MARKET RISK

Page no.

MARKET RISK **BA 320**

(Confidential and not available for inspection by the public) Monthly

Name of bank……..

Month ended……..(yyyy-mm-dd)

(All amounts to be rounded off to the nearest R'000)

Summary information	**Line no.**	**Trading**	**Banking**	**Total**
		1	**2**	**3**
Standardised approach (total of items 2, 8, 14 and 19)	1			
Interest rate risk (total of items 3 to 7)	2			
Specific risk (item 35)	3			
General risk (item 53)	4			
Interest rate options - simplified method (item 95, col. 1)	5			
Interest rate options - delta-plus method: gamma and vega risk (item 96, col. 1)	6			
Interest rate options - scenario matrix approach (item 99, col 1)	7			
Equity position risk (total of items 9 to 13)	8			
Equity specific risk (item 69)	9			
Equity general risk (item 70)	10			
Equity options - simplified method (item 95, col. 2)	11			
Equity options - delta-plus method: gamma and vega risk (item 96, col. 2)	12			
Equity options - scenario matrix approach (item 99, col.2)	13			
Foreign exchange risk (total of items 15 to 18)	14			
Foreign exchange and gold (item 82)	15			
Foreign exchange and gold options - simplified method (item 95, col. 3)	16			
Foreign exchange and gold options - delta-plus method: gamma and vega risk (item 96, col. 3)	17			
Foreign exchange and gold options - scenario matrix approach (item 99, col. 3)	18			
Commodities risk (total of items 20 to 24)	19			
Simplified method (item 83, col 7)	20			
Maturity ladder method (item 86, col.7)	21			
Commodity options - simplified method (item 95, col. 4)	22			
Commodity options - delta-plus method: gamma and vega risk (item 96, col.4)	23			
Commodity options - scenario matrix approach (item 99, col. 4)	24			
		VaR	**sVaR**	**Total**
Internal models approach		**1**	**2**	**3**
Current day[1]	25			
Previous day[1]	26			
60 day average, multiplied by the specified multiplication factor[1]	27			
Specific risk add-on[1]	28			
Incremental risk charge[1]	29			
Capital requirement (item 28 plus item 29 plus (the higher of item 26 or 27, col. 1) plus (the higher of item 26 or 27, col. 2))	30			
Total market risk requirement (total of items 32 to 34)	31			
Minimum prescribed (pillar 1) market risk requirement[2] (item 1 plus item 30)	32			
Systemic risk add-on (pillar 2a) market risk requirement[3]	33			
Additionally specified bank-specific (pillar 2b) market risk requirement[4]	34			

1. **Calculated in accordance with the relevant requirements specified in regulation 28(8).**
2. **Also refer to item 9 column 3 of the form BA 700.**
3. **Also refer to item 9 column 3 of the form BA 700.**
4. **Also refer to item 12 column 3 of the form BA 700.**

(All amounts to be rounded off to the nearest R'000)

Interest rate risk	**Line no.**	**Position**	**Risk weight**	**Required capital**
		1	**2**	**3**
Specific risk (total of items 36 to 38, 42 to 45, and 49 to 52)	35			
SA central government or SA Reserve Bank	36		0.00%	
Other sovereign exposure rated AAA to AA-	37		0.00%	
Other sovereign exposure rated A+ to BBB- (total of items 39 to 41)	38			
Up to 6 months	39		0.25%	
More than 6 months but less than or equal to 24 months	40		1.00%	
More than 24 months	41		1.60%	
Other sovereign exposure rated BB+ to B-	42		8.00%	
Other sovereign exposure rated below B-	43		12.00%	
Unrated government exposure	44		8.00%	
Qualifying items (total of items 46 to 48)	45			
Up to 6 months	46		0.25%	
More than 6 months but less than or equal to 24 months	47		1.00%	
More than 24 months	48		1.60%	
Specified non-qualifying issuers[1]	49		Varied	
Other exposures rated BB+ to BB-	50		8.00%	
Other exposure rated below BB-	51		12.00%	
Unrated non-government exposure	52		8.00%	
		Position	**Required capital**	
		1	**2**	
General risk (total of items 54 to 60)	53			
Base currency (ZAR)	54			
USD	55			
Euro	56			
GBP	57			
CHF	58			
JPY	59			
Other	60			

1. Includes instruments issued in respect of a securitization scheme, which securitization exposure constitutes a first-loss credit-enhancement facility, unrated liquidity facility or letter of credit.

(All amounts to be rounded off to the nearest R'000)

Equity and equity indices risk	**Line no.**	**Positions in RSA**	**Positions held in foreign operations**	**Total positions** (total of col. 1 and col. 2)	**Risk weight**	**Required capital**
		1	**2**	**3**	**4**	**5**
Equity						
Specific risk (gross equity positions, long and short) (total of items 62 and 63)	61					
Less liquid[1]	62				12.00%	
Other	63				8.00%	
General risk (net equity positions, or difference between long and short)	64				8.00%	
Equity indices						
General risk (net equity positions, or difference between long and short)	65				8.00%	
Equity index specific risk and add-on (total of items 67 and 68)	66					
Net long or short position for index contracts without futures-related arbitrage strategy[2]	67				10.00%	
Position for index contracts with futures-related arbitrage strategy[3]	68				10.00%	
Total specific equity risk and equity index add-on (total of items 61 and 66)	69					
Total general risk (total of items 64 and 65)	70					
Total equity risk (total of items 69 and 70)	71					

1. **Refer to regulation 28(7)(c)(ii).**
2. **Refer to regulation 28(7)(c)(v)(B).**
3. **Refer to regulation 28(7)(c)(v)(C).**

(All amounts to be rounded off to the nearest R'000)

Foreign exchange and gold risk	Line no.	Trading book		Banking book		Total[1]	
		Long	Short	Long	Short	Long	Short
		1	2	3	4	5	6
Total foreign currency and gold position	72						
All foreign currencies (total of items 75 to 80)	73						
Gold	74						
Memorandum items: foreign currency positions							
USD	75						
Euro	76						
GBP	77						
CHF	78						
JPY	79						
Other	80						
Required capital and reserve funds							**Total**
							1
Total net open position[2]	81						
Total capital requirement for foreign currency and gold (8% of item 81)	82						

1. Report as absolute amounts.

2. **Calculated in accordance with the relevant requirements specified in regulation 28(7)(d)(iii), that is, the greater of the sum of the bank's relevant net short positions or the sum of the bank's relevant net long positions in foreign currency, plus the bank's net absolute position in gold, that is, the bank's net position in gold irrespective whether the said net position is a long or short position.**

(All amounts to be rounded off to the nearest R'000)

