BASEL III IRB APPROACHES

PRUDENTIAL RETURNS and GUIDANCE NOTES

SAMA

BANKING SUPERVISION DEPARTMENT

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General Guidance Notes: IRB Approaches

A. RISK-WEIGHTED AMOUNT UNDER IRB APPROACHES

1. The banks should read SAMA's Guidance Documents to complete the attached IRB Prudential Return Q17.10 – Q17.20 concerning IRB Approaches.

    1. SAMA's Basel II Prudential returns concerning Internal Rating Based (IRB) Approaches for Credit Risk issued under circular # BCS 5318 dated 18 January 2012.

    2. BCBS Basel III Document entitled "Basel III: A global regulatory framework for more resilient banks and banking systems of June 2011.

    3. SAMA's Basel III implementation document entitled "SAMA's Final Guidance Document Concerning Implementation of Capital Reforms Under Basel III Framework" issued in December 2012.

    4. SAMA's Detailed Guidance Document Consultative Draft # 2 of June 2006. (also, referred to as SAMA's Guidance Document of June 2006)

    5. SAMA's Basel II Prudential Returns Consultative Draft of March, 2007 (referred to as SAMA's Guidance Document for March, 2007).

1.1 The attached Basel III IRB Prudential Returns are to be completed on a quarterly basis.

The Basel III IRB Prudential returns are identical to those issued by SAMA for Basel II IRB purposes. However, these have been enhanced and amended under the Basel III IRB Approaches Framework of June 2011. These enhancements are based on the lessons learnt from the financial crisis, where additional capital needs to be provided based on further refinements and enhancements related to the following elements.

a. **Highly Leveraged Counterparties (refer to item 6.1 - page 3)**

Highly leveraged counterparties have a greater probability of default (PD), thus, there is a need for higher credit risk capital requirement. This in turn leads to a higher PD estimates based on stressed PD values.

b. **Securitized and Resecuritized Assets (refer to attached Prudential Returns – Basel III Q17.17B**

The crisis demonstrated the highly risky nature of securitized and resecuritized exposures. Consequently, there is a need for higher RW's for such exposures.

c. **Credit Value Adjustments (CVA's) (refer to item 102.2 – page 25)**

The crisis demonstrated that in addition to default risk capital charges, a bank needs to add a capital charge to cover for mark to market losses. This incremental risk charge is calculated through the CVA's under IRB Approaches.

d. **Wrong Way Exposures**

General Wrong Way Exposures (refer to item 102.3.1 – page 26)

These are linked to risk factors at the general market level i.e. interest rate, FX rates, commodity risk, etc. that are positively correlated with the counterparty credit risk worthiness. These need to be identified through stress and scenario testing which may reveal severe shocks to credit worthiness occurring when relationships between such risks change.

Specific Wrong Way Exposures (refer to item 102.3.2 – page 26)

A bank is exposed to a specific wrong way exposures if the future exposure to a specific counterparty is highly co-related with the counterparty defaults risk. Examples include guarantees, credit defaults swaps provided by subsidiaries and other connected parties of the borrowing counterparties.

e. **Asset Value Correlated multiplier for Large Financial Institutions (refer to 102.4 – page 27)**

The crisis demonstrated a large co-relationship in the interbank market concerning large financial institutions. Consequently, a multiplier of 1.25 is applicable to the co-relation parameter of all exposure to financial institutions. Therefore, calculated risk weights under the IRB Approaches is multiplied by 1.25.

f. **Margin Requirements for non-centrally cleared derivatives (refer to item 102.5 – pge 28)**

Risk related to OTC derivatives exposures in the crisis demonstrated the need for margin requirements to limit risk taking and provide relief or mitigation to counterparty risk. Refer to item 102.5.

g. **Haircuts for securitized Assets Collaterals (refer to item 117.1 – page 31)**

This was due to the high risk associated with securitized assets discussed in item item 2 above. Consequently, such collaterals have limited collateral values which is achieved through haircuts.

2   The IRB Approaches measure both Expected Losses (EL) where EL are calculated as a composite of borrower PD and LGD. Unexpected Losses are measured through the IRB equation. The IRB equation for all portfolio i.e. corporate and retail, etc. are described in Section D (p5 – p14). These are based on derived PD, LGD and EAD values. Expected Losses (EL) are based on PD x LGD x EAD where PD is = 1, and a standard LGD is 60% for FIRB Approach.

2.1   A Bank should calculate the risk-weighted amount for the UL of its credit exposures using the IRB equation as described in page 5-6 of this document.

2.2   For securitized and resecuritized exposures, higher risk weights are to be used as prescribed by BCBS on the Prudential returns Q17.B.

2.3   A Bank should calculate the risk-weighted amount of equity exposures as described in item F (page 14) using either the market based approach, or the PD/LGD approach. In respect of an equity exposure which is subject to the internal models method, the Bank should calculate the risk-weighted amount by multiplying the potential loss of the exposure or capital requirement calculated under the internal models method by 12.5;

2.4   All other assets refer to RW's on Prudential return Q17.A.

2.5 A Bank should aggregate the risk-weighted amount figures derived from items (i) 2.1 to 2.7 and (ii) and then apply a scaling factor[1] (1.06) to the aggregate figure to arrive at the total risk-weighted amount for credit risk under the IRB approach.

3. A Bank may reduce the risk-weighted amount of an exposure by taking into account the effect of any recognized credit risk mitigation through adjusting the PD, LGD or EAD.

B. <u>GENERAL REQUIREMENTS FOR ALL IRB CLASSES</u>

General Requirements

4. There are three key elements for calculation of risk-weighted amount for the UL portion under the IRB approach, including:

   i. Credit risk components – these are estimates of PD, LGD, EAD, EL and M made by a Bank, or supervisory estimates specified in SAMA's Draft Guidance Rules of June 2006.
   ii. Risk-weight functions – these are the formulae by which credit risk components are transformed into risk-weighted amounts and therefore capital requirements.
   iii. Minimum requirements - the minimum standards (qualitative and quantitative) which a Bank should meet for the use of the IRB approach are described in SAMA's Draft of Guidance documents of June 2006.

5. A Bank should use the risk-weight functions provided in this section for the purpose of calculating the risk-weighted amount, unless otherwise specified. In applying such risk-weight functions, PD and LGD are measured as decimals, EAD is measured in SR and M is measured in years.

Corporate, Sovereign and Bank Exposures

6. Under the foundation IRB approach, a Bank should provide its own estimates of PD associated with each of its obligor grades, but should use supervisory estimates for other credit risk components i.e. LGD, and M as given below.

   - LGD (refer to note 29 and 30 of this document)
   - M should be 2.5 year Subject to the SAMA's prior consent, a Bank having suitable systems for the calculation of M may be allowed to use explicit maturity adjustments under the foundation IRB approach. Also refer to item 44.45 and 47 of this document.

6.1 Treatment of Highly Leveraged Counterparties as an adjustment under Basel III.

The Basel Committee believes it is appropriate to add a qualitative requirement indicating that the PD estimates for highly leveraged counterparties should reflect the performance of their assets based on a stressed period and, thus, is introducing a new paragraph after 415[2] of the framework to read as follows:

415(i). PD estimates for borrowers that are highly leveraged or for borrowers whose assets are predominantly traded assets must reflect the performance of the underlying assets based on periods of stressed volatilities.
In this respect, banks must also refer to the BCBS Basel III document entitled "Basel III: A global regulatory framework for more resilient banks and banking systems of June 2011" page 45, item 112.

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[1] The scaling factor also applies to securitization exposures under the IRB(S) approach.
[2] Refer to the BCBS document of June 2006.

7. Under the Advanced IRB approach, a Bank should provide its own estimates of PD, LGD and EAD and M.

8. In respect of Specialized Lending (SL) under supervisory slotting criteria approach, a Bank should apply the supervisory estimate of a risk-weight that is applicable to a supervisory rating grade in calculating the risk-weighted amount of such SL. Refer to section 2.2.3 to 2.2.10 of SAMA's detailed Guidance documents of June 2006.

Retail Exposures

9. Under the retail IRB approach, a Bank should provide its own estimates of PD, LGD and EAD associated with each pool of retail exposures. There is no distinction between a foundation approach and an advanced approach for retail exposures.

Equity Exposures

10. There are two approaches to calculating the risk-weighted amount of equity exposures held in the banking book: (i) the market-based approach and (ii) the PD/LGD approach. Under the market-based approach, a Bank may use the simple risk-weight method, the internal models method or a combination of both.

Other Exposures

11. Under the specific risk-weight approach, a Bank should apply a specific risk-weight applicable to an exposure which falls within the IRB subclass of cash items (see paragraph 81) or the IRB subclass of other items (see paragraph "L" on page 20) in calculating the risk-weighted amount of the exposure.

C. SPECIFIC REQUIREMENTS FOR CERTAIN EXPOSURE PORTFOLIOS

Purchased Receivables

12. Purchased receivables refers to corporate and retail IRB classes. For purchased corporate receivables, both the foundation IRB approach and the advanced IRB approach are available subject to the relevant minimum requirements being met. Like other retail exposures, there is no distinction between a foundation approach and an advanced approach for purchased retail receivables. For purchased receivables (whether corporate or retail), a Bank is required to calculate the risk-weighted amount for default risk and, if material, dilution risk of such purchased receivables (see item 73-78: Part H of this document)

Leasing Transactions

13. There is a distinct treatment for calculating the risk-weighted amount of exposures arising from leases with residual value risk. Leases without any residual value risk will be accorded the same treatment as exposures collateralized by the underlying leased assets. (see item 79-80: Part I of this document)

Repo-style Transactions

14. The calculation of the risk-weighted amount for repo-style transactions depends on the economic substance of the transaction and whether the transaction is booked in the banking book or the trading book. (See item 81-82 of this document)

D. CORPORATE, SOVEREIGN AND BANK EXPOSURES

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Risk-weight Function to Derive Risk-weighted Amounts under IRB Approaches

15. The calculations of the risk-weighted amounts for corporate, sovereign and bank exposure is dependent on the estimates of PD, LGD, EAD and, M, of a given exposure.

   (D.1) **Non-defaulted exposures**

16. For corporate, sovereign and bank exposures that are not in default (but excluding those treated as hedged exposures under the double default framework), the risk weighted amount is calculated as follows[1][2]

   Correlation (R)
   = 0.12 × (1 - EXP (-50 × PD)) / (1 - EXP (-50)) + 0.24 × [1 - (1 - EXP (-50 × PD)) / (1 - EXP (-50))]

   Maturity adjustment (b)
   = (0.11852 - 0.05478 × ln (PD))^2

   Capital charge factor[19] **(K)**
   = [LGD × N [(1 - R)^-0.5 × G (PD) + (R / (1 - R))^0.5 × G (0.999)] - PD x LGD] x (1 - 1.5 x b)^ -1 × (1 + (M - 2.5) × b)

   Risk-weight (RW)[3] = K x 12.5

   Risk-weighted amount = RW x EAD

   (D.2) **Defaulted exposures**

17. A Bank should use the same risk-weight function set out in paragraph 16 to calculate the risk-weighted amount of its corporate, sovereign and bank exposures which are in default, except that the capital charge factor (K) for a defaulted corporate, sovereign or bank exposure should be equal to the greater of:

   i. zero
   ii. The figure resulting from the subtraction of the Bank's best estimate of the EL[4] expected loss from the LGD of the defaulted exposure.

