not qualify as capital of the issuing institution. This category also includes other debt instruments, including corporate debt and revenue instruments issued by states and other political subdivisions of OECD countries, that are:

1. Rated investment-grade by at least two nationally recognized credit rating services;
2. Rated investment-grade by one nationally recognized credit rating agency and not rated less than investment grade by any other credit rating agency; or
3. Unrated, but deemed to be of comparable investment quality by the reporting organization and the issuer has instruments listed on a recognized stock exchange, subject to review by the Federal Reserve.

(C) The other category includes debt instruments that are not included in the government or qualifying categories.

(D) Covered equity positions. (1) For purposes of this section 5, covered equity positions means equity instruments located in the trading account with values that react primarily to changes in equity prices, including voting or non-voting common stock, certain convertible bonds, and commitments to buy or sell equity instruments. Also included are derivatives (including written or purchased options) for which the underlying is a covered equity position.

16 An organization may also net positions in depository receipts against an opposite position in the underlying equity or identical equity in different markets, provided that the organization includes the costs of conversion.

17 A portfolio is liquid and well-diversified if: (1) it is characterized by a limited sensitivity to price changes of any single equity issue or closely related group of equity issues held in the portfolio; (2) the volatility of the portfolio's value is not dominated by the volatility of any individual equity issue or by equity issues from any single industry or economic sector; (3) it contains a large number of individual equity positions, with no single position representing a substantial portion of the portfolio's total market value; and (4) it consists mainly of issues traded on organized exchanges or in well-established over-the-counter markets.
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(2) Long and short positions in index contracts at the same date in different but similar indices.

(C) For futures contracts on broadly-based indices that are matched by offsetting positions in a basket of stocks comprising the index, an organization may apply a 2.0 percent risk weighting factor to the futures and stock basket positions (long and short), provided that such trades are deliberately entered into and separately controlled, and that the basket of stocks comprises at least 90 percent of the capitalization of the index.

(iv) The specific risk capital charge component for covered equity positions is the sum of the weighted values.


APPENDIX F TO PART 225—INTERAGENCY GUIDELINES ESTABLISHING INFORMATION SECURITY STANDARDS

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I. INTRODUCTION

These Interagency Guidelines Establishing Information Security Standards (Guidelines) set forth standards pursuant to sections 501 and 505 of the Gramm-Leach-Bliley Act (15 U.S.C. 6801 and 6805). These Guidelines address standards for developing and implementing administrative, technical, and physical safeguards appropriate to the size and complexity of the bank holding company and the nature and scope of its activities. While all parts of the bank holding company are not required to implement a uniform set of policies, all elements of the information security program must be coordinated. A bank holding company also shall ensure that each of its subsidiaries is subject to a comprehensive information security program. The bank holding company may fulfill this requirement either by including a subsidiary within the scope of the bank holding company’s comprehensive information security program or by causing the subsidiary to implement a separate comprehensive information security program in

A. Information Security Program.
B. Preservation of Existing Authority.
C. Definitions.
D. Oversee Service Provider Arrangements.
E. Implement the Standards.