Commodities risk	Line no.	Trading book		Banking book		Positions subject to capital requirement	Capital requirement	
		Long	Short	Long	Short		(%)	Total
		1	2	3	4	5	6	7
Simplified approach[1] **(**total of items 84 and 85**)**	83							
Net positions	84						15%	
Gross positions	85						3%	
Maturity ladder approach[2] **(**total of items 87 to 89**)**	86							
Matched long and short positions	87						1.50%	
Residual net positions carried between time bands	88						0.6%[2]	
Residual net open position	89						15%	
Memorandum items: commodity positions								
Precious metals	90							
Agricultural products	91							
Minerals	92							
Base metals	93							
Other	94							

1. Refer to regulation 28(7)(e)(ii).
2. Refer to regulation 28(7)(e)(iii).

(All amounts to be rounded off to the nearest R'000)

Options risk Simplified approach	**Line no.**	**Interest rates**	**Equities**	**Foreign exchange and gold**	**Commodities**
		1	**2**	**3**	**4**
Capital requirement	95				
Delta-plus approach		**Interest rates**	**Equities**	**Foreign exchange and gold**	**Commodities**
		1	**2**	**3**	**4**
Capital requirement (total of items 97 and 98)	96				
Gamma impact	97				
Vega impact	98				
Scenario matrix approach		**Interest rates**[1]	**Equities**[2]	**Foreign exchange and gold**[3]	**Commodities**[4]
		1	**2**	**3**	**4**
Capital requirement	99				

1. Refer to regulation 28(7)(b) in respect of the treatment of different currencies and time bands.

2. Refer to regulation 28(7)(c) in respect of the treatment of positions in different markets and indices.

3. Refer to regulation 28(7)(d) in respect of the treatment of different currency pairs.

4. Refer to regulation 28(7)(e) in respect of the treatment of positions in different commodities.

(All amounts to be rounded off to the nearest R'000)

Internal models approach	Line no.	Regulatory VaR amounts[1, 2]				Incremental risk charge[1, 6]	Internal VaR[3]		
		Min VaR	Ave VaR	Max VaR	sVaR		Max VaR	VaR limit	sVaR limit
		1	2	3	4	5	6	7	8
Position risk - VaR amounts[4, 5] and incremental risk amount	100								
Interest rate risk	101								
Equity risk	102								
Foreign exchange risk, including gold	103								
Commodity risk	104								
Other	105								
Memorandum items:									
Total VaR amounts[4, 5]	106								
Desk 1[5]	107								
Desk 2[5]	108								
Desk 3[5]	109								
Other desks[5]	110								

1. **Calculated in accordance with the relevant requirements specified in these Regulations.**
2. **Based on, amongst other things, a 99 per cent, one-tailed confidence interval, and a minimum holding period of ten trading days.**
3. **May be based on a confidence interval and/or minimum holding period that differs from the requirements specified in these Regulations.**
4. **May not be equal to the sum of individual requirements calculated in respect of the respective risk categories or trading desks due to, amongst others, diversification benefits.**
5. **Please separately submit in writing the relevant desk description and other relevant information.**
6. **Refer to regulation 28(8)(h)(i)(E).**

28. Market risk (position risk) - Directives and interpretations for completion of monthly return concerning market risk (Form BA 320)

(1) The content of the relevant return is confidential and not available for inspection by the public.

(2) The purpose of the form BA 320, amongst other things, is to measure and report the reporting bank's exposure to market risk or position risk arising from the bank's trading activities and specified banking activities.

(3) In respect of-

(a) the current market value of any interest rate related instrument held in the reporting bank's trading book;

(b) the current market value of any equity instrument held in the reporting bank's trading book;

(c) any foreign exchange instrument held in the reporting bank's banking book or trading book, that is, any foreign-currency position held by the bank;

(d) any commodity position held in the reporting bank's banking book or trading book, that is, any commodity position held by the bank,

the reporting bank shall calculate a capital requirement in accordance with the relevant requirements specified in this regulation 28, provided that-

(i) subject to such conditions as may be specified in writing by the Registrar, the Registrar may allow a bank to exclude from the said capital requirements such structural foreign exchange positions as may be specified in writing by the Registrar;

(ii) when the bank internally hedges a credit exposure held in the bank's banking book using a credit-derivative instrument held in the bank's trading book, the banking book exposure shall be deemed not to be hedged for purposes of calculating the bank's required amount of capital and reserve funds unless the bank purchased from an eligible third party protection provider a credit-derivative instrument that complies with the relevant requirements specified in regulations 23(9)(d)(xi)(B) and 23(9)(e), provided that when the bank purchased and recognises the third party protection as a hedge of the said banking book exposure as envisaged in this subparagraph (ii), neither the internal nor external credit derivative hedge shall be included in the bank's trading book for the purposes of these Regulations;

(iii) the bank shall in accordance with the relevant requirements specified in regulation 38(5) deduct from its capital and reserve funds any instrument held that qualifies as capital of the reporting bank, any other bank, any securities firm or other regulated institution, or that constitutes an intangible asset, provided that, subject to such conditions as may be specified in writing by the Registrar, the Registrar may in respect of instruments that qualify as capital of any other bank, securities firm or regulated institution grant approval for a bank that actively acts as a market maker in the said instruments to include the said instruments in its trading book and calculate a capital requirement in accordance with the relevant requirements specified in these Regulations instead of deducting the said amounts from the bank's capital and reserve funds;

(iv) the bank may include in its trading book any term trading related repo-style transaction that complies with the relevant requirements specified in these Regulations in respect of trading positions, provided that-

(A) both legs of the said transaction shall be in the form of cash or securities otherwise eligible for inclusion in the bank's trading book;

(B) regardless whether the said transaction is recorded in the bank's banking book or trading book, all repo-style transactions shall be subject to the relevant requirements relating to counterparty credit risk specified in regulations 23(15) to 23(19).

(v) based on the relevant requirements specified in regulations 23(15) to 23(20) read with the relevant risk weights envisaged in regulations 23(6), 23(8), 23(11) or 23(13) the bank shall, in addition to any relevant required amount of capital and reserve funds relating to specific risk or general risk calculated in accordance with the relevant requirements specified in this regulation 28, calculate the relevant required amount of capital and reserve funds relating to counterparty credit risk arising from any relevant OTC derivative instrument, repo-style transaction or other transaction held in the bank's trading book, including any relevant credit-derivative instrument, provided that the risk weights applied by the bank in respect of the relevant exposure to counterparty credit risk shall be consistent with the risk weights applied by the bank in respect of the bank's banking book credit exposure, that is-

(A) a bank that adopted the standardised approach in order to measure the bank's exposure to credit risk in respect of any banking book exposure shall apply the relevant risk weights envisaged in the said standardised approach in order to calculate the said required amount of capital and reserve funds relating to counterparty credit risk arising from any relevant OTC derivative instrument, repo-style transaction or other transaction held in the bank's trading book;

(B) a bank that adopted the IRB approach in order to measure the bank's exposure to credit risk in respect of any banking book exposure shall apply the relevant risk weights envisaged in the said IRB approach in order to calculate the said required amount of capital and reserve funds relating to counterparty credit risk arising from any relevant OTC derivative instrument, repo-style transaction or other transaction held in the bank's trading book;

(vi) in order to ultimately calculate the bank's required capital adequacy ratio the bank shall, based on the formula specified below, convert the bank's required amount of capital and reserve funds calculated in accordance with the relevant requirements specified in this regulation 28 to the required risk-weighted exposure amount.

