

**246. Treatment of interest rate contracts and exchange rate contracts**

Where an authorized institution has an exposure arising from its entering into an interest rate contract or exchange rate contract in a securitization transaction, the institution shall calculate the risk-weighted amount of that exposure in accordance with Part 4 or 5, as the case requires.

**247. Recognized credit risk mitigation**

(1) Subject to subsection (2), an authorized institution shall calculate the risk-weighted amount of a securitization exposure in respect of which credit protection has been obtained in accordance with Divisions 5, 6, 7, 8, 9 and 10 of Part 4.

(2) Where an authorized institution which has a securitization exposure in respect of a securitization transaction would use the BSC approach to calculate its credit risk for all or the majority of the underlying exposures of the transaction as determined in section 15(4), and credit protection has been obtained in respect of the securitization exposure, the institution shall calculate the risk-weighted amount of the securitization exposure in accordance with Divisions 5, 6, 7 and 8 of Part 5.

**248. Treatment of maturity mismatches**

For the purposes of calculating the risk-weighted amount of an authorized institution's securitization exposures covered by credit protection, where there is a maturity mismatch between the securitization exposures and the credit protection, the institution shall apply section 243(3) as if a reference to an underlying exposure in a synthetic securitization transaction in that section were a reference to a securitization exposure covered by credit protection.

**Division 4—Risk-weighting requirements under IRB(S) approach****249. Application of Division 4**

(1) This Division applies to an authorized institution which uses the IRB(S) approach to calculate its credit risk for securitization exposures.

(2) Unless the context otherwise requires, a reference to an authorized institution in this Division is a reference to an authorized institution which uses the IRB(S) approach to calculate its credit risk for securitization exposures.

**250. Application of scaling factor**

An authorized institution shall use the aggregate of—

- (a) the risk-weighted amount of its rated securitization exposures calculated under the ratings-based method in accordance with this Division and Division 5; and
- (b) the risk-weighted amount of its unrated securitization exposures calculated under the supervisory formula method in accordance with this Division and Division 6,

for the purposes of calculating its capital adequacy ratio only after multiplying that amount by a scaling factor specified in section 224.

**251. Deductions from core capital and supplementary capital**

(1) Subject to subsection (2), an authorized institution shall deduct from any of its core capital and supplementary capital—

- (a) any credit-enhancing interest-only strip recorded by the institution as the originating institution in a securitization transaction (after deduction of any gain-on-sale arising from the credit-enhancing interest-only strip);
- (b) any gain-on-sale arising from a securitization transaction where the institution is the originating institution;
- (c) if the institution uses the ratings-based method, any rated securitization exposure of the institution with a long-term credit quality grade of 12 or a short-term credit quality grade of 4 as allocated, respectively, under Table A or Table B in Schedule 14, as the case requires;
- (d) if the institution uses the supervisory formula method, any unrated securitization exposure of the institution with a risk-weight of not less than 1,250%;
- (e) if the institution cannot use the supervisory formula method, or the method specified in section 277(3) for liquidity facilities or servicer cash advance facilities, because it lacks the Monetary Authority's consent to do so, any unrated securitization exposure of the institution; and
- (f) any other securitization exposure specified by the Monetary Authority in a notice in writing given to the institution.

(2) An authorized institution required by subsection (1) to make a deduction from any of its core capital and supplementary capital shall—

- (a) make the deduction based on—

- (i) the principal amount (after deduction of any specific provision, partial write-off or non-refundable purchase price discount, as the case may be, made against the deductible item) of the deductible item if the item is an on-balance sheet securitization exposure; or
- (ii) the credit equivalent amount of the deductible item if the item is an off-balance sheet securitization exposure;
- (b) subject to section 49(1) and paragraph (c), make the deduction 50% from the institution's core capital and 50% from the institution's supplementary capital;
- (c) if the deductible item falls within subsection (1)(b), make the deduction 100% from the institution's core capital.

## **252. Treatment of liquidity facilities and servicer cash advance facilities**

(1) For the purposes of sections 264 and 277, a liquidity facility provided by an authorized institution, which forms part of a securitization transaction, is an eligible liquidity facility where—

- (a) subject to paragraph (b), the facility documentation clearly identifies and limits the circumstances under which the facility may be drawn;
- (b) drawings under the facility are limited to the amount which is likely to be repaid fully from the realization of the underlying exposures in the transaction and any credit enhancement provided by the originator of the underlying exposures;
- (c) the facility is not able to be drawn so as to provide credit support to cover losses already incurred in respect of the pool of underlying exposures prior to the drawing;
- (d) there are no regular or continuous drawings under the facility to indicate that the facility is either—
  - (i) used to provide permanent or regular funding to investors in the securitization issues; or
  - (ii) structured such that drawdown is certain;
- (e) the facility is subject to an asset quality test which precludes it from being drawn to cover underlying exposures which would be regarded as in default in section 149 under the IRB approach;
- (f) if the securitization issues supported by the facility are rated, the facility can only be drawn to make payment in respect of those securitization issues which are rated as investment grade at the time of drawdown;

- (g) the facility is not capable of being drawn after all credit enhancements from which the facility would benefit have been exhausted; and
  - (h) repayment of drawings on the facility is not subordinated to the claims of investors in the securitization issues or subject to deferral or waiver by the institution which provides the facility.
- (2) Subject to subsection (3), where—
- (a) a servicer cash advance facility is provided by an authorized institution in respect of a securitization transaction;
  - (b) the institution is entitled to full reimbursement of cash advanced under the facility; and
  - (c) the entitlement ranks senior for payment to other claims on cash flows from the pool of underlying exposures in the transaction,
- subsection (1) and section 264 or 277, as the case requires, with all necessary modifications, apply to that servicer cash advance facility as they apply to a liquidity facility.
- (3) Where a servicer cash advance facility which falls within subsection (2) is unconditionally cancellable by an authorized institution without prior notice to the person to whom the facility is provided, the institution may apply a CCF of 0% to the undrawn portion of the facility.

