

the FDIC-supervised institution 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. An FDIC-supervised institution 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 FDIC-supervised institution 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:

$$E = 1 - \frac{\sum_{t=1}^T (X_t - X_{t-1})^2}{\sum_{t=1}^T (A_t - A_{t-1})^2}, \text{ where}$$

(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.

**§ 324.153 Internal models approach (IMA).**

(a) *General.* An FDIC-supervised institution 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, an FDIC-supervised institution must receive prior written approval from the FDIC. To receive such approval, the FDIC-supervised institution must demonstrate to the FDIC's satisfaction that the FDIC-supervised institution meets the following criteria:

(1) The FDIC-supervised institution 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

FDIC-supervised institution's modeled equity exposures; and

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

(2) The FDIC-supervised institution'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 FDIC-supervised institution'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 FDIC-supervised institution's model and benchmarking exercise must be sufficient to provide confidence in the accuracy and robustness of the FDIC-supervised institution's estimates.

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

(5) The FDIC-supervised institution must be able to demonstrate, using theoretical arguments and empirical evidence, that any proxies used in the modeling process are comparable to the FDIC-supervised institution's mod-

eled equity exposures and that the FDIC-supervised institution has made appropriate adjustments for differences. The FDIC-supervised institution must derive any proxies for its modeled equity exposures and benchmark portfolio using historical market data that are relevant to the FDIC-supervised institution'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 FDIC-supervised institution's modeled equity exposures.

(c) *Risk-weighted assets calculation for an FDIC-supervised institution using the IMA for publicly traded and non-publicly traded equity exposures.* If an FDIC-supervised institution models publicly traded and non-publicly traded equity exposures, the FDIC-supervised institution'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 § 324.152(b)(1) through (b)(3)(i) (as determined under § 324.152) and each equity exposure to an investment fund (as determined under § 324.154); and

(2) The greater of:

(i) The estimate of potential losses on the FDIC-supervised institution's equity exposures (other than equity exposures referenced in paragraph (c)(1) of this section) generated by the FDIC-supervised institution'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 FDIC-supervised institution'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 § 324.152(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 FDIC-supervised institution's equity exposures that are not publicly traded,

do not qualify for a 0 percent, 20 percent, or 100 percent risk weight under § 324.152(b)(1) through (b)(3)(i), and are not equity exposures to an investment fund.

(d) *Risk-weighted assets calculation for an FDIC-supervised institution using the IMA only for publicly traded equity exposures.* If an FDIC-supervised institution models only publicly traded equity exposures, the FDIC-supervised institution'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 §§ 324.152(b)(1) through (b)(3)(i) (as determined under § 324.152), each equity exposure that qualifies for a 400 percent risk weight under § 324.152(b)(5) or a 600 percent risk weight under § 324.152(b)(6) (as determined under § 324.152), and each equity exposure to an investment fund (as determined under § 324.154); and

(2) The greater of:

(i) The estimate of potential losses on the FDIC-supervised institution's equity exposures (other than equity exposures referenced in paragraph (d)(1) of this section) generated by the FDIC-supervised institution'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 FDIC-supervised institution'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 § 324.152(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.

**§ 324.154 Equity exposures to investment funds.**

(a) *Available approaches.* (1) Unless the exposure meets the requirements for a community development equity exposure in § 324.152(b)(3)(i), an FDIC-supervised institution 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 § 324.152(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 FDIC-supervised institution does not use the full look-through approach, the FDIC-supervised institution may use the ineffective portion of the hedge pair as determined under § 324.152(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.* An FDIC-supervised institution 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 FDIC-supervised institution) may either:

(1) Set the risk-weighted asset amount of the FDIC-supervised institution'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 FDIC-supervised institution; and

(ii) The FDIC-supervised institution's proportional ownership share of the fund; or

(2) Include the FDIC-supervised institution's proportional ownership share of each exposure held by the fund in the FDIC-supervised institution's IMA.

(c) *Simple modified look-through approach.* Under this approach, the risk-weighted asset amount for an FDIC-supervised institution'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