RWE = K x 12,5

where:

RWE is the required risk-weighted exposure amount

K is the required amount of capital and reserve funds calculated in accordance with the relevant requirements specified in this regulation 28.

(4) For the measurement of a bank's exposure to market risk (position risk) as envisaged in subregulation (3), the bank shall, at the discretion of the bank, use one of the alternative methodologies specified below.

(a) The standardised approach envisaged in subregulation (7) below, which standardised approach is based on a building-block method;

(b) Subject to the bank's compliance with specified conditions and the prior written approval of the Registrar, the internal models approach envisaged in subregulation (8) below; or

(c) Subject to the bank's compliance with the conditions specified in subregulation (5) below, the prior written approval of the Registrar and such further conditions as may be specified in writing by the Registrar, a combination of the said standardised approach and internal models approach.

Provided that when a bank is unable, unwilling or unprepared to comply with the qualifying criteria specified for a particular approach for the measurement of the bank's exposure to market risk, the Registrar may in writing direct the bank to apply a different specified approach, subject to such conditions as may be specified in writing by the Registrar.

(5) *Combination of the internal models approach and the standardised approach*

When a bank adopts the internal models approach for the measurement of one or more risk categories such as interest rates, foreign exchange rates that include gold, equity prices or commodity prices, which risk categories shall include all related option volatilities, the bank shall during the time period specified in writing by the Registrar develop and implement an integrated risk measurement system that captures and measures the bank's aggregate exposure to market risk arising from all the said categories of risk, provided that-

(a) unless specified otherwise in writing by the Registrar, once a bank developed and implemented one or more internal models for the measurement of-

(i) the bank's aggregate exposure to market risk; or

(ii) a particular category of risk such as interest rates or equity exposure,

the bank shall not revert to the standardised approach specified in subregulation (7) in order to measure the bank's aggregate exposure to market risk or exposure to the said particular category of risk;

(b) in exceptional circumstances the Registrar may allow a bank to continue applying the standardised approach in respect of an insignificant risk category, such as commodities;

(c) any relevant exposure to market risk not captured by the bank's internal models shall be subject to the standardised approach specified in subregulation (7);

(d) during the period when the bank uses a combination of approaches as envisaged in this subregulation (5)-

(i) the bank shall not use a combination of the said two approaches within a particular risk category or across the bank's different risk centres in respect of the same type of risk, that is, each risk category shall be assessed using either the internal models approach or the standardised approach;

(ii) the bank shall not modify the combination of the two approaches without the prior written approval of the Registrar;

(iii) the bank shall ensure that no element of market risk escapes the bank's measurement of risk, that is, all the relevant exposures arising from all the specified risk categories, whether calculated according to the standardised approach or internal models approach, shall be captured;

(e) as a minimum, subject to any relevant requirements relating to minimum required capital and reserve funds that may be specified in or in terms of the provisions of regulation 38 of these Regulations, the bank's aggregate required amount of capital and reserve funds relating to market risk shall be equal to the sum of the amounts calculated in accordance with the relevant requirements specified in respect of the standardised approach and/or the internal models approach.

(6) A bank-

(a) shall include in the monthly form BA 320 all relevant financial instruments and positions envisaged in subregulation (3);

(b) shall include in the daily form BA 325 all financial instruments held as an open position in the bank's trading book;

(c) shall include in the monthly form BA 330, amongst other things, all financial instruments held in the bank's banking book that expose the bank to interest-rate risk;

(d) shall include in the monthly form BA 340 all equity exposures held in the bank's banking book;

(e) shall include in the monthly form BA 350 all relevant derivative instruments held in the bank's banking book or trading book;

(f) shall in the calculation of the bank's exposure to market risk and the related required amount of capital and reserve funds, from the date on which the relevant transaction was entered into, include all relevant on-balance sheet and off-balance sheet transactions, including any forward sale or purchase transaction;

(g) shall manage its exposure to market risk arising from all relevant positions held in its trading book and/ or banking book in such a manner that the bank continuously complies, that is, at the close of each business day, with the relevant prescribed minimum required amount of capital and reserve funds relating to market risk;

(h) shall have in place robust risk management policies, procedures, processes and systems in order to ensure that the bank's intraday exposures to market risk are within the approved internal limits set by the bank;

(i) shall, in order to calculate the bank's adjusted exposure in respect of any collateral held in terms of a repurchase or resale agreement, which transaction is included in the bank's trading book, apply the comprehensive approach relating to collateral, prescribed in regulation 23(9)(b);

(j) shall have in place a written board approved policy, and procedures, which policy and procedures-

(i) shall duly specify the criteria for determining which on-balance sheet items and which off-balance sheet items, or activities of the bank, are classified as part of the bank's trading book or activities, and which of the said items or activities are classified as part of the bank's banking book or activities;

(ii) shall duly specify the bank's appetite for trading, including the nature and extent of the bank's trading activities;

(iii) shall take into account the bank's risk management capabilities and practices;

(iv) shall be sufficiently robust to ensure-

(A) that any transfer of instruments, items or assets between the bank's trading book and banking book is duly documented and subject to audit verification;

(B) the bank's continued compliance with the requirements of these Regulations, including compliance with minimum required capital and reserve funds, and compliance with all the relevant requirements specified in the said board-approved policy, which compliance, amongst other things, shall be duly documented and be subject to periodic internal audit;

(v) shall specify that any transfer of instruments, items or assets between the bank's trading book and banking book shall be recorded at arms-length prices;

(vi) shall be reviewed by the bank on a regular basis but not less frequently than once a year;

(vii) shall duly specify-

(A) the extent to which an exposure can be marked-to-market on a daily basis by reference to an active liquid two-way market;

(B) the extent to which the bank is able to and required to obtain or derive valuations for exposures, which valuation can be externally validated in a consistent manner;

(C) the extent to which legal restrictions or other operational requirements may impede the bank's ability to effect an immediate liquidation of relevant exposure;

(D) the extent to which the bank is required to and able to actively manage all relevant exposures within its trading operations;

(E) the extent to which the bank may transfer risk or exposures between the banking book and trading book, and criteria for the said transfers;

(viii) shall in the case of exposures that are marked-to-model, duly specify the extent to which the bank is able-

(A) to identify the material risks relating to the relevant exposures;

(B) to hedge the material risks arising from the said exposures and the extent to which any hedging instrument would have an active, liquid two-way market;

(C) to derive reliable estimates for the key assumptions and parameters used in the bank's model;

(k) shall, based on the relevant requirements relating to financial instruments in foreign exchange or commodity positions held in the bank's trading book, calculate and maintain capital and reserve funds in respect of such financial instruments or positions held in the bank's banking book;

(l) shall implement a robust risk management framework for the prudent valuation of positions held in the bank's trading book, which risk management framework, amongst other things, shall include the key elements specified in regulation 39(13);

(m) shall whenever relevant or required for reporting or calculation purposes, unless expressly stated otherwise in this regulation 28, convert all relevant gross or net foreign exchange or gold positions at the prevailing spot exchange rate.