### **253. Treatment of overlapping facilities**

- (1) Where an authorized institution provides 2 or more facilities which may be drawn in respect of the same securitization transaction such that—
- (a) duplicate coverage is provided in respect of the same underlying exposure (referred to in this subsection as “overlapping portion”); and
  - (b) a drawing on one such facility precludes the drawing, whether in whole or in part, on another such facility,
- the institution shall—
- (c) calculate the risk-weighted amount of the overlapping portion on the basis of—
    - (i) if the facilities are subject to the same CCF, attributing the overlapping portion to any one of the facilities;
    - (ii) if the facilities are subject to different CCFs, attributing the overlapping portion to the facility with the highest CCF; and
  - (d) calculate the risk-weighted amount of that portion of each of the facilities which is not the overlapping portion.
- (2) Where overlapping facilities are provided by different authorized institutions, each institution shall calculate the risk-weighted amount for the maximum amount of the facility provided by it.

**254. Maximum regulatory capital for originating institution**

(1) Subject to subsection (2), the originating institution in a securitization transaction shall not provide regulatory capital for the securitization exposures held by the institution in the transaction in excess of the regulatory capital the institution would have been required to provide for the underlying exposures in the transaction if the underlying exposures had not been securitized.

(2) Where the originating institution has entered into a securitization transaction which is subject to an early amortization provision whereby the institution is required to provide regulatory capital for the investors' interest in the transaction, subsection (1) does not apply to the regulatory capital which the institution is required to provide for the securitization exposures held by it in the transaction.

**255. Treatment of underlying exposures of originating institution in synthetic securitization transactions**

(1) This section applies to the calculation of the risk-weighted amount of the pool of underlying exposures by an originating institution in a synthetic securitization transaction which falls within Schedule 10.

(2) Subject to subsections (3) and (4), an originating institution in a synthetic securitization transaction shall—

- (a) subject to paragraphs (b) and (c), calculate the risk-weighted amount of the institution's underlying exposures in the transaction based on the approach used by the institution to calculate its credit risk for the class of exposures into which the underlying exposures fall;
- (b) take into account the effect of any credit risk mitigation used for transferring credit risk in respect of the underlying exposures to other parties to the transaction in accordance with the credit risk mitigation requirements set out in Part 4 in calculating the risk-weighted amount of the underlying exposures; and
- (c) treat the EL amount of the institution's underlying exposures in the transaction as zero.

(3) For the purposes of calculating the risk-weighted amount of the originating institution's underlying exposures in a synthetic securitization transaction where there is a maturity mismatch between the credit protection pursuant to which credit risk is transferred under the transaction and the underlying exposures, the institution—

- (a) subject to paragraphs (b) and (c), shall apply the maturity mismatch treatment set out in section 103, with all necessary modifications;
- (b) shall—
  - (i) take the maturity of the underlying exposures as being the lesser of—
    - (A) the longest maturity of any of the underlying exposures; or
    - (B) 5 years; and
  - (ii) determine the maturity of the credit protection in accordance with section 103(3) and (4); and
- (c) shall not take into account any maturity mismatch in respect of the institution's securitization exposures which are subject to deduction from its core capital and supplementary capital.

(4) Where a synthetic securitization transaction incorporates a call option (other than a clean-up call) which is capable, when exercised, of terminating the transaction and the credit protection on a specified date, the originating institution in the transaction shall treat the transaction in accordance with the treatment of maturity mismatch specified in subsection (3).

**256. Treatment of investors' interest for securitization exposures of originating institution subject to early amortization provision**

(1) Subject to subsections (2) and (3), the originating institution in a securitization transaction shall provide regulatory capital against the investors' interest in the transaction if—

- (a) the institution sells the underlying exposures, or transfers the credit risk of the underlying exposures, into a structure that contains an early amortization provision; and
- (b) the underlying exposures are of a revolving nature.

(2) Where a securitization transaction has a pool of underlying exposures comprising revolving exposures and non-revolving exposures, the originating institution in the transaction shall apply the relevant early amortization treatment specified in section 257 to that portion of the pool containing the revolving exposures.

(3) The originating institution in a securitization transaction is not required to provide regulatory capital pursuant to subsection (1) in any case where—

- (a) the transaction includes a replenishment structure under which the underlying exposures which are revolving in nature are to be replenished by exposures which are non-revolving in nature and the early amortization ends the ability of the institution to add new underlying exposures;
- (b) the transaction is subject to an early amortization provision which results in the structure of the transaction being akin to a structure which is non-revolving in nature in that the credit risk in respect of the underlying exposures does not return to the institution;
- (c) investors in the securitization issues remain fully exposed to future drawings by the borrowers in respect of the underlying exposures which are revolving in nature such that the credit risk of those exposures does not return to the institution notwithstanding that an early amortization provision has been triggered; or
- (d) the early amortization provision is solely triggered by events not related to the performance of the underlying exposures which are revolving in nature or of the institution.

