

# CONSULTATION PAPER

P006 - 2006  
June 2006

## Proposals for the Implementation of Basel II in Singapore - Phase 3

MAS

Monetary Authority of Singapore

## PREFACE

In June 2004, the Basel Committee on Banking Supervision (“BCBS”) issued its report on “International Convergence of Capital Measurement and Capital Standards: A Revised Framework” (commonly known as Basel II).

Following the Phase 1 consultation paper issued in August 2005 and the Phase 2 consultation paper issued in March 2006, this consultation paper proposes rules for calculating capital requirements for equity and securitisation exposures under Basel II.

MAS invites comments from Singapore-incorporated banks and other interested parties. Please note that any comments received may be made public unless confidentiality is specifically requested. Electronic submission is encouraged.

The public consultation period ends on **31 July 2006**. Please direct comments to:

Prudential Policy Department  
Monetary Authority of Singapore  
10 Shenton Way, MAS Building  
Singapore 079117  
Fax : (65) 62203973  
Email : [policy@mas.gov.sg](mailto:policy@mas.gov.sg)

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**DRAFT TEXT OF DIVISIONS 5 AND 6  
OF PART VII OF MAS NOTICE TO BANKS 6XX:  
RISK-BASED CAPITAL ADEQUACY  
REQUIREMENTS FOR BANKS INCORPORATED IN  
SINGAPORE**

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## PART VII: CREDIT RISK

### DIVISION 5: Equity Investments

#### Sub-division 1: Definition of Equity Investments

7.5.1 An equity investment shall be defined on the basis of the economic substance of the instrument.

7.5.2 Equity investments shall include any direct or indirect ownership interests<sup>1</sup>, whether voting or non-voting, in the assets or income of a corporation or of a financial institution, as well as any holding in a fund that contains investments meeting the definition of equity investments in this sub-division.<sup>2</sup>

7.5.3 An instrument shall be classified as an equity investment if:

- (a) it has the same structure as an instrument permitted as Tier 1 Capital under Part VI of this Notice;
- (b) it is irredeemable in the sense that the return of invested funds can be achieved only by the sale of the investment or sale of the rights to the investment or by the liquidation of the issuer of the instrument;
- (c) it does not embody an obligation on the part of the issuer of the issuer; and
- (d) it conveys a residual claim on the assets or income of the issuer of the instrument.

7.5.4 Notwithstanding paragraph 7.5.3(c) above, an instrument that embodies an obligation on the part of the issuer of the instrument shall be classified as an equity investment if it meets any of the following conditions:

- (a) the issuer may defer indefinitely the settlement of the obligation;
- (b) the obligation requires or permits, at the discretion of the issuer, settlement by issuance of a fixed number of the equity shares of the issuer;
- (c) the obligation requires or permits, at the discretion of the issuer, settlement by issuance of a variable number of the equity shares of the issuer and *ceteris paribus* any change in the value of the obligation is attributable to, comparable to, and in the same direction as, the change in the value of a fixed number of the equity shares of the issuer<sup>3</sup>; or

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<sup>1</sup> Indirect equity interests include holdings of derivative instruments tied to equity interests, and holdings in corporations, partnerships, limited liability companies or other types of enterprises that issue ownership interests and are engaged principally in the business of investing in equity instruments.

<sup>2</sup> Investments in funds will normally be treated as equity investments unless the Reporting Bank is able to demonstrate to the Authority (if required to do so) that a look-through approach is appropriate.

<sup>3</sup> For certain obligations that require or permit settlement by issuance of a variable number of the issuer's equity shares, the change in the monetary value of the obligation is equal to the change in the fair value of a fixed number of equity shares multiplied by a specified factor. Those obligations meet the conditions of paragraph 7.5.4(c) if both the factor and the referenced number of shares are fixed. For example, an issuer may be required to settle an obligation by issuing shares with a value equal to three times the appreciation in the fair value of 1,000 equity shares. That obligation is considered to be

- (d) the holder has the option to require that the obligation be settled in equity shares, unless either:
  - (i) in the case of a traded instrument, the Reporting Bank is able to demonstrate to the Authority (if required to do so) that the instrument trades more like the debt of the issuer than like its equity; or
  - (ii) in the case of non-traded instruments, the Reporting Bank is able to demonstrate to the Authority (if required to do so) that the instrument should be treated as a debt position.

7.5.5 In cases stated in paragraphs 7.5.4 (d)(i) and 7.5.4(d)(ii), a Reporting Bank may decompose the risks into an equity position and a debt position for the purposes of calculating the capital requirements for the instrument. The Reporting Bank shall be able to demonstrate to the Authority (if required to do so) the decomposition of risks.

7.5.6 Debt obligations and other securities, partnerships, derivatives or other vehicles structured with the intent of conveying the economic substance of equity ownership shall be treated as equity investments.<sup>4</sup>

7.5.7 Equity investments that are recorded as a loan but arise from a debt/equity swap made as part of the orderly realisation or restructuring of the debt shall be classified as equity investments. Such instruments shall not attract a lower capital charge than would apply if they had remained in the debt portfolio.

7.5.8 Liabilities with a return linked to that of equities shall be categorised as equity investments. However, such liabilities need not be included if they are directly hedged by an equity holding and the net position does not involve material risk.<sup>5</sup>

7.5.9 Instruments that are structured with the intent of conveying the economic substance of debt holdings or securitisation exposures shall not be considered as equity investments.

7.5.10 The Authority may, on a case-by-case basis, re-characterise a debt holding as an equity investment for the purposes of calculating the capital requirements for the instrument, or otherwise ensure the proper treatment of the holding under Pillar 2.

## **Sub-division 2: Definition of Private Equity and Venture Capital (“PE/VC”) Investments**

7.5.11 PE/VC investments are defined as investments in companies or businesses of the type specified in paragraphs 7.5.12 and 7.5.13, made by way of instruments of the type specified in paragraph 7.5.14.

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the same as an obligation that requires settlement by issuance of shares equal to the appreciation in the fair value of 3,000 equity shares.

<sup>4</sup> For example, options and warrants on equities and short positions in equity securities would be characterised as equity exposures. If a debt instrument is convertible into equity at the option of the holder, it would be deemed equity upon conversion. If such debt is convertible into equity at the option of the issuer or automatically by the terms of the instrument, it would be characterised as equity from inception.

<sup>5</sup> A Reporting Bank shall be able, if asked, to demonstrate to the Authority that the net position of hedged equity exposures does not involve material risk.

### Types of Investees

7.5.12 Subject to paragraph 7.5.13, the investees covered by this sub-division are:

- (a) any company or firm which carries on a prohibited business<sup>6</sup> (whether as its principal business or otherwise) if, and only if, it has potential for high growth from the exploitation of high technology, emerging technology or new business models;
- (b) any company or firm which carries on a prohibited business (whether as its principal business or otherwise) if, and only if, it has potential for high growth, and which is, as at the time of the investment, undergoing a reorganization of its management or a restructuring of its business directions or operations; or
- (c) any company or firm whose principal business is that of investing in companies or firms within the preceding sub-paragraphs (a) or (b). Included within this class will be those companies and firms that are managed by a party which is not related to the Reporting Bank (referred to as "independent funds" in MAS Notice 630).

7.5.13 However, the following shall not be included:

- (a) any company or firm that is not carrying on any substantial business or is not in operation;
- (b) any company or firm that carries on the business of engaging in property related activities (as defined in the Banking Regulations 2001); and
- (c) any company or firm that carries on the business of factoring, leasing or otherwise purchasing debt obligations from other persons.

### Types of Investment Instruments

7.5.14 The investment instruments covered by this sub-division are:

- (a) shares in an investee company or partnership capital in a firm;
- (b) convertible debentures issued by an investee company, where following conversion, the aggregate value of shares held exceeds 10% of the investee company's share capital;
- (c) warrants or options issued or granted by an investee company, where following exercise, the aggregate value of shares held exceeds 10% of the investee company's share capital; and
- (d) debentures or credit facilities, where these are held concurrently with investment instruments that are within the preceding sub-paragraphs (a), (b) or (c)<sup>7</sup>.

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<sup>6</sup> As defined in Section 32(7) of the Banking Act.

<sup>7</sup> The investment need not be categorised as a PE/VC investment if it is initially by way of debentures and credit facilities alone. However, if subsequent investment instruments within paragraphs 7.5.14(a), 7.5.14(b) and 7.5.14(c) are acquired, then both the subsequent investment instruments as well as the debentures and credit facilities shall be categorized as PE/VC investments.

### **Sub-division 3: Overview of Calculation of Equity RWA**

7.5.15 A Reporting Bank shall not include the following in its calculation of Equity RWA:

- (a) any equity investment held in the trading book;
- (b) any equity investment that is not included in the consolidated financial statements of the Reporting Bank in accordance with Part III of this Notice; or
- (c) any equity investment that is included in deductions from Tier 1 Capital and Upper Tier 2 Capital of the Reporting Bank pursuant to Part VI of this Notice.

7.5.16 A Reporting Bank that has received supervisory permission from the Authority to adopt the IRBA pursuant to Division 4 of this Part shall not calculate the credit risk-weighted exposure amount for its equity investments other than PE/VC investments using the SA(CR) unless such investments fall below the materiality threshold set out in Annex 7V.

7.5.17 A Reporting Bank shall not use the internal models method or the PD/LGD method under the IRBA to calculate the credit risk-weighted exposure amount for its equity investments other than PE/VC investments unless it has obtained prior supervisory permission from the Authority to do so.

### **Sub-division 4: Calculation of Credit Risk-Weighted Exposure Amount for Equity Investments Using SA(CR)**

7.5.18 A Reporting Bank using the SA(CR) to calculate the credit risk-weighted exposure amount for its equity investments other than PE/VC investments shall apply a risk weight of 100% to E, being the value of the equity exposure measured in accordance with Division 2 of this Part.

### **Sub-division 5: Calculation of Credit Risk-Weighted Exposure Amount for Equity Investments Using IRBA**

7.5.19 A Reporting Bank using the IRBA to calculate the credit risk-weighted exposure amount for its equity investments other than PE/VC investments shall use one of the following methods:

- (a) the simple risk weight method;
- (b) the internal models method; or
- (c) the PD/LGD method.

7.5.20 A Reporting Bank may use different methods for different portfolios of equity investments. The method used shall:

- (a) address the risks faced by the equity portfolio<sup>8</sup>;
- (b) be consistent with the amount and complexity of the Reporting Bank's equity holdings; and
- (c) be commensurate with the overall size and sophistication of the Reporting Bank.

7.5.21 A Reporting Bank shall be able to demonstrate to the Authority (if required to do so) that its choice of method(s) under paragraph 7.5.20 is made consistently<sup>9</sup>, and in particular not determined by regulatory arbitrage considerations.

#### Simple Risk Weight Method

7.5.22 A Reporting Bank using the simple risk weight method to calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments shall do so using the following formula:

$$\text{Credit Risk-Weighted Exposure Amount} = \text{?}[\text{RW} \times \text{EAD}]$$

where:

- (a) RW is:
  - (i) 150% for equity investments that are listed on any securities exchange in Singapore or any recognised group A exchange as set out in Table 4 of the Fourth Schedule to the Securities and Futures (Financial and Margin Requirements for Holders of Capital Markets Services Licences) Regulations; and
  - (ii) 200% for all other equity investments; and
- (b) EAD is the value of an equity exposure measured in accordance with Division 2 of this Part.

7.5.23 Short cash positions and derivative instruments held in the banking book are permitted to offset long positions in the same individual stocks provided that these instruments have been explicitly designated as hedges of specific equity holdings and that they have remaining maturities of at least one year. Other short positions are to be treated as if they are long positions with the relevant risk weights in paragraph 7.5.22(a) applied to the value of each position as measured in accordance with Division 2 of this Part. A Reporting Bank shall treat maturity mismatched positions in accordance with Annex 7G.

7.5.24 A Reporting Bank using the simple risk weight method may recognise the effects of eligible guarantees in accordance with Sub-division 3 of Division 3, but not recognise the risk mitigation effects of collateral obtained on an equity position.

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<sup>8</sup> The PD/LGD method aims to capture risks from credit-related losses while the simple risk weight method and internal models method aim to capture risks from various factors that can affect the volatility in value and total return of an equity interest – both systematic and idiosyncratic.

<sup>9</sup> The Authority expects Reporting Banks to establish clear and documented policies and procedures for determining the method to be used. Justifications for changes in methods should also be clearly documented.



### Internal Models Method

7.5.25 A Reporting Bank shall not use the internal models method to calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments unless it has received supervisory permission to use the IMA to calculate Market RWA. The Reporting Bank should meet the minimum expectations for using the IMA as set out in Division 3 of Part VIII, subject to the following modifications:

- (a) the estimated losses used in deriving K pursuant to paragraph 7.5.27 should be robust to adverse market movements relevant to the long-term risk profile of the Reporting Bank's specific holdings. The data used to represent return distributions should reflect the longest sample period for which data are available and meaningful in representing the risk profile of the Reporting Bank's specific equity holdings. The data used should be sufficient to provide conservative statistically reliable loss estimates that are not based purely on subjective or judgmental considerations. A Reporting Bank should be able to demonstrate to the Authority (if required to do so) that the shock employed provides a conservative estimate of potential losses over a relevant long-term market or business cycle;
- (b) a Reporting Bank should combine empirical analysis of available data with adjustments based on a variety of factors in order to attain model outputs that achieve conservatism. In constructing VaR models estimating potential quarterly losses, a Reporting Bank may use quarterly data or convert shorter horizon period data to a quarterly equivalent using an analytically appropriate method supported by empirical evidence. Such adjustments should be applied through a well-developed and well-documented thought process and analysis and in a conservative and consistent manner. Where only limited data are available, or where technical limitations are such that estimates from any single method would be of uncertain quality, a Reporting Bank should add appropriate margins of conservatism;
- (c) a Reporting Bank's internal model should be fully integrated into the Reporting Bank's risk management infrastructure including use in:
  - (i) establishing investment hurdle rates and evaluating alternative investments;
  - (ii) measuring and assessing equity portfolio performance (including the risk-adjusted performance); and
  - (iii) allocating capital to equity holdings and evaluating overall capital adequacy as required under Pillar 2. The bank shall be able to demonstrate, through for example, investment committee minutes, that internal model output plays an essential role in the investment management process;
- (d) A Reporting Bank's internal validation shall comprise the following:
  - (i) regular backtesting by comparing actual return performance, computed using realised and unrealised gains and losses, with modelled estimates, using historical data over as long a period as possible. The methods and data used in such comparisons shall be clearly documented by the Reporting Bank. This analysis and documentation shall be updated at least annually;

- (ii) sound internal standards for situations where actual equity returns deviate significantly from expectations and where the validity of the internal model is called into question. These standards should take account of business cycles and similar systematic variability in equity returns; and
- (iii) maintenance of information on actual quarterly performance of the Reporting Bank's equity investments as well as the estimates derived using its internal models to facilitate model validation through backtesting on an ongoing basis. The Authority may require a Reporting Bank to scale its quarterly forecasts to a different, in particular shorter, time horizon, store performance data for this time horizon and perform backtests on this basis.

7.5.26 Where a Reporting Bank does not meet all the expectations in Division 3 of Part VIII subject to the modifications in paragraph 7.5.25 above and any conditions or restrictions imposed by the Authority in relation to the use of an internal models method, it shall:

- (a) develop a plan for rapid return to compliance;
- (b) obtain the Authority's approval of the plan;
- (c) undertake prompt corrective action in accordance with the plan in paragraph (b) above; and
- (d) in the interim, calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments using the simple risk weight method.

7.5.27 A Reporting Bank using the internal models method to calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments shall do so using the following formula:

$$\text{Credit Risk-Weighted Exposure Amount} = ?[K \times 12.5]$$

Where K represents the potential loss on the Reporting Bank's equity investments as derived using internal value-at-risk models subject to the 99th percentile, one-tailed confidence interval of the difference between quarterly returns and an appropriate risk-free rate computed over a long-term sample period.