(7) *Method 1: standardised approach*

(a) A bank that adopts the standardised approach for the measurement of the bank's exposure to market risk, which standardised approach is based on a building-block method-

(i) shall on a daily basis and in accordance with the relevant requirements specified in this subregulation (7) separately calculate its exposure to-

(A) specific risk and general market risk arising from all relevant debt and equity positions held in the bank's trading book;

(B) foreign exchange risk arising from all relevant foreign currency and gold positions held by the bank;

(C) commodity risk arising from all relevant commodity positions held by the bank;

(D) risks arising from all relevant positions in options.

(ii) shall in order to measure the bank's exposure to price risk arising from option positions implement the more sophisticated methods specified in paragraph (f) below when the bank engages in the writing of options or when the bank conducts business in exotic options, provided that in the longer term a bank that is a significant trader in options, that is, a bank that holds unexpired positions in excess of 10 per cent of the aggregate amount of unexpired positions in the market, shall adopt and implement comprehensive value-at-risk models and shall be subject to the full range of quantitative and qualitative requirements specified in subregulation (8) below, and such further quantitative and qualitative requirements as may be specified in writing by the Registrar.

(b) Matters relating to debt securities and other interest rate related instruments

(i) Based on the relevant requirements specified in this paragraph (b), in respect of any relevant position in a debt security or interest rate instrument held by the reporting bank in its trading book, including-

(A) any fixed-rate debt security or floating-rate debt security, or similar instrument;

(B) any non-convertible preference share; and

(C) any convertible debt instrument or preference share trading in a manner similar to a debt security,

the reporting bank shall separately calculate the relevant minimum required amount of capital and reserve funds relating to specific risk and general risk.

(ii) Matters relating to specific risk

A bank that adopted the standardised approach for the measurement of the bank's exposure to market risk-

(A) may in the calculation of the bank's risk position offset matching positions in respect of identical instruments, including any relevant position arising from a derivative instrument, that is, even when the issuer of instruments is the same, the bank shall not offset positions arising from different issues since, for example, differences in coupon rates, liquidity or call features may cause prices to diverge in the short-term;

(B) shall in respect of any relevant net short or long position relating to a government, qualifying, specified non-qualifying or other exposure calculate the bank's capital requirement relating to specific risk in accordance with the relevant requirements specified in table 1 below:

Table 1

<table>
<tr><th>Position in respect of-</th><th colspan="7">Description of position and specific risk capital requirement</th></tr>
<tr><td rowspan="3">Government[1, 2]</td><td colspan="5">External credit assessment</td><td rowspan="3">Unrated</td></tr>
<tr><td rowspan="2">AAA to AA-</td><td colspan="3">A+ to BBB-</td><td rowspan="2">BB+ to B-</td><td rowspan="2">Below B-</td></tr>
<tr><td colspan="3">Residual term to maturity of-</td></tr>
<tr><td></td><td>Up to 6 months</td><td>More than 6 months but less than or equal to 24 months</td><td>More than 24 months</td><td></td><td></td><td></td></tr>
<tr><td></td><td>0%</td><td>0.25%</td><td>1%</td><td>1.60%</td><td>8%</td><td>12%</td><td>8%</td></tr>
<tr><td>Central government or central bank of RSA[1, 2, 3]</td><td colspan="7">0%</td></tr>
<tr><td rowspan="3">Qualifying[4]</td><td colspan="6">Residual term to maturity of-</td></tr>
<tr><td colspan="2">Up to 6 months</td><td colspan="2">More than 6 months but less than or equal to 24 months</td><td colspan="2">More than 24 months</td></tr>
<tr><td colspan="2">0.25%</td><td colspan="2">1%</td><td colspan="2">1.60%</td></tr>
<tr><td>Specified non-qualifying issuers[5]</td><td colspan="7">Capital requirement calculated in accordance with the relevant requirements specified in item (C) below</td></tr>
<tr><td rowspan="3">Other</td><td colspan="5">External credit assessment</td><td rowspan="3">Unrated</td></tr>
<tr><td colspan="3">BB+ to BB-</td><td colspan="2">Below BB-</td></tr>
<tr><td colspan="3">8%</td><td colspan="2">12%</td><td>8%</td></tr>
</table>

1. **Includes forms of government that qualify for a risk weight of zero per cent in terms of the provisions of regulation 23(6).**
2. **Includes instruments such as bonds and treasury bills and other short-term instruments.**
3. **Provided that the relevant instrument is denominated, and funded by the bank, in Rand.**
4. **Includes-**
   - **(a) securities issued by public sector entities and multilateral development banks;**
   - **(b) any instrument rated investment grade, that is, a rating of BBB- or an equivalent rating, or a better rating, which rating shall be issued in respect of the relevant instrument by no less than two eligible institutions;**
   - **(c) any instrument rated investment grade, that is, a rating of BBB- or an equivalent rating, by one eligible institution, and not less than investment grade by another eligible institution;**
   - **(d) any unrated instrument issued by any institution rated investment grade, that is, a rating of BBB- or an equivalent rating, or a better rating, provided that the said institution shall be subject to comparable supervisory and regulatory arrangements than banks in the RSA, including, in particular, risk-based capital requirements and regulation and supervision on a consolidated basis, and the bank has no reason to suspect that the said unrated instrument is of a lesser quality than investment grade;**
   - **(e) subject to such conditions as may be specified in writing by the Registrar, any other unrated or other instrument specified in writing by the Registrar.**
5. **Includes instruments issued in respect of a securitization scheme, such as a first-loss credit-enhancement facility, an unrated liquidity facility or a letter of credit.**

(C) shall in the case of a securitisation or resecuritisation exposure calculate the bank's specific risk capital requirement in accordance with the relevant requirements specified in regulation 23(6)(h), 23(8)(h), 23(11) or 23(13), as the case may be, provided that-