**257. Calculation of risk-weighted amount of investors' interest for securitization exposures of originating institution subject to early amortization provision**

(1) For the purposes of this section, the investors' interest for the originating institution in a securitization transaction consists of the sum of—

- (a) the investors' share of the principal amount of the drawn balances of the underlying exposures in the transaction; and
- (b) the investors' share of the credit equivalent amount of the undrawn balances of the underlying exposures in the transaction, which is the principal amount of the undrawn balances multiplied by the applicable CCF of the underlying exposures as specified in section 163 or 164, as the case requires, and section 166 for corporate exposures and sections 180 and 182 for retail exposures, determined by allocating the undrawn balances of the underlying exposures between the institution and the investors according to the proportion of their respective share of the drawn balances of the underlying exposures.

(2) The originating institution in a securitization transaction shall calculate the risk-weighted amount for the investors' interest in the transaction by multiplying together—

- (a) the investors' interest as determined under subsection (1);

- (b) the appropriate CCF as determined under subsections (3) and (4);
- (c)  $K_{IRB}$  as determined under section 271; and
- (d) 12.5.

(3) For the purposes of determining the CCFs to be applied to the investors' interest in a securitization transaction which is subject to a controlled early amortization provision referred to in subsection (5), an authorized institution shall—

- (a) divide the underlying exposures into committed and uncommitted credit lines;
- (b) apply a CCF of 90% to the investors' interest in respect of the underlying exposures which fall into committed credit lines;
- (c) in respect of the underlying exposures which fall into uncommitted credit lines, further divide the exposures into—
  - (i) non-retail credit lines;
  - (ii) retail credit lines;
- (d) apply a CCF of 90% to the investors' interest in respect of the underlying exposures which fall into uncommitted non-retail credit lines;
- (e) subject to paragraphs (f) and (g), apply the appropriate CCF, determined by reference to the ratio of the 3-month average excess spread of the transaction to the trapping point of excess spread set out in Schedule 12, to the investors' interest in respect of the underlying exposures which fall into uncommitted retail credit lines;
- (f) treat the trapping point of excess spread, for the purposes of paragraph (e), as that point of the accumulated excess spread at or below which the SPE in the transaction is required to retain the amount of excess spread and not pay it out to the originator in transaction; and
- (g) in any case where the transaction does not require excess spread to be trapped, treat the trapping point as that point of the accumulated excess spread where such accumulated excess spread is equal to 4.5% of the principal amount of the underlying exposures in the transaction.

(4) For the purposes of determining the CCFs to be applied to the investors' interest in a securitization transaction which is subject to a non-controlled early amortization provision (being an early amortization provision which does not fall within subsection (5)), an authorized institution shall—

- (a) divide the underlying exposures into committed and uncommitted credit lines;
- (b) apply a CCF of 100% to the investors' interest in respect of the underlying exposures which fall into committed credit lines;



- (c) in respect of the underlying exposures which fall into uncommitted credit lines, further divide the exposures into—
    - (i) non-retail credit lines;
    - (ii) retail credit lines;
  - (d) apply a CCF of 100% to the investors' interest in respect of the underlying exposures which fall into uncommitted non-retail credit lines;
  - (e) subject to paragraphs (f) and (g), apply the appropriate CCF, determined by reference to the ratio of the 3-month average excess spread of the transaction to the trapping point of excess spread set out in Schedule 13, to the investors' interest in respect of the underlying exposures which fall into uncommitted retail credit lines;
  - (f) treat the trapping point of excess spread, for the purposes of paragraph (e), as that point of the accumulated excess spread at or below which the SPE in the transaction is required to retain the amount of the excess spread and not pay it out to the originator in the transaction; and
  - (g) in any case where the transaction does not require excess spread to be trapped, treat the trapping point as that point of the accumulated excess spread where such accumulated excess spread is equal to 4.5% of the principal amount of the underlying exposures in the transaction.
- (5) For the purposes of subsection (3), an early amortization provision is controlled if—
- (a) the originating institution in a securitization transaction has a plan which operates to ensure that it has sufficient capital and liquidity available for acquiring the investors' interest in the event of an early amortization in respect of the transaction;
  - (b) throughout the duration of the transaction, including the early amortization period, the same pro-rata sharing between the originating institution and investors of payments of interest, principal, expenses, losses and recoveries is applied, based on the relative share of the originating institution and the investors in the drawn balances of the underlying exposures outstanding at the beginning of each month;
  - (c) the early amortization period set by the originating institution is sufficient for at least 90% of the total debt outstanding under the underlying exposures at the beginning of that period to have been repaid, or to have been regarded by the originating institution as in default in section 149 under the IRB approach, by the end of that period; and

- (d) the speed of repayment of amounts due to the investors by the originating institution is no more rapid than would be the case under a straight-line amortization (being the gradual paying-off of a debt in regular instalments of equal amounts) over the period referred to in paragraph (c).

## **258. Treatment of interest rate contracts and exchange rate contracts**

Where an authorized institution has an exposure arising from its entering into an interest rate contract or exchange rate contract in a securitization transaction, the institution shall calculate the risk-weighted amount of that exposure in accordance with Part 4.

### **Division 5—Specific risk-weighting requirements under ratings-based method**

## **259. Application of Division 5**

(1) This Division applies to an authorized institution which uses the ratings-based method under the IRB(S) approach.

(2) Unless the context otherwise requires, a reference to an authorized institution in this Division is a reference to an authorized institution which uses the ratings-based method under the IRB(S) approach.

## **260. Calculation of risk-weighted amount of securitization exposures**

(1) Subject to subsections (2), (3), (4) and (5), an authorized institution shall calculate the risk-weighted amount of a rated securitization exposure held by it by applying the relevant risk-weight to the exposure by reference to its ECAI issue specific rating or otherwise in accordance with these Rules.

(2) Subject to subsections (4) and (5), an authorized institution shall calculate the risk-weighted amount of an on-balance sheet securitization exposure by multiplying the principal amount of the exposure by the applicable risk-weight.