7.5.28 At the individual exposure level, the credit risk-weighted exposure amount calculated under the internal models method shall be no less than the credit risk-weighted exposure amount that would have been calculated under the simple risk weight method using a 100% risk weight for equity investments that meet the conditions in paragraph 7.5.22(a)(i) and 150% risk weight for all other equity investments.

7.5.29 A Reporting Bank using the internal models method may recognise the effects of eligible guarantees, but not recognise the risk mitigation effects of collateral obtained on an equity position.

### PD/LGD Method

7.5.30 A Reporting Bank shall not use the PD/LGD method to calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments (including equity of companies that are included in the retail asset class) unless it has met the Authority's expectations for using F-IRBA<sup>10</sup> for corporate exposures in Annex 7U.

7.5.31 A Reporting Bank using the PD/LGD method to calculate the credit risk-weighted exposure amount of its equity investments other than PE/VC investments shall do so using the following formula:

$$\text{Credit Risk-Weighted Exposure Amount} = ?[K_{eq} \times 12.5 \times \text{EAD}]$$

$$\text{Correlation (R)} = \frac{0.12 \times (1 - \text{EXP}(-50 \times \text{PD}))}{1 - \text{EXP}(-50)} + 0.24 \times \frac{[1 - (1 - \text{EXP}(-50 \times \text{PD}))]}{(1 - \text{EXP}(-50))}$$

$$\text{Maturity adjustment (b)} = (0.11852 - 0.05478 \times \ln(\text{PD}))^2$$

$$\text{Capital requirement (K}_{eq}) = [\text{LGD} \times \text{N} [(1 - \text{R})^{-0.5} \times \text{G}(\text{PD}) + (\text{R} / (1 - \text{R}))^{0.5} \times \text{G}(0.999)] - \text{PD} \times \text{LGD}] \times (1 - 1.5 \times \text{b})^{-1} \times (1 + (\text{M} - 2.5) \times \text{b})$$

Where:

- (a) LGD = 90%
- (b) M = 5
- (c)  $K_{eq}$  represents the capital requirement for an equity exposure calculated in accordance with the formula above; and
- (d) EAD is the value of an equity exposure measured in accordance with Division 2.

7.5.32 The Reporting Bank's estimate of the PD of a corporate entity in which it holds an equity position shall satisfy the same requirements as the Reporting Bank's estimate of the PD of a corporate entity in which the Reporting Bank holds debt.<sup>11</sup> If a Reporting Bank does not hold debt of the corporate entity in whose equity it has invested, and does not have sufficient information on the position of that corporate entity to be able to use the applicable definition of default in Annex 7W, a 1.5 scaling factor shall be applied to calculation of  $K_{eq}$ , given the PD set by the Reporting Bank.

7.5.33 At the individual exposure level, the sum of the credit risk-weighted exposure amount calculated in accordance with paragraph 7.5.31 above and the EL amount<sup>12</sup> shall be:

- (a) no less than the credit risk-weighted exposure amount that would have been calculated under the simple risk weight method using the minimum risk weights in paragraphs 7.5.3 4 and 7.5.3 5 below; and

<sup>10</sup> There is no advanced approach for equity exposures.

<sup>11</sup> In practice, if there is both an equity exposure and an IRB credit exposure to the same counterparty, a default on the credit exposure would thus trigger a simultaneous default for regulatory purposes on the equity exposure.

<sup>12</sup> The EL amount is calculated using the following formula: PD x LGD x EAD x 12.5.

- (b) no more than the credit risk-weighted exposure amount that would have been calculated under the simple risk weight method using a risk weight of 1,250%.

7.5.34 A minimum risk weight of 100% applies to:

- (a) equity investments that meet the conditions in paragraph 7.5.22(a)(i); and
- (b) private equities where the returns on the investment are based on regular and periodic cash flows not derived from capital gains and there is no expectation of future (above trend) capital gain or of realising any existing gain.

7.5.35 For all other equity investments, including net short positions as defined in paragraph 7.5.23, the minimum risk weight is 150%.

7.5.36 As an alternative to calculating the credit risk-weighted exposure amount of an equity investment, a Reporting Bank using the PD/LGD method may deduct the value of the equity investment measured in accordance with Division 2 of this Part 50% from Tier 1 Capital and 50% from Tier 2 Capital, provided the value of the equity investment is equal to or exceeds the EL amount as defined in paragraph 7.5.33.

7.5.37 A Reporting Bank using the PD/LGD method may recognise the effect of eligible credit protection in accordance with sub-division 10 of Division 4, subject to an LGD of 90% on the exposure to the credit protection provider and assuming that the equity positions has a five -year maturity.

#### **Sub-division 6: Calculation of Credit Risk-Weighted Exposure Amount for PE/VC Investments**

7.5.38 A Reporting Bank shall calculate the credit risk-weighted exposure amount for its PE/VC investments using the following formula:

$$\text{Credit Risk-Weighted Exposure Amount} = ?[\text{RW} \times \text{E}]$$

Where:

- (a) RW is 200%; and
- (b) E represents the value of a PE/VC investment exposure measured in accordance with Division 2.

## **Division 6: Securitisation**

### **Sub-division 1: Introduction**

7.6.1 A Reporting Bank shall apply the securitisation framework for determining regulatory capital requirements on exposures relating to traditional and synthetic securitisations or similar structures that contain features common to both. Since securitisations may be structured in many different ways, the capital treatment of a securitisation should be determined on the basis of its economic substance rather than its legal form.

7.6.2 A Reporting Bank should consult the Authority when it is uncertain about whether a given transaction should be considered a securitisation.

### **Sub-division 2: Operational Requirements for the Recognition of Risk Transference**

7.6.3 A Reporting Bank that acts as an originator or a sponsor with respect to a securitisation shall transfer all of the securitised exposures and any securitisation exposures that it retains to the banking book if they were previously held in the trading book.

#### Operational Requirements for Traditional Securitisations

7.6.4 A Reporting Bank that is an originator in a traditional securitisation may exclude securitised exposures from the calculation of Credit RWA only if all of the conditions in Section 1 of Annex 7AB have been met. A Reporting Bank meeting these conditions shall still hold regulatory capital against any securitisation exposures it retains.

#### Operational Requirements for Synthetic Securitisations

7.6.5 Subject to paragraphs 7.6.6 to 7.6.8 below, a Reporting Bank that is an originator in a synthetic securitisation may recognise credit protection obtained through the synthetic securitisation in its calculation of Credit RWA only if all of the conditions in Section 2 of Annex 7AB have been met and provided the Reporting Bank observes Annex 7E. A Reporting Bank meeting these conditions shall still hold regulatory capital against any securitisation exposures it retains.

7.6.6 For avoidance of doubt, a Reporting Bank may recognise the credit risk mitigation effect of eligible collateral pledged by any SPE, but it may not recognise any SPE as an eligible protection provider.

7.6.7 Where a Reporting Bank is using the FC(CA) and there is a maturity mismatch between the underlying exposure being hedged and the credit protection obtained through the synthetic securitisation, the Reporting Bank shall adjust the value of the credit protection in accordance with Annex 7G.

7.6.8 Paragraph 7.6.7 does not apply to any securitisation exposure retained by a Reporting Bank which is required to be included in deductions from Tier 1 Capital and Upper Tier 2 Capital.

### **Sub-division 3: Treatment of Securitisation Exposures**

7.6.9 A Reporting Bank shall include in its calculation of Securitisation RWA all of its securitisation exposures, including those arising from investments in asset-backed securities, retention of a subordinated tranche, and the extension of a liquidity facility or credit enhancement for a securitisation. Repurchased securitisation exposures shall be treated as retained securitisation exposures.

7.6.10 Where a Reporting Bank provides implicit support to a securitisation, it shall include all the underlying exposures of the securitisation in its calculation of Credit RWA as if those exposures were on the balance sheet of the Reporting Bank. Furthermore, the Reporting Bank shall disclose publicly:

- (a) that it has provided non-contractual support to the securitisation; and
- (b) the capital impact of doing so.

7.6.11 Where a Reporting Bank provides two or more facilities (whether they are liquidity facilities or credit enhancements) in relation to a securitisation that can be drawn under various conditions with different triggers, it may be that the Reporting Bank provides duplicative coverage to the underlying exposures, i.e. the facilities provided by the Reporting Bank may overlap since a draw on one facility may preclude (in part) a draw under the other facility. In such cases, the Reporting Bank shall calculate the capital requirement for the overlapping part of the facilities only once. Where the overlapping facilities are subject to different credit conversion factors, the Reporting Bank shall attribute the overlapping part to the facility with the highest credit conversion factor. However, if overlapping facilities are provided by different banks, each Reporting Bank shall hold capital for the maximum amount of its respective facility.

#### Choice of Approach

7.6.12 Subject to paragraphs 7.6.13 and 7.6.14 below, a Reporting Bank shall use the SA(SE) to calculate the credit risk-weighted exposure amounts for its securitisation exposures unless it has received supervisory permission to adopt the IRBA for the asset sub-class to which the underlying exposures in the securitisation belong, in which case it shall use the IRBA(SE) to calculate the credit risk-weighted exposure amounts for those securitisation exposures.

7.6.13 In the case of a securitisation where some of the underlying exposures belong to an asset sub-class for which the Reporting Bank is using the SA(CR) to calculate the credit risk-weighted exposure amount and the remaining underlying exposures belong to an asset sub-class for which the Reporting Bank is using the IRBA to calculate the credit risk-weighted exposure amount, the Reporting Bank shall consult with the Authority on the approach to be applied to the securitisation exposure. In general, a Reporting Bank would be expected to use the SA(SE) if the SA(CR) is the approach used for the predominant share of the underlying exposures and to use the IRBA(SE) if the IRBA is the approach used for the predominant share of the underlying exposures.

7.6.14 Notwithstanding paragraph 7.6.13 above, where there is no specific IRBA treatment for the asset sub-class to which the underlying exposures in a securitisation belong, a Reporting Bank that has received approval from the Authority to use the IRBA and that is not the originator of the securitisation may use the RBM to calculate the credit risk-weighted exposure amount for those securitisation exposures.

### Deductions from Tier 1 Capital and Upper Tier 2 Capital

7.6.15 Subject to paragraph 7.6.16 below, when a Reporting Bank is required to include a securitisation exposure in its deductions from Tier 1 Capital and Upper Tier 2 Capital, such deduction shall be taken 50% from Tier 1 Capital and 50% from Upper Tier 2 Capital. Credit enhancing interest-only strips (net of any amount that must be included in deductions from Tier 1 Capital pursuant to paragraph 7.6.16) shall be deducted 50% from Tier 1 Capital and 50% from Upper Tier 2 Capital. Deductions from capital may be calculated net of any specific provisions taken against the relevant securitisation exposures.

7.6.16 A Reporting Bank shall include in deductions from Tier 1 Capital any increase in equity capital resulting from a securitisation transaction, such as that associated with expected future margin income resulting in a gain-on-sale that is recognised in equity capital.

### Use of ECAI Credit Assessments

7.6.17 A Reporting Bank may use the external credit assessments of an eligible ECAI under the SA(SE) or IRBA(SE) only if the criteria in paragraphs 7.3.37 to 7.3.39, 7.3.43 and 7.3.44 of sub-division 4 of Division 3, read in reference to an SA(SE) exposure or IRBA(SE) exposure, are met.

7.6.18 Notwithstanding Paragraph 7.6.17, a Reporting Bank shall treat as unrated any securitisation exposure where the external credit assessment incorporates credit protection provided directly to the SPE by a protection provider that is not an eligible protection provider.

### **Sub-division 4: SA(SE)**

#### Risk weights

7.6.19 A Reporting Bank shall risk-weight any securitisation exposure for which it is using the SA(SE) to calculate the credit risk-weighted exposure amount in accordance with Tables 6 -1 and 6-2 below:

Table 6-1: Risk weights for long-term SA(SE) exposures

Credit Quality Grade	1 to 2	3 to 5	6 to 8	9 and below	Unrated
Regulatory capital treatment	20%	50%	100%	Include in Deductions from Tier 1 Capital and Upper Tier 2 Capital	Include in Deductions from Tier 1 Capital and Upper Tier 2 Capital

Table 6-2: Risk weights for short-term SA(SE) exposures

Credit Quality Grade	I	II	III	IV	Unrated
Regulatory capital treatment	20%	50%	100%	Include in Deductions from Tier 1 Capital and Upper Tier 2 Capital	Include in Deductions from Tier 1 Capital and Upper Tier 2 Capital

Treatment of Securitisation Exposures that are Unrated or that have a Credit Quality Grade of "9" or below or "IV"

7.6.20 Subject to paragraphs 7.6.21 to 7.6.24 below, a Reporting Bank shall include in deductions from Tier 1 Capital and Upper Tier 2 Capital an amount equal to the value of the securitisation exposure measured in accordance with Division 2 of this Part if:

- (a) in the case of a short-term securitisation exposure, it is unrated or has a credit quality grade of "IV"; and
- (b) in the case of other securitisation exposures, it is unrated or has a credit quality grade of "9" or below.

7.6.21 A Reporting Bank that holds or guarantees an unrated securitisation exposure that belongs to the most senior tranche in a securitisation may determine the risk weight to be applied to the securitisation exposure by applying the "look-through" treatment set out in paragraph 7.6.22 below, provided the composition of the underlying pool of exposures is known at all times and it is able to determine the risk weights assigned to the exposures in the underlying pool of exposures. A Reporting Bank is not required to consider interest rate or currency swaps when determining whether a securitisation exposure belongs to the most senior tranche in a securitisation for the purpose of applying the "look-through" approach.

7.6.22 Under the "look-through" approach, the Reporting Bank shall apply to the securitisation exposure the average risk weight of the underlying exposures in the securitisation determined in accordance with sub-division 2 of Division 3.

7.6.23 A Reporting Bank that is the sponsor of an ABCP programme may apply the higher of (i) a 100% risk weight; or (ii) the highest risk weight assigned to any of the underlying exposures in the ABCP programme to an unrated securitisation exposure arising from the ABCP programme, provided it satisfies the following requirements:

- (a) the securitisation exposure is economically in a second loss position or better and the first loss position provides significant credit protection to the second loss position;
- (b) the associated credit risk is the equivalent of investment grade or better; and
- (c) the Reporting Bank does not retain or provide the first loss position.

7.6.24 A Reporting Bank that provides an eligible liquidity facility which is unrated may apply to the resulting securitisation exposure the highest risk weight that would be assigned to any of the underlying exposures in the pool covered by the facility.

7.6.25 A Reporting Bank that provides credit protection for a basket of reference exposures through an unrated first-to-default credit derivative may apply to the securitisation exposure the aggregate of the risk weights that would be assigned to the reference exposures, provided that the resulting capital requirement does not exceed the notional amount of the credit protection.

7.6.26 A Reporting Bank that provides credit protection for a basket of reference exposures through an unrated second-to-default credit derivative may apply the treatment referred to in paragraph 7.6.25 above, except that in aggregating the risk



weights, the reference exposure with the lowest risk-weighted amount may be excluded.

#### Treatment of Credit Protection Bought

7.6.27 A Reporting Bank may recognise the effect of eligible credit protection provided it observes Annex 7E. However, the Reporting Bank shall not recognise any SPE as an eligible protection provider.

7.6.28 A Reporting Bank that has eligible credit protection for an SA(SE) exposure may recognise the credit risk mitigation effects of the eligible credit protection as follows:

- (a) divide the SA(SE) exposure into:
  - (i) a protected portion with E equal to the notional amount of the eligible credit protection<sup>13</sup>; and
  - (ii) an unprotected portion with E equal to the value of the SA(SE) exposure measured in accordance with Division 2 of this Part less the notional amount of the eligible credit protection; and
- (b) apply the risk weight that is applicable to the eligible protection provider to the protected portion calculated in accordance with sub-paragraph (a)(i) above to calculate the credit risk-weighted exposure amount of the protected portion; and
- (c) either:
  - (i) apply the risk weight that is applicable to the securitisation exposure to the unprotected portion calculated in accordance with sub-paragraph (a)(ii) above to calculate the credit risk-weighted exposure amount of the unprotected portion; or
  - (ii) include the unprotected portion in deductions from Tier 1 Capital and Upper Tier 2 Capital,whichever is applicable.