(i) in respect of the relevant net securitization or resecuritisation position held in the bank's trading book, a bank that adopted the standardized approach for the measurement of the bank's exposure to credit risk shall in the case of a securitization or resecuritisation exposure that is externally rated calculate its capital requirement relating to specific risk in accordance with the relevant requirements specified in table 2 below:

Table 2
Specific risk capital requirement based on external rating

External credit assessment[1]	**Long-term rating[1]**				
	AAA to AA-	**A+ to A-**	**BBB+ to BBB-**	**BB+ to BB-**	**Below BB- or unrated**
Securitisation exposure	1.6%	4%	8%	28%	100%
Resecuritisation exposure	3.2%	8%	18%	52%	100%
External credit assessment[1]	**Short-term rating[1]**				
	A-1/ P-1	**A-2/ P-2**	**A-3/ P3**	**Below A-3/ P-3 or unrated**	
Securitisation exposure	1.6%	4%	8%	100%	
Resecuritisation exposure	3.2%	8%	18%	100%	

1. The notations used in this table relate to the ratings applied by a particular credit assessment institution. The use of the rating scale of a particular credit assessment institution does not mean that any preference is given to a particular credit assessment institution, and the assessments/ rating scales of other external credit assessment institutions, recognised as eligible institutions in South Africa, may have been used instead.

(ii) in respect of the relevant net securitization or resecuritisation position held in the bank's trading book, a bank that adopted the IRB approach for the measurement of the bank's exposure to credit risk shall in the case of a rated securitization or resecuritisation exposure calculate its capital requirement relating to specific risk in accordance with the relevant requirements specified in table 3 below:

Table 3
Specific risk capital requirement based on external rating

External long-term rating[1]	Securitisation exposure			Resecuritisation exposure	
	Senior, granular position[2, 3]	Non-senior, granular[5]	Non-granular [4]	Senior[6]	Non-senior
AAA	0.56%	0.96%	1.60%	1.60%	2.40%
AA	0.64%	1.20%	2.00%	2.00%	3.20%
A+	0.80%	1.44%	2.80%	2.80%	4.00%
A	0.96%	1.60%		3.20%	5.20%
A-	1.60%	2.80%		4.80%	8.00%
BBB+	2.80%	4.00%		8.00%	12.00%
BBB	4.80%	6.00%		12.00%	18.00%
BBB-	8.00%			16.00%	28.00%
BB+	20.00%			24.00%	40.00%
BB	34.00%			40.00%	52.00%
BB-	52.00%			60.00%	68.00%
Below BB-	100%				

External short-term rating[1]	Securitisation exposure			Resecuritisation exposure	
	Senior, granular position[2, 3]	Non-senior, granular[5]	Non-granular [4]	Senior[6]	Non-senior
A-1/P-1	0.56%	0.96%	1.60%	1.60%	2.40%
A-2/P-2	0.96%	1.60%	2.80%	3.20%	5.20%
A-3/P-3	4.80%	6.00%		12.00%	18.00%
Below A-3/P-3-	100%				

1. **The notations used in this table relate to the ratings used by a particular credit assessment institution. The use of the rating scale of a particular credit assessment institution does not mean that any preference is given to a particular credit assessment institution. The assessments/ rating scales of other external credit assessment institutions, recognised as eligible institutions in the RSA, may have been used instead.**
2. **Relates to senior positions in a securitisation scheme that consists of an effective number of underlying exposures of no less than 6, which effective number of exposures shall be calculated in accordance with the relevant requirements specified in regulation 23(11)(n), and where senior position means an effective first claim in respect of the entire amount of the assets/exposures in the underlying securitised pool. For example, in the case of-**
   (a) a synthetic securitisation scheme the "super-senior" tranche shall be treated as a senior position, provided that the bank complies with the relevant conditions specified in regulation 23(11)(f) to infer a rating from a lower tranche.
   (b) a traditional securitisation scheme, in which scheme all tranches above the first-loss position are rated, the highest rated position shall be treated as a senior position, provided that when several tranches share the same rating the most senior position in the waterfall of payment shall be treated as the senior position.
3. **Including eligible senior exposures that comply with the relevant requirements specified in regulations 23(11)(g) and 23(11)(h) relating to the internal assessment approach.**
4. **Relates to a senior position in a securitisation scheme in which the effective number of underlying exposures, calculated in accordance with the relevant requirements specified in regulation 23(11)(n), is less than 6.**
5. **Relates to all positions other than a senior position, such as a position/facility that, in economic substance, constitutes a mezzanine position and not a senior position in respect of the underlying pool.**
6. **Means a resecuritisation exposure that is a senior position and none of the underlying exposures are resecuritisation exposures, that is, any resecuritisation exposure in respect of which the underlying exposure includes a resecuritisation exposure shall be categorised as a non-senior resecuritisation position or exposure.**

(iii) subject to any conditions specified in writing by the Registrar, in respect of an unrated position-

(aa) a bank that obtained the approval of the Registrar to apply the IRB approach for the relevant asset classes related to the underlying exposures, may apply the standard formula approach specified in regulation 23(11)(i), provided that, when estimating the relevant PDs and LGDs for the calculation of K_{IRB}, the bank shall comply with the relevant minimum requirements related to the IRB approach;

(bb) to the extent that the bank obtained the approval of the Registrar to apply the bank's internally developed VaR model that incorporates specific risk related to the underlying exposures, as envisaged in regulation 28(8)(h) of these Regulations, and the bank derives estimates for PDs and LGDs from the said internally developed VaR model, the bank may use the aforesaid estimates for the calculation of K_{IRB}, and consequently for applying the standard formula approach;

(cc) other than the unrated positions specifically referred to above, the bank shall calculate the relevant required amount of capital and reserve funds related to specific risk as follows:

(i) multiply the weighted average risk weight that would be applied to the securitised exposures under the standardised approach with eight per cent; and

(ii) multiply the aforesaid product, calculated in accordance with the provisions of sub-item (i) above, with a concentration ratio, which concentration ratio shall be calculated as the sum of the nominal or notional amounts of all the relevant tranches divided by the sum of the nominal or notional amounts of the tranches junior to or ranking *pari passu* with the tranche in which the position is held, including that tranche itself, provided that when the said concentration ratio is equal to 12.5, or higher, the bank shall assign to the relevant position a risk weight of 1 250 per cent;

Provided that the bank's required amount of capital and reserve funds related to specific risk in respect of an unrated position shall in no case be lower than the specific risk capital requirement related to a rated more senior tranche. When the bank is unable to determine the specific risk capital requirement as described hereinbefore or prefers not to apply the treatment specified above, the bank shall deduct from its common equity tier 1 capital and reserve funds the relevant amount of the unrated position.