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[1] EXP denotes exponential and in denotes the natural logarithm.

[2] N(x) denotes the cumulative distribution function for a standard normal random variable (i.e. the probability that a normal random variable with mean zero and variance of one is less than or equal to x). G(z) denotes the inverse cumulative distribution function for a standard normal random variable (i.e. the value of x such that N(x) = z). The normal cumulative distribution function and the inverse of the normal cumulative distribution function are, for example, available in Excel as the functions NORMSDIST and NORMSINV.

[3] If this calculation results in a negative capital charge for any individual sovereign exposure, a Bank should apply a zero capital charge for that exposure.

[4] With the prior consent of SAMA, a Bank which uses the foundation IRB approach may use the supervisory estimate for the LGD as 60% as the EL for its corporate, sovereign and bank exposures which are in default: EL: PDxLGD; PD = 100% as default has occurred.

Hedged exposures under double default framework

18. For any hedged exposure (Please refer Para 20 of this document for SME Corporates for guidance on correlation parameter - P_{os}) under the double default framework (see paragraphs 131 and 132 of this document), the risk-weighted amount is calculated as below:

Correlation (P_{os})

$= 0.12 \times (1 - EXP(-50 \times PD_o))/(1-EXP(-50)) + 0.24 \times [1-(1-EXP(-50 \times PD_o))/(1-EXP(-50))]$

Maturity adjustment (b_{os})

$= (0.11852 - 0.054478 \times 1n(PD_{os}))^2$

Capital charge factor (K_{DD})

$$= \left\{ LGD_g \times \left[N \left(\frac{G(PD_o) + \sqrt{P_{os}} \times G(0.999)}{\sqrt{1-P_{os}}} \right) - PD_o \right] \times \frac{1+(M_{os}-2.5 \times b_{os})}{1-15 \times b_{os}} \right\} \times (0.15+160 \times PD_g)$$

Risk-weight (RW_{DD}) $= K_{DD} \times 12.5$
Risk-weighted amount $= RW_{DD} \times EAD_g$

Where:

PD_o	=	PD of the underlying obligor without taking into account the effect of credit protection (see paragraph 25)
PD_g	=	PD of the credit protection provider of the hedged exposure (see paragraph 25)
PD_{os}	=	The lower of PD_o and PD_g
M_{os}	=	M of credit protection (see paragraph 48)
LGD_g	=	LGD of a comparable direct exposure to the credit protection provider paragraph 39 & and 40)
EAD_g	=	EAD of the hedged exposure

19. Defaulted exposures cannot be subject to the double default framework. In case the underlying obligor of a hedged exposure defaults, such exposure should be treated as a direct exposure to the credit protection provider and then risk-weighted accordingly. Conversely, if the credit protection provider of a hedged exposure defaults, such exposure should remain with the underlying obligor and should be risk-weighted as an unhedged exposure to the underlying obligor. In case both the underlying obligor and the credit protection provider of a hedged exposure default, such exposure should be treated as a defaulted exposure to either the underlying obligor or the credit protection provider, depending on which party defaulted last.

(D.3) **SME corporates**

20.   A Bank using the IRB approach is permitted to separately distinguish its corporate exposures as SME corporates as defined in SAMA's guidance document of June 2006. Under the IRB Approach for corporate credits, banks are permitted to separately distinguish exposures to SME borrowers (defined as corporate exposures where the reported sales for the consolidated group of which the firm is a part is less than SAR equivalent of *50* million Euros) from those to large firms[1]. A firm-size adjustment (i.e. 0.04 x (1 - (S-5) / 45)) is made to the corporate risk-weight formula for exposures to SME borrowers. S is expressed as total annual sales in millions of SR with values of S falling in the range of equal to or less than SAR equivalent of *50* million Euros or greater than or equal to SAR equivalent of 5 million Euros. Reported sales of less than SAR equivalent of 5 million Euros will be treated as if they were equivalent to SAR equivalent of 5 million Euros for the purposes of the firm-size adjustment for SME borrowers.

$$\text{Correlation (R)} = 0.12 \times (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50))] - 0.04 \times (1 - (S - 5) / 45)$$

For Exposures with respect to SME Corporates that are subject to double default framework, the Correlation (P_{os}) is given as follows

$$\text{Correlation (R)} = 0.12 \times (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50))] - 0.04 \times (1 - (S-5) / 45)$$

Please Refer Para 284 (ii) and Para 273 of BCBS Basel II Guidelines)

20. A Bank using the IRB approach is permitted to separately distinguish its corporate exposures as SME corporates as defined in SAMA's guidance document of June 2006. For these SME corporate exposures, a firm-size adjustment (i.e. 0.04 x (1 - (S-30) / 450)) may be applied to the relevant risk-weight function for the calculation of the correlation value:

(i)   Exposures to SME corporates that are not subject to the double default Framework

Correlation (R)

$$\text{Correlation (R)} = 0.12 \times (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times PD)) / (1 - \text{EXP}(-50))] - 0.04 \times (1 - (S - 5) / 45)$$

(ii)   Exposures to SME corporates that are subject to the double default framework

Correlation (P_{os})

$$= 0.12 \times (1 - \text{EXP}(-50 \times PD_o)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times PD_o)) / (1 - \text{EXP}(-50))] - 0.04 \times (S - 50) / 95)$$

(D.4) **Specialized Lending (SL)**

21. A Bank that meets the requirements for PD estimation under the IRB approach for its SL should use the foundation IRB approach (or the advanced IRB approach, where the Bank can also provide the estimates of other credit risk components) to calculate the risk-weighted amount for such SL, based on the relevant risk-weight functions set out in paragraphs 15 to 16.

22. In respect of SL under supervisory slotting criteria approach, a Bank should apply the UL risk-weight specified in the table below for the relevant supervisory rating grade to which a SL is assigned in calculating the risk-weighted amount of that SL.

	Strong	Good	Satisfactory	Weak	Default
Remaining Maturity of Less than 2.5 Years	50%	70%	115%	250%	0%
Remaining Maturity of Equal to or More than 2.5 years	70%	90%	115%	250%	0%

23. A Bank may assign a preferential risk-weight of 50% to "strong" exposures SAMA and 70% to "good" exposures, provided that the Bank demonstrates to the satisfaction of SAMA that the Bank's credit underwriting criteria and the ability of the obligor in respect of the SL to withstand other risk characteristics are substantially stronger than the corresponding criteria for the equivalent supervisory rating grade as described in paragraph 22.

Credit Risk Components

Probability of Default (PD)

24. For corporate and bank exposures, the PD of an exposure is the greater of the PD associated with the internal obligor grade to which that exposure is assigned, or 0.03%.
25. Under the double default framework, PDo and PDg (see paragraph 18) are the PD associated with the internal obligor grade of the underlying obligor and the credit protection provider, respectively, and both are also subject to the PD floor of 0.03%.

26. For sovereign exposures, the PD of an exposure is the PD associated with the internal obligor grade to which that exposure is assigned (i.e. without any PD floor).

26.1 For corporate bonds, other financial institutions, use of associated external rating is permitted provided it is from SAMA approving Agency which includes Moodys, S&P and Fitch IBCA.
27. For corporate, sovereign and bank exposures, the PD of an exposure assigned to a default grade is 100%.

Loss Given Default (LGD)

28. A Bank should provide an estimate of the LGD for each corporate, sovereign and bank exposure. There are two approaches for deriving this LGD estimate: the foundation IRB approach or the advanced IRB approach.

LGD under foundation IRB approach

      (a)   <u>Treatment of exposures which are unsecured or secured by non-recognized collateral under foundation IRB approach</u>

29. For corporate, sovereign and bank exposures, a senior exposure[1] that is unsecured or secured by a non-recognized collateral should be assigned a LGD of **60%[2]**.

30. For corporate, sovereign and bank exposures, a subordinated exposure[3] should be assigned a LGD of **75%**.

      (b) **Recognized collateral** under foundation IRB approach

31. With reference to collateral recognized for senior exposures under the foundation IRB approach: Refer to SAMA's Guidance Document of March 2007.

      Recognized financial collateral

      These include all collaterals classified as eligible financial collaterals with the exception of equities and mutual funds. These collaterals related generally to all senior exposures under the IRB approach. However equities do get recognized as collateral only in this case of exposures relating to **margin** lending programs.
      SAMA does not recognized any IRB collaterals i.e. Financial Receivable, Residential Real Estate (RPE), Commercial Real Estate (CRE) Physical Cards, etc.

32. The methodology for recognition of recognized financial collateral closely follows the comprehensive approach under the STD approach. The effective LGD (LGD*) applicable to a senior exposure with recognized financial collateral is expressed as follows:

      LGD* = LGD x (E* / E)

      Where:

      LGD   =   LGD of the senior exposure before recognition of recognized financial collateral (i.e. 60%)

      E   =   EAD of the exposure

      E*   =   Net credit exposure (being the EAD of the exposure after recognition of recognized financial collateral[2])

33. E* is calculated as follows:

      E*   =   max {0, [E x (1 + He) - C x (1 - Hc - Hfx)]}

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[1] A senior exposure means an exposure to an obligor which is not a subordinated exposure.

[2] While the Basle Committee for Banking Supervision has recommended a Standard LGD of 45% under the FIRB Approaches, the Agency would like Saudi Banks to use an LGD ratio of 60% as an interim measure. This percentage maybe revised in the future as relevant additional information and data is collected by Saudi Banks and SIMAH's National Data Pooling Project.

[3] A subordinated exposure means an exposure to an obligor which is lower in ranking, or junior, to other claims against the obligor in terms of the priority of repayment or which will be repaid only after all the senior claims against the obligor have been repaid.

For details refer to SAMA's documents entitled "SAMA Basle II Prudential Returns Consultative Draft # 2 of March, 2007" or section B of this document.

34. As in the STD approach, a 0% haircut is applied to repo-style transactions that are treated as collateralized loans to the counterparty if the criteria for the preferential treatment under the comprehensive approach as set out in SAMA's Guidance Document on Comprehensive Approach.

35. NOT APPLICABLE

36. NOT APPLICABLE

37. NOT APPLICABLE

<u>LGD under Advanced IRB Approach</u>

38. A bank using the advanced IRB approach is allowed to use its own internal estimates of LGD for corporate, sovereign and bank exposures. The LGD should be measured as a percentage of the EAD.

<u>LGD under Double Default Framework</u>

39. For the purposes of calculating the risk-weighted amount of hedged exposures under the double default framework, LGDg is the LGD of a comparable direct exposure to the credit protection provider (see paragraph 18). That means, LGDg will be the LGD of the exposure to the credit protection provider or an unhedged exposure to the underlying obligor, depending upon whether in the event both the credit protection provider and the underlying obligor default during the life of the hedged exposure, available evidence and the structure of the guarantee/credit derivative contract indicate that the amount recovered would depend on the financial condition of the credit protection provider or the underlying obligor as the case may be.