7.6.29 Notwithstanding paragraph 7.6.28(a)(i), a Reporting Bank shall calculate the protected portion of an SA(SE) exposure in accordance with Annex 7S in cases of principal-only cover, partially eligible credit derivatives, tranching cover, basket credit derivatives and currency mismatches.

#### Treatment of Credit Protection Sold

7.6.30 Where a Reporting Bank other than the originator provides unfunded credit protection to a securitisation exposure, the Reporting Bank shall calculate the credit risk-weighted exposure amount for the covered securitisation exposure as if it were directly holding that exposure.

7.6.31 Where a Reporting Bank provides funded credit protection to a securitisation exposure, the Reporting Bank shall calculate the credit risk-weighted exposure amount for the credit protection as the sum of:

<sup>13</sup> Where there is a maturity mismatch, a Reporting Bank shall determine the maturity-adjusted value of the protected portion in accordance with Annex 7G.

- (a) the credit risk-weighted exposure amount for the covered securitisation exposure calculated in accordance with paragraph 7.6.30; and
- (b) the credit risk-weighted exposure amount for the exposure to the protection buyer using the risk weight that is applicable to the protection buyer, unless the protection buyer is an SPE, in which case, the risk weight that is applicable to the collateral owned by the SPE shall be used,

provided that the capital requirement for the credit protection calculated in accordance with this paragraph shall not exceed the nominal amount of the credit protection.

7.6.32 Notwithstanding paragraph 7.6.31 above, the credit risk-weighted exposure amount for funded credit protection shall be the higher of the credit risk-weighted amounts calculated under sub-paragraph 7.6.31 (a) and 7.6.31 (b) if:

- (a) the securitisation exposure has a credit quality grade of "8" or above; and
- (b) the protection buyer or collateral, as the case may be, has a credit quality grade of "3" or above.

#### Recognition of Eligible Financial Collateral under FC(CA)

7.6.33 A Reporting Bank that has taken eligible financial collateral<sup>14</sup> for an SA(SE) exposure and is using the FC(SA) may recognise the effect of the eligible financial collateral as follows:

- (a) divide the SA(SE) exposure into:
  - (i) a collateralised portion with E equal to the latest fair market value of the eligible financial collateral; and
  - (ii) an uncollateralised portion with E equal to the E of the SA(SE) exposure less the latest fair market value of the eligible financial collateral; and
- (b) apply the risk weight that is applicable to the eligible financial collateral to the collateralised portion calculated in accordance with sub-paragraph (a)(i) above to calculate the credit risk-weighted exposure amount of the collateralised portion as though the Reporting Bank had a direct exposure to the eligible financial collateral; and
- (c) either:
  - (i) apply the risk weight that is applicable to the securitisation exposure to the uncollateralised portion calculated in accordance with sub-paragraph (a)(ii) above to calculate the credit risk-weighted exposure amount of the uncollateralised portion; or

<sup>14</sup> Collateral in this context refers to that used to hedge the credit risk of a securitisation exposure rather than the underlying exposures of the securitisation transaction, including collateral pledged by an SPE.

- (ii) include the uncollateralised portion in deductions from Tier 1 Capital and Upper Tier 2 Capital,

whichever is applicable,

provided the Reporting Bank observes Annex 7E.

#### **Sub-division 5: IRBA(SE)**

7.6.34 A Reporting Bank using the IRBA(SE) shall use the following hierarchy of methods in paragraphs 7.6.35 to 7.6.40 to determine the method to be applied for calculating the credit risk-weighted exposure amount or the amount to be included in deductions from Tier 1 Capital and Upper Tier 2 Capital in respect of the relevant securitisation exposures.

7.6.35 A Reporting Bank shall apply the RBM as described in Annex 7AE to any securitisation exposure that has a credit quality grade, or for which a credit quality grade can be inferred based on the Reporting Bank's internal rating of the securitisation exposure.

7.6.36 Where an external or an inferred credit quality grade is not available, a Reporting Bank that qualifies for the use of the Internal Assessment Method (IAM) prescribed in Annex 7AF may apply the IAM to an unrated securitisation exposure to an ABCP programme (e.g. liquidity facilities and credit enhancements). Alternatively, the Reporting Bank may apply the Supervisory Formula (SF) prescribed in Annex 7AG if it is able to calculate the set of risk factors relating to the securitisation.

7.6.37 Where a securitisation exposure does not qualify for the RBM and is not an exposure to an ABCP programme, the Reporting Bank may apply the SF prescribed in Annex 7AG if it is able to calculate the set of risk factors relating to the securitisation.

7.6.38 Where the Reporting Bank is unable to apply the RBM, the SF or the IAM to an eligible liquidity facility, it may, subject to approval from the Authority, apply the "look-through" treatment to the liquidity facility. Under the "look-through" treatment, the Reporting Bank shall apply the highest risk weight of any of the underlying exposures covered by the liquidity facility determined in accordance with sub-division 2 of Division 3 and the applicable credit conversion factor determined in accordance with Annex 7AD.

7.6.39 If the Reporting Bank is unable to apply any of the above methods to a particular securitisation exposure, it shall include in its deductions from Tier 1 Capital and Upper Tier 2 Capital the value of the securitisation exposure measured in accordance with Division 2 of this Part.

7.6.40 Notwithstanding the above, a Reporting Bank that is an originator in a securitisation and that is using the IRBA(SE) to calculate credit risk-weighted exposure amounts for those securitisation exposures shall include in its deductions from Tier 1 Capital and Upper Tier 2 Capital all retained securitisation exposures that are unrated or that have a credit quality grade of IV, 9 or below.

#### Treatment of Credit Protection Bought

7.6.41 A Reporting Bank may recognise the effect of eligible credit protection when applying the RBM or the SF, provided the Reporting Bank observes Annex 7E. However, the Reporting Bank shall not recognise any SPE as an eligible protection provider.

7.6.42 A Reporting Bank that has eligible credit protection for an IRBA(SE) exposure may recognise the credit risk mitigation effects of the eligible credit protection as follows:

- (a) divide the IRBA(SE) exposure into:
  - (i) a protected portion with EAD equal to the notional amount of the eligible credit protection<sup>15</sup>; and
  - (ii) an unprotected portion with EAD equal to the EAD of the IRBA(SE) exposure less the notional amount of the eligible credit protection; and
- (b) apply the risk weight that is applicable to the eligible protection provider to the protected portion calculated in accordance with sub-paragraph (a)(i) above to calculate the credit risk-weighted exposure amount of the protected portion; and
- (c) either:
  - (i) apply the risk weight that is applicable to the securitisation exposure to the unprotected portion calculated in accordance with sub-paragraph (a)(ii) above to calculate the credit risk-weighted exposure amount of the unprotected portion; or
  - (ii) include the unprotected portion in deductions from Tier 1 Capital and Upper Tier 2 Capital,whichever is applicable.

7.6.43 Notwithstanding paragraph 7.6.42(a)(i), a Reporting Bank shall calculate the protected portion of an IRBA(SE) exposure in accordance with Annex 7S in cases of principal-only cover, partially eligible credit derivatives, tranching cover, basket credit derivatives and currency mismatches.

#### Treatment of Credit Protection Sold

7.6.44 Where a Reporting Bank other than the originator provides unfunded credit protection to a securitisation exposure, the Reporting Bank shall calculate the credit risk-weighted exposure amount for the covered securitisation exposure as if it were directly holding that exposure.

7.6.45 Where a Reporting Bank provides funded credit protection to a securitisation exposure, the Reporting Bank shall calculate the credit risk-weighted exposure amount for the credit protection as the sum of:

- (a) the credit risk-weighted exposure amount for the covered securitisation exposure calculated in accordance with paragraph 7.6.44; and

<sup>15</sup> Where there is a maturity mismatch, a Reporting Bank shall determine the maturity-adjusted value of the protected portion in accordance with Annex 7G.

- (b) the credit risk-weighted exposure amount for the exposure to the protection buyer using the risk weight that is applicable to the protection buyer, unless the protection buyer is an SPE, in which case, the risk weight that is applicable to the collateral owned by the SPE shall be used,

provided that the capital requirement for the credit protection calculated in accordance with this paragraph shall not exceed the nominal amount of the credit protection.

7.6.46 Notwithstanding paragraph 7.6.45 above, the credit risk-weighted exposure amount for funded credit protection shall be the higher of the credit risk-weighted exposure amounts calculated under sub-paragraph 7.6.45(a) and 7.6.45(b) if:

- (a) the securitisation exposure has a credit quality grade or inferred credit quality grade of "8" or above; and
- (b) the protection buyer or collateral, as the case may be, has a credit quality grade of "3" or above.

7.6.47 Where a Reporting Bank uses the SF and the credit risk mitigant covers the first loss or losses on a proportional basis, the Reporting Bank may reduce the capital requirement for its securitisation exposures proportionally. In all other cases where the Reporting Bank uses the SF, it shall assume that the credit risk mitigant covers the most senior portion of the securitisation exposure. Examples for recognising eligible credit protection under the SF are provided in Annex 7AI.

#### **Sub-division 6: Capital Requirement for Early Amortisation Provisions**

7.6.48 A Reporting Bank that is an originator or an ABCP programme sponsor shall hold capital against all or a portion of the investors' interest (i.e. against both the drawn and undrawn balances related to the securitised exposures) in accordance with Annex 7AH when:

- (a) it sells exposures into a structure that contains an early amortisation feature; and
- (b) the exposures sold are of a revolving nature. These involve exposures where the borrower is permitted to vary the drawn amount and repayments within an agreed limit under a line of credit (e.g. credit card receivables and corporate loan commitments).

7.6.49 In the case of securitisation structures wherein the underlying pool comprises revolving and term exposures, a Reporting Bank shall calculate the investors' interest only for that portion of the underlying pool containing revolving exposures.

#### Exemption from early amortisation treatment

7.6.50 Notwithstanding paragraph 7.6.48, a Reporting Bank is not required to calculate a capital requirement for early amortisations in the following situations:

- (a) replenishment structures where the underlying exposures do not revolve and the early amortisation ends the ability of the Reporting Bank to add new exposures;

- (b) transactions of revolving assets containing early amortisation features that mimic term structures (i.e. where the risk on the underlying facilities does not return to the Reporting Bank);
- (c) structures where the Reporting Bank securitises one or more credit line(s) and where investors remain fully exposed to future draws by borrowers even after an early amortisation event has occurred;
- (d) the early amortisation clause is solely triggered by events not related to the performance of the securitised assets or the Reporting Bank, such as material changes in tax laws or regulations.

#### Determination of Investors' Interest

7.6.51 For a Reporting Bank using the SA(SE), investors' interest is defined as investors' drawn balances related to the securitised exposures and the notional amount of the undrawn balances related to the securitised exposures. For determining the notional amount, the undrawn balances of the securitised exposures shall be allocated between the originator and the investors' interests on a pro rata basis, based on the proportions of the originator's and investors' shares of the securitised drawn balances.

7.6.52 For a Reporting Bank using the IRBA(SE), investors' interest is defined as investors' drawn balances related to securitised exposures and EAD associated with investors' undrawn lines related to securitised exposures. For determining EAD, the undrawn balances of securitised exposures shall be allocated between the originator's and investors' interests on a pro rata basis, based on the proportions of the originator's and investors' shares of the securitised drawn balances.

**MATURITY MISMATCHES**

1.1 A Reporting Bank may recognise credit protection for an exposure where there is a maturity mismatch only if the credit risk mitigant has an original maturity of at least one year and a residual maturity of more than three months.

1.2 A Reporting Bank shall calculate the value of the credit risk mitigation adjusted for any maturity mismatch,  $P_A$ , using the following formula:

$$P_A = [P(t-0.25)]/(T-0.25)$$

where

P = value of the credit protection (e.g. collateral amount, guarantee amount) adjusted for any haircuts

t = min (T, residual maturity of the credit risk mitigant) expressed in years

T = min (5, residual maturity of the exposure<sup>16</sup>) expressed in years

<sup>16</sup> In the case of a basket of exposures with different maturities, a Reporting Bank shall use the longest maturity of any of the exposures as the maturity of all the exposures being hedged.

**CREDIT QUALITY GRADES AND ELIGIBLE ECAIS****For SA(CR)**

<b>Credit Quality Grade</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Fitch Ratings	AAA AA+ AA AA-	A+ A A-	BBB+ BBB BBB-	BB+ BB BB-	B+ B B-	CCC+ CCC CCC- CC C D
Moody's Investor Services	Aaa Aa1 Aa2 Aa3	A1 A2 A3	Baa1 Baa2 Baa3	Ba1 Ba2 Ba3	B1 B2 B3	Caa1 Caa2 Caa3 Ca C
Standard & Poor's	AAA AA+ AA AA-	A+ A A-	BBB+ BBB BBB-	BB+ BB BB-	B+ B B-	CCC+ CCC CCC- CC C D

<b>Short-term Credit Quality Grade</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
Fitch Ratings	F-1	F-2	F-3	Others
Moody's Investor Services	P-1	P-2	P-3	Others
Standard & Poor's	A-1	A-2	A-3	Others



**For SA(SE) AND IRBA(SE)**

<b>Credit Quality Grade</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
Fitch Ratings	AAA	AA+ AA AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+ B B- CCC+ CCC CCC- CC C D
Moody's Investor Services	Aaa	Aa1 Aa2 Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1 B2 B3 Caa1 Caa2 Caa3 Ca C
Standard & Poor's	AAA	AA+ AA AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+ B B- CCC+ CCC CCC- CC C D

<b>Short-term Credit Quality Grade</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
Fitch Ratings	F-1	F-2	F-3	Others
Moody's Investor Services	P-1	P-2	P-3	Others
Standard & Poor's	A-1	A-2	A-3	Others

**IRBA ROLLOUT PARAMETERS**

Exclusion for Equity Exposures

A Reporting Bank may exclude its equity exposures from IRBA based on materiality. A Reporting Bank's equity exposures will normally be considered to be material if their aggregate value (excluding PE/VC investments as defined in Division 5 of Part VII of this Notice) at the Group level exceeds 10% of the Reporting Bank's Eligible Total Capital Less Deductions at the Group level calculated in accordance with Part IV of this Notice. The materiality threshold will be lowered to 5% of a Reporting Bank's Eligible Total Capital Less Deductions if the equity portfolio consists of less than 10 individual holdings.

**CONDITIONS FOR EXCLUSION OF SECURITISED EXPOSURES FROM THE CALCULATION OF CREDIT RWA**

**Section 1: Traditional Securitisation**

1.1 In the case of a traditional securitisation, a Reporting Bank may exclude securitised exposures from its calculation of Credit RWA only if all of the following conditions have been met —

- (a) except as provided for in sub-paragraphs (g)(i) and (k) below, the risks associated with the underlying pool of exposures are fully transferred to third parties;
- (b) the Reporting Bank does not have any effective or indirect control<sup>17</sup> over the underlying pool of exposures;
- (c) the Reporting Bank obtains an opinion from its legal advisors confirming that the underlying pool of exposures are beyond the reach of the Reporting Bank or its creditors, even in an insolvency situation or receivership;
- (d) the securities issued pursuant to the securitisation are not obligations of the Reporting Bank and any investor who purchases the securities shall have a claim only against the underlying pool of exposures;
- (e) the securities are issued by an SPE and the holders of the beneficial interests in that SPE have the right to pledge or exchange their said beneficial interests without restriction;
- (f) a clean up call, if any, satisfies the conditions set out in section 3 of this Annex;
- (g) the securitisation documents do not contain any clauses that —
  - (i) other than clean-up calls, obliges the Reporting Bank to repurchase any exposure in the underlying pool of exposures, at any time, except where that obligation arises from the exercise of a representation or warranty given by the Reporting Bank. The Reporting Bank may give a representation or warranty solely in respect of the nature or existing state of facts of any exposure in the underlying pool of exposures, that is capable of being verified, at the time of its transfer<sup>18</sup>;
  - (ii) requires the Reporting Bank to alter systematically the underlying pool of exposures such that the weighted average credit quality of the pool is improved unless this is achieved by

<sup>17</sup> **Guideline:** A Reporting Bank is deemed to have maintained effective control over the transferred exposures if -  
 (a) it is able to repurchase from the transferee the previously transferred exposures in order to realise their benefits; or  
 (b) it is obligated to retain the risk of the transferred exposures.  
 In this regard, a Reporting Bank's role as a servicer in respect of the exposures will not necessarily constitute indirect control of the exposures.