(iv) during such transition period as may be directed by the Registrar in writing, in respect of any relevant securitisation position not included in the bank's correlation trading portfolio, a bank's required amount of capital and reserve funds for specific risk arising from securitisation positions held in the bank's trading book shall be calculated separately from the bank's relevant required amount of capital and reserve funds related to its correlation trading portfolio, and shall be the higher of-

(aa) the bank's total required amount of capital and reserve funds for specific risk arising from the bank's relevant net long securitisation positions held in the trading book; or

(bb) the bank's total required amount of capital and reserve funds for specific risk arising from the bank's relevant net short securitisation positions held in the trading book;

(v) any position risk weighted at 1 250 per cent in accordance with the provisions of subitems (i) to (iii) of this item (C) may be excluded from the bank's calculation of its required amount of capital and reserve funds for general market risk, irrespective whether the bank applies the standardised measurement method or internal models method;

(vi) in respect of the bank's correlation trading portfolio, the bank shall calculate its specific risk capital requirement in accordance with the relevant requirements specified in item (F) below;

(D) shall in respect of any relevant position hedged by a credit-derivative instrument, other than an n-th-to-default credit derivative instrument, calculate the bank's specific risk capital requirement in accordance with the relevant requirements specified in this item (D), provided that in the case of an n-th-to-default credit derivative instrument the bank shall calculate its specific risk capital requirement in accordance with the relevant requirements specified in item (E) below.

When-

(i) the values of the relevant long leg and short leg always move in opposite directions, and materially to the same extent, that is, when-

(aa) the two legs consist of identical instruments, or

(bb) a long cash position is hedged by a total return swap, or *vice versa*, and an exact match exists between the reference obligation and the underlying exposure, that is, the cash position, irrespective whether or not the maturity of the said swap contract differs from the maturity of the relevant underlying exposure,

the reporting bank may fully offset the two sides of the position, that is, the reporting bank shall be exempted from any specific risk capital requirement in respect of the said hedged position.

(ii) the values of the relevant long leg and short leg always move in opposite directions, but not to the same extent, that is, when a long cash position is hedged by a credit default swap or credit linked note, or *vice versa*, and in all cases an exact match exists in respect of the reference obligation, the maturity of the reference obligation and the credit derivative instrument, and the currency to the underlying exposure, the reporting bank may apply an eighty per cent specific risk offset in respect of the side of the transaction with the higher capital requirement, and a specific risk requirement of zero in respect of the other leg, provided that-

(aa) the key features of the credit derivative contract, such as the credit event definitions and settlement mechanism, shall not cause the price movement of the credit derivative instrument materially to deviate from the price movement of the cash position; and

(bb) based on matters such as restrictive payout provisions, such as fixed payouts and materiality thresholds, the transaction shall materially transfer risk.

(iii) the values of the relevant long leg and short leg usually move in the opposite direction, that is-

(aa) a long cash position is hedged by a total return swap, or *vice versa*, as envisaged in sub-item (i) above, but an asset mismatch exists between the reference obligation and the underlying exposure, and the requirements relating to an asset mismatch specified in regulation 23(9)(d)(xi)(B)(xviii) are met;

(bb) the relevant two legs relate to identical instruments as envisaged in sub-item (i) above but a currency or maturity mismatch exists between the credit protection and the underlying asset;

(cc) the relevant positions meet the relevant requirements specified in sub-item (ii) above except that a currency or maturity mismatch exists between the credit protection and the underlying asset; or

(dd) the relevant positions meet the relevant requirements specified in sub-item (ii) above but an asset mismatch exists between the cash position and the credit derivative instrument, and the underlying asset is included in the deliverable obligations in terms of the credit derivative documentation,

the reporting bank shall calculate and maintain a capital requirement only in respect of the side of the transaction with the highest capital requirement, that is, instead of adding the specific risk capital requirements for each side of the relevant transaction in respect of the credit protection and the underlying asset the reporting bank shall calculate and maintain a capital requirement only in respect of the side of the transaction that requires the highest capital requirement.

(iv) the relevant hedged position relates to a position other than the positions envisaged in sub-items (i) to (iii) above, the reporting bank shall calculate and maintain a capital requirement in respect of both sides of the relevant transaction;

(E) shall in the case of an n-th-to-default credit derivative instrument, that is, a contract or instrument in respect of which the payment or payoff is based on the n-th asset to default in the basket of underlying reference assets or instruments, calculate the bank's specific risk capital requirement in accordance with the relevant requirements specified in this item (E).

The bank's capital requirement for specific risk shall in the case of a first-to-default credit derivative instrument be the lesser of the sum of the specific risk capital requirements for the individual reference assets or credit instruments in the basket, or the maximum possible credit event payment in terms of the contract, provided that-

(i) when the bank has a risk position in one of the reference assets or credit instruments underlying the first-to-default credit derivative instrument, and the said credit derivative instrument hedges the bank's risk position, the bank may reduce both the capital requirement for specific risk for the relevant reference asset or credit instrument and that part of the capital requirement for specific risk for the credit derivative instrument that relates to the particular reference credit instrument, provided that when the bank has multiple risk positions in reference assets or credit instruments underlying a first-to-default credit derivative instrument the offset shall be allowed only in respect of the underlying asset or reference credit instrument with the lowest specific risk capital requirement;

(ii) when "n" is greater than one, the bank's capital requirement for specific risk shall be the lesser of the sum of the specific risk capital requirements for the individual reference assets or credit instruments in the basket, but disregarding the "n-1" obligations with the lowest specific risk capital requirement, or the maximum possible credit event payment in terms of the contract, provided that in the case of n-th-to-default credit derivative instruments where "n" is greater than 1 no offset of the capital requirement for specific risk with any underlying reference asset or credit instrument shall be allowed;

(iii) when a first or other n-th-to-default credit derivative instrument is externally rated, a bank that acts as a protection seller shall calculate its specific risk capital requirement based on the said rating issued in respect of the derivative instrument and the relevant securitisation risk weights specified in item (C) above;

(iv) the capital requirement shall apply in respect of each net n-th-to-default credit derivative position, irrespective whether the bank has a long position or short position, that is, irrespective whether the bank obtains or provides protection;

(F) shall in respect of the bank's correlation trading portfolio calculate its relevant required amount of capital and reserve funds for specific risk in accordance with the relevant requirements specified in this item (F).

The-

(i) bank shall separately calculate the relevant required amount of capital and reserve funds related to specific risk in respect of its net long positions, that is, based on its net long correlation trading exposures combined;

(ii) bank shall separately calculate the relevant required amount of capital and reserve funds related to specific risk in respect of its net short positions, that is, based on its net short correlation

trading exposures combined;

(iii) bank's required amount of capital and reserve funds for specific risk in respect of its correlation trading portfolio shall be the higher amount of sub-item (i) or sub-item (ii), of this item (F).