40. In estimating the LGDg, a Bank may recognize collateral provided exclusively against the exposure or the guarantee/credit derivative contract respectively. There should be no consideration of double recovery in the LGD estimate.

Exposure at Default (EAD)

41. The EAD of an exposure is measured without deduction of specific provisions and partial write-offs.

42. In relation to an on-balance sheet exposure, a Bank should use the current drawn amount of the exposure, as an estimate of the EAD of the exposure such that the EAD of the exposure is not less than the sum of:

   (i) The amount by which the Bank's core capital would be reduced if the exposure were fully written-off; and

   (ii) Any specific provisions and partial write-offs in respect of the exposure.

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Where the amount by which a Bank's estimate of EAD in respect of an exposure exceeds the sum of items (i) and (ii) of the exposure, this amount is termed a discount. The calculation of the risk-weighted amount should be independent of any discounts. In calculating the eligible provisions for the purpose of the EL-eligible provisions calculation as set out in Section M (P. 33), any discounts attributed to defaulted exposures should be included.

43. In relation to the calculation of EAD of off-balance sheet exposures, a Bank should refer to item section 84.

Effective Maturity (M)

44. (a) M under foundation IRB approach

For a Bank using the foundation IRB approach for corporate, sovereign and bank exposures, M will be 2.5 years except for repo-style transactions where M will be 6 months[1].

(b) M under advanced IRB approach

45. A Bank using the advanced IRB approach for corporate, sovereign and bank exposures is required to calculate M for each exposure. Subject to paragraph 46, M is defined as the greater of one year or the remaining effective maturity, in years, of the exposure as defined below:

  i. For an exposure subject to a predetermined cash flow schedule, M is defined as:

  $$\text{Effective Maturity (M)} = \sum_t t^* CF_t \, / \sum_t CF_t$$

  Where CF_t denotes the cash flows (principal, interest payments and fees) contractually payable by the borrower in period t
  Where CFt denotes cash flows (including principal, interest payments and fees) contractually payable by the obligor in period t. Period t is expressed in years (that is, where a payment is due to be received in 18 months, t = 1.5).

  ii. If it is not practicable for a Bank to calculate M of the contracted payments in accordance with item (i), the Bank should use a more prudent measure of M which is not less than the maximum remaining time, in years, that the obligor is permitted to fully discharge its contractual obligations (including principal payments, interest payments and fees) under the terms of the agreement governing the exposure. This usually corresponds to the nominal maturity of the exposure.

  iii. Banks using any element of the advanced IRB approach are required to measure effective maturity for each facility. However, SAMA has exempted facilities to certain smaller Saudi domestic corporate borrowers from the explicit maturity adjustment if the reported sales (i.e. turnover) for the firm is less than SR 30 million. The company has to be a Saudi company based in KSA. If the exemption is applied, all exposures to qualifying smaller domestic firms will be assumed to have an average maturity of 2.5 years, as under the foundation IRB approach.

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[1] With the prior consent of the SAMA, a Bank using the foundation IRB approach may calculate M for each exposure in accordance with paragraphs 45 to 47 if the Bank can demonstrate that it has adequate systems for doing so.

In all cases, M will be no greater than five years.

46. The one-year floor on M does not apply to the following exposures:

    i.   Fully or almost fully collateralized capital market-driven transactions (i.e. OTC derivative transactions and securities margin lending transactions) or repo-style transactions with an original maturity of less than one year, where the documentation for the transaction contains clauses requiring daily revaluation or re-margining and allowing for the prompt realization or set-off of the collateral in the event of default or failure to revalue or re-margin, as the case may be.

    ii. Exposures with an original maturity of less than one year which are not part of a Bank's ongoing financing (i.e. there being no intent or legal obligation to roll over the exposure concerned in the future) of the obligor. These exposures include:

- short-term self-liquidating trade transactions (such as an import or export letter of credit, or any similar transaction, which can be accounted for at its actual remaining maturity);
- securities purchases or sales, cash settlement by wire transfer, foreign exchange settlement, or any other exposures arising from unsettled non DvP transactions, provided that such exposures do not continue for five business days or more after the settlement date.
- Any other short-term exposures that a Bank demonstrates to the satisfaction of the SAMA that the Bank has no intent or legal obligation to roll over such exposures and will not, in practice, roll over the exposures. M of these exposures is calculated as the greater of one day or that measured in accordance with the above formula.

(c) M under the double default framework

47. Omitted[1]

[1]All items marked as omitted are due to the alignments under Basel III framework. Consequently, these are to be ignored by the banks.

48. For hedged exposures that are subject to the double default framework, Mos[1] of the exposure should be the greater of:

    i.   one year
    ii. The M of the credit protection in respect of the hedged exposure as calculated in accordance with the above formula on item 45.

E. RETAIL EXPOSURES

Risk-weight Function for Derivation of Risk-weighted Amount

49. There are three separate risk-weight functions for retail exposures. The risk-weights for retail exposures are based on separate assessments of PD and LGD as inputs to the risk-weight functions. The calculation of the risk-weighted amount for retail exposures does not require the input of M.

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[1] Refer to months

(a) Non-defaulted exposures

RM (Residential Mortgage)

50. For retail exposures which fall within the IRB subclass of RM to individuals that are not in default (whether secured or partially secured[1]), the risk-weighted amount is calculated as follows:

> **Correlation (R) =** 0.15
> **Capital charge factor (K)**
> = LGD x N [(1-R)^-0.5 x G (PD) + (R/(1-R))^0.5 x G (0.999)]-PD x LGD
> **Risk-weight (RW) =** K x 12.5
> **Risk-weighted amount** = RW x EAD

QRRE (Qualifying Revolving Retail Exposure)

51. For retail exposures which fall within the IRB subclass of QRRE (see paragraph 26) that are not in default, the risk-weighted amount is calculated as below:

> **Correlation (R) =** 0.04
> **Capital charge factor (K)**
> = LGD x N [(1-R) ^-0.5 x G (PD) + (R / (1-R)) ^ 0.5 x G (0.999)] – PD x LGD
> **Risk-weight (RW)** = K x 12.5
> **Risk-weighted amount** = RW x EAD

Small Business Exposures and Other Retail Exposures to Individuals

52. For retail exposures which fall within the IRB subclasses of small business enterprise[2] or other retail exposures to individuals that are not in default, the risk-weighted amount is calculated as below:

> **Correlation (R)[3]**
> = 0.03 x (1-EXP (-35 x PD)) / (1-EXP (-35)) + 0.16 x [1-(1-EXP (-35 x PD))
> / (1 – EXP (-35))
> **Capital charge factor (K)**
> =LGD x N [(1-R)^ -0.5 x G (PD) + (R/(1-R))^ 0.5 x G (0.999)] – PD x LGD
> **Risk-weight (RW) =** K x 12.5
> **Risk-weighted amount =** RW x EAD

(b) Defaulted exposures

53. A Bank should use the same risk-weight function set out in paragraph 50, 51 or 52, as the case may be, to calculate the risk-weighted amount of a retail exposure which is in default, except that the capital charge factor (K) for a defaulted retail exposure should be equal to the greater of:
   i. Zero
   ii. The figure resulting from the subtraction of the Bank's best estimate of the EL from the LGD of the exposure.

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[1] this means that the risk-weight also applies to the unsecured portion of such RMs

[2] Where a Bank intends to apply a double default framework to small business enterprise, such exposures should be re-classified as corporate exposures because they should no longer be managed on a pooled or portfolio basis.

[3] Correlation (R) is allowed to vary with PD.

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Credit Risk Components

Probability of Default (PD) and Loss Given Default (LGD)

54. For each identified pool of retail exposures, a Bank using the retail IRB approach should provide an estimate of the PD and LGD associated with the pool. The PD for a retail exposure is the greater of the PD associated with the pool to which the retail exposure is assigned or 0.03%. The PD of a retail exposure assigned to a default pool is 100%.

55. Owing to the potential for a very long run cycle in property prices which even comparatively long runs of data may not adequately capture, the estimate of LGD of a retail exposure which falls within the IRB subclass of RM to individuals cannot be set below 10%[1] for any sub-segment of exposures to which the formula in paragraph 328 of BCBS Basel II guidelines is applied. (Refer: Paragraph 266 of BCBS Basel II guidelines.)

55. Note:

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Exposure at Default (EAD)

56. The EAD of an exposure is measured without deduction of specific provisions and partial write-offs.

57. In relation to an on-balance sheet exposure, a Bank should use the current drawn amount of the exposure, after taking into account the credit risk mitigating effect of any recognized netting (no netting in KSA permitted for capital purposes), as an estimate of the EAD of the exposure such that the EAD of the exposure is not less than the sum of:

  (i) The amount by which Bank's core capital would be reduced if the exposure were fully written-off.
  (ii) Any specific provisions and partial write-offs in respect of the exposure.

Where the amount by which a Bank's estimate of EAD in respect of an exposure exceeds the sum of items (i) and (ii) of the exposure, this amount is termed a discount. The calculation of the risk-weighted amount should be independent of any discounts. In calculating the eligible provisions for the purpose of the EL-eligible provisions calculation as set out in Section N, any discounts attributed to defaulted exposures should be included.

58. In relation to the calculation of EAD of off-balance sheet exposures, a Bank should refer to Section L of this section.

F. EQUITY EXPOSURES

Derivation of Risk-weighted Amount

59. A Bank is allowed to use either the market-based approach or the PD/LGD approach to calculate the risk-weighted amount of its equity exposures held in the banking book, subject to fulfilling the

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[1] The 10% LGD floor should not apply, however, to sub-segments that are subject to, or benefit from, recognized guarantees issued by sovereigns. Furthermore, the existence of the floor does not imply any waiver of the requirements of LGD estimation.

relevant requirements set out in the Rules. In addition, the Bank should demonstrate to the satisfaction of SAMA that the approach employed:

(i) Is appropriate for the Bank's portfolios of equity exposures.
(ii) Is applied consistently to those portfolios.
(iii) Is not used for the purpose of regulatory capital arbitrage.

(a) Market-based approach

60. Under this approach, a Bank is permitted to calculate the risk-weighted amount of its equity exposures held in the banking book using one or both of the following two separate and distinct methods:

(i) Simple risk-weight method

A 300% risk-weight is to be applied to equity exposure in a publicly traded company (being an equity security traded on a recognized exchange)[1] and a 400% risk-weight is to be applied to all other equity exposures.

Short positions in an equity exposure (including derivative instruments) held in the banking book are permitted to offset long positions in the same equity exposure, provided that these short positions have been explicitly designated as a hedge of the long positions in that equity exposure and that they have a remaining maturity of at least one year. Other short positions (including the net short position remains after the set-off) are to be treated as if they were long positions with the relevant risk-weight applied to the absolute value of each position.

(ii) Internal models method

A Bank may use its internal models to calculate the risk-weighted amount of its equity exposures, subject to fulfilling the relevant requirements set out in the Rules described in SAMA's documents relating to the market risk amendment of 2004. Under this method, the Bank should calculate the risk-weighted amount of its equity exposures by multiplying the potential loss of its equity exposures as derived by using its internal models (e.g. VaR models) subject to the one-tailed 99% confidence interval of the difference between quarterly returns of the exposures and an appropriate risk-free rate computed over a long-term observation period (i.e. not less than three years) by 12.5. The risk-weighted amount calculated under the internal models method should be no less than the risk-weighted amount calculated under the simple risk weight method using a 200% risk-weight for equity exposure in a publicly traded company and a 300% risk-weight for all other equity exposures. Such minimum risk-weighted amount should be calculated separately using the simple risk-weight method at individual exposure level rather than at portfolio level.