<sup>18</sup> **Guideline:** In addition, the Reporting Bank should undertake appropriate due diligence prior to giving any such representation or warranty.

selling exposures to independent and unaffiliated third parties at market prices<sup>19</sup>;

- (iii) allows for increases in a retained first loss position or credit enhancement provided by the Reporting Bank after the inception of the securitisation; or
  - (iv) other than step-up features incorporated in relation to the underlying exposures of the securitisation, increase the yield payable to parties other than the Reporting Bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool of exposures;
- (h) where there is a transfer of the risks of the exposures being securitised by the transfer of the underlying pool of exposures or through sub-participation, such transfer or sub-participation does not contravene the terms and conditions of any underlying agreement in respect of the underlying pool of exposures and where applicable, all the necessary consents for the transfer or sub-participation have been obtained;
- (i) where there is a transfer of the risks of the exposures being securitised by the transfer of the underlying pool of exposures or through sub-participation, the documented terms of the transfer or sub-participation specify that, if cash flows relating to the underlying pool of exposures are rescheduled or renegotiated, the SPE, and not the Reporting Bank, would be subject to the rescheduled or renegotiated terms;
- (j) the Reporting Bank receives a fixed amount of consideration<sup>20</sup> for the underlying pool of exposures; and
- (k) the Reporting Bank shall not hold more than 20 per cent of the aggregate original amount of all securities issued by the SPE and all transactions shall be conducted at arm's length and on market terms and conditions<sup>21</sup>.

## Section 2: Synthetic Securitisation

2 In the case of a synthetic securitisation, a Reporting Bank may recognise the credit protection obtained through the synthetic securitisation in its calculation of Credit RWA only if all of the following conditions have been met —

- (a) the Reporting Bank transfers all material credit risk associated with the underlying pool of exposures to third parties;

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<sup>19</sup> **Guideline:** For avoidance of doubt, this requirement does not preclude the substitution of non-defaulted assets which have been fully amortised.

<sup>20</sup> **Guideline:** For avoidance of doubt, the amount of consideration received in the form of a fixed amount of securities in the SPE would generally be regarded as meeting this requirement if the transaction is conducted at arm's length and on market terms and conditions. Also, this requirement does not preclude excess cash from being channeled to the Reporting Bank after all claims connected with the securities issued by the SPE have been paid out.

<sup>21</sup> **Guideline:** This requirement does not apply where a Reporting Bank acquires securities in the SPE pursuant to an underwriting arrangement, provided that the Reporting Bank complies with the 20 per cent limit no later than 8 weeks after the date on which the securities were acquired. The Reporting Bank must calculate its Credit RWA for the securities acquired pursuant to the underwriting arrangement in accordance with sub-division 6 of Division 1.

- (b) the instrument used to transfer credit risk does not contain terms or conditions that limit the amount of credit risk transferred, including any clause that —
  - (i) materially limits the credit protection or credit risk transference (e.g. significant materiality thresholds below which credit protection is deemed not to be triggered even if a credit event occurs or those that allow for the termination of the protection due to deterioration in the credit quality of the underlying pool of exposures);
  - (ii) requires the Reporting Bank to alter the underlying pool of exposures to improve the weighted average credit quality of the pool<sup>22</sup>;
  - (iii) increases the cost of credit protection to the Reporting Bank in response to deterioration in the overall credit quality of the pool of underlying exposures;
  - (iv) increase the yield payable to parties other than the Reporting Bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool of exposures; or
  - (v) provides for increases in a retained first loss position or credit enhancement provided by the Reporting Bank after the transaction's inception;
- (c) the Reporting Bank obtains an opinion from its legal advisors that confirms the enforceability of the contracts in all relevant jurisdictions;
- (d) a clean up call, if any, satisfies the conditions set out in section 3 of this Annex; and
- (e) in the case where the risks associated with the underlying exposures are transferred to an SPE -
  - (i) the securities issued pursuant to the securitisation are not obligations of the Reporting Bank;
  - (ii) the securities are issued by an SPE and the holders of the beneficial interests in that SPE have the right to pledge or exchange their said beneficial interests without restriction; and
  - (iii) the Reporting Bank shall not hold more than 20 per cent of the aggregate original amount of all securities issued by the SPE and all transactions shall be conducted at arm's length and on market terms and conditions<sup>23</sup>.

<sup>22</sup> **Guideline:** For avoidance of doubt, this requirement does not preclude the substitution of non-defaulted assets which have been fully amortised.

<sup>23</sup> **Guideline:** This requirement does not apply where a Reporting Bank acquires securities in the SPE pursuant to an underwriting arrangement, provided that the Reporting Bank complies with the 20 per cent limit no later than 8 weeks after the date on which the securities were acquired. The Reporting Bank must calculate its Credit RWA for the securities acquired pursuant to the underwriting arrangement in accordance with sub-division 6 of Division 1.

### **Section 3: Securitisation Containing Clean-Up Calls**

3 If a securitisation includes a clean-up call, the Reporting Bank that has the ability to exercise the clean-up call shall ensure that —

- (a) the exercise of the clean-up call by the Reporting Bank is at its discretion;
- (b) the clean-up call is not structured to avoid allocating losses to credit enhancements or positions held by investors or otherwise structured to provide credit enhancement; and
- (c) the clean-up call is exercisable by the Reporting Bank only when 10% or less of the original underlying exposures, or securities issued remain, or, for synthetic securitisations, when 10% or less of the original reference portfolio value remains.

**CREDIT CONVERSION FACTORS FOR  
OFF-BALANCE SHEET ITEMS UNDER SA(SE)**

	<b>Description of Off-balance Sheet Item</b>	<b>Credit Conversion Factor</b>
(i)	Eligible liquidity facilities <sup>24</sup>	
	(a) with an original maturity of one year or more	50%
	(b) with an original maturity of less than one year	20%
(ii)	Others	100%

<sup>24</sup> With a risk weight of not less than 100%

**CREDIT CONVERSION FACTORS FOR  
OFF-BALANCE SHEET ITEMS UNDER IRBA(SE)**

	<b>Description of Off-balance Sheet Item</b>	<b>Credit Conversion Factor</b>
(i)	Eligible liquidity facilities <sup>25</sup>	
	(a) with an original maturity of one year or more	100%
	(b) with an original maturity of less than one year	50%
(ii)	Eligible servicer cash advance facilities <sup>26</sup>	0% <sup>27</sup>
(iii)	Others	100%

<sup>25</sup> This applies only to a Reporting Bank using the look-through approach.

<sup>26</sup> This refers to undrawn servicer cash advances or facilities that are contractually provided for and unconditionally cancellable without prior notice, so long as the servicer is entitled to full reimbursement and this right is senior to other claims on cash flows from the underlying pool of exposures.

<sup>27</sup> This is subject to the Authority's consent.



**RATINGS-BASED METHOD (RBM)****Section 1: Calculation of Credit Risk -Weighted Exposure Amount**

1.1 A Reporting Bank using the RBM shall calculate the credit-risk weighted exposure amount for a securitisation exposure, except for those securitisation exposures which the Reporting Bank is required to include in its deductions from Tier 1 Capital and Upper Tier 2 Capital, using the following formula:

$$\text{Credit RWE} = \text{Exposure} \times \text{RW} ,$$

where

- (ii) Credit RWE refers to the credit risk-weighted exposure amount for that IRBA(SE) exposure;
- (iii) Exposure refers to EAD, or where applicable EAD\*, for that IRBA(SE) exposure calculated in accordance with paragraph 6.1.8(a) of subdivision 6 of Division 1; and
- (iv) RW refers to the applicable risk weight for that securitisation exposure determined in accordance with paragraph 1.2 below.

1.2 A Reporting Bank shall risk-weight any securitisation exposure for which it is using the RBM to credit the credit risk-weighted exposure amount in accordance with Tables AE-1 and AE-2 below.

Table AE-1: Risk weights for IRBA(SE) exposures with a long-term rating or an inferred rating from a long-term assessment

Credit Quality Grade / Inferred rating	N <sup>28</sup> = 6		N < 6
	Risk weights for senior <sup>29</sup> positions and exposures eligible for IAM	Risk weights for other exposures	Risk weights
1	7%	12%	20%
2	8%	15%	25%
3	10%	18%	35%
4	12%	20%	
5	20%	35%	
6	35%	50%	
7	60%	75%	
8	100%		
9	250%		
10	425%		
11	650%		
12	Include in deductions from Tier 1 Capital and Upper Tier 2 Capital		
Unrated	Include in deductions from Tier 1 Capital and Upper Tier 2 Capital		

<sup>28</sup> A Reporting Bank shall calculate the effective number of underlying exposures (N) for each securitisation exposure in accordance with paragraph • of Section B of this Annex.

<sup>29</sup> A Reporting Bank may treat a securitisation exposure as a senior tranche if it is effectively backed or secured by a first claim on the entire amount of the underlying exposures of the securitisation. A Reporting Bank is not required to consider interest rate or currency swaps when determining whether a securitisation exposure is the most senior in a securitisation for the purpose of applying the RBM.

Table AE-2: Risk weights for IRBA(SE) exposures with a short-term rating or an inferred rating from a short-term assessment

Credit Quality Grade / Inferred rating	N = 6		N < 6
	Risk weights for senior positions and exposures eligible for IAM	Risk weights for other exposures	Risk weights
I	7%	12%	20%
II	12%	20%	35%
III	60%	75%	75%
IV	Include in deductions from Tier 1 Capital and Upper Tier 2 Capital		
Unrated	Include in deductions from Tier 1 Capital and Upper Tier 2 Capital		

**Section 2: Treatment of Securitisation Exposures that are Unrated or that have a Credit Quality Grade of “12” or “IV”**

2 A Reporting Bank shall include an amount equal to the securitisation exposure in deductions from Tier 1 Capital and Upper Tier 2 Capital if:

- (c) in the case of a short-term securitisation exposure, it is unrated or has a credit quality grade or inferred rating of “IV”; and
- (d) in the case of other securitisation exposures, it is unrated or has a credit quality grade or inferred rating of “12”.

**Section 3: Use of Inferred Ratings**

3 A Reporting Bank may attribute an inferred rating to an unrated securitisation exposure provided that the following requirements are met:

- (a) there is a another securitisation exposure which has an eligible external credit assessment (the “reference securitisation exposure”) and which is subordinate in all respects to the unrated securitisation exposure<sup>30</sup>;
- (b) the maturity of the reference securitisation exposure is equal to or longer than that of the unrated securitisation exposure; and
- (c) the Reporting Bank has an established internal process to ensure that any inferred rating will be updated continually to reflect any changes in the external credit assessment of the reference securitisation exposure on an ongoing basis.

<sup>30</sup> Credit enhancements, if any, shall be taken into account when assessing the relative subordination of the unrated exposure and the reference securitisation exposure. For example, if the reference securitisation exposure benefits from any third -party guarantees or other credit enhancements that are not available to the unrated exposure, then the latter may not be assigned an inferred rating based on the reference securitisation exposure.

**INTERNAL ASSESSMENT METHOD (IAM)****Section 1: Eligibility Requirements**

1.1 Subject to paragraph 1.2 below and the Authority's approval, a Reporting Bank may use its internal assessments of the credit quality of the securitisation exposures that the Reporting Bank extends to ABCP programmes to determine its IRBA(SE) capital requirement for those securitisation exposures. The Authority may subsequently preclude the Reporting Bank from applying the IAM to its ABCP programme exposures, both existing and newly originated, for determining the appropriate capital treatment if the Reporting Bank's internal assessment process is no longer considered adequate, until the Reporting Bank has remedied the deficiencies.

1.2 A Reporting Bank's internal assessment process must meet the following operational requirements:

- (a) the ABCP must be rated by an eligible ECAI and subject to the RBM in Annex AE;
- (b) the Reporting Bank's internal assessment of the credit quality of an ABCP programme exposure must be based on an eligible ECAI's criteria and rating methodology for the asset type purchased<sup>31</sup> and must be the equivalent of at least investment grade when initially assigned to the ABCP programme exposure;
- (c) the internal assessment must be used in the Reporting Bank's internal risk management processes, including its management information and economic capital systems, and generally must meet all the relevant requirements of the IRB framework<sup>32</sup>;
- (d) the Reporting Bank's internal assessment process must identify gradations of risk and the internal assessments must correspond to the external ratings of eligible ECAs ;
- (e) the Reporting Bank's internal assessment process, particularly the stress factors for determining credit enhancement requirements, must be at least as conservative as the publicly available rating criteria of the eligible ECAs that have rated the ABCP for the asset type being purchased by the ABCP programme. However, a Reporting Bank should consider all publicly available ECAI ratings methodologies, even from non-eligible ECAs, in developing its internal assessments:
  - (i) in the case where the ABCP is externally rated by two or more ECAs and the different ECAs' benchmark stress factors require different levels of credit enhancement to achieve the same external rating equivalent, the Reporting Bank shall apply the ECAI stress factor that requires the most conservative or highest

<sup>31</sup> The Reporting Bank must demonstrate to the satisfaction of the Authority that its internal assessments correspond with the relevant eligible ECAI's standards.

<sup>32</sup> The Reporting Bank will be required to assess the ability of their internal assessments to meet the use test requirements of the IRB framework in Annex 7U, *mutatis mutandis*, and to inform the Authority if the internal assessment is unable to meet all the relevant requirements.

level of credit protection<sup>33</sup>;

- (ii) when selecting ECAIs to externally rate an ABCP, a Reporting Bank shall not choose only those ECAIs that generally have relatively less restrictive rating methodologies. In addition, if there are changes in the methodology of a selected ECAI, including the stress factors, that adversely affect the external rating of the ABCP, then the revised rating methodology should be considered in evaluating whether the internal assessments assigned to the Reporting Bank's ABCP programme exposures are in need of revision;
  - (iii) a Reporting Bank shall not utilise an ECAI's rating methodology to derive an internal assessment if the ECAI's process or rating criteria is not publicly available. However, a Reporting Bank should consider the non-publicly available methodology, to the extent that it has access to such information, in developing its internal assessments, particularly if it is more conservative than the publicly available criteria; and
  - (iv) in general, if the ECAI rating methodologies for an asset or exposure are not publicly available, then the IAM may not be used. However, in certain instances, e.g. new or uniquely structured transactions which are not currently addressed by the rating criteria of an ECAI rating the ABCP, a Reporting Bank may discuss the specific transaction with the Authority to determine whether the IAM may be applied to the related exposures;
- (f) internal or external auditors, an ECAI, or the Reporting Bank's internal credit review or risk management function must perform annual (or more frequent where appropriate) reviews of the internal assessment process and assess the validity of the Reporting Bank's internal assessments. If the Reporting Bank's internal audit, credit review, or risk management functions perform the reviews of the internal assessment process, these functions must be independent of the ABCP programme business line and the underlying customer relationships;
  - (g) the Reporting Bank must track the performance of its internal assessments over time to evaluate the performance of the assigned internal assessments and make adjustments, as necessary, to its assessment process when the performance of its ABCP programme exposures routinely diverges from the assigned internal assessments on those ABCP programme exposures;
  - (h) the ABCP programme must have credit and investment guidelines, e.g., in the consideration of an asset purchase, the ABCP programme administrator should develop an outline of the structure of the purchase transaction and consider the type of asset being purchased, the type and monetary value of the exposures arising from the provision of liquidity facilities and credit enhancements, the loss waterfall, and the legal and economic isolation of the transferred assets from the entity selling the assets;

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<sup>33</sup> For example, if one ECAI required enhancement of 2.5 to 3.5 times historical losses for an asset type to obtain a single A rating equivalent and another required 2 to 3 times historical losses, the Reporting Bank shall use the higher range of stress factors in determining the appropriate level of seller-provided credit enhancement

- (i) a credit analysis of the asset seller's risk profile must be performed and should consider, e.g., past and expected future financial performance, current market position, expected future competitiveness, leverage, cash flow and interest coverage and debt rating. In addition, a review of the seller's underwriting standards, servicing capabilities, and collection processes should be performed;
- (j) the ABCP programme's underwriting policy must establish minimum asset eligibility criteria that, among other things, excludes the purchase of assets that are significantly past due or defaulted, limits excess concentration to an individual obligor or a geographic area and limits the tenor of the assets to be purchased;
- (k) the ABCP programme should have collections processes established that consider the operational capability and credit quality of the servicer and should mitigate to the extent possible seller/servicer risk through various methods, such as triggers based on current credit quality that would preclude co-mingling of funds and lockbox arrangements that would help ensure the continuity of payments to the ABCP programme;
- (l) the aggregate estimate of loss on an asset pool that the ABCP programme is considering purchasing must take into account all sources of potential risk, such as credit and dilution risk. If the seller-provided credit enhancement is sized based on only credit-related losses and dilution risk is material for the particular exposure pool, then a separate reserve should be established for dilution risk. In addition, in sizing the required enhancement level, the Reporting Bank should review several years of historical information, including losses, delinquencies, dilutions, and the turnover rate of the receivables. Furthermore, the Reporting Bank should evaluate the characteristics of the underlying asset pool, e.g. weighted average credit score, any concentrations to an individual obligor or geographic region, and the granularity of the asset pool; and
- (m) the ABCP programme must incorporate structural features into the purchase of assets in order to mitigate potential credit deterioration of the underlying portfolio, e.g., wind-down triggers specific to a pool of exposures.