Provided that a bank may limit the required amount of capital and reserve funds in respect of any relevant individual position in a credit derivative or securitisation instrument to the maximum possible loss, that is-

(A) a bank shall calculate a maximum possible loss amount for each relevant individual position;

(B) in the case of a short risk position the limit may be calculated as a change in value due to the underlying names immediately becoming default risk-free;

(C) in the case of a long risk position, the maximum possible loss amount may be calculated as the change in value in the event that all the underlying names were to default with a zero or no recovery.

(iii) Matters relating to general risk

(A) A bank that adopted the standardised approach for the measurement of the bank's exposure to market risk-

(i) may in order to calculate the bank's general risk requirement, at the discretion of the bank, apply either the maturity method prescribed in item (B) below or duration method prescribed in item (C) below;

(ii) shall apply a separate maturity ladder in respect of each relevant currency, provided that subject to the approval of and such conditions as may be specified in writing by the Registrar the reporting bank may apply a single maturity ladder in respect of currencies in which the bank's business is insignificant in which case the reporting bank shall within each relevant time band-

(aa) assign the relevant net long or short position in respect of each relevant currency;

(bb) in order to calculate the bank's relevant gross position, irrespective whether or not a net position is long or short, aggregate the relevant net long positions and relevant net short positions;

(iii) shall in respect of each relevant currency separately calculate the bank's relevant required amount of capital and reserve funds;

(iv) shall, unless specifically otherwise provided in this regulation 28, base its calculation of the required amount of capital and reserve funds on the absolute amount of all relevant calculated positions, that is, unless specifically otherwise provided the reporting bank shall not apply offsetting between calculated positions or requirements of opposite sign, provided that in respect of any debt instrument with a high yield to redemption the Registrar may disallow offsetting of the relevant position against other relevant positions even when provision is otherwise made in terms of these Regulations for the bank to offset the said positions;

(v) shall in the case of a credit-default swap include any relevant periodic premium or interest payment due as a notional position in a government bond with the relevant fixed or floating rate;

(vi) shall in the case of a total return swap contract include the relevant interest rate legs of the contract as a notional short or long position, as the case may be;

(vii) shall in the case of a credit-linked note in terms of which the bank acts as a protection provider include in its measurement system the relevant coupon or interest rate exposure of the said note;

(viii) shall in accordance with the relevant requirements specified in items (B) or (C) below calculate and maintain a capital requirement in respect of general risk equal to the sum of the specified requirements relating to-

(aa) the relevant net short or long position in respect of the bank's entire trading book;

(bb) the relevant portion in respect of the specified offsetting positions within each relevant time-band;

(cc) the relevant portion in respect of the specified offsetting positions across different time-bands;

(dd) the relevant net requirement in respect of specified positions in options.

(B) Maturity method

A bank that adopted the maturity method for the measurement of the bank's exposure to general risk-

(i) shall assign to the relevant maturity band specified in the maturity ladder specified in table 4 below the relevant actual or notional amount relating to each relevant long or short position in a debt security or other instrument of interest rate exposure held in the reporting bank's trading book, including any relevant derivative instrument, provided that the bank may omit from the said interest rate maturity framework opposite positions of the same amount and in respect of the same issue, but not in respect of different issues by the same issuer.

Table 4
Maturity method: time bands and weights[1, 2]

Time zone	Coupon equal to or more than 3%	Coupon less than 3%[3]	Risk weight (%)	Assumed change in yield
	Maturity band			
1	0 ≤ 1 month	0 ≤ 1 month	0.00	1.00
	> 1 ≤ 3 months	> 1 ≤ 3 months	0.20	1.00
	> 3 ≤ 6 months	> 3 ≤ 6 months	0.40	1.00
	> 6 ≤ 12 months	> 6 ≤ 12 months	0.70	1.00
2	> 1 ≤ 2 years	> 1.0 ≤ 1.9 years	1.25	0.90
	> 2 ≤ 3 years	> 1.9 ≤ 2.8 years	1.75	0.80
	> 3 ≤ 4 years	> 2.8 ≤ 3.6 years	2.25	0.75
3	> 4 ≤ 5 years	> 3.6 ≤ 4.3 years	2.75	0.75
	> 5 ≤ 7 years	> 4.3 ≤ 5.7 years	3.25	0.70
	> 7 ≤ 10 years	> 5.7 ≤ 7.3 years	3.75	0.65
	> 10 ≤ 15 years	> 7.3 ≤ 9.3 years	4.50	0.60
	> 15 ≤ 20 years	> 9.3 ≤ 10.6 years	5.25	0.60
	> 20 years	> 10.6 ≤ 12.0 years	6.00	0.60
		> 12.0 ≤ 20.0 years	8.00	0.60
		> 20 years	12.50	0.60

1. Based on the residual term to maturity the bank shall assign to the relevant time band the relevant position arising from any fixed rate instrument.
2. Based on the residual term to the next repricing date the bank shall assign to the relevant time band the relevant position arising from any floating-rate instrument.
3. Including any zero-coupon bond or deep-discount bond.

(ii) shall, based on the relevant weights specified in table 4 above, which weights reflect the price sensitivity of all relevant positions to assumed changes in interest rates, weight all relevant positions assigned by the bank to the relevant maturity band;

(iii) shall in order to determine a single short or long position in respect of each specified maturity band offset the weighted long positions and weighted short positions within the said maturity band;

(iv) shall in respect of the lower aggregate amount of the relevant long or short positions in a particular maturity band calculate a 10 per cent capital requirement in order to reflect basis risk and gap risk since each relevant maturity band will include different instruments and different maturities. For example, when the sum of the weighted long positions in a particular time band is equal to R100 million and the sum of the weighted short positions in the said time band is equal to R90 million, the deemed amount in respect of vertical disallowance for the particular time band shall be equal to 10 per cent of R90 million, that is, R9.0 million;

(v) shall offset the relevant net positions **within** each of the relevant three time zones specified in table 4 above, and subsequently offset the relevant calculated net positions **between** the three different time zones specified in table 4 above, provided that the said offsetting of net positions shall be subject to a scale of disallowances, which disallowance factors are specified in table 5 below and are expressed as a fraction of the relevant calculated matched and unmatched positions, that is, the reporting bank shall offset the weighted long positions and weighted short positions **within** each of the three specified time zones and subsequently offset the residual net position in each relevant time zone against opposite positions in the other time zones, provided that the said offsetting of positions within and between the relevant time zones shall be subject to the disallowance factors specified in table 5 below, which disallowance factors shall constitute a separate component of the reporting bank’s required amount of capital and reserve funds.