61. A Bank may use more than one market-based approach for its different equity portfolios[2], provided that the Bank can demonstrate to the satisfaction of the SAMA that:

    i.   This is justified having regard to the respective risk profiles of the portfolios.
    ii. The Bank uses different risk assessment methods for the portfolios in its internal risk management functions.

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[1] For the definition of recognized exchange refer to SAMA's guidance document concerning the market risk issued in January 2004.

[2] For example, the bank may apply the simple risk-weight method to its non-listed equity exposures while the internal models method to its listed equity exposures.

<u>(b) PD/LGD approach</u>

62. The minimum requirements and methodology for calculating the risk-weighted amount of equity exposures including equity of companies that are included in the retail asset class under the PD/LGD approach are the same as those for the foundation IRB approach for corporate exposures, except that:

    i.   The EAD in respect of an equity exposure should be determined in accordance with paragraphs 68 to 70

    ii. If the Bank has an equity exposure to a corporate but does not have a debt exposure to that corporate such that the Bank does not have sufficient information on the corporate for the application of the prescribed default criteria[1] as set out in the Rules, the Bank should calculate the risk-weighted amount of the equity exposure such that:

- If the EAD of the Bank's equity exposures to the corporate is not more than 15% of the Bank's total equity exposures, the Bank calculates the risk-weighted amount of the equity exposure by multiplying the EAD of the exposure by the product of the risk-weight as derived from using the risk-weight function set out in paragraph 16 given the PD set by Bank (where applicable, adjusted in accordance with paragraph 20 in respect of exposures to SME corporates) and a factor of 1.5.

- If the EAD of the Bank's equity exposures to the corporate is material i.e. exceeds 15% of the Bank's total equity exposures, and the Bank is permitted to use the PD/LGD approach for regulatory purposes but the bank has not yet met the relevant standards, the Bank applies the simple risk-weight method set out in paragraph 60(i).

    iii. An LGD of 90%[2] is assumed for deriving the risk-weight of an equity exposure.

    iv. M is assumed to be five years.

63. Hedging for equity exposures under the PD/LGD approach is subject to an LGD of 90% in respect of the exposure to the seller of the hedge. For this purpose, equity exposures will be treated as having a five-year maturity.

64. Under the PD/LGD approach, when the sum of UL and EL in respect of an equity exposure results in lesser capital than would be required from application of one of the minimum risk-weights set out in paragraphs 65 and 66, the minimum risk weights should be used. In other words, the minimum risk-weight should be applied, if the risk-weight calculated according to paragraph 62 plus the EL in respect of an equity exposure (i.e. EL for non-defaulted exposures = PD x LGD while EL for defaulted exposures = a Bank best estimate of EL) multiplied by 12.5 is less than the minimum risk-weight applicable to the exposure.

65. A minimum risk-weight of 100% applies to the following types of equity exposures as long as the portfolio is managed in the manner outlined below:

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[1] In practice, if there are both an equity exposure and a debt exposure to the same counterparty, a default on the debt exposure would thus trigger a simultaneous default for regulatory purposes on the equity exposure.

[2] There is no advanced approach for equity exposures

      i.   Publicly traded equity exposures held for long-term investment – equity exposures in publicly traded companies where the investment is part of a long term customer relationship, any capital gains are not expected to be realized in the short-term in accordance with the Bank's investment policy and there is no anticipation of above trend capital gains in the long-term. It is expected that in almost all cases, the Bank will have lending and/or general banking relationships with the portfolio company so that the estimated PD is readily available. Given their long-term nature, specification of an appropriate holding period for such investments merits careful consideration. In general, the Bank is expected to hold the equity over the long-term (at least five years).

     ii.   Privately owned equity exposures held for long-term investment – equity exposures in   privately owned companies where the returns on the exposures 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 realization of any existing gain in the short-term, in accordance with the Bank's investment policy.

66. For all other equity positions, including net short positions (see paragraph 60 (i), the minimum risk-weights are 200% for publicly traded equity exposures and 300% for all other equity exposures.

67. The maximum risk-weight for the PD/LGD approach for equity exposures is 1250%[1]. This maximum risk-weight can be applied if the risk-weight calculated in accordance with paragraph 62 plus the EL in respect of an equity exposure multiplied by 12.5 exceeds 1250%.

Credit Risk Components

Exposure at Default (EAD)

68. In general, the measure of EAD for an equity exposure on which the calculation of the risk-weighted amount is based is the value of the equity exposure presented in a Bank's balance sheet. Therefore, the EAD of equity exposures will be measured as follows:

> (i) Investments held at fair value with changes in value flowing directly through the profit and loss account: the fair value presented in the balance sheet.
>
> (ii) Investments held at fair value with changes in value not flowing through profit and loss account but into reserves: the fair value presented in the balance sheet.
>
> (iii) Investments held at cost: the cost presented in the balance sheet.

69. Holdings in a collective investment scheme which contains investments which would constitute both equity exposures and non-equity exposures can be either treated, in a consistent manner, as a single investment based on the majority of the scheme's investments or, where possible, as separate and distinct investments in the scheme's component investments based on a look-through approach.

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[1] Alternatively, a Bank may deduct the entire amount of the equity exposure as EL amount from its core capital and supplementary capital.

70. Where only the investment mandate of the collective investment scheme is known, the scheme can still be treated as a single investment. For this purpose, it is assumed that the scheme first invests, to the maximum extent allowed under its mandate, in investments which would constitute exposures falling within the IRB class attracting the highest capital charge of all the investments permissible under the scheme's investment mandate, and then continues making investments which would constitute exposures falling within other IRB classes in descending order of the level of the capital charge required in respect of such exposures.

G. Item "G" is omitted.

H. PURCHASED RECEIVABLES

Derivation of Risk-weighted Amount for Default Risk

71. Purchased receivables should be classified as retail or corporate exposures, according to the nature of the receivables. For receivables belonging unambiguously to one IRB subclass, the risk-weight for default risk is based on the risk-weight function applicable to that particular IRB subclass, as long as the Bank can meet the relevant requirements for the use of that particular risk-weight function. For example, if a Bank cannot comply with the criteria for QRRE, the Bank should use the risk-weight function for other retail exposures to individuals. Where a Bank purchases a hybrid pool of receivables containing a mixture of exposures, the Bank should, if it cannot separate the receivables into different IRB subclasses, apply the risk-weight function that will result in the highest risk-weighted amount of the exposures in the pool of purchased receivables.

(a) Purchased retail receivables

72. A Bank may use the "top-down" approach to its purchased retail receivables as for other retail exposures (i.e. estimation of credit risk components on a pooled basis), provided that it meets the relevant requirements for retail exposures as set out in the Rules set in SAMA's Guidance Document of June 2006. The Bank may utilize external and internal reference data to estimate the PD and LGD in respect of its purchased retail receivables at the pool level (i.e. the Bank is not required to estimate PDs and LGDs or EL for individual retail receivables within the pool). The estimates for PD and LGD (or EL) should be calculated for the purchased retail receivables on a stand-alone basis, that is, without regard to any recourse to, or guarantees from, the seller or other parties.

(b) Purchased corporate receivables

73. A Bank which purchases corporate receivables should use the "bottom-up" approach to estimate the credit risk components for individual receivables for the calculation of the risk-weighted amount (i.e. consistent with the treatment of the Bank's corporate exposures). In other words, the Bank is not allowed to use the "top-down" approach to its purchased corporate receivables. The estimates for PD and LGD (or EL) should be calculated for each of the purchased corporate receivables on a stand-alone basis, that is, without regard to any recourse to, or guarantees from, the seller or other parties.

Derivation of Risk-weighted Amount for Dilution Risk

74. Dilution refers to the possibility that the amount of a receivable is reduced through cash or non-cash credits to the receivable's obligor[1]. The following treatment of dilution risk will be applied regardless of whether the purchased receivables are corporate or retail exposures.

75. Unless a Bank can demonstrate to the satisfaction of the SAMA that the dilution risk it faces is immaterial, the Bank should calculate the risk-weighted amount for dilution risk in respect of both purchased corporate and retail receivables as follows:

      i.   At the level of either the pool as a whole (the "top-down" approach) or the individual receivables making up the pool (the "bottom-up" approach), the purchasing Bank has to estimate the one-year EL for dilution risk (expressed as a percentage of the EAD of the purchased receivables).

      ii.   As with the treatment for default risk, the estimate of dilution risk should be computed on a stand-alone basis, that is, without regard to any recourse to, or guarantees from, the seller or other parties.

76. For the purpose of calculating the risk-weighted amount for dilution risk, the risk weight function for corporate exposures set out in paragraph 16 (and where applicable, adjusted in accordance with paragraph 20 in respect of SME corporates) should be used as follows:

(i) PD should be set equal to the Bank's estimate of EL for dilution risk;

(ii) LGD should be set at 100%; and

(iii) M is determined in accordance with:

- In the case of purchased corporate receivables, paragraph 44 if the Bank uses the foundation IRB approach, or paragraphs 45 to 47 if the Bank uses the advanced IRB approach.
- In the case of purchased retail receivables, paragraphs 45 to 47.

If a Bank can demonstrate to the satisfaction of SAMA that the Bank's dilution risk in respect of its purchased receivables is monitored and managed by the Bank with a view to the risk being resolved within one year after the purchase, the Bank may set M at one year.

I.   LEASING TRANSACTIONS

Leases without Residual Value Risk

77. Exposures arising from leasing arrangements, other than those exposing the Bank to residual value risk (see paragraph 80), should be treated as exposures secured by the leased assets. A Bank may recognize the credit risk mitigating effect of the leased assets as recognized collateral if the relevant requirements set out in the Rules relating to collaterals are met.

Leases with Residual Value Risk

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[1] Examples include offsets or allowances arising from returns of goods sold, disputes regarding product quality, possible debts of the borrower to a receivable's obligor, and any payment or promotional discounts offered by the borrower (e.g. a credit for cash payments within 30 days).

78. Exposures arising from leasing arrangements that expose the Bank to residual value risk should be treated as follows:
    i. Risk-weighted amount for default risk – a Bank should calculate the risk-weighted amount for default risk in respect of the exposure by multiplying the discounted lease payment stream (i.e. EAD) by a risk-weight derived by using the riskweight function applicable to the IRB subclass within which an exposure to the lessee falls (the PD and LGD as those which the Bank assigns to the exposure).

    ii. Risk-weighted amount for residual value risk – a Bank should calculate the riskweighted amount for residual value risk in respect of the exposure by multiplying the residual value of the leased asset by a risk-weight of 100%.

J. REPO-STYLE TRANSACTIONS

79. A Bank should calculate the risk-weighted amount of its repo-style transactions booked in its banking book and reverse repos of securities and securities borrowing against cash collateral that are booked in its trading book.