(3) Subject to subsections (4) and (5), an authorized institution shall calculate the risk-weighted amount of an off-balance sheet securitization exposure by—

- (a) multiplying the credit equivalent amount of the exposure (being the product of the principal amount of the exposure and the applicable CCF) by the applicable risk-weight;

(b) unless otherwise specified in section 252(3) or 257, applying a CCF of 100% to the exposure.

(4) Where the stated principal amount of a securitization exposure held by an authorized institution is leveraged or enhanced by the structure of the exposure, the institution shall use the effective principal amount of the exposure taking into account that the stated principal amount is so leveraged or enhanced, as the case may be, for the purposes of this Division.

(5) Where a securitization exposure held by an authorized institution is subject to credit protection, the institution shall adjust the risk-weighted amount of the exposure in accordance with sections 265 and 266.

### **261. Provisions supplementary to section 260**

(1) Where an authorized institution, other than the originating institution in a securitization transaction, provides credit protection to a securitization issue in the transaction, the institution providing the credit protection shall calculate its regulatory capital in respect of the credit protection as if it were an investor in the securitization issue.

(2) Where an authorized institution, other than the originating institution in a securitization transaction, provides credit protection to an unrated credit enhancement to other parties to the transaction, the institution providing the credit protection shall calculate its regulatory capital in respect of the credit protection as if it directly provided the credit enhancement.

### **262. Determination of risk-weights**

(1) An authorized institution shall, in respect of its rated securitization exposures—

- (a) for the purposes of determining the risk-weights to be allocated to the exposures for calculating the risk-weighted amount of the exposures, or determining whether the exposures are to be deducted from the institution's core capital and supplementary capital, map the ECAI issue specific ratings of the exposures to a scale of credit quality grades represented—
  - (i) by the numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 for long-term ECAI issue specific ratings as specified in Table A in Schedule 14; and
  - (ii) by the numerals 1, 2, 3 and 4 for short-term ECAI issue specific ratings as specified in Table B in Schedule 14;
- (b) allocate risk-weights to, or deduct from the institution's core capital and supplementary capital, the exposures in accordance with subsections (2), (3), (4), (5), (6), (7), (8) and (9); and

- (c) apply this section to and in relation to an inferred rating as it applies this section to an ECAI issue specific rating.
- (2) For the purposes of subsection (1)(b), where—
- (a) an authorized institution holds a securitization position in a given tranche of a securitization transaction; and
- (b) the tranche is effectively backed or secured by a first legal claim on the entire amount outstanding in respect of the underlying exposures in the transaction,

the institution shall treat the securitization position as a senior position.

(3) For the purposes of determining whether a securitization position held by an authorized institution in a given tranche of a securitization transaction falls within subsection (2), the institution shall not take into account—

- (a) any interest rate contract or exchange rate contract entered into for the purposes of hedging the respective interest rate risk or foreign exchange risk in the transaction; or
- (b) fees or other similar payments due under the transaction.

(4) Subject to subsections (5), (6) and (7), for the purposes of subsection (1)(b), an authorized institution shall allocate risk-weights to, or deduct from the institution's core capital and supplementary capital, securitization exposures in accordance with Table 26 if the exposures have—

- (a) a long-term ECAI issue specific rating; or
- (b) a long-term inferred rating.

TABLE 26

RISK-WEIGHTS OR DEDUCTIONS APPLICABLE TO LONG-TERM CREDIT QUALITY GRADES UNDER RATINGS-BASED METHOD

Long-term credit quality grade	Risk-weight			Deduction
	A	B	C	
1	7%	12%	20%	} not applicable
2	8%	15%	25%	
3	10%	18%	35%	
4	12%	20%	35%	
5	20%	35%	35%	
6	35%	50%	50%	
7	60%	75%	75%	
8	100%	100%	100%	
9	250%	250%	250%	
10	425%	425%	425%	
11	650%	650%	650%	

Long-term credit quality grade	A	Risk-weight B	C	Deduction
12		not applicable		deduction from core capital and supplementary capital

(5) An authorized institution shall, in the case of a securitization exposure referred to in subsection (4), allocate—

- (a) the applicable risk-weight specified in column A of Table 26 if—
  - (i) the effective number of underlying exposures specified in subsection (6) is not less than 6; and
  - (ii) the exposure is a senior position as referred to in subsection (2);
- (b) the applicable risk-weight specified in column B of Table 26 if—
  - (i) the effective number of underlying exposures specified in subsection (6) is not less than 6; and
  - (ii) the exposure is not a senior position as referred to in subsection (2);
- (c) the applicable risk-weight specified in column C of Table 26 if the effective number of underlying exposures specified in subsection (6) is less than 6.

(6) For the purposes of subsection (5), an authorized institution shall calculate the effective number of underlying exposures—

- (a) by treating multiple exposures to one obligor as one exposure; and
- (b) subject to subsection (7), by using Formula 24.

#### FORMULA 24

##### CALCULATION OF EFFECTIVE NUMBER OF UNDERLYING EXPOSURES

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

where—

- N = effective number of underlying exposures (in the case of a re-securitization transaction as specified in subsection (7), the effective number of securitization exposures which have been securitized); and
- $EAD_i$  = the EAD associated with the  $i^{\text{th}}$  obligor in the pool of underlying exposures.