## **Section 2: Calculation of Credit Risk -Weighted Exposure Amount**

2 A Reporting Bank using the IAM shall calculate the credit-risk weighted exposure amount for an unrated securitisation exposure to an ABCP programme by:

- (a) assigning an internal rating, i.e. a credit rating equivalent, to the unrated securitisation exposure;
- (b) allocating the risk weight appropriate to the credit rating equivalent assigned to that exposure in accordance with Tables AE-1 and AE-2 of Annex AE, except where the credit rating equivalent is less than investment grade, in which case the unrated securitisation exposure shall be included in deductions from Tier 1 Capital and Upper Tier 2

Capital and excluded from the calculation of the credit-risk weighted exposure amount; and

- (c) applying the formula in paragraph 1.1 of Annex AE.

**Section 3: Treatment of Securitisation Exposures that have a Credit Rating Equivalent of "9" or below or "IV"**

3 A Reporting Bank shall include an amount equal to the securitisation exposure in deductions from Tier 1 Capital and Upper Tier 2 Capital if:

- (e) in the case of a short-term securitisation exposure, it has a credit rating equivalent of "IV"; and
- (f) in the case of other securitisation exposures, it has a credit rating equivalent of "9" or below.

**SUPERVISORY FORMULA (SF)**

1.1 A Reporting Bank using the SF to calculate the credit risk-weighted exposure amount of a securitisation exposure shall use the following inputs:  $K_{IRB}$ , L, T, N and LGD, which are defined in paragraphs • to •.  $K_{IRB}$ , L and T are expressed in decimal form.

1.2 Before applying the SF, a Reporting Bank shall first calculate  $K_{IRB}$  and:

- (a) if  $L > K_{IRB}$ , the Reporting Bank shall determine the credit risk-weighted exposure amount of the IRBA(SE) exposure using the SF;
- (b) if  $L \leq K_{IRB}$  and  $(L + T) \leq K_{IRB}$  the Reporting Bank shall include an amount equal to the IRBA(SE) exposure in deductions from Tier 1 Capital and Upper Tier 2 Capital; or
- (c) if  $L \leq K_{IRB}$  but  $(L + T) > K_{IRB}$ , the Reporting Bank shall distinguish the IRBA(SE) into a senior portion above  $K_{IRB}$  and a junior portion. The Reporting Bank shall include in deductions from Tier 1 Capital and Upper Tier 2 Capital an amount equal to the junior portion of the securitisation exposure, and shall calculate a credit risk-weighted exposure amount corresponding to the senior portion of securitisation exposure using the SF.

1.3 A Reporting Bank using the SF shall calculate the credit risk-weighted exposure amount of a securitisation exposure that has not been included in deductions from Tier 1 Capital and Upper Tier 2 Capital pursuant to paragraphs 1.7(a) or 1.7(c) using the following formula:

$$\text{Credit RWE} = 12.5 \times k,$$

where

- (a) Credit RWE refers to the credit risk-weighted exposure amount for that IRBA(SE) exposure; and
- (b) k refers to the capital charge for the securitisation exposure generated by the SF and is calculated using the following formula:

$$k = \text{Exposure} \times A \times \% \text{ Interest}$$

where

- (i) Exposure refers to the nominal amount of the underlying exposures of the securitisation;
- (ii) A is the greater of  $0.0056 * T$  or either:
  - (A) when  $L > K_{IRB}$ ,  $(S[L + T] - S[L])$ ; or
  - (B) when  $L \leq K_{IRB}$  but  $(L + T) > K_{IRB}$ ,  $(S[L + T] - S[K_{IRB}])$ ,

where the function  $S[x]$  is defined in paragraph 1.4 below; and

- (iii) % Interest refers to the proportion of the securitisation tranche in question that is held by the Reporting Bank.

1.4 Subject to paragraphs 1.5 to 1.23 below, the function  $S[x]$  is given by the following expression:

$$S[x] = K_{IRB} + K[x] - K[K_{IRB}] + (d * K_{IRB} / \omega) (1 - e^{w(K_{IRB}-x) / K_{IRB}})$$

where

$$\begin{aligned} h &= (1 - K_{IRB} / LGD)^N \\ c &= K_{IRB} / (1 - h) \\ v &= [(LGD - K_{IRB}) K_{IRB} + 0.25 (1 - LGD) K_{IRB}] / N \\ f &= \{ [(v + K_{IRB}^2) / (1 - h)] - c^2 \} + [(1 - K_{IRB}) K_{IRB} - v] / \tau (1 - h) \\ g &= [c (1 - c) / f] - 1 \\ a &= g c \\ b &= g (1 - c) \\ d &= 1 - (1 - h) (1 - \text{Beta} [K_{IRB} ; a, b]) \\ K[x] &= (1 - h) \{ (1 - \text{Beta} [x ; a, b]) x + \text{Beta} [x ; a + 1, b] c \} \\ \tau &= 1000 \\ \omega &= 20 \end{aligned}$$

1.5 Beta  $[x; a, b]$  refers to the cumulative beta distribution<sup>34</sup> with parameters a and b evaluated at x.

#### Definition of $K_{IRB}$

1.6 Subject to paragraphs 1.7 to 1.9 below, a Reporting Bank shall calculate  $K_{IRB}$  in decimal form<sup>35</sup> as the ratio of:

- (a) the IRB capital requirement including the EL portion for the underlying exposures in the pool; to
- (b) the exposure amount of the pool (e.g. the sum of drawn amounts related to securitised exposures plus the EAD associated with undrawn commitments related to securitised exposures).

1.7 A Reporting Bank shall calculate the amount in sub-paragraph 1.6(a) in accordance with the applicable minimum IRB standards set out in Division 4 as if the exposures in the pool were held directly by the Reporting Bank<sup>36</sup>.

1.8 In the case of any structure involving an SPE, the Reporting Bank shall treat all the assets of the SPE that are related to the securitisation as exposures in the pool, including assets in which the SPE may have invested a reserve account, such as a cash collateral account.

1.9 In cases where a Reporting Bank has set aside a specific provision or has a non-refundable purchase price discount on an exposure in the pool, the Reporting Bank shall calculate the amounts in sub-paragraphs 1.6(a) and 1.6(b) using the gross amount of the exposure without the specific provision and/or non-refundable purchase price discount. In this case, the amount of the specific provision or the non-refundable purchase price discount on a defaulted asset may be used to reduce the

<sup>34</sup> The cumulative beta distribution function is available, for example, in Excel as the function BETADIST.

<sup>35</sup> For example, a capital charge equal to 15% of the pool should be expressed as 0.15.

<sup>36</sup> **Guideline:** This calculation should reflect the effects of any credit risk mitigant that is applied on the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitisation exposures.



amount of any deduction from total capital associated with the securitisation exposure pursuant to sub-paragraphs 1.2(b) and 1.2(c).

#### Definition of Credit Enhancement Level (L)

1.10 Subject to paragraphs 1.11 to 1.13 below, a Reporting Bank shall calculate L in decimal form as the ratio of:

- (a) the amount of all securitisation exposures subordinate to the tranche in question; to
- (b) the amount of exposures in the pool.

1.11 A Reporting Bank shall exclude the effects of any tranche-specific credit enhancements<sup>37</sup>, and any gain-on-sale or credit-enhancing interest-only strips associated with the securitisation.

1.12 A Reporting Bank may measure the size of interest rate or currency swaps that are more junior than the tranche in question at their current values (without the potential future exposures) or if the current values cannot be measured, these instruments may be ignored.

1.13 A Reporting Bank may include any reserve account funded by accumulated cash flows from the underlying exposures that is more junior than the tranche in question. For avoidance of doubt, a Reporting Bank shall not include unfunded reserve accounts that are to be funded from future receipts from the underlying exposures.

#### Definition of Thickness of Exposure (T)

1.14 Subject to paragraph 1.15 below, a Reporting Bank shall calculate T in decimal form as the ratio of:

- (a) the nominal size of the tranche in question; to
- (b) the notional amount of exposures in the pool.

1.15 In the case of a securitisation exposure arising from an interest rate or currency swap, a Reporting Bank shall use as the exposure size:

- (a) if current value is non-negative, the current value of the instrument plus the potential future exposure add-on in accordance with Annex 7L; or
- (b) if current value is negative, the potential future exposure add-on in accordance with Annex 7L.

#### Definition of Effective Number of Exposures (N)

1.16 Subject to paragraphs 1.17 and 1.18 below, a Reporting Bank shall calculate the effective number of exposures as:

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<sup>37</sup> For example, third-party guarantees that benefit only a single tranche.

$$N = \frac{(\sum_i EAD_i)^2}{\sum_i EAD_i^2}$$

where  $EAD_i$  represents the exposure -at-default associated with the  $i^{\text{th}}$  instrument in the pool.

1.17 A Reporting Bank shall aggregate multiple exposures to the same obligor (i.e. treat them as a single instrument) and, in the case of re-securitisation (securitisation of securitisation exposures), apply the formula to the number of securitisation exposures in the pool and not the number of underlying exposures in the original pools.

1.18 If the portfolio share associated with the largest exposure  $C_1$  is available, a Reporting Bank may compute  $N$  as  $1 / C_1$ .

#### Definition of Exposure-Weighted Average LGD

1.19 Subject to paragraphs 1.20 and 1.21 below, a Reporting Bank shall calculate the exposure -weighted average LGD as follows:

$$LGD = \frac{\sum_i LGD_i \times EAD_i}{\sum_i EAD_i}$$

where  $LGD_i$  represents the average LGD associated with all exposures to the  $i^{\text{th}}$  obligor.

1.20 In the case of re-securitisation, an LGD of 100% shall be assumed for the underlying securitised exposures.

1.21 When default and dilution risks for purchased receivables are treated in an aggregate manner (e.g. a single reserve or over-collateralisation is available to cover losses from either source) within a securitisation, the  $LGD_i$  shall be the weighted-average of the LGD for default risk and the 100% LGD for dilution risk (where the weights are the stand-alone IRB capital charges for default risk and dilution risk respectively).

#### Simplified Method for Computing N and LGD

1.22 For securitisations involving retail exposures where the underlying pool of exposures has more than 2000 exposures, a Reporting Bank shall be permitted to use  $h = 0$  and  $v = 0$  in the SF.

1.23 If the portfolio share associated with the largest exposure,  $C_1$ , is no more than 0.03 (or 3% of the underlying pool), a Reporting Bank shall be permitted to set LGD equal to 0.50 and to apply the following for calculating  $N$  and the exposure-weighted average LGD:

(a) set  $N$  equal to the following amount:

$$N = \left( C_1 C_m + \left( \frac{C_m - C_1}{m - 1} \right) \max\{1 - m C_1, 0\} \right)^{-1}$$

where  $C_m$  represents the share (in decimal form) of the pool corresponding to the sum of the largest 'm' exposures (the level of m is set by the Reporting Bank); or

- (b) if only  $C_1$  is available and this amount does not exceed 0.03, set  $N$  equal to the reciprocal of  $C_1$ .

**CREDIT CONVERSION FACTORS FOR SECURITISED EXPOSURES WITH EARLY AMORTISATION FEATURES**

Uncommitted Retail Exposures<sup>38</sup>

1.1 To determine the CCF to be applied for uncommitted retail exposures, a Reporting Bank shall compute, as a percentage, the ratio of the three-month average excess spread to the point at which the Reporting Bank is required to trap excess spread as economically required by the structure, that is, the excess spread trapping point ("excess spread ratio" or "ESR").

1.2 In cases where a transaction does not require excess spread to be trapped, a Reporting Bank shall deem the trapping point to be 4.5 percentage points.

	Securitisations subject to a controlled early amortisation provision	Securitisations subject to a non-controlled early amortisation provision
	CCF	CCF
ESR $\geq$ 133.33%	0%	0%
100% $\leq$ ESR < 133.33%	1%	5%
75% $\leq$ ESR < 100%	2%	15%
50% $\leq$ ESR < 75%	20%	50%
25% $\leq$ ESR < 50%	20%	100%
ESR < 25%	40%	100%

Other Exposures<sup>39</sup>

	Securitisations subject to a controlled early amortisation provision	Securitisations subject to a non-controlled early amortisation provision
CCF	90%	100%

<sup>38</sup> A credit line is considered uncommitted if it is unconditionally cancellable without prior notice. For example, credit card receivables.

<sup>39</sup> Committed retail credit lines and all non-retail exposures

**ILLUSTRATIVE EXAMPLES: CALCULATING THE EFFECTS OF CREDIT RISK MITIGATION UNDER THE SF**

**Section 1: Illustrative Example Involving Collateral - proportional cover**

1 Assume a Reporting Bank that is an originator purchases a \$100 securitisation exposure with a credit enhancement level in excess of  $K_{IRB}$  for which an external or inferred rating is not available. Additionally, assume that the SF capital requirement on the securitisation exposure is \$1.60 (when multiplied by 12.5 results in risk weighted assets of \$20). Further assume that the Reporting Bank receives \$80 of collateral in the form of cash that is denominated in the same currency as the securitisation exposure.

$$\begin{aligned} \text{(a) } EAD^* &= \max \{0, [EAD \times (1 + H_e) - C \times (1 - H_c - H_f)]\} \\ &= \max \{0, [100 \times (1 + 0) - 80 \times (1 - 0 - 0)]\} \\ &= \$20 \end{aligned}$$

$$\begin{aligned} \text{(b) } k &= (EAD^* / EAD) \times \text{SF capital requirement} \\ &= \$20 / \$100 \times \$1.60 \\ &= \$0.32 \end{aligned}$$

$$\begin{aligned} \text{(c) } \text{Credit RWE} &= 12.5 \times k \\ &= 12.5 \times \$0.32 \\ &= \$4 \end{aligned}$$

**Section 2: Illustrative Example Involving a Guarantee - proportional cover**

2 All of the assumptions provided in the illustrative example in Section 1 apply, except that in place of the collateral, assume that the Reporting Bank receives an eligible, unsecured guarantee of \$80 from another bank that has a risk weight of 10% under the IRBA.

$$\begin{aligned} \text{(a) } \text{Credit RWE (Protected portion)} &= \$80 \times 10\% \\ &= \$8 \end{aligned}$$

$$\begin{aligned} \text{(b) } k \text{ (Unprotected portion)} &= \$20 / \$100 \times \$1.60 \\ &= \$0.32 \end{aligned}$$

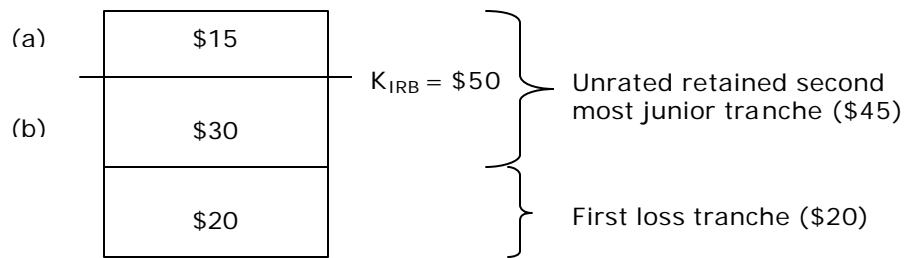
$$\begin{aligned} \text{(c) } \text{Credit RWE (Unprotected portion)} &= 12.5 \times \$0.32 \\ &= \$4 \end{aligned}$$

$$\begin{aligned} \text{(d) } \text{Total Credit RWE} &= \$8 + \$4 \\ &= \$12 \end{aligned}$$

**Section 3: Illustrative Example - credit risk mitigants covering the most senior part**

3.1 Assume a Reporting Bank that is an originator securitises a pool of loans of \$1000. The  $K_{IRB}$  of this underlying pool is 5%. There is a first loss position of \$20. The Reporting Bank retains only the second most junior tranche i.e. an unrated tranche of \$45.