80. Other than those covered by a valid bilateral netting agreement (see paragraphs 155 to 160), the Bank should adopt the "economic substance" approach for the calculation of the risk-weighted amount for repo-style transactions and report such transactions as on-balance sheet exposures as follows:

    i. Repos of securities (for the banking book only): a Bank agrees to sell securities to a third party for a sum of money with a commitment to repurchase the securities at an agreed price on an agreed future date from the third party. Under these transactions, the Bank should regard the underlying securities as its own assets and risk-weight such securities by applying an appropriate risk-weight function or method according to the nature of the securities (i.e. debt or equity) and the IRB class/subclass to which the issuer of the securities belongs.

    ii. Securities lending (for the banking book only): a Bank lends securities to a third party and receives a sum of money or other securities from the third party in exchange as collateral. Under these transactions, the Bank should regard the underlying securities as its own assets and risk-weight such securities by applying an appropriate risk-weight function or method according to the nature of the securities (i.e. debt or equity) and the IRB class/subclass to which the issuer of the securities belongs.

    iii. Reverse repos of securities (for both the banking book and the trading book): an Bank agrees to acquire securities from a third party for a sum of money with a commitment to resell the securities at an agreed price on an agreed future date to the third party. These transactions should be regarded as a collateralized loan to a counterparty and risk-weighted according to the IRB class/subclass to which that counterparty belongs.

    iv. Securities borrowing: a Bank borrows securities from a third party and provides a sum of money or other securities to the third party in exchange as collateral. The calculation of the risk-weighted amount for these transactions depends on:

        • Where the collateral provided is cash (for both the banking book and the trading book), the transaction should be treated as a collateralized loan to

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a counterparty[1] and risk-weighted according to the IRB class/subclass to which that counterparty belongs.

- Where the collateral provided is securities (for the banking book only), the Bank should   regard the collateral as its own assets and risk-weight such securities by applying an appropriate risk-weight function or method according to the nature of the securities (i.e. debt or equity) and the IRB class/subclass to which the issuer of the securities belongs.

K. Securitized and Resecuritized Exposures

All securitized and resecuritized exposures will be risk weighted as risk weights described on annex-1 of this document.

L. OTHER EXPOSURES

81. Notes and Coins

- Cash has risk provided subject to 0%
- Cash items in course of collection 20%
- Fixed assets 100%

82. The risk-weighted amount of other items is calculated by multiplying the EAD (i.e. the principal amount) of each item by a uniform risk-weight of 100%, or a higher risk weight specified by the SAMA if the SAMA is of the view that a particular exposure item poses a higher risk to the Bank.

II. Calculation of Risk-weighted Amount of Off-balance Sheet Exposures

Classification of Off-balance Sheet Exposures

83. A Bank is required to categorize its off-balance sheet exposures into one of the following three types:
    i. Off-balance sheet exposures (other than OTC derivative transactions and credit derivative contracts) in the banking book.

    ii. OTC derivative transactions

    iii. Credit derivative contracts in the trading book.

Derivation of Risk-weighted Amount of Off-balance Sheet Exposures

84. For the calculation of risk-weighted amount of off-balance sheet exposures, a Bank should:

    i. Convert an off-balance sheet exposure into credit equivalent amount (i.e. EAD) by applying an applicable credit conversion factor (CCF) to:

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[1] For securities lending or borrowing where the contractual agreement is made between the securities borrower/lender and the custodian (e.g. Clearstream Banking or Euroclear Bank) and the securities borrower/lender has no knowledge as from/to whom the security is borrowed/lent, the custodian becomes the "counterparty" of the stock borrower/lender.

- The principal amount of the off-balance sheet exposure (other than OTC derivative transactions and credit derivative contracts) in the banking book.
- The principal amount of the OTC derivative transaction, plus any current exposure amount in the banking book.
- The principal amount of the credit derivative contract in the trading book, plus any   current exposure amount.

ii. Multiply the credit equivalent amount of the off-balance sheet exposure by an applicable risk-weight.

Off-balance Sheet Exposures (Other than OTC Derivative Transactions and Credit Derivative Contracts)

(a) CCFs and EAD

85. A Bank should classify each of its off-balance sheet exposures (other than OTC derivative transactions and credit derivative contracts) in the banking book as one of the following items:

No.	Off-balance sheet exposures (other than OTC derivative transactions and credit derivative contracts) in the banking book	CCF		
		Corporate / Sovereign / Bank exposures		Retail exposures
		FIRB approach	AIRB approach	Retail IRB approach
1.	*Direct credit substitutes*	100%	100%	Own Estimate

No.	Off-balance sheet exposures (other than OTC derivative transactions and credit derivative contracts) in the banking book	CCF		
		Corporate / Sovereign / Bank Exposures		Retail exposures
		FIRB approach	AIRB approach	Retail IRB approach
2.	*Transaction-relate*	50%	Own estimate	Own estimate
3.	Trade-related contingencies	20%	Own estimate	Own estimate
4.	*Asset sales with recourse*	100%	100%	Own estimate
5.	*Forward asset purchases*	100%	100%	Own estimate
6.	Partly paid-up securities (being securities the unpaid portion of which a Bank may be called upon by the issuer to pay at a pre-determined or unspecified future date)	100%	100%	Own estimate
7.	*Forward forward deposits placed[1]*	100%	100%	Own estimate

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[1] Where a Bank has contracted to receive a deposit (i.e. forward deposits taken), failure to deliver by the counterparty may result in an unanticipated change in the Bank's interest rate exposures and involve a replacement cost. Such exposure should thus be accorded the same treatment as interest rate contracts.

8.	Note issuance and revolving Underwriting facilities	75%	Own estimate	Own estimate
9.	Commitments that are unconditionally cancelable without prior notice (i.e. commitments which do not fall within any of items 1 to 8 and may be cancelled at any time unconditionally by a Bank or which provide for automatic cancellation due to a deterioration in the creditworthiness of the person to whom the commitment has been made[1]	0%	Own estimate	Own Estimate

10.	Other commitments			
	(a) subject to paragraph (b) commitments which do not fall within item 9.	75%	Own Estimate	Own estimate
	(b) The drawdown of which will give rise to an off-balance sheet exposure falling within any items 1 to 8 or item 11.	The lower of 75% or the CCF applicable to the off-balance sheet exposure arising from the commitment concerned	Own estimate	Own Estimate
11.	Others *This item includes any off balance sheet exposure not classified as the above items.*			

86. A Bank using the advanced IRB approach for corporate, sovereign and bank exposures or the retail IRB approach for retail exposures is allowed to provide its own estimates of CCFs for off balance sheet exposures as listed out in paragraph 85.

87. For corporate, sovereign and bank exposures, the principal amount to which the CCF is applied is the lower of (i) the amount of the unused committed credit line or (ii) the amount that reflects any possible constraining availability of the facility (e.g. the existence of a ceiling on the potential

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[1] Included in this item are those facilities that are unconditionally cancelable without prior notice by the Bank other than for "force majeure" reasons, or that effectively provide for automatic cancellation due to deterioration in a borrower's creditworthiness. This is also includes any revolving or undated/open cancelled commitments, e.g. overdrafts or unused credit card lines, provided that these commitments can be unconditionally cancelled at any time and subject to credit review at least annually.

lending amount subject to the borrower's reported cash flow). If the facility is constrained in this manner, the Bank should have sufficient monitoring and management procedures to support this treatment.

88. For retail exposures with an uncertain future drawdown (e.g. credit cards), a Bank should take into account the drawdown and repayment history and expectation of additional drawings by the obligors prior to default in its overall calibration of loss estimates. In particular, where a Bank does not reflect CCFs for undrawn lines in its EAD estimates, it should reflect in its LGD estimates the likelihood of additional drawings prior to default. Conversely, if a Bank does not incorporate the possibility of additional drawings in its LGD estimates, it should do so in its EAD estimates.

89. When only the drawn balances of retail facilities have been securitized, a Bank should ensure that it continues to hold required capital against its share (i.e. seller's interest) of undrawn balances related to the securitization exposures under the IRB approach. For determining the EAD associated with the seller's interest in the undrawn lines, the undrawn balances of securitization exposures will be allocated between the seller's and investors' interests on a pro rata basis, based on the proportion of the seller's and investors' shares of the securitized drawn balances.

(b) Calculation of risk-weighted amount

90. In calculating the risk-weighted amount of off-balance sheet exposures (other than OTC derivative transactions and credit derivative contracts) in the banking book, the applicable risk-weight to an exposure should be derived from the risk-weight function for the IRB class/subclass within which the exposure falls.

OTC Derivative Transactions and Credit Derivative Contracts and Banking and Trading Book

Counterparty Credit Risk

(a) CCFs for OTC derivative transactions

91. A Bank should classify its OTC derivative transactions into one of the following items:

No.	OTC derivative transactions	CCF		
		Residual maturity: 1 year or less	Residual Maturity: Over 1 year To 5 years	Residual Maturity: Over 5 Years
1.	**Exchange rate contracts**[1]	1.0%	5.0%	7.5%

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[1] The following contracts may be excluded from the calculation of risk-weighted amount:

(i) exchange rate contracts (except those based on gold) with an original maturity of 14 calendar days or less – when such contracts are covered by a valid bilateral netting agreement, the Bank may net the profit or loss on such contracts against those on other contracts covered by the same netting agreement in arriving at the net exposure for capital adequacy purposes. The inclusion or exclusion of such contracts for netting purposes should be done on a consistent basis.

(ii) forward exchange rate contracts arising from swap deposit arrangements – under such contracts, the money deposited by the customer remains under the control of the Bank at all times during the transaction, and the Bank will be in a position to ensure that the customer does not default on the settlement of the forward contract.

2.	**Interest rate contracts**	0.0%	0.5%	1.5%
3.	**Equity contracts**	6.0%	8.0%	10.0%
4.	**Precious metal contracts**	7.0%	7.0%	8.0%
5.	**Debt security contracts or Other commodity contracts**	10.0%	12.0%	15.0%

92. For contracts with multiple exchanges of principal, the CCFs to be used are to be multiplied by the number of remaining payments in the contract.

93. For contracts structured to settle outstanding exposure on specified payment dates and where the terms are reset such that the market value of the contract is zero on these dates, the residual maturity should be set equal to the time until the next reset date. In the case of interest rate contracts that meet these criteria and the remaining time to final maturity of the contracts is more than one year, the CCF is subject to a floor of 0.5%.

94. Forward contracts, swap contracts, purchased option contracts and similar derivative contracts other than those contracts the value of which is derived from <u>the value of exchange rate, gold, interest rate, equity, precious metal, or credit derivative contracts in the banking and trading book, should be applied the CCFs applicable to "other commodities contracts".</u>

<u>(b) CCFs for credit derivative contracts in the trading book</u>

95. A Bank should classify its credit derivative contracts that are booked in the trading book into one of the following items according to the role of the Bank in the contract (i.e. protection buyer or protection seller) and the credit quality of the reference obligation:

No.	Credit derivative contracts in the Trading book	CCF	
		Protection buyer	**Protection Seller**
1.	**Total return swap**		
a.	Qualifying reference obligation	5%	5%
b.	Non-qualifying reference obligation	10%	10%
2.	**Credit default Swap**		
a.	Qualifying reference obligation	5%	5%
b.	Non-qualifying reference obligation	10%	10%

The definition of "qualifying" is the same as for the "qualifying" class for the treatment of specific risk under the Standardized approach for market risk as described in SAMA's completion instructions of Market Risk.