(7) Where there is a further securitization of securitization exposures (referred to in this section and section 275 as “relevant exposures”) held by an authorized institution (referred to in this section and sections 274 and 275 as “re-securitization transaction”)—

- (a) the institution shall take into account the number of relevant exposures in the pool for the re-securitization transaction instead of the number of underlying exposures in the original pools in the securitization transactions creating the relevant exposures; and
- (b) if the portfolio share of the largest exposure (referred to in this subsection as “ $C_1$ ”) (being the amount of the largest exposure in the pool as a percentage of the total amount of the pool of the relevant exposures) is available, the institution may, for the purposes of Formula 24, calculate N in that formula as  $1/C_1$ .

(8) Subject to subsection (9), for the purposes of subsection (1)(b), an authorized institution shall allocate the risk-weights to, or deduct from the institution’s core capital and supplementary capital, securitization exposures in accordance with Table 27 if the exposures have—

- (a) a short-term ECAI issue specific rating; or
- (b) a short-term inferred rating.

TABLE 27

RISK-WEIGHTS OR DEDUCTIONS APPLICABLE TO SHORT-TERM CREDIT QUALITY GRADES UNDER RATINGS-BASED METHOD

Short-term credit quality grade	Risk-weight			Deduction
	A	B	C	
1	7%	12%	20%	} not applicable
2	12%	20%	35%	
3	60%	75%	75%	
4	not applicable			deduction from core capital and supplementary capital

(9) Subsections (5), (6) and (7), with all necessary modifications, apply to and in relation to any risk-weights and credit quality grades referred to in Table 27 as they apply to and in relation to any risk-weights and credit quality grades referred to in Table 26.

**263. Use of inferred ratings**

An authorized institution shall only attribute an inferred rating to a securitization exposure held by it by making reference to a securitization exposure which has an ECAI issue specific rating (referred to in this section as “reference securitization exposure”) if—

- (a) the exposure held by the institution has no applicable ECAI issue specific rating;
- (b) the reference securitization exposure is subordinate in all respects to the exposure after taking into account credit enhancements, if any, when assessing the relative subordination of the exposure and the reference securitization exposure;
- (c) the maturity of the reference securitization exposure is not less than that of the exposure;
- (d) the inferred rating is updated from time to time in order to reflect any changes in the ECAI issue specific rating of the reference securitization exposure; and
- (e) the ECAI issue specific rating of the reference securitization exposure satisfies the requirements for recognition of ECAI issue specific ratings as specified in sections 231 and 232.

**264. Calculation of risk-weighted amount of liquidity facilities**

(1) An authorized institution shall, for the purposes of calculating the risk-weighted amount of the undrawn portion of a rated liquidity facility provided by the institution (whether or not the facility is an eligible liquidity facility)—

- (a) determine the risk-weight to be allocated to the undrawn portion of the facility, or whether that undrawn portion is to be deducted from the institution’s core capital and supplementary capital, by applying Table 26 or 27, as the case requires, and Schedule 14 in accordance with section 262;
- (b) apply a CCF of 100% to the undrawn portion of the facility for the purposes of calculating the credit equivalent amount of that undrawn portion;
- (c) multiply the credit equivalent amount of the undrawn portion of the facility by the risk-weight determined in accordance with paragraph (a); and
- (d) where deduction referred to in paragraph (a) is required, deduct the credit equivalent amount of the undrawn portion of the facility from the institution’s core capital and supplementary capital.

(2) An authorized institution shall, for the purposes of calculating the risk-weighted amount of the drawn portion of a rated liquidity facility provided by the institution—

- (a) determine the risk-weight to be allocated to the drawn portion of the facility, or whether that drawn portion is to be deducted from the institution's core capital and supplementary capital, in accordance with subsection (1)(a);
- (b) multiply the principal amount of the drawn portion of the facility by the risk-weight determined in accordance with paragraph (a); and
- (c) where deduction referred to in paragraph (a) is required, deduct the principal amount of the drawn portion of the facility from the institution's core capital and supplementary capital.

### **265. Recognized credit risk mitigation**

An authorized institution in a securitization transaction shall, for the purposes of calculating the risk-weighted amount of a rated securitization exposure in respect of which full or partial credit protection has been obtained—

- (a) in the case of credit protection in the form of recognized financial collateral (within the meaning of section 139(1)), multiply the adjusted EAD of the exposure, which is the net credit exposure calculated by using Formula 19 pursuant to section 160(3)(c) and (d), by the risk-weight determined in accordance with section 262;
- (b) in the case of credit protection in the form of a recognized guarantee (within the meaning of section 51) or recognized credit derivative contract (within the meaning of section 51)—
  - (i) adopt the substitution framework in accordance with sections 214(1), 215 and 216; and
  - (ii) multiply the EAD of the exposure by the risk-weight of the credit protection provider derived in section 216(3).

### **266. Treatment of maturity mismatches**

For the purposes of calculating the risk-weighted amount of an authorized institution's securitization exposures covered by credit protection, where there is a maturity mismatch between the securitization exposures and the credit protection, the institution shall apply section 255(3) and (4) as if a reference to an underlying exposure in a synthetic securitization transaction in that section were a reference to a securitization exposure covered by credit protection.



## **Division 6—Specific risk-weighting requirements under supervisory formula method**

### **267. Application of Division 6**

(1) This Division applies to an authorized institution which uses the supervisory formula method under the IRB(S) approach.

(2) Unless the context otherwise requires, a reference to an authorized institution in this Division is a reference to an authorized institution which uses the supervisory formula method under the IRB(S) approach.

### **268. Calculation of risk-weighted amount of securitization exposures**

(1) Subject to subsections (2) and (3), an authorized institution shall calculate the risk-weighted amount of an unrated securitization exposure held by it by multiplying the amount of capital charge calculated in accordance with section 270(2) in respect of the exposure by 12.5.