Diagram AI -1



Without collateral or guarantees

3.2 The capital requirement for the unrated retained tranche that is straddling the  $K_{IRB}$  line is the sum of the capital requirements for sub-tranches (a) and (b) in Diagram AI-1 above:

(a) Assuming that the SF risk weight for sub-tranche (a) is 820%, then:

$$\begin{aligned} \text{Credit RWE} &= \$15 \times 820\% \\ &= \$123 \end{aligned}$$

(b) Sub-tranche (b) lies below  $K_{IRB}$  and must be deducted (\$30)

With collateral

3.3 Assume that the Reporting Bank receives \$25 of collateral in the form of cash that is denominated in the same currency as the securitisation exposure. The Reporting Bank must assume that the collateral covers the most senior sub-tranche (a) first and can be applied to the more junior sub-tranche (b) only if there is collateral left.

$$\begin{aligned} \text{(a) For sub-tranche (a), } EAD^* &= \max \{0, [15 \times (1 + 0) - 15 \times (1 - 0 - 0)]\} \\ &= \$0 \end{aligned}$$

$$K = \$0; \text{ Credit RWE} = \$0$$

$$\begin{aligned} \text{(b) For sub-tranche (b), } EAD^* &= \max \{0, [30 \times (1 + 0) - 10 \times (1 - 0 - 0)]\} \\ &= \$20 \end{aligned}$$

$$\begin{aligned} \text{Amount to be included in deductions from Tier 1 Capital and Upper Tier 2} \\ \text{Capital} &= (EAD^* / EAD) \times \text{SF capital requirement} \\ &= (\$20 / \$30) \times \$30 \\ &= \$20 \end{aligned}$$

With a guarantee

3.4 Assume now that instead of collateral, the Reporting Bank receives an eligible, unsecured guarantee in the amount of \$25 from another bank that has a risk weight of 20% under the IRBA.

$$\begin{aligned} \text{(a) For sub-tranche (a), Credit RWE} &= \$15 \times 20\% \\ &= \$3 \end{aligned}$$

$$\begin{aligned} \text{(b) For sub-tranche (b), Credit RWE (Protected portion)} &= \$10 \times 20\% \\ &= \$2 \end{aligned}$$

Amount to be included in deductions from Tier 1 Capital and Upper Tier 2 Capital (Unprotected portion) = \$30 - \$10  
= \$20

(c) Total Credit RWE = \$3 (protected portion, above  $K_{IRB}$ ) + \$2 (protected portion, below  $K_{IRB}$ )  
= \$5

(d) Total amount to be included in deductions from Tier 1 Capital and Upper Tier 2 Capital = \$20 (unprotected portion, below  $K_{IRB}$ )

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**ADDENDUM TO DRAFT TEXT  
OF ANNEX 2A OF PART II OF  
MAS NOTICE TO BANKS 6XX:  
RISK-BASED CAPITAL ADEQUACY  
REQUIREMENTS FOR BANKS INCORPORATED  
IN SINGAPORE**

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<p>asset-backed commercial paper programme or ABCP programme</p>	<p>means a programme which predominantly issues commercial paper with an original maturity of one year or less that is backed by assets or other exposures in a bankruptcy-remote SPE;</p>
<p>clean-up call</p>	<p>means an option that permits the securitisation exposures to be called before all of the underlying exposures or securitisation exposures have been repaid. In the case of a traditional securitisation, this is generally accomplished by repurchasing the remaining securitisation exposures once the underlying pool of exposures or the outstanding securities issued have fallen below some specified level. In the case of a synthetic securitisation, the clean-up call may take the form of a clause that extinguishes the credit protection;</p>
<p>controlled early amortisation provision</p>	<p>refers to an early amortisation provision where the following conditions are met —</p> <ul style="list-style-type: none"> <li>(a) the originator has an appropriate capital/liquidity plan, as the Authority may determine from time to time, in place to ensure that it has sufficient capital and liquidity available in the event of an early amortisation;</li> <li>(b) throughout the duration of the transaction there is a pro rata sharing of interest and principal, expenses, losses and recoveries based on the proportion of the originator's interests and the investors' interests in the receivables outstanding at the beginning of the month;</li> <li>(c) the amortisation period is sufficient for at least 90% of the total debt outstanding at the beginning of the early amortisation period to have been repaid or recognised as in default; and</li> <li>(d) the speed of repayment is not more rapid than would be achieved by straight-line amortisation over the period set out in item (c);</li> </ul>
<p>credit enhancement</p>	<p>means a contractual arrangement in which a Reporting Bank retains or assumes a securitisation exposure and, in substance, provides some degree of added credit protection to other parties to the securitisation transaction;</p>
<p>credit-enhancing interest only strip</p>	<p>means an on-balance sheet asset that represents a valuation of cash flows related to future margin income and is subordinated to the other securitisation exposures in the transaction;</p>
<p>early amortisation provision</p>	<p>refers to a contractual clause which requires, on the occurrence of defined events, for investors' positions to be redeemed prior to the originally stated maturity of the securities issued;</p>
<p>eligible liquidity facility</p>	<p>refers to a liquidity facility where the following conditions are met —</p>

- (a) the facility documentation clearly identifies the nature, purpose and extent of any undertaking or commitment provided to the SPE, and limits the circumstances under which it may be drawn;
- (b) the facility is limited to a specified amount and duration, unless the bank is able to withdraw, at its absolute discretion, the facility at any time with a reasonable period of notice;
- (c) any draws made under the facility is provided to the SPE and not directly to investors, and is limited to the amount that is likely to be repaid fully from the liquidation of the underlying pool of exposures and any seller-provided credit enhancements;
- (d) the facility does not cover any losses incurred in the underlying pool of exposures prior to a draw, or be structured such that draw-down is certain (as indicated by regular or continuous draws or continuous revolving funding);
- (e) the facility is subject to an asset quality test that precludes it from being drawn to cover credit risk exposures where the obligor(s) are in default;
- (f) if the exposures that a liquidity facility is required to fund are securities with an eligible external credit assessment, the facility is used to fund only securities that are investment grade or above at the time of funding;
- (g) the facility cannot be drawn after all applicable (e.g. transaction-specific and programme-wide) credit enhancements from which the liquidity would benefit have been exhausted;
- (h) repayment of draws on the facility is not subordinated to any interests of any note holder in the programme or subject to deferral or waiver;
- (i) the obligations of the bank under the facility are standalone from its obligations under any other facility, commitment or undertaking provided by the bank; and
- (j) either —
  - (i) an independent third party co-provides 25% of the liquidity facility that is to be drawn and repaid on a pro-rata basis; or
  - (ii) all the exposures in the underlying pool of exposures of the SPE are investment-grade or rated F3/P-3/A-3 or above and the facility documentation expressly provides that the Reporting Bank may reduce (and ultimately withdraw) its funding if the quality of the

exposures is no longer investment-grade or F3/P-3/A-3 or above;

excess spread generally means gross finance charge collections and other income received by the trust or SPE minus certificate interest, servicing fees, charge-offs, and other senior trust or SPE expenses;

funded credit protection means a technique of credit risk mitigation where the reduction of the credit risk of the exposure of a Reporting Bank is derived from the right of the Reporting Bank, in the event of the default of a counterparty or on the occurrence of other specified credit events relating to the counterparty, to liquidate, or to obtain transfer or appropriation of, or to retain certain assets or amounts;

gain-on-sale means any increase in Tier 1 Capital of a Reporting Bank that is an originator resulting from the sale of underlying exposures in a securitisation transaction;

implicit support means any support that a Reporting Bank provides to a securitisation transaction in excess of its predetermined contractual obligations, with a view to reducing potential or actual losses to investors. For avoidance of doubt, any Reporting Bank that provides a facility, commitment or undertaking to investors or the SPE in a securitisation transaction is deemed to have provided implicit support to the securitisation unless:

(a) the nature and extent of the facility, commitment or undertaking are clearly specified in a written agreement and there is no recourse to the Reporting Bank beyond the specified contractual obligations;

(b) the facility, commitment or undertaking is limited to a specified amount;

(c) the duration of the facility, commitment or undertaking is limited to the date on which:

(i) all claims connected with the securities issued by the SPE are paid out; or

(ii) the Reporting Bank's obligations are otherwise terminated,

whichever is the earliest, unless the facility, commitment or undertaking may be cancelled unconditionally; and

(d) the facility, commitment or undertaking is given at the initiation of the securitisation.

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internal assessment method or IAM means the method for calculating credit risk-weighted exposure amounts for securitisation exposures set out in Annex 7AF of Part VII or, if the reference is to any regulatory requirements of, or administered by, a bank regulatory agency other than the Authority, whatever corresponds to that method under those requirements;

internal ratings- means the approach for calculating credit risk-weighted exposure

based approach for securitisation exposures or IRBA(SE)	amounts for securitisation exposures set out in sub-division 5 of Division 6 of Part VII or, if the reference is to any regulatory requirements of, or administered by, a bank regulatory agency other than the Authority, whatever corresponds to that approach under those requirements;
originator	means: <ul style="list-style-type: none"> <li>(a) an entity which, either itself or through related entities, directly or indirectly, creates the exposure being securitised<sup>40</sup>; or</li> <li>(b) any entity which purchases or advises or causes an SPE to purchase, the exposures of a third party, which are then used in a securitisation (for avoidance of doubt, selling credit protection such that the entity or the SPE has a long position in the credit risk of the obligor is equivalent to purchasing exposures)<sup>41</sup>;</li> </ul>
ratings-based method or RBM	means the method for calculating credit risk-weighted exposure amounts for securitisation exposures set out in Annex 7AE of Part VII or, if the reference is to any regulatory requirements of, or administered by, a bank regulatory agency other than the Authority, whatever corresponds to that method under those requirements;
securitisation exposure	means the exposure of a bank, whether at Solo or Group level, to a securitisation, and includes any on-balance sheet exposure to securities issued pursuant to a securitisation (e.g. asset-backed securities, mortgage-backed securities and collateralised debt obligations) and any off-balance sheet exposure to a securitisation (e.g. through credit enhancements, liquidity facilities, interest rate or currency swaps, credit derivatives or tranching cover), regardless of whether it was retained by the bank at, or repurchased by the bank after, the origination of the securitisation;
special purpose entity or SPE	means a corporation, trust, or other entity organised for a specific purpose, the activities of which are limited to those appropriate to accomplish the purpose of the SPE, and the structure of which is intended to isolate the SPE from the credit risk of an originator or seller of the underlying exposures;
standardised approach for securitisation exposures or SA(SE)	means the approach for calculating credit risk-weighted exposure amounts for securitisation exposures set out in sub-division 4 of Division 6 of Part VII or, if the reference is to any regulatory requirements of, or administered by, a bank regulatory agency other than the Authority, whatever corresponds to that approach under

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<sup>40</sup> Guideline: Where an entity lends to an SPE with a view to enabling that SPE to make loans which are then used in a securitisation, the entity will generally be deemed to be acting as an originator.

<sup>41</sup> Guideline: An entity which advises or causes an SPE to purchase the exposures of a third party, which are then used in a securitisation will generally not be deemed to be acting as an originator if:

- (a) the entity has not advised or caused the SPE to purchase any exposures which are then used in a securitisation before the date of issue of securities effecting the transfer of credit risk of those exposures to the investors in the securitisation;
- (b) the entity will not be liable for any losses incurred by the SPE arising from the exposures (for avoidance of doubt, the entity may still be liable for losses arising from a breach of its fiduciary duties); and
- (c) the entity does not undertake to achieve a minimum performance for the exposures.

	those requirements;
supervisory formula or SF	means the method for calculating credit risk-weighted exposure amounts for securitisation exposures set out in Annex 7AG of Part VII or, if the reference is to any regulatory requirements of, or administered by, a bank regulatory agency other than the Authority, whatever corresponds to that method under those requirements;
synthetic securitisation	means a structure with at least two different tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of funded or unfunded credit derivatives or guarantees that serve to hedge the credit risk of the portfolio;
traditional securitisation	means a structure where the cash flow from an underlying pool of exposures is used to service at least two different tranches reflecting different degrees of credit risk;
tranche	means a contractually established segment of the credit risk associated with an underlying exposure or a pool of underlying exposures, where a position in the segment entails a risk of credit loss greater than or less than a position of the same amount in each other such segment, without taking account of credit protection provided by third parties directly to the holders of positions in the segment or in other segments;
unfunded credit protection	means a technique of credit risk mitigation where the reduction of the credit risk of the exposure of a Reporting Bank is derived from the undertaking of a third party to pay an amount in the event of the default of the obligor or on the occurrence of other specified events; and
unrated	means, in relation to any exposure, that the exposure does not have an eligible external credit assessment.

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**CONSEQUENTIAL EDITS TO DRAFT TEXT  
OF DIVISIONS 1 AND 2 OF PART VII OF  
MAS NOTICE TO BANKS 6XX:  
RISK-BASED CAPITAL ADEQUACY  
REQUIREMENTS FOR BANKS INCORPORATED  
IN SINGAPORE**

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*[EDITS ARE HIGHLIGHTED IN YELLOW]*

## **PART VII: CREDIT RISK**

### **Division 1: Introduction to Calculation of Credit RWA**

#### **Sub-division 1: Introduction**

7.1.1 The Credit RWA of a Reporting Bank is the sum of its SA(CR) RWA calculated in accordance with sub-division 3, IRBA RWA calculated in accordance with sub-division 4, Equity RWA calculated in accordance with sub-division 5 and Securitisation RWA calculated in accordance with sub-division 6.

#### **Sub-division 2: Exposures Included in the Calculation of SA(CR) RWA and IRBA RWA**

7.1.2 A Reporting Bank shall include in its calculation of either SA(CR) RWA or IRBA RWA:

- (a) any on-balance sheet asset; and
- (b) any off-balance sheet item<sup>42</sup>,

provided they are not any of the following:

- (i) any equity **investment** or PE/VC investment designated by the Reporting Bank in accordance with Division 5;
- (ii) **any securitisation exposure;**
- (iii) any securitised exposure that meets **the operational requirements for the recognition of risk transference set out in sub-division 2 of Division 6**<sup>43</sup>; or
- (iii) any exposure designated by the Reporting Bank as a trading instrument or transaction in accordance with Division 1 of Part VIII.<sup>44</sup>

#### **Sub-division 3: Calculation of SA(CR) RWA**

7.1.3 A Reporting Bank using the SA(CR) shall calculate its SA(CR) RWA by:

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<sup>42</sup> For avoidance of doubt, off-balance sheet items would include but are not limited to:

- (a) any pre-settlement counterparty exposure arising from an OTC derivative transaction, whether such OTC derivative transaction is designated by the Reporting Bank as a banking or trading book exposure;
- (b) the underlying securities in a credit derivative transaction or an OTC derivative transaction that is in substance similar to a forward purchase or credit substitute; and
- (c) any pre-settlement counterparty exposure arising from an SFT, whether such SFT is designated by the Reporting Bank as a banking or trading book exposure.