96. Where the credit derivative contract is a first-to-default credit derivative contract linked to a basket of reference obligations, the CCF of non-qualifying reference obligations will be used if there is at least one non-qualifying reference obligation in the basket of reference obligations; otherwise, the CCF of qualifying reference obligations should be applied. For second-to-default credit derivative

contract, the CCF of non-qualifying reference obligations will be used if there are at least two non-qualifying reference obligations in the basket; otherwise, the CCF of qualifying reference obligations should be applied. The same principle applies to other subsequent-to-default credit derivative contracts.

(c) Calculation of risk-weighted amount for Banking Bank and Trading Book

Current Exposures Method

Banks will use the current exposure method (CEM) as described below.

97. As under the standardized approach, a Bank using the IRB approach should calculate the EAD of its OTC derivative transactions and credit derivative contracts in the banking and trading book in accordance with the current exposure method under which the Bank is required to calculate the credit equivalent amount of each OTC derivative transaction and credit derivative contract in the trading book which is the sum of:

> (i) current exposure which is the replacement cost (obtained by "marking to market") of each derivative contract that has a positive value (where a contract has a negative value, its current exposure should be taken as zero).

> (ii) potential exposure (i.e. the add-on) which is derived by multiplying the principal amount of the contract by the applicable CCF as given in attachment.

98. The calculation of the potential exposure for single-currency floating / floating interest rate swap contracts is not necessary. The current exposures of these swap contracts should be taken as their credit equivalent amount.

99. For all derivative contracts, the calculation of the potential exposure should be based on the effective notional amount which reflects the actual risk inherent in the contract. For example, where the contract provides for the multiplication of cash flows as in leveraged derivative contracts, the notional amount should be adjusted to take into account this leveraged effect.

100. In calculating the risk-weighted amount of OTC derivative transactions and credit derivative contracts in the trading book, the EAD of an exposure should be the credit equivalent amount after adjusting for the risk mitigating effects of any recognized netting (see paragraphs 112 to 114) and the applicable risk-weight to the exposure should be derived from the risk-weight function for the IRB class/subclass within which the counterparty of the exposure falls.

101. For credit-linked notes, where the Bank issues such note to cover the credit risk of an underlying exposure, the maximum amount of protection is the amount of the funds received from issuing that note. The protected amount should be treated as an exposure collateralized by cash deposits while the remaining unprotected amount, if any, should be treated as an exposure to the issuer of the underlying assets.

102. Where the Bank holds a credit –linked note, it does not offload credit risk but acquires credit exposure on two fronts, to the reference entity of the note and also to the note issuer. This on-balance sheet exposure should be risk-weighted by the higher of the risk-weight of the reference entity or the risk-weight of the note issuer.

102.1 **Other Enhancements and Additional risk relating to Basel III**

102.2   **Credit Value Adjustment (CVA)**

Treatment of mark-to-market counterparty risk losses (CVA capital charge)

CVA Risk Capital Charge

The CVA risk capital charge under the IRB Approach is identical to the one used for Standardized Approach. Consequently, banks should refer to SAMA's Basel III implementation document entitled "SAMA's Final Guidance Document Concerning Implementation of Capital Reforms Under Basel III Framework" circular # 15689 dated 19 December 2012.

102.3   Wrong Way Risk

Banks must refer to BCBS document of June 2011, page 37-39 item 100 entitled "Wrong way exposures". In this respect, there is the i) General wrong way exposures and ii) specific wrong way exposures, where each of them need to be identified, monitored and quantified in accordance with BCBS methodology identification in the aforementioned reference to the BCBS document.

102.3.1   General Wrong Way Exposures

Banks must identify exposures that give rise to a greater degree of general wrong-way risk. Stress testing and scenario analyses must be designed to identify risk factors that are correlated with counterparty credit worthiness.

102.3.2   **Specific Wrong Way Exposures**

A bank is exposed to "specific wrong-way risk" if future exposure to a specific counterparty is highly correlated with the counterparty's probability of default. For example, a company writing put options on its own stock creates wrongway exposures for the buyer that is specific to the counterparty. A bank must have procedures in place to identify, monitor and control cases of specific wrong way risk, beginning at the inception of a trade and continuing through the life of the trade. To calculate the CCR capital charge, the instruments for which there exists a legal connection between the counterparty and the underlying issuer, and for which specific wrong way risk has been identified, are not considered to be in the same netting set as other transactions with the counterparty. Furthermore, for single-name credit default swaps where there exists a legal connection between the counterparty and the underlying issuer, and where specific wrong

way risk has been identified, EAD in respect of such swap counterparty exposure equals the full <u>expected loss in the remaining fair value of the underlying instruments assuming the underlying issuer is in liquidation. The use of the full expected loss in remaining fair value of the underlying instrument allows the bank to recognise, in respect of such swap, the market value that has been lost already and any expected recoveries.</u> **Accordingly LGD for Advanced or Foundation IRB banks must be set to 100% for such swap transactions[1]. For banks using the Standardised Approach, the risk weight to use is that of an unsecured transaction. For equity derivatives, bond options, securities financing transactions etc. referencing a single company where there exists a legal connection between the counterparty and the underlying company, and where specific wrong way risk has been identified, EAD equals the value of the transaction under the assumption of a jump-to-default of the underlying security. Inasmuch this makes re-use of possibly existing (market risk) calculations (for IRC) that already contain an LGD assumption, the LGD must be set to 100%.**

102.4. **Asset Value Correlation multiplier for Large Financial Institution**
<u>Asset value correlation multiplier for large financial institutions</u>

In order to implement the AVC multiplier, paragraph 272 of the Basel framework would be revised as follows:

Throughout this section, PD and LGD are measured as decimals, and EAD is measured as currency (eg euros), except where explicitly noted otherwise. For exposures not in default, the formula for calculating risk-weighted assets is[2]:

Correlation (R) = 0.12 × (1 – EXP(-50 × PD)) / (1 – EXP(-50)) + 0.24 × [1 – (1 – EXP(-50 × PD)) / (1 – EXP(-50))]

Maturity adjustment (b) = (0.11852 – 0.05478 × ln(PD))^2

Capital requirement[3] (K) = [LGD × N[(1 – R)^-0.5 × G(PD) + (R / (1 – R))^0.5 × G(0.999)] – PD x LGD] x (1 – 1.5 x b)^-1 × (1 + (M – 2.5) × b)

Risk-weighted assets (RWA) = K x 12.5 x EAD

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[1] Note that the recoveries may also be possible on the underlying instrument beneath such swap. The capital requirements for such underlying exposure are to be calculated under the Accord without reduction for the swap which introduces wrong way risk. Generally this means that such underlying exposure will receive the risk weight and capital treatment associated with an unsecured transaction (ie assuming such underlying exposure is an unsecured credit exposure).

[2] Ln denotes the natural logarithm.

N(x) denotes the cumulative distribution function for a standard normal random variable (ie the probability that a normal random variable with mean zero and variance of one is less than or equal to x). G(z) denotes the inverse cumulative distribution function for a standard normal random variable (ie the value of x such that N(x) = z). The normal cumulative distribution function and the inverse of the normal cumulative distribution function are, for example, available in Excel as the functions NORMSDIST and NORMSINV.

[3] If this calculation results in a negative capital charge for any individual sovereign exposure, banks should apply a zero capital charge for that exposure.

The capital requirement (K) for a defaulted exposure is equal to the greater of zero and the difference between its LGD (described in paragraph 468[1]) **and the bank's best estimate of expected loss (described in paragraph 471). The risk-weighted asset amount for the defaulted exposure is the product of K, 12.5, and the EAD. A multiplier of 1.25 is applied to the correlation parameter of all exposures to financial institutions meeting the following criteria:**

- **Regulated financial institutions whose total assets are greater than or equal to US $100 billion. The most recent audited financial statement of the parent company and consolidated subsidiaries must be used in order to determine asset size.** For the purpose of this paragraph, a regulated financial institution is defined as a parent and its subsidiaries where any substantial legal entity in the consolidated group is supervised by a regulator that imposes prudential requirements consistent with international norms. These include, but are not limited to, prudentially regulated Insurance Companies, Broker/Dealers, Banks, Thrifts and Futures Commission Merchants;

- Unregulated financial institutions, regardless of size. Unregulated financial institutions are, for the purposes of this paragraph, legal entities whose main business includes: the management of financial assets, lending, factoring, leasing, provision of credit enhancements, securitisation, investments, financial custody, central counterparty services, proprietary trading and other financial services activities identified by supervisors.

Correlation (R_FI) = 1.25 x [0.12 x (1 - EXP(-50 x PD)) / (1 - EXP(-50))+ 0.24 x [1 - (1 - EXP(-50xPD)) / (1 - EXP(-50))]]

102.5 **Margin Requirements for Non-Centrally Cleared Derivatives under Basel III**

Bank should refer to SAMA's Circular # 341000134328 of 1434/11/25.

M. CREDIT RISK MITIGATION

General

103. Under the IRB approach, a Bank may take into account the effect of recognized credit risk mitigation in its calculation of risk-weighted amount of exposures, including:
    (i) Recognized collateral
    (ii) Recognized guarantees and recognized credit derivative contracts.

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[1] BCBS document of Basel II issued in June 2006.

104. The risk-weighted amount of a Bank's exposure in respect of which recognized credit risk mitigation has been taken into account shall not be higher than that of an identical exposure in respect of which recognized credit risk mitigation has not been so taken into account.

Capital Treatment of Recognized Collateral

105. Under the IRB approach, collateral is recognized through the determination of LGD (see paragraphs 28 to 38 for corporate, sovereign and bank exposures and paragraphs 54 and 55 for retail exposures)

106 to 120 – Items (to be ignored) for the present as netting is not permitted.

Capital Treatment of Recognized Netting

(a) General

106. Where a Bank is entitled pursuant to a valid bilateral netting agreement to net amounts owed by the Bank to a counterparty against amounts owed by the counterparty to the Bank, the Bank may take into account the credit risk mitigating effect of the recognized netting in calculating the EAD of its exposure to the counterparty. (However, netting is not permitted in KSA for capital purposes)

(b) EAD measurement for on-balance sheet netting

107. In respect of on-balance sheet exposures which fall within the IRB class of corporate, sovereign, bank, retail or other exposures, a Bank may net the debit balances from the credit balances in the accounts of the same counterparty in accordance with the formula set out in paragraph 148 and report the net credit exposure amount as on balance sheet exposures before recognized guarantees/credit derivative contracts.

108. Below is the formula for calculating the net credit exposure with a counterparty for on-balance sheet exposures, adjusted for the credit risk mitigating effect of a valid bilateral netting agreement:
$$\text{Net credit exposure} = \max [0, \text{exposures} - \text{liabilities} \times (1 - H_{fx})]$$

Guidance note on Basel II Prudential Returns Draft # 2 of March, 2006.