(2) Where the stated principal amount of a securitization exposure held by an authorized institution is leveraged or enhanced by the structure of the exposure, the institution shall use the effective principal amount of the exposure taking into account that the stated principal amount is so leveraged or enhanced, as the case may be, for the purposes of this Division.

(3) Where a securitization exposure held by an authorized institution is subject to credit protection, the institution shall adjust the risk-weighted amount of the exposure in accordance with sections 278, 279 and 280.

### **269. Provisions supplementary to section 268**

(1) Where an authorized institution, other than the originating institution in a securitization transaction, provides credit protection to a securitization issue in the transaction, the institution providing the credit protection shall calculate its regulatory capital in respect of the credit protection as if it were an investor in the securitization issue.

(2) Where an authorized institution, other than the originating institution in a securitization transaction, provides credit protection to an unrated credit enhancement to other parties to the transaction, the institution providing the credit protection shall calculate its regulatory capital in respect of the credit protection as if it directly provided the credit enhancement.

**270. Use of supervisory formula**

(1) Subject to subsections (2), (3), (4) and (5), an authorized institution shall, for the purposes of using Formula 25 to calculate the capital charge factor for a securitization position held by it in a given tranche of a securitization transaction, determine—

- (a) the capital charge factor for the underlying exposures which those underlying exposures would have attracted under the use of the IRB approach if those underlying exposures had not been securitized (referred to in this Division as “ $K_{IRB}$ ”) in accordance with section 271;
- (b) the tranche’s credit enhancement level (referred to in this Division as “ $L$ ”) in accordance with section 272;
- (c) the tranche’s thickness (referred to in this Division as “ $T$ ”) in accordance with section 273;
- (d) the pool’s effective number of underlying exposures (referred to in this Division as “ $N$ ”) in accordance with sections 274 and 276; and
- (e) the pool’s exposure-weighted average LGD in accordance with sections 275 and 276.

**FORMULA 25****SUPERVISORY FORMULA**

$$S[L] = \begin{cases} L & \text{when } L \leq K_{IRB} \\ K_{IRB} + K[L] - K[K_{IRB}] + (d \times K_{IRB} / \omega) (1 - e^{\omega(K_{IRB} - L) / K_{IRB}}) & \text{when } K_{IRB} < L \end{cases}$$

where—

$$h = (1 - K_{IRB} / LGD)^N;$$

$$c = K_{IRB} / (1 - h);$$

$$v = \frac{(LGD - K_{IRB}) K_{IRB} + 0.25 (1 - LGD) K_{IRB}}{N};$$

$$f = \left[ \frac{v + K_{IRB}^2}{1 - h} - c^2 \right] + \frac{(1 - K_{IRB}) K_{IRB} - v}{(1 - h) \tau};$$

$$g = \frac{(1 - c) c}{f} - 1;$$

$$\begin{aligned}
 a &= g \times c; \\
 b &= g \times (1 - c); \\
 d &= 1 - (1 - h) \times (1 - \text{Beta} [K_{\text{IRB}}; a, b]); \\
 K[L] &= (1 - h) \times ((1 - \text{Beta} [L; a, b]) L + \text{Beta} [L; a + 1, b] c); \\
 \tau &= 1000; \\
 \omega &= 20; \text{ and} \\
 \text{Beta} [L; a, b] &= \text{cumulative beta distribution with parameters } a \text{ and } b \\
 &\text{evaluated at } L.
 \end{aligned}$$

(2) Subject to subsection (3), an authorized institution shall calculate the capital charge for any securitization position held by it in a given tranche of a securitization transaction by multiplying—

- (a) the EAD of the underlying exposures in the transaction; by
- (b) the greater of—
  - (i) the product of 0.0056 multiplied by T; or
  - (ii) the capital charge factor for the securitization position which is the excess of  $S[L + T]$  over  $S[L]$ ,

where—

function  $S[.]$  = the supervisory formula.

(3) Where an authorized institution holds only a proportional interest in a securitization position in a tranche of a securitization transaction, the institution shall calculate the capital charge for its interest in the position as equal to its prorated share of the capital charge calculated for the entire tranche.

(4) An authorized institution shall determine the risk-weight to be allocated to an unrated securitization exposure as the greater of—

- (a) 7%; or
- (b) the effective risk-weight determined by multiplying the capital charge factor for the exposure calculated by the use of Formula 25 by 12.5.

(5) If the effective risk-weight determined in accordance with subsection (4)(b) for a securitization exposure is not less than 1,250%, the authorized institution holding the securitization exposure shall deduct that exposure from the institution's core capital and supplementary capital.

## **271. Capital charge factor for underlying exposures under IRB approach**

For the purposes of the supervisory formula—

- (a)  $K_{IRB}$  is the ratio, expressed in decimal form, of the capital charge calculated under the use of the IRB approach for the pool of underlying exposures in a securitization transaction, as if those exposures were held directly by the authorized institution concerned, subject to the effect of any credit protection covering those exposures (whether individually or as the entire pool), to the EAD of the underlying exposures;
- (b) if there is an SPE in a securitization transaction, all the assets of the SPE that are related to the transaction shall be treated as underlying exposures in the pool (including assets in the form of a reserve account, whether a cash collateral account or otherwise);
- (c) where an authorized institution has made a specific provision or a partial write-off in respect of, or has a non-refundable purchase price discount on, an underlying exposure in the pool—
  - (i) the amounts referred to in paragraph (a) shall be calculated using the gross amount of the underlying exposure without deducting the specific provision, partial write-off or non-refundable purchase price discount, as the case may be;
  - (ii) if the underlying exposure is regarded as in default in section 149 under the IRB approach, the amount of the specific provision, partial write-off or non-refundable purchase price discount, as the case may be, may be used to reduce the amount of any deduction from the institution's core capital and supplementary capital required to be made in respect of that exposure.