<sup>43</sup> This paragraph should be read in conjunction with Part III on the scope of application.

<sup>44</sup> For avoidance of doubt, the pre-settlement counterparty exposures arising from any OTC derivative transaction or SFT cannot be designated by a Reporting Bank as a trading instrument or transaction. All pre-settlement counterparty exposures arising from OTC derivative transactions and SFTs shall be included for calculating either SA(CR) RWA or IRBA RWA.

- (a) applying the exposure measurement guidelines in Division 2 to calculate E, or where applicable E\*, for any exposure or class of exposures for which the Reporting Bank is using the SA(CR) to calculate the credit risk-weighted exposure amount (hereinafter referred to as "SA(CR) exposure");
- (b) categorising that SA(CR) exposure in accordance with sub-division 1 of Division 3;
- (c) allocating an applicable risk weight for that SA(CR) exposure in accordance with sub-division 2 of Division 3;
- (d) calculating the credit risk-weighted exposure amount for that SA(CR) exposure using the following formula:

$$\text{Credit RWE} = \text{Exposure} \times \text{RW} ,$$

where

- (i) Credit RWE refers to the credit risk-weighted exposure amount for that SA(CR) exposure;
  - (ii) Exposure refers to E, or where applicable E\*, for that SA(CR) exposure calculated in accordance with sub-paragraph (a) above; and
  - (iii) RW refers to the applicable risk weight for that SA(CR) exposure determined in accordance with sub-paragraph (c) above; and
- (e) summing the credit risk-weighted exposure amounts calculated in accordance with sub-paragraph (d) above for all its SA(CR) exposures.

#### **Sub-division 4: Calculation of IRBA RWA**

7.1.4 A Reporting Bank using the IRBA shall calculate its IRBA RWA by:

- (a) applying the exposure measurement guidelines in Division 2 to calculate EAD, or where applicable EAD\*, for any exposure or class of exposures for which the Reporting Bank is using the IRBA to calculate the credit risk-weighted exposure amount (hereinafter referred to as "IRBA exposure");
- (b) categorising that IRBA exposure in accordance with sub-division 4 of Division 4;
- (c) calculating  $K_{corp}$ ,  $K_{sm}$ ,  $K_{sov}$ ,  $K_{bank}$ ,  $K_{sl}$ ,  $K_{hv}$ ,  $K_{mort}$ ,  $K_{qrr}$ ,  $K_{oret}$ ,  $K_{cp}$ ,  $K_{sb}$ ,  $K_{rp}$  or  $K_{def}$ , whichever is applicable to that IRBA exposure based on the categorisation in sub-paragraph (b) above, in accordance with sub-divisions 7, 8, 9 and 11 respectively of Division 4;
- (d) if the IRBA exposure is categorised under the SL asset sub-class and the Reporting Bank is using the supervisory slotting criteria to calculate the credit risk-weighted exposure amounts for such exposures, determining  $RW_{slot}$  for that IRBA exposure in accordance with Annex 7A;



(e) calculating the credit risk-weighted exposure amount for that IRBA exposure as follows:

(i) for an IRBA exposure categorised under the SL asset sub-class that is not in default and for which the Reporting Bank is using the supervisory slotting criteria to calculate the credit risk-weighted exposure amount, using the following formula:

$$\text{Credit RWE} = \text{RW}_{\text{slot}} \times \text{EAD} ,$$

where

(A) Credit RWE refers to the credit risk-weighted exposure amount for that IRBA exposure;

(B)  $\text{RW}_{\text{slot}}$  refers to  $\text{RW}_{\text{slot}}$  determined in accordance with sub-paragraph (d) above; and

(C) EAD refers to EAD, or where applicable EAD\*, for that IRBA exposure calculated in accordance with sub-paragraph (a) above; and

(ii) for all other IRBA exposures, using the following formula:

$$\text{Credit RWE} = K \times 12.5 \times \text{EAD} ,$$

where

(A) Credit RWE refers to the credit risk-weighted exposure amount for that IRBA exposure;

(B) K refers to  $K_{\text{corp}}$ ,  $K_{\text{sm}}$ ,  $K_{\text{sov}}$ ,  $K_{\text{bank}}$ ,  $K_{\text{sl}}$ ,  $K_{\text{hv}}$ ,  $K_{\text{mort}}$ ,  $K_{\text{qrre}}$ ,  $K_{\text{oret}}$ ,  $K_{\text{cp}}$ ,  $K_{\text{sp}}$ ,  $K_{\text{rp}}$  or  $K_{\text{def}}$ , whichever is applicable to that IRBA exposure based on the categorisation in sub-paragraph (b) above, calculated in accordance with sub-paragraph (c) above; and

(C) EAD refers to EAD, or where applicable EAD\*, for that IRBA exposure calculated in accordance with sub-paragraph (a) above;

(f) summing the credit risk-weighted exposure amounts calculated in accordance with sub-paragraph (e) above for all its IRBA exposures; and

(g) multiplying the result at sub-paragraph (f) above by a scaling factor.<sup>45</sup>

## Sub-division 5: Calculation of Equity RWA

**7.1.5 A Reporting Bank shall calculate its Equity RWA by:**

<sup>45</sup> The current best estimate of the scaling factor is 1.06. This scaling factor is subject to change, taking into account further guidance from the BCBS.

- (a) applying the exposure measurement guidelines in Division 2 to calculate:
  - (i) E for any equity investment other than PE/VC investments for which the Reporting Bank is using the SA(CR) to calculate the credit risk-weighted exposure amount;
  - (ii) EAD for any equity investment other than PE/VC investments for which the Reporting Bank is using the IRBA to calculate the credit risk-weighted exposure amount; and
  - (iii) E for any PE/VC investment;
- (b) calculating the credit risk-weighted exposure amount for equity investments other than PE/VC investments in accordance with sub-division 4 of Division 5 in the case of a Reporting Bank using the SA(CR) for equity exposures and sub-division 5 of Division 5 in the case of a Reporting Bank using the IRBA for equity exposures;
- (c) calculating the credit risk-weighted exposure amount for PE/VC investments in accordance with Sub-division 6 of Division 5; and
- (d) summing the credit-risk weighted exposure amounts calculated in accordance with sub-paragraphs (b) and (c) above.

#### **Sub-division 6: Calculation of Securitisation RWA**

7.1.6 The Securitisation RWA of a Reporting Bank is the sum of its SA(SE) RWA, IRBA(SE) RWA and RWA for early amortisation exposures.

7.1.7 A Reporting Bank shall calculate its SA(SE) RWA by:

- (a) applying the exposure measurement guidelines in Division 2 to calculate E, or where applicable E\*, for any securitisation exposure or class of securitisation exposures for which the Reporting Bank is using the SA(SE) to calculate the credit risk-weighted exposure amount (hereinafter referred to as "SA(SE) exposure");
- (b) allocating the applicable risk weight for that SA(SE) exposure in accordance with sub-division 4 of Division 6;
- (c) calculating the credit-risk weighted exposure amount for each SA(SE) exposure, except for those SA(SE) exposures which the Reporting Bank is required to include in its deductions from Tier 1 Capital and Upper Tier 2 Capital, using the following formula:

$$\text{Credit RWE} = \text{Exposure} \times \text{RW} ,$$

where

- (v) Credit RWE refers to the credit risk-weighted exposure amount for that SA(SE) exposure;
- (vi) Exposure refers to E, or where applicable E\*, for that SA(SE) exposure calculated in accordance with sub-paragraph (a) above; and

(vii) RW refers to the applicable risk weight for that securitisation exposure determined in accordance with sub-paragraph (b) above; and

(d) summing the credit risk-weighted exposure amounts calculated in accordance with sub-paragraph (c) above for all its SA(SE) exposures.

7.1.8 A Reporting Bank shall calculate its IRBA(SE) RWA by:

(a) applying the exposure measurement guidelines in Division 2 to calculate EAD, or where applicable EAD\*, for any securitisation exposure or class of securitisation exposures for which the Reporting Bank is using the IRBA(SE) to calculate the credit risk-weighted exposure amount (hereinafter referred to as "IRBA(SE) exposure");

(b) calculating the credit-risk weighted exposure amount for each IRBA(SE) exposure, except for those IRBA(SE) exposures which the Reporting Bank is required to include in its deductions from Tier 1 Capital and Upper Tier 2 Capital, using the applicable method in accordance with sub-division 5 of Division 6; and

(c) summing the credit risk-weighted exposure amounts calculated in accordance with sub-paragraph (b) above for all its IRBA(SE) exposures.

7.1.9 A Reporting Bank shall calculate its RWA for early amortisation exposures by:

(a) applying the exposure measurement guidelines in Division 2 to calculate E or EAD for any securitisation exposure or class of securitisation exposures for which the Reporting Bank is subject to the early amortisation treatment in accordance with sub-division 6 of Division 6 (hereinafter referred to as "early amortisation exposure"); and

(b) calculating the credit-risk weighted exposure amount for each early amortisation exposure using the following formula:

$$\text{Credit RWE} = \text{Exposure} \times \text{RW}$$

where

(i) Credit RWE refers to the credit risk-weighted exposure amount for that early amortisation exposure;

(ii) Exposure refers to E or EAD for that early amortisation exposure calculated in accordance with sub-paragraph (a) above; and

(iii) RW refers to the applicable risk weight for that early amortisation exposure determined as follows:

(A) for a Reporting Bank using the SA(SE), the risk weight appropriate to the underlying exposure type as if the exposure had not been securitised; and

(B) for a Reporting Bank using the IRBA(SE),  $K_{IRB}$ ; and

(c) summing the credit risk-weighted exposure amounts calculated in accordance with sub-paragraph (b) above for all its early amortisation exposures.

7.1.10 The aggregate credit risk-weighted exposure amount for all of a Reporting Bank's securitisation exposures to a securitisation and exposures arising from credit risk mitigation techniques applied to those securitisation exposures shall not exceed the aggregate credit risk-weighted exposure amount corresponding to the underlying exposures of the securitisation had they been on the balance sheet of the Reporting Bank and included in the Reporting Bank's calculation of Credit RWA. For avoidance of doubt, the aggregate credit risk-weighted exposure amount shall not include any deduction for a gain-on-sale or a credit enhancing interest-only strip arising from the securitisation.

## Division 2: Measurement of Exposures under SA(CR) And IRBA

*(The Authority will take into account the observance of these guidelines by a Reporting Bank in assessing whether the Reporting Bank has complied with section 10(2) of the Banking Act.)*

### Sub-division 1: Introduction

7.2.1 A Reporting Bank should apply the guidelines on exposure measurement set out in this Division to calculate:

- (a) E, or where applicable E\*, for any SA(CR) or SA(SE) exposure; and
- (b) EAD, or where applicable EAD\*, for any IRBA or IRBA(SE) exposure.

7.2.2 Unless provided for in this Notice, a Reporting Bank should calculate:

- (a) E, or where applicable E\*, for any SA(CR) or SA(SE) exposure net of any individual impairment provision<sup>46</sup> attributable to such SA(CR) or SA(SE) exposure as determined in accordance with the Accounting Standards; and
- (b) EAD, or where applicable EAD\*, for any IRBA or IRBA(SE) exposure gross of any individual impairment provision or partial write-offs attributable to such IRBA or IRBA(SE) exposure as determined in accordance with the Accounting Standards.

### Sub-division 2: Measurement of E or EAD for On-balance Sheet Assets

7.2.3 For each on-balance sheet asset, E or EAD, whichever is applicable, should be the carrying value of the asset as determined in accordance with the Accounting Standards.<sup>47,48</sup>

7.2.4 A Reporting Bank should not recognise the effect of netting arrangements covering on-balance sheet assets and liabilities.

Note: The Authority is reviewing whether, and if so how, to recognise on-balance sheet netting, and will consult on this at a later date.

<sup>46</sup> For avoidance of doubt, individual impairment provision is also commonly known as specific provision.

<sup>47</sup> For any asset, E or EAD, whichever is applicable, should be equal to the fair value of that asset presented in the balance sheet except:

- (a) for any asset held at cost, E or EAD, whichever is applicable, should be equal to the cost of the asset presented in the balance sheet;
- (b) for any AFS debt security or AFS loan, E or EAD, whichever is applicable, should be equal to the fair value of that AFS debt security or AFS loan gross of any unrealised fair value gains or losses on revaluation of that AFS debt security or AFS loan to be excluded from Tier 1 Capital pursuant to paragraph 6.1(b) of Division 1 of Part VI.

<sup>48</sup> Guideline: Foreign exchange transaction or translation gains or losses from foreign currency-denominated on-balance sheet assets as well as interest earned on fixed income instruments should be allocated to the exposure to which they accrue.

### Sub-division 3: Measurement of E or EAD for Off-balance Sheet Items

7.2.5 For each off-balance sheet item, other than pre-settlement counterparty exposures arising from OTC derivative transactions or SFTs, a Reporting Bank should calculate E or EAD, whichever is applicable, by multiplying the notional amount<sup>49</sup> of each item<sup>50</sup> with:

- (a) the applicable credit conversion factor set out in Annex 7B if that item is an SA(CR) exposure;
- (b) the applicable credit conversion factor set out in Annex 7C if that item is an IRBA exposure, unless the Reporting Bank is using the A-IRBA or the IRBA for the IRBA retail asset class, in which case it may use its own internal estimates of credit conversion factors<sup>51</sup> in certain instances<sup>52</sup>;
- (c) the applicable credit conversion factor set out in Annex 7AC if that item is an SA(SE) exposure;
- (d) the applicable credit conversion factor set out in Annex 7AD if that item is an IRBA(SE) exposure; or
- (e) the applicable credit conversion factor set out in Annex 7AH if that item is an early amortisation exposure.

### Sub-division 4: Recognition of Eligible Financial Collateral for On-balance Sheet and Off-balance Sheet Transactions Other than Securitisation Exposures, OTC Derivative Transactions and Securities Financing Transactions (SFTs)

7.2.6 A Reporting Bank that has taken eligible financial collateral<sup>53</sup> for any transaction other than OTC derivative transactions and SFTs may recognise the effect of such collateral in accordance with paragraphs 7.2.8 to 7.2.13 below, provided the Reporting Bank observes Annex 7E.

7.2.7 A Reporting Bank using the SA(CR) should not recognise the effect of eligible financial collateral if such collateral is already reflected in the issue-specific external credit assessment of the SA(CR) exposure.

7.2.8 Subject to paragraph 7.2.9, a Reporting Banking using the SA(CR) should use either the FC(SA) or the FC(CA) to recognise the effect of eligible financial collateral. The Reporting Bank should apply the chosen approach consistently to the entire banking group and should not use a combination of both approaches.

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<sup>49</sup> For avoidance of doubt, the notional amount of an off-balance sheet item refers to the amount that has been committed but is as yet undrawn.

<sup>50</sup> Guideline: Foreign exchange transaction or translation gains or losses from foreign currency-denominated off-balance sheet items should be allocated to the exposure to which they accrue.

<sup>51</sup> Guideline: A Reporting Bank using the A-IRBA should calculate historical EAD using a default-weighted average and not a time-weighted average when making its own internal estimates of credit conversion factors.

<sup>52</sup> Exposures which receive a 100% CCF under the F-IRBA will continue to have the same CCF under the A-IRBA.

<sup>53</sup> A list of eligible financial collateral and eligible IRBA collateral can be found in Annex 7D.

7.2.9 For pre-settlement counterparty exposures arising from transactions in the trading book, a Reporting Bank using SA(CR) should use only the FC(CA) to recognise the effect of eligible financial collateral.

7.2.10 A Reporting Bank using the SA(CR) and the FC(SA) may recognise the effect of eligible financial collateral in accordance with sub-division 3 of Division 3. The remaining paragraphs in this sub-division do not apply to a Reporting Bank using the FC(SA).