109. H_{fx} is the haircut to be applied in the case of a currency mismatch between exposures and liabilities, which is 8% assuming a **minimum holding period** of 10 business days, daily remargining and daily marking-to-market. It should be adjusted in accordance with the provisions set out in SAMA based on the frequency of remargining.

110. Treatments for maturity mismatch in respect of on-balance sheet netting are set out in paragraphs 142 to 144.

111. In respect of sovereign exposures, the market makers of Notes and bills which have short positions in these instruments may report their net holdings, provided that the short positions are covered by the Sale and Repurchase Agreements with the SAMA. The following steps should be taken in determining the amount to be reported:

    i.   The long and short positions of instruments with a residual maturity of under one year may be offset with each other.

    ii.   The long and short positions of instruments with a residual maturity of one year and over may be offset with each other.

    iii.   If the net positions of both items (i) and (ii) above are long, the positions should be reported.

    iv.   If the net position in item (i) is long and the net position in item (ii) is short, or the other way round, the positions can be netted with each other on a dollar for   dollar basis. The resultant net long position, if any, should be reported.

(c) EAD measurement for netting of OTC derivative transactions and credit derivative contracts in the trading book

112. A Bank is allowed to net exposures arising from OTC derivative transactions and credit derivative contracts in the trading book with the same counterparty, provided that such exposures are subject to a valid bilateral netting agreement. The netting agreement may cover only a single type or more than one type of contracts or transactions.

113. A Bank is required to calculate an aggregate credit equivalent amount for OTC derivative transactions and credit derivative contracts in the trading book subject to a valid bilateral netting arrangement and report it as the credit equivalent amount before recognized guarantees/credit derivative contracts. Under the current exposure method, the aggregate credit equivalent amount of OTC derivative transactions and credit derivative contracts in the trading book subject to a valid bilateral netting agreement should be the sum of:

    i. Current exposure which is the net amount of the sum of the positive and negative mark-to-market values of the individual contracts or transactions covered by a valid bilateral netting agreement, if positive.

    ii. Potential exposure (the net add-on or ANet) which is derived by adding 40% of the sum of the products derived by multiplying the principal amount of each of those contracts or transactions by the CCFs and 60% of the Net/Gross Ratio (NGR) multiplied by the sum of the products derived by multiplying the principal amount of each of those contracts or transactions by the CCFs. This is expressed through the following formula:

$$A_{Net} = 0.4 \times A_{Gross} + 0.6 \times NGR \times A_{Gross}$$

where:

A_{Gross} = the sum of the individual add-on amounts (derived by multiplying the principal amount by the CCF) of all contracts or transactions covered by the valid bilateral netting agreement with the same counterparty

NGR = the ratio of net replacement cost to gross replacement cost for contracts covered by the valid bilateral netting agreement

114. The NGR in the above formula can be calculated on a counterparty by counterparty or on an aggregate basis for all contracts or transactions covered by a valid bilateral netting agreement. However, the basis chosen by a Bank should be used consistently.

(d) EAD measurement for netting of repo-style transactions

115. Where repo-style transactions are subject to a valid bilateral netting agreement, a Bank may choose not to take into account the netting effects in calculating the risk weighted amount for such transactions. In taking into account the credit risk mitigating effects of recognized netting for repo-style transactions, the Bank should calculate the net credit exposure (E#) using the formula below, and equate E# as the credit equivalent amount before recognized guarantees/credit derivative contracts.

where:

$E^{\#}$ = Net credit exposure

E = Current market value of money and securities sold, transferred, loaned or paid by the Bank

C = Current market value of money and securities received by the Bank

E_s = Absolute value of the net position in the same securities

H_s = Haircut applicable to the absolute value of the net position in the same securities (i.e. E_s) pursuant to the standard supervisory haircuts for the comprehensive approach to the treatment of recognized collateral subject to adjustment as set out in section 92 of the Rules

E_{fx} = Absolute value of the net position in a currency different from the settlement currency

H_{fx} = Haircut applicable in consequence of a currency mismatch, if any, between the currency in which a net position is denominated and the settlement currency pursuant to the standard supervisory haircuts for currency mismatch set out in Schedule 7 of the Rules subject toadjustment as set out in section 92 of the Rules.

116. The Bank should compare the aggregate market value of money and securities sold, transferred, loaned or paid with the aggregate market value of money and securities received, taking into account haircuts in the formula specified in paragraph 115. Where the value calculated in accordance with the formula is greater than zero, the Bank has a net credit exposure to the counterparty for which capital requirement should be provided.

117.1 For appropriate values of haircuts to be applied, the Bank should refer to SAMA's Basel II Prudential Returns Draft # 2 of March, 2006 which set out the standard supervisory haircuts and the circumstances requiring haircut adjustments under the comprehensive approach to treatment of collateral under the STD approach. As under the STD approach, a haircut of 0% may be applied for repo-style transactions where the criteria specified in SAMA's instruction are satisfied.

Revise text to establish standard supervisory haircuts for securitisation collateral

To implement the supervisory haircuts for securitisation collateral, a new paragraph 145(i) will be inserted into the Basel text and paragraph 151[1] will be revised as follows:

- 145(i). Re-securitisations (as defined in the securitisation framework), irrespective of any credit ratings, are not eligible financial collateral. This prohibition applies whether the bank is using the supervisory haircuts method, the own estimates of haircuts method, the repo VaR method or the internal model method.

- These are the standardised supervisory haircuts (assuming daily mark-to-market, daily remargining and a 10-business day holding period), expressed as percentages:

Issue rating for debt	Residual	Sovereigns	Other	Securitisation

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[1] From BCBS document of June 2006.

securities	Maturity			Issuers	Exposures
AAA to AA-/A-1	<1 year	0.5		1	2
	>1 year <5 years	2		4	8
	> 5 years	4		8	16
A+ to BBB-/	<1 year	1		2	4
A-2/A-3/P-3 and	>1 year <5 years	3		6	12
unrated bank securities	> 5 years	6		12	24
BB+ to BB-	All	15		Not eligible	Not eligible
main index equities	15				
other equities	25				
UCITS/mutual funds	Highest haircut applicable to any security in fund				
Cash in the same currency	0				
(The footnotes associated with the table are not included. However, securitisation exposures would be defined as those exposures that meet the definition set forth in the securitisation framework.)					

118. In general, repo-style transactions in the banking book and the trading book should be netted separately. Netting across positions in different books with the same counterparty will only be allowed if:

    (i)   All transactions are marked-to-market daily

    (ii)   The collateral used in the transactions is recognized collateral for transactions booked in the banking book.

119. Where the Bank has been approved for using internal models to measure market risk for capital adequacy purposes, it may, subject to the prior consent of SAMA, use a VaR approach as an alternative to the use of standard supervisory haircuts, to reflect the price volatility of the exposure and collateral for repo-style transactions covered by valid bilateral netting agreements on a counterparty-by-counterparty basis. The criteria for using the VaR approach and the related capital treatments are set out in SAMA's Basel II Prudential Returns Draft #2 of March 2006.

120. For corporate, sovereign and bank exposures under the foundation IRB approach, the impact of collateral on these repo-style transactions may not be reflected through an adjustment to LGD. Under the advanced IRB approach, own LGD estimates would be permitted for the unsecured net exposure amount (E#). The risk-weight of the net exposure amount will be determined using the risk-weight function applicable for that particular IRB class/subclass.

Capital Treatment of Recognized Guarantees and Recognized Credit Derivative Contracts

121. Under the IRB approach, a Bank may use the substitution framework to take into account the credit risk mitigating effects of recognized guarantees and recognized credit derivative contracts in calculating the risk-weighted amount of an exposure. Alternatively, a Bank may use the double default framework to take into account the credit risk mitigating effect of a recognized guarantee or recognized credit derivative contract for each exposure which meets the requirements for using the double default framework.

122. Consistent with the STD approach, a Bank may choose not to take into account the credit risk mitigating effects of guarantees and credit derivative contracts under the substitution framework or the double default framework, if doing so would result in a higher risk-weighted amount.

123. A Bank should have in place clearly documented criteria, methods and processes for taking into account the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts, and the effects should be taken into account consistently both for a given type of recognized guarantee or recognized credit derivative contract and over time.

124. In respect of credit derivative contracts, only credit default swaps and total return swaps that provide credit protection will be recognized. However, where a Bank buys the credit protection through a total return swap and records the net payments received on the swap as net income, but does not record offsetting deterioration in the value of the asset that is protected (either through reductions in fair value or by an addition to reserves or provisions), the credit protection will not be recognized. Credit linked notes issued by the Bank which fulfil the operational requirements for credit derivative contracts will be treated as cash collateralized transactions (see paragraph 101).

124.1 **Recognition under Foundation IRB Approaches**

For banks using the foundation approach for LGD, the approach to guarantees and credit derivatives closely follows the treatment under the standardised approach as specified in paragraphs 189 to 201[1]. The range of eligible guarantors is the same as under the standardised approach except that companies that are internally rated may also be recognised under the foundation approach. To receive recognition, the requirements outlined in paragraphs 189 to 194 must be met[1].

Corporate, Sovereign and Bank Exposures

(a) Substitution framework

125. Under the substitution framework, there are two approaches for taking into account the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts: (i) the foundation IRB approach and (ii) the advanced IRB approach. Under the substitution framework, credit risk mitigation in the form of guarantees and credit derivative contracts should not reflect the effect of double default. Consequently, to the extent that the credit risk mitigation is recognized by a Bank, the adjusted risk-weight will not be less than that of a comparable direct exposure to the credit protection provider.

Foundation IRB Approach

126. For a Bank using the foundation IRB approach, the treatment of recognized guarantees and recognized credit derivative contracts closely follows that under the comprehensive approach to the treatment of recognized collateral under the STD approach.

127. The credit risk mitigating effect of recognized guarantees and credit derivative contracts is taken into account as follows:

(i) For the covered portion of the exposure, a risk-weight is derived by taking the risk-weight function applicable to the IRB class/subclass to which the credit protection provider belongs, and the PD associated with the internal obligor grade of the credit protection provider or the PD of an obligor grade falling between the internal obligor

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[1] BCBS Basel II Framework of June 2006.

grades of the underlying obligor and the credit protection provider if the Bank considers that a full substitution treatment may not be warranted.

(ii) The Bank may replace the LGD of the underlying exposure with the LGD applicable to the guarantee/credit derivative contract taking into account seniority and any recognized collateral of the credit protection.

(iii) The uncovered portion of the exposure is assigned the risk-weight associated with the underlying obligor.

128. Where partial coverage exists, or where there is a currency mismatch or maturity mismatch between the underlying obligation and the credit protection, a Bank should split the exposure into a covered and an uncovered portion as follows:

(i) proportional cover – Where the amount guaranteed, or against which credit protection is held, is less than the amount of the exposure, and the secured and unsecured portions are of equal seniority (i.e. the Bank and the credit protection provider share losses on a pro-rata basis), capital relief will be afforded on a proportional basis. That means the protected portion of the exposure will receive the treatment applicable to recognized guarantees/credit derivative contracts, with the remainder treated as unsecured.