## 272. Credit enhancement level of tranche

- (1) For the purposes of the supervisory formula—
  - (a) L, in relation to a given tranche of a securitization transaction, is the ratio, expressed in decimal form, of the sum of the relevant amounts of all securitization positions subordinate to that tranche of the transaction to the EAD of the underlying exposures in the transaction;
  - (b) an authorized institution which holds securitization positions in a given tranche shall—
    - (i) determine L in relation to that tranche before considering the effects of any tranche-specific credit enhancement (including third party guarantees which cover only a single tranche); and

- (ii) exclude from the measurement of L any gain-on-sale or credit enhancing interest-only strip realized or held by the institution in respect of the securitization transaction concerned;
  - (c) subject to paragraph (d), if any interest rate contract or exchange rate contract, entered into by an authorized institution with another person for the purposes of hedging any interest rate risk or foreign exchange risk, as the case may be, arising from the securitization position held by the institution, ranks junior for payment to the tranche concerned, the institution may measure the principal amount of the contract at its current exposure (without taking into account that contract's potential exposure) in calculating L;
  - (d) if the current exposure of the interest rate contract or exchange rate contract referred to in paragraph (c) cannot be measured, the authorized institution shall not take into account that contract in the calculation of L;
  - (e) an authorized institution which has entered into a securitization transaction may include in the calculation of L any reserve accounts, funded by accumulated cash flows from the underlying exposures in the transaction, that rank junior to the tranche concerned; and
  - (f) an authorized institution which has entered into a securitization transaction shall not include in the calculation of L any unfunded reserve accounts that are to be funded from future receipts from the underlying exposures in the transaction.
- (2) In subsection (1)—
- “relevant amount” (有關數額), in relation to a securitization position—
- (a) if the position is an on-balance sheet securitization position, means the principal amount of the position;
  - (b) if the position is an off-balance sheet securitization position, means the credit equivalent amount of the position.

### 273. Thickness of tranche

- (1) For the purposes of the supervisory formula—
  - (a) T, in relation to a given tranche of a securitization transaction, is the ratio, expressed in decimal form, of the relevant amount of that tranche of the transaction to the EAD of the underlying exposures in the transaction; and

- (b) in determining the principal amount of an authorized institution's securitization exposure arising from an interest rate contract or exchange rate contract entered into by the institution with another person for the purposes of hedging any interest rate risk or foreign exchange risk—
- (i) the institution shall take into account the potential exposure of the securitization exposure;
  - (ii) if the current exposure of the securitization exposure is not negative, the institution shall determine the credit equivalent amount of the securitization exposure by aggregating the current exposure and the potential exposure of the securitization exposure;
  - (iii) if the current exposure of the securitization exposure is negative, the institution shall determine the credit equivalent amount of the securitization exposure as only the potential exposure.

(2) In subsection (1)—

“relevant amount” (有關數額), in relation to a securitization position—

- (a) if the position is an on-balance sheet securitization position, means the principal amount of the position;
- (b) if the position is an off-balance sheet securitization position, means the credit equivalent amount of the position.

#### **274. Effective number of underlying exposures**

For the purposes of the supervisory formula, an authorized institution which has securitization exposures in respect of a securitization transaction shall—

- (a) use Formula 24 set out in section 262 to calculate the effective number of underlying exposures in the transaction;
- (b) treat multiple exposures to one obligor as one exposure; and
- (c) if the transaction is a re-securitization transaction, use Formula 24 in accordance with section 262(7).

#### **275. Exposure-weighted average LGD**

For the purposes of the supervisory formula—

- (a) an authorized institution which has securitization exposures in respect of a securitization transaction shall use Formula 26 to calculate the exposure-weighted average LGD of the securitization exposures;

- (b) if the transaction is a re-securitization transaction, the authorized institution shall apply an LGD of 100% to the relevant exposures in the pool for the re-securitization transaction;
- (c) subject to paragraph (d), if the underlying exposures in the securitization transaction are purchased receivables and the default risk and dilution risk for the purchased receivables are treated by the authorized institution in an aggregate manner (whether by means of the institution holding a single reserve or over-collateralization being available to the institution to cover losses from either default risk or dilution risk or by other means), the institution shall, for the purposes of the LGD to be used in Formula 26 for calculating the exposure-weighted average LGD, first determine the LGD as a weighted average of the LGD for default risk and a 100% LGD for dilution risk;
- (d) the authorized institution shall determine the respective weights of the LGD for default risk and the LGD for dilution risk referred to in paragraph (c) by reference to the proportion that the capital charge calculated for that default risk and the capital charge calculated for that dilution risk respectively bear to the aggregate capital charge calculated for default risk and dilution risk under the use of the IRB approach to calculate its credit risk in respect of the underlying exposures in the securitization transaction.

#### FORMULA 26

##### CALCULATION OF EXPOSURE-WEIGHTED AVERAGE LGD

$$\text{Exposure-weighted average LGD} = \frac{\sum_i \text{LGD}_i \times \text{EAD}_i}{\sum_i \text{EAD}_i}$$

where—

$\text{LGD}_i$  = the average LGD associated with the  $i^{\text{th}}$  obligor in the pool of underlying exposures; and

$\text{EAD}_i$  = the EAD associated with the  $i^{\text{th}}$  obligor in the pool of underlying exposures.