7.2.11 A Reporting Bank using the SA(CR) and the FC(CA) may calculate E\*, the SA(CR) exposure adjusted for eligible financial collateral, in accordance with Annex 7F and substitute E\* for E when calculating the credit risk-weighted exposure amount for that SA(CR) exposure under sub-division 3 of Division 1.

7.2.12 A Reporting Bank using the F-IRBA and the FC(CA)<sup>54</sup> may calculate E\*, the IRBA exposure adjusted for eligible financial collateral, in accordance with Annex 7F and use E\* to calculate LGD\* in accordance with sub-division 7 of Division 4<sup>55</sup>.

7.2.13 A Reporting Bank using the A-IRBA or the IRBA for the IRBA retail asset class may take collateral into account when deriving its own estimates of LGD, provided the Reporting Bank observes Annex 7E.

#### **Sub-division 4A: Recognition of Eligible Financial Collateral for On-balance Sheet and Off-balance Sheet Securitisation Exposures**

7.2.13A A Reporting Bank that has taken eligible financial collateral for a securitisation exposure may recognise the effect of such collateral in accordance with paragraphs 7.2.13B to 7.2.13F below, provided the Reporting Bank observes Annex 7E.

7.2.13B A Reporting Bank using the SA(SE) or the RBM of the IRBA(SE) should not recognise the effect of eligible financial collateral if such collateral is already reflected in the issue-specific external credit assessment of the SA(SE) or IRBA(SE) exposure.

7.2.13C A Reporting Bank using the SA(SE) should use either the FC(SA) or the FC(CA) to recognise the effect of eligible financial collateral. The Reporting Bank should apply the chosen approach consistently to the entire banking group and should not use a combination of both approaches.

7.2.13D A Reporting Bank using the SA(SE) and the FC(SA) may recognise the effect of eligible financial collateral in accordance with sub-division 4 of Division 6. The remaining paragraphs in this sub-division do not apply to a Reporting Bank using the FC(SA).

7.2.13E A Reporting Bank using the SA(SE) and the FC(CA) may calculate E\*, the SA(SE) exposure adjusted for eligible financial collateral, in accordance with Annex 7F and substitute E\* for E when calculating the credit risk-weighted exposure amount for that SA(SE) exposure under sub-division 6 of Division 1.

<sup>54</sup> The FC(SA) is not available to a Reporting Bank using the F-IRBA.

<sup>55</sup> For avoidance of doubt, the EAD for any IRBA exposure is not affected by this calculation of E\*.

7.2.13F A Reporting Bank using the IRBA(SE) may calculate EAD\*, the IRBA(SE) exposure adjusted for eligible financial collateral, in accordance with Annex 7F and substitute EAD\* for EAD when calculating the credit risk-weighted exposure amount for that IRBA(SE) exposure under sub-division 6 of Division 1.

#### **Sub-division 5: Measurement of E or EAD for Pre-settlement Counterparty Exposures Arising from OTC Derivative Transactions**

7.2.14 For each OTC derivative transaction that meets the characteristics at Annex 7K, a Reporting Bank should calculate E or EAD, whichever is applicable, for the pre-settlement counterparty exposure arising from that OTC derivative transaction using the current exposure method by adding:

- (a) the replacement cost (obtained by marking to market) of the OTC derivative transaction or in the case of an OTC derivative transaction with negative replacement cost, a value of zero<sup>56</sup>; and
- (b) the amount for potential future exposure obtained by applying the appropriate credit conversion factor set out in Annex 7L to the notional amount of the OTC derivative transaction.

7.2.15 A Reporting Bank that has taken eligible financial collateral for any OTC derivative transaction may recognise the effect of such collateral in accordance with paragraphs 7.2.16 to 7.2.20 below, provided the Reporting Bank observes Annex 7E.

7.2.16 A Reporting Bank using the SA(CR) should use either the FC(SA) or the FC(CA) to recognise the effect of eligible financial collateral for OTC derivative transactions in the banking book. The Reporting Bank should apply the chosen approach consistently to the entire banking group and should not use a combination of both approaches. For pre-settlement counterparty exposures arising from OTC derivative transactions in the trading book, a Reporting Bank using the SA(CR) should use only the FC(CA) to recognise the effect of eligible financial collateral.

7.2.17 A Reporting Bank using the SA(CR) and FC(SA) may recognise the effect of eligible financial collateral for OTC derivative transactions in accordance with sub-division 3 of Division 3.

7.2.18 A Reporting Bank that has taken eligible financial collateral for OTC derivative transactions that are not covered by a qualifying bilateral netting agreement may:

- (a) if it is using the SA(CR) and the FC(CA), calculate E\*, the SA(CR) exposure adjusted for eligible financial collateral, in accordance with Annex 7F and substitute E\* for E when calculating the credit risk-weighted exposure amount for that SA(CR) exposure under sub-division 3 of Division 1; and
- (b) if it is using the F-IRBA and the FC(CA)<sup>57</sup>, calculate E\*, the IRBA exposure adjusted for eligible financial collateral, in accordance with Annex 7F and use E\* to calculate LGD\* in accordance with sub-division 7 of Division 4.<sup>58</sup>

<sup>56</sup> Guideline: Foreign exchange transaction or translation gains or losses from foreign currency-denominated OTC derivative transactions should be allocated to the exposure to which they accrue.

<sup>57</sup> The FC(SA) is not available to a Reporting Bank using the F-IRBA.

<sup>58</sup> For avoidance of doubt, the EAD for any IRBA exposure is not affected by this calculation of E\*.



7.2.19 A Reporting Bank that has taken eligible financial collateral for OTC derivative transactions that are covered by a qualifying bilateral netting agreement may:

- (a) if it is using the SA(CR) and the FC(CA), calculate  $E^*$ , the exposure adjusted for eligible financial collateral, for all its SA(CR) exposures to any single counterparty covered by the netting agreement in accordance with Annex 7M and substitute  $E^*$  for  $E$  when calculating the credit risk-weighted exposure amount for its SA(CR) exposures to that counterparty under sub-division 3 of Division 1; and
- (b) if it is using the F-IRBA and the FC(CA), calculate  $E^*$ , the exposure adjusted for eligible financial collateral for all its IRBA exposures to any single counterparty covered by the netting agreement in accordance with Annex 7M and use  $E^*$  to calculate LGD\* in accordance with sub-division 7 of Division 4.<sup>59</sup>

7.2.20 A Reporting Bank using the A-IRBA or the IRBA for the IRBA retail asset class may take collateral into account when deriving its own estimates of LGD, provided the Reporting Bank observes Annex 7E.

7.2.21 Aside from the pre-settlement counterparty exposure in an OTC derivative transaction calculated under paragraphs 7.2.14, 7.2.18 and 7.2.19 above, a Reporting Bank is also exposed to the risk of the underlying securities in a credit derivative transaction or an OTC derivative transaction that is in substance similar to a forward purchase or credit substitute. Accordingly, a Reporting Bank should calculate  $E$  or EAD, whichever is applicable, for such exposures in accordance with sub-division 7 of this Division.

Note: The Authority will consult on the rules relating to (a) the calculation of  $E$  or EAD, whichever is applicable, for OTC derivative transactions that are covered by qualifying bilateral netting agreements, using the standardised method and the internal models method that applies the concept of expected positive exposure; and (b) cross-product netting, at a later date.

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<sup>59</sup> For avoidance of doubt, the EAD for any IRBA exposure is not affected by this calculation of  $E^*$ .

**Sub-division 6: Measurement of E or EAD for Pre-Settlement Counterparty Exposures Arising from SFTs**

7.2.22 An SFT that meets the characteristics at Annex 7K should be treated in substance as similar to collateralised lending for the purposes of this Notice, notwithstanding the wide range of legal contractual forms that could be used for SFTs.

7.2.23 A Reporting Bank that has lent a security in an SFT that falls within paragraph 7.2.22 above should calculate E or EAD, whichever is applicable, for the pre-settlement counterparty exposure arising from that SFT by adding:

- (a) the latest fair market value of the security lent; and
- (b) the product of the latest fair market value of the security lent and  $H_E$ , where  $H_E$  is either:
  - (i) the standard supervisory haircut applicable to the security lent as specified in Annex 7H; or
  - (ii) the Reporting Bank's own estimate of the haircut applicable to the security lent determined in accordance with Annex 7I.

7.2.24 A Reporting Bank that has lent cash in an SFT that falls within paragraph 7.2.22 above should calculate E or EAD, whichever is applicable, for the pre-settlement counterparty exposure arising from that SFT by adding:

- (a) the amount of cash lent; and
- (b) accrued interest on the cash lent.

7.2.25 A Reporting Bank that has taken eligible financial collateral for any SFT may recognise the effect of such collateral in accordance with paragraphs 7.2.26 to 7.2.30 below, provided the Reporting Bank observes Annex 7E.

7.2.26 A Reporting Bank using the SA(CR) should use either the FC(SA) or the FC(CA) to recognise the effect of eligible financial collateral for SFTs in the banking book. The Reporting Bank should apply the chosen approach consistently to the entire banking book and should not use a combination of both approaches. For pre-settlement counterparty exposures arising from SFTs in the trading book, a Reporting Bank using SA(CR) should use only the FC(CA) to recognise the effect of eligible financial collateral.

7.2.27 A Reporting Bank using the SA(CR) and FC(SA) may recognise the effect of eligible financial collateral for SFTs in accordance with sub-division 3 of Division 3.

7.2.28 A Reporting Bank that has taken eligible financial collateral for SFTs that are not covered by a qualifying bilateral netting agreement may:

- (a) if it is using the SA(CR) and the FC(CA), calculate  $E^*$ , the SA(CR) exposure adjusted for eligible financial collateral, in accordance with Annex 7F and substitute  $E^*$  for E when calculating the credit risk-weighted exposure amount for that SA(CR) exposure under sub-division 3 of Division 1; and

- (b) if it is using the F-IRBA and the FC(CA)<sup>60</sup>, calculate E\*, the IRBA exposure adjusted for eligible financial collateral, in accordance with Annex 7F and use E\* to calculate LGD\* in accordance with sub-division 7 of Division 4.<sup>61</sup>

7.2.29 A Reporting Bank using the A-IRBA or the IRBA for the IRBA retail asset class may take collateral into account when deriving its own estimates of LGD for SFTs that are not covered by a qualifying bilateral netting agreement, provided the Reporting Bank observes Annex 7E.

7.2.30 A Reporting Bank that has taken eligible financial collateral for SFTs that are covered by a qualifying bilateral netting agreement may:

- (a) if it is using the SA(CR) and the FC(CA), calculate E\*, the exposure adjusted for eligible financial collateral, for all its SA(CR) exposures to any single counterparty covered by the netting agreement in accordance with Annex 7M (if the Reporting Bank is using supervisory haircuts or own-estimate haircuts) or Annex 7N (if the Reporting Bank is using VaR models) and substitute E\* for E when calculating the credit risk-weighted exposure amount for its SA(CR) exposures to that counterparty undersub-division 3 of Division 1; and
- (b) if it is using the IRBA (whether F-IRBA, A-IRBA or IRBA for the IRBA retail asset class) and the FC(CA), calculate EAD\*, the exposure adjusted for eligible financial collateral for all its IRBA exposures to any single counterparty covered by the netting agreement in accordance with Annex 7M (if the Reporting Bank is using supervisory haircuts or own-estimate haircuts) or Annex 7N (if the Reporting Bank is using VaR models), and substitute EAD\* for EAD for its IRBA exposures to that counterparty when calculating IRBA RWA under sub-division 4 of Division 1.<sup>62</sup>

7.2.31 Notwithstanding paragraphs 7.2.23, 7.2.24, 7.2.28 and 7.2.30, a Reporting Bank using FC(CA) to recognise the effect of eligible financial collateral for qualifying SFTs with a core market participant that meet the conditions in Annex 7Q, may apply  $H_E = H_C = 0$  in place of the haircuts available under FC(CA) in Annex 7H and Annex 7I.<sup>63</sup>

Note: The Authority will consult on the rules relating to (a) the calculation of E or EAD, whichever is applicable, for SFTs that are covered by qualifying bilateral netting agreements, using the internal models method that applies the concept of expected positive exposure; and (b) cross product netting, at a later date.

<sup>60</sup> The FC(SA) is not available to a Reporting Bank using the F-IRBA.

<sup>61</sup> For avoidance of doubt, the EAD for any IRBA exposure is not affected by this calculation of E\*.

<sup>62</sup> For avoidance of doubt, the Reporting Bank should not recognise the effect of eligible financial collateral, eligible IRBA collateral or both by adjusting LGD.

<sup>63</sup> For avoidance of doubt, this carve-out approach is not available to Reporting Banks using VaR models as per Annex 7N to calculate E\* or EAD\*, whichever is applicable.

**Sub-division 7: Measurement of E or EAD for Credit Risks of Underlying Securities in Credit Derivative Transactions and OTC Derivative Transactions Similar in Substance to a Forward Purchase or Credit Substitute**

7.2.32 Where a Reporting Bank has provided credit protection through a first-to-default credit derivative or through a second-to-default credit derivative, E or EAD, whichever is applicable, should be equal to the nominal amount of the credit protection.<sup>64</sup> This does not apply to any exposure that falls within the definition of a securitisation exposure.

7.2.33 Where a Reporting Bank has provided credit protection through a pooled credit derivative, E or EAD, whichever is applicable, should be equal to the nominal amount of the credit protection.

7.2.34 Where a Reporting Bank has provided unfunded credit protection via a credit default swap, E or EAD, whichever is applicable, should be equal to the nominal amount of the credit protection.

7.2.35 Where a Reporting Bank has provided unfunded credit protection via a total rate of return swap, E or EAD, whichever is applicable, should be equal to the nominal amount of the credit protection less the amount of any depreciation payments made to the protection buyer and recognised in the profit and loss account of the Reporting Bank.

7.2.36 Where a Reporting Bank has provided funded credit protection, E or EAD, whichever is applicable, should be equal to the sum of:

- (a) the nominal amount of the credit protection; and
- (b) the carrying value of the collateral placed with the protection buyer.

7.2.37 Where a Reporting Bank has provided credit protection (whether funded or unfunded) through a proportionate structure, i.e. where the maximum possible payout in respect of any particular reference asset is capped at a pre-determined proportion of the notional amount of the credit protection, the Reporting Bank should distinguish individual sub-exposures equal to the proportionate amount of credit protection in respect of each reference asset before applying paragraphs 7.2.35 to 7.2.36 above.

7.2.38 Where a Reporting Bank has assumed the underlying risks of an asset through a forward purchase<sup>65</sup> or an OTC derivative transaction that is in substance similar to a forward purchase, E or EAD, whichever is applicable, should be equal to the nominal amount of the forward purchase transaction.

7.2.39 Where a Reporting Bank is exposed to credit risks in credit derivative transactions with structures that are not explicitly addressed in paragraphs 7.2.32 to 7.2.38, the Reporting Bank should consult the Authority on the appropriate treatment in the measurement of E or EAD, whichever is applicable.

**Sub-division 8: Measurement of E or EAD for Equity Investments and PE/VC Investments**

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<sup>64</sup> The potential exposure to multiple risk factors is taken into account in the determination of risk weights under the SA(CR) or K under the IRBA. Please refer to sub-division 3 in Division 3 and sub-division 10 in Division 4.

<sup>65</sup> Includes forward asset purchases, forward deposits, and partly paid shares and securities.

7.2.40 For any equity investment, E or EAD, whichever is applicable, should be equal to the fair value of that investment presented in the balance sheet except:

- (a) for any equity investment held at cost, E or EAD, whichever is applicable, should be equal to the cost of that investment presented in the balance sheet (i.e. cost less impairment); and
- (b) for any AFS equity investment, E or EAD, whichever is applicable, should be equal to the fair value of that AFS equity investment gross of any unrealised fair value gains or losses on revaluation of that AFS equity investment to be included in deductions from Tier 1 Capital pursuant to paragraph 6.1.1(b) of Division 1 of Part VI, if the Reporting Bank has elected not to recognise the revaluation gains as Upper Tier 2 Capital pursuant to paragraph 6.2.1(e) of Division 2 of Part VI.



Monetary Authority of Singapore