(ii) tranched cover – Where a Bank has entered into a transaction under which a portion of the credit risk of an exposure in one or more tranches is transferred to one or more credit protection providers and the remaining portion of the credit risk of the exposure is retained by the Bank, and the portion of the credit risk transferred and the portion of the credit risk retained are of different seniority, the Bank should treat the transaction as a securitization transaction.

(iii) Currency mismatch / maturity mismatch – The treatment of currency mismatch is set out in paragraphs 140 and 141 and that of maturity mismatch is set out in paragraphs 142 to 144.

Advanced IRB Approach

129. A Bank using the advanced IRB approach may reflect the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts through adjusting either PD or LGD estimates. Whether adjustments are done through PD or LGD, they should be done in a consistent manner for a given type of guarantees or credit derivative contracts. In doing so, the Bank should not include the effect of double default in such adjustments. Consequently, the adjusted risk-weight should not be less than that of a comparable direct exposure to the credit protection provider.

130. A Bank relying on its own estimates of LGD has the option to adopt the treatment for Bank using the foundation IRB approach (see paragraphs 126 to 128), or to make an adjustment to its LGD estimate of the exposure to reflect the presence of the recognized guarantee/credit derivative contract under the advanced IRB approach.

(b) Double default framework

131. Corporate exposures (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposures (excluding exposures to sovereign foreign public sector entities) that are hedged by recognized guarantees/credit derivative contracts and satisfy the relevant requirements as set out by BCBS are eligible for the double default framework for recognition of the credit risk mitigating effect.

132. The risk-weighted amount of hedged exposures should be calculated according to the risk-weight function set out in paragraph 18 (and, where applicable, adjusted by paragraph 20(ii) in respect of SME corporates). The risk-weighted amount of the unhedged exposure should be calculated in the same way as for all other corporate exposures to the same obligor of the underlying exposure according to the risk-weight function set out in paragraph 16 (and, where applicable, adjusted by paragraph 20(i) in respect of SME corporates).

Retail Exposures

133. A Bank using the retail IRB approach may use the substitution framework as set out in paragraphs 129 and 130 to take account of the credit risk mitigating effects of recognized guarantees and recognized credit derivative contracts in calculating the risk-weighted amount of a retail exposure.

Equity Exposures

134. A Bank using the PD/LGD approach may use the substitution approach set out in paragraphs 126 to 128 to take account of the credit risk mitigating effects of recognized guarantees and recognized credit derivative contracts in calculating the risk-weighted amount of an equity exposure.

Purchased Receivables

135. For both purchased corporate and retail receivables, recognized guarantees and recognized credit derivative contracts under the substitution framework will be recognized generally using the substitution framework as set out in paragraphs 126 to 130, without regard to whether the guarantee or contract, as the case may be, covers default risk or dilution risk, or both.

136. If the recognized guarantee/credit derivative contract covers both the purchased receivable's default risk and dilution risk, a Bank should substitute the risk-weight of the exposure to the credit protection provider for the sum of the purchased receivable's risk-weights for default risk and dilution risk which would otherwise be allocated to the exposure in respect of the purchased receivable in accordance with paragraphs 73 to 78.

137. If the recognized guarantee/credit derivative contract covers only default risk or dilution risk, but not both, a Bank should substitute the risk-weight of the exposure to the credit protection provider for the risk-weight which would otherwise be allocated in respect of the default risk or dilution risk, as the case may be, covered by the guarantee/contract for the purpose of calculating the risk-weighted amount of the Bank's exposure for default risk or dilution risk, as the case may be, in respect of the purchased receivable. The risk-weighted amount of the purchased receivable for the other risk component (being default risk or dilution risk not covered by the guarantee/contract, as the case may be), will then be added.

138. If the recognized guarantee/credit derivative contract covers only a portion of the default risk and/or dilution risk, a Bank should divide the exposure into a covered portion and an uncovered portion for the default risk and dilution risk in accordance with paragraph 128 for proportional or tranched coverage. A Bank should calculate the risk-weighted amount of the uncovered portion of the exposure in respect of default risk and dilution risk in accordance with paragraphs 73 to 78 and the risk-weighted amount of the covered portion of the exposure in respect of default risk and dilution risk in accordance with paragraph 136.

139. If the recognized guarantee/credit derivative contract covers only the dilution risk in respect of a purchased corporate receivable and the exposure meets the requirements set out in the Rules, a Bank may use the double default framework to calculate the risk weighted amount for dilution risk of the hedged exposure. In this case, paragraph 18 (and, where applicable, adjusted by paragraph 20(ii) in respect of SME corporates) apply with PDo equal to the estimated EL for dilution risk, LGDg equal to 100%, and M set according to paragraph 48.

Currency Mismatches

140. Where a foreign currency mismatch occurs, i.e. when the credit protection is denominated in a currency different from that of the underlying obligation, the portion covered by the credit protection should be reduced by a standard haircut of 8%.

$$G_a \quad = \quad G \times (1 - H_{fx})$$

where:

Ga   =   Credit protection covered portion adjusted for currency mismatch

G   =   Maximum amount payable to the Bank under the credit protection

Hfx   =   Haircut applicable for currency mismatch between the credit protection and underlying obligation pursuant to the standard supervisory haircuts for the comprehensive approach to the treatment of recognized collateral subject to adjustment .

141. The 8% haircut is based on a 10-business day holding period, daily remargining and daily marking-to-market.

Maturity Mismatches

142. The maturity of both the underlying exposure and the credit protection (i.e. on-balance sheet netting, recognized collateral, guarantees and credit derivative contracts) should be defined conservatively. The effective maturity of the underlying exposure should be regarded as the longest possible remaining time before the obligor is scheduled to fulfill its obligation, taking into account any applicable grace period. For the credit protection, embedded options which may reduce the term of the credit protection should be taken into account such that the shortest possible effective maturity should be considered. Where a call is at the discretion of the protection provider, the maturity will always be the first call date. If the call is at the discretion of the Bank as the protection buyer but the terms of the arrangement of obligation of the hedge contain a positive incentive for the buyer to call the transaction before contractual maturity, the remaining time to the first call date will be deemed to be the effective maturity.

143. A maturity mismatch occurs where the residual maturity of the credit protection is less than that of the underlying exposure. The credit protection will be recognized when the hedge has an original maturity of longer than or equal to one year. As a result, the maturity of hedges for exposures with original maturities of less than one year must be matched to be recognized. In all cases, hedges with maturity mismatches will no longer be recognized when the hedges have a residual maturity of three months or less.

144. Where a recognized maturity mismatch exists, the value of the credit protection should be adjusted as follows:

$$P_a = P \times (t - 0.25) / (T - 0.25)$$

where:

P_a = Value of credit protection adjusted for maturity mismatch

P = Value of credit protection adjusted for haircuts for price volatility of collateral and currency mismatch (if applicable)

t = min (T, residual maturity of credit protection) expressed in years

T = min (5, residual maturity of the underlying exposure) expressed in years

M.   Application of Scaling Factor

145. In determining the total risk-weighted amount under the IRB approach, SAMA will apply a scaling factor (which could be either greater than or less than one) to the riskweighted amount calculated for all IRB classes under the IRB approach (see also paragraph 2). The use of this scaling factor is to broadly maintain the aggregate level of minimum capital requirements derived from the revised capital adequacy framework.

146. The current best estimate of the scaling factor is 1.06. In applying this scaling factor, a Bank should multiply the risk-weighted amount calculated under the IRB approach by 1.06 for the computation of the capital adequacy ratio.

N.   Treatment of Expected Losses and Eligible Provisions under IRB Approach

Determination of Total EL Amount

147. A Bank should sum the EL amount (i.e. EL x EAD) attributed to its corporate, sovereign, bank and retail exposures (excluding hedged exposures under the double default framework[1]) that are subject to the IRB approach to obtain a total EL amount.

[1]In general, most banks do not make provisions for the hedged portion of an exposure. Furthermore, the EL is dependent on the joint probability of default of the underlying obligor and the credit protection provider and would therefore be minimal. Under these circumstances, the EL for the hedged portion of an exposure is assumed to be zero.

EL for Exposures other than SL under Supervisory Slotting Criteria Approach

148. A bank should calculate the EL as PD x LGD for corporate, sovereign, bank and retail exposures which are not in default and not treated as hedged exposures under the double default framework. For corporate, sovereign, bank and retail exposures that are in default, a Bank should use its best estimate of EL.

149. **EL for SL under Supervisory Slotting Criteria Approach**

    For SL under supervisory slotting criteria approach, EL is determined by multiplying by 8% the risk-weighted amount produced from the appropriate risk-weights as specified below:

Remaining Maturity	Strong	Good	Satisfactory	Weak	Default
Equal or more Than 2.5 years	5%	10%	35%	100%	625%
Less than 2.5 years	0%	5%	35%	100%	625%

150. Where a Bank assigns preferential risk-weights to its SL under supervisory slotting criteria approach in accordance with paragraph 23, then, for the purpose of calculating the risk-weighted amount of the SL, the Bank may assign preferential risk-weights of 0% and 5% to the SL which falls within the "strong" and "good" grades respectively in calculating the EL.

    Determination of Total Eligible Provisions

151. Total eligible provisions is defined as the sum of eligible provisions that are attributed to corporate, sovereign, bank and retail exposures (excluding hedged exposures under the double default framework) that are subject to the IRB approach.

    A Portion of Exposures subject to STD Approach to Credit Risk

152. A Bank using the STD approach for a portion of its credit exposures, either on a transitional basis, or on a permanent basis if the exposures subject to the STD approach are exempted from the IRB approach, should determine the portion of regulatory reserve for general banking risks and provisions that is attributed to exposures under the STD approach, or IRB approach. The treatment of such reserves and provisions attributed to exposures under the STD approach, whereas the IRB approach for this is outlined in paragraphs 155 to 157.

153. A bank should generally attribute the regulatory reserve for general banking risks and specific provisions on a pro-rata basis according to the proportion of the risk weighted amount subject to the STD approach, or IRB approach. However, when one approach to determining the risk-weighted amount (i.e. STD approach, or IRB approach) is used exclusively within an entity of the Bank's consolidation group, the regulatory reserve for general banking risks and collective provisions booked within the entity using the STD approach may be attributed to exposures under the STD approach. Similarly, the regulatory reserve for general banking risks and specific provisions booked within an entity using the IRB approach may be attributed to the total eligible provisions as defined in paragraph 151.

154. The SAMA may, on a case-by-case basis, consider whether there are particular circumstances that justify a Bank using its internal allocation methodology for allocating the reserves for general banking risks and collective provisions for recognition in capital under the STD approach. A Bank should obtain the SAMA's prior consent before such a method can be used.

Treatment of Total EL Amount and Total Eligible Provisions

155. A Bank using the IRB approach should compare the amount of total eligible provisions (see paragraph 151) with the total EL amount (see paragraphs 147 to 150).

156. Where the total EL amount exceeds total eligible provisions, the Bank should deduct the difference from its core capital and supplementary capital.

157. Where the total EL amount is less than total eligible provisions, the Bank should include the difference in its supplementary capital, up to a maximum of 0.6% of the risk weighted amount (excluding securitization exposures) calculated under the IRB approach.