## 276. Simplified method for calculating N and exposure-weighted average LGD

For the purposes of the supervisory formula—

- (a) if the portfolio share of the largest exposure (referred to in this section as “ $C_1$ ”) in the pool of underlying exposures in a securitization transaction is not more than 0.03 or 3% of the aggregate amount of all the underlying exposures in the pool, an authorized institution which has securitization exposures in respect of the transaction may set the exposure-weighted average LGD at 0.50 and use Formula 27 to calculate N;

### FORMULA 27

#### SIMPLIFIED METHOD FOR CALCULATING N

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

where—

- $C_m$  = the share of the pool of underlying exposures corresponding to the sum of the largest “m” exposures (for example, a 15% share corresponds to a value of 0.15) and the level of “m” is set by the authorized institution making the regulatory capital calculation;
- (b) if only  $C_1$  is known to the authorized institution and this amount is not more than 0.03, the institution may set the exposure-weighted average LGD at 0.50 and calculate N as  $1/C_1$ ;
- (c) if the underlying exposures are retail exposures, the authorized institution may use a value for h of zero and a value for v of zero.

## 277. Calculation of risk-weighted amount of liquidity facilities

(1) An authorized institution shall, for the purposes of calculating the risk-weighted amount of the undrawn portion of an unrated eligible liquidity facility provided by the institution—

- (a) determine the risk-weight in accordance with section 270(4) in respect of the undrawn portion of the facility;
- (b) subject to paragraph (c), apply a CCF of 100% to the undrawn portion of the facility for the purposes of calculating the credit equivalent amount of that undrawn portion;



- (c) apply a CCF of 20% to the undrawn portion of the facility for the purposes of calculating the credit equivalent amount of that undrawn portion, if that facility can satisfy the requirements specified in section 240(3)(a) and (b); and
- (d) multiply the risk-weight calculated in accordance with paragraph (a) by the credit equivalent amount calculated in accordance with paragraph (b) or (c), as the case may be.

(2) Where the risk-weight determined in accordance with subsection (1)(a) is not less than 1,250%, the authorized institution providing the facility shall deduct that credit equivalent amount from its core capital and supplementary capital.

(3) Where an authorized institution demonstrates to the satisfaction of the Monetary Authority that it is not practicable for the institution to calculate  $K_{IRB}$  for the purposes of applying the supervisory formula, the institution may, with the prior consent of the Monetary Authority, and until the expiration of such period, or the occurrence of such event, as specified in that consent, in order to calculate the risk-weighted amount of the undrawn portion of an unrated eligible liquidity facility provided by the institution—

- (a) determine the risk-weight to be allocated to the undrawn portion of the facility by applying to that undrawn portion the highest risk-weight which would be applied to any of the underlying exposures covered by the facility as determined pursuant to the approach used by the institution to calculate its credit risk for the class of exposures into which the underlying exposures would fall;
- (b) apply to the undrawn portion of the facility—
  - (i) subject to subparagraph (iii), a CCF of 50% if the facility has an original maturity of not more than one year;
  - (ii) subject to subparagraph (iii), a CCF of 100% if the facility has an original maturity of more than one year;
  - (iii) a CCF of 20% if the facility can satisfy the requirements specified in section 240(3)(a) and (b), for the purposes of calculating the credit equivalent amount of the undrawn portion of the facility;
- (c) subject to paragraph (d), multiply the risk-weight determined in accordance with paragraph (a) by the credit equivalent amount calculated in accordance with paragraph (b)(i) or (ii), as the case may be;
- (d) where the risk-weight determined in accordance with paragraph (a) is not less than 1,250%, deduct the credit equivalent amount of the undrawn portion of the facility from its core capital and supplementary capital.

(4) Where an unrated liquidity facility provided by an authorized institution is not an eligible liquidity facility and the institution uses the supervisory formula method to calculate its credit risk for securitization exposures, the institution shall determine the risk-weight to be allocated to the undrawn portion of the facility, or whether that undrawn portion is to be deducted from the institution's core capital and supplementary capital, in accordance with subsections (1)(a) and (b) and (2).

(5) Where an unrated liquidity facility provided by an authorized institution is not an eligible liquidity facility and the institution does not have the consent of the Monetary Authority to use the supervisory formula method to calculate its credit risk for securitization exposures, the institution shall deduct the credit equivalent amount of the undrawn portion of the facility from the institution's core capital and supplementary capital.

(6) An authorized institution shall determine the risk-weight of the drawn portion of an unrated liquidity facility provided by the institution in accordance with subsection (1)(a) or (3)(a), as the case requires, and calculate the risk-weighted amount of that drawn portion by applying the risk-weight to the principal amount of that drawn portion.

(7) Where the risk-weight determined in accordance with subsection (6) is not less than 1,250%, the authorized institution providing the relevant liquidity facility shall deduct the principal amount of the drawn portion of the facility from its core capital and supplementary capital.

## **278. Treatment of recognized credit risk mitigation— full credit protection**

An authorized institution in a securitization transaction shall, for the purposes of calculating the risk-weighted amount of a securitization exposure in the transaction which is fully covered by credit protection—

- (a) in the case of credit protection in the form of recognized financial collateral (within the meaning of section 139(1)), multiply the adjusted EAD of the exposure, which is the net credit exposure calculated by the use of Formula 19 pursuant to section 160(3)(c) and (d), by the risk-weight determined in accordance with section 270(4);
- (b) in the case of credit protection in the form of a recognized guarantee (within the meaning of section 51) or recognized credit derivative contract (within the meaning of section 51)—
  - (i) adopt the substitution framework in accordance with sections 214(1), 215 and 216; and
  - (ii) multiply the EAD of the exposure by the risk-weight of the credit protection provider derived in section 216(3).