Table 5
Horizontal disallowances

Time zone[1]	Disallowance factor within the relevant time zone	Disallowance factor between adjacent time zone	Disallowance factor between time zones 1 and 3
1	40%		
		40%	
2	30%		100%
		40%	
3	30%		

1. Based on the maturity bands specified in table 4 above.

(vi) shall maintain a capital requirement equal to 100 per cent of any residual position not subject to any form of offsetting as envisaged in sub-items (iii) to (v) above, provided that subject to such conditions as may be specified in writing by the Registrar, the Registrar may for purposes of calculating a bank's exposure to general risk disallow the said reporting bank to offset certain positions relating to high yield instruments against any other debt instruments;

(vii) shall in the case of residual currencies as envisaged in item (A)(ii) above apply the risk weights specified in table 4 above in respect of the gross positions calculated in respect of each relevant time band, with no further offsets;

(viii) shall maintain an aggregate capital requirement in respect of the maturity method equal to the sum of the relevant amounts specified in this item (B).

(C) Duration method

A bank that wishes to adopt the duration method for the measurement of the bank's exposure to general risk, which method provides a more accurate measure of the bank's exposure to general risk than the maturity method due to the separate measurement of the price sensitivity of each relevant position-

(i) shall obtain the prior written approval of the Registrar and at all times, in addition to the relevant requirements specified in this paragraph (b), comply with such requirements as may be specified in writing by the Registrar;

(ii) shall, based on-

(aa) the maturity of each relevant instrument;

(bb) the relevant requirements specified in table 6 below; and

(cc) the relevant requirements specified in this item (C),

separately measure the price sensitivity of each relevant instrument in terms of a change in interest rates of between 0.6 and 1.0 percentage points.

Table 6
Duration method: time bands and assumed changes in yield

Time zone	Duration	Assumed change in yield
1	0 ≤ 1 month	1,00
	> 1 ≤ 3 months	1,00
	> 3 ≤ 6 months	1,00
	> 6 ≤ 12 months	1,00
2	> 1,0 ≤ 1,9 years	0,90
	> 1,9 ≤ 2,8 years	0,80
	> 2,8 ≤ 3,6 years	0,75
3	> 3,6 ≤ 4,3 years	0,75
	> 4,3 ≤ 5,7 years	0,70
	> 5,7 ≤ 7,3 years	0,65
	> 7,3 ≤ 9,3 years	0,60
	> 9,3 ≤ 10,6 years	0,60
	> 10,6 ≤ 12,0 years	0,60
	> 12,0 ≤ 20,0 years	0,60
	> 20 years	0,60

(iii) shall assign to the relevant time band specified in the duration-based ladder specified in table 6 above the calculated sensitivity measure of the relevant instrument or position;

(iv) shall in a manner similar to the method specified in item (B)(iv) above, in order to capture basis risk in respect of the relevant long positions and short position **within** each relevant time band, calculate and maintain a 5 per cent capital requirement, which capital requirement shall constitute the vertical disallowance component;

(v) shall subsequently carry forward the relevant net position in each relevant time band and offset the said net positions **within** and **between** the relevant time zones in accordance with and subject to the relevant requirements and horizontal disallowance factors specified in item (B)(v) and in table 5 above;

(vi) shall maintain a capital requirement equal to 100 per cent of any residual position not subject to any form of offsetting as envisaged in sub-items (iv) and (v) above, provided that subject to such conditions as may be specified in writing by the Registrar, the Registrar may for purposes of calculating a bank's exposure to general risk disallow the said reporting bank to offset certain positions relating to high yield instruments against any other debt instruments;

(vii) shall in the case of residual currencies as envisaged in item (A)(ii) above apply the assumed change in yield specified in table 6 above in respect of the gross positions calculated in respect of each relevant time band, with no further offsets.

(iv) Matters relating to interest rate derivative instruments

(A) Irrespective of the measurement system adopted by the reporting bank for the measurement of the bank's exposure to market risk the bank shall include in its calculation of market risk exposure all interest rate derivative instruments and off-balance sheet instruments that respond to changes in interest rates, which instruments are held by the bank in its trading book, including any forward rate agreement, any other forward contract, any bond future, any interest rate or cross-currency swap contract or any forward foreign exchange position, provided that the reporting bank-

(i) shall calculate all relevant positions in accordance with the relevant requirements specified in item (B) below;

(ii) shall calculate all relevant capital requirements relating to derivative instruments in accordance with the relevant requirements specified in item (C) below.

(B) Matters relating to the calculation of positions in interest rate derivative instruments

A bank that adopted the standardised method for the measurement of the bank's exposure to market risk shall convert all relevant transactions in derivative instruments into positions in the relevant underlying instrument and calculate the relevant specific risk and general risk requirements in accordance with the relevant requirements specified in this paragraph (b), provided that-

(i) the bank shall base all relevant calculations on the market value of the principal amount relating to the relevant underlying or notional underlying;

(ii) in the case of any instrument in respect of which the notional amount differs from the effective notional amount, the bank shall use the effective notional amount;

(iii) in the case of any future contract on a corporate bond index, the bank shall include the relevant positions at the market value of the notional underlying portfolio of securities;

(iv) in the case of any future or forward contract, including any forward rate agreement, the bank shall treat the contract as a combination of a long position and a short position in a notional government security, provided that the maturity of the said future or forward rate agreement shall be the period until delivery or exercise of the contract plus the life of the underlying instrument when relevant. For example, a long position in a June three month interest rate future, which contract is concluded in April, shall be reported as a long position in a government security with a maturity of five months and a short position in a government security with a maturity of two months.

When a range of deliverable instruments may be delivered to fulfil the relevant requirements of a contract, the bank may decide which deliverable security should be included in the maturity or duration ladder, provided that the bank shall take into consideration any conversion factor defined by the relevant exchange.

(v) in the case of any swap contract the bank shall treat the relevant positions as two notional positions in government securities with relevant maturities. For example, an interest rate swap contract in terms of which the reporting bank receives floating rate interest and pays fixed interest shall be treated as a long position in a floating rate instrument of maturity equivalent to the period until the next interest fixing and a short position in a fixed-rate instrument of maturity equivalent to the residual life of the swap contract;

(vi) in the case of a swap contract that pays or receives a fixed or floating interest rate against some other reference price, such as a stock index, the bank shall include the interest rate component in the relevant repricing maturity category, with the equity component being included in the equity framework in accordance with the relevant requirements specified in paragraph (c) below;

(vii) in the case of a cross-currency swap contract the bank shall report the relevant separate legs of the contract in the relevant maturity ladders relating to the currencies concerned.

(C) Matters relating to the calculation of capital requirements relating to positions in interest rate derivative instruments

In respect of specific risk and general risk a bank may exclude from the relevant interest rate maturity framework long positions and short positions, irrespective whether the said positions are actual or notional positions, in respect of identical instruments issued by the same issuer and which instruments have the same coupon and maturity and are denominated in the same currency, including any matched position in respect of a future or forward and its corresponding underlying, provided that-

(i) in the case of a future contract the bank shall report the relevant leg that represents the time to expiry of the said future contract;

(ii) when the future or forward contract comprises a range of deliverable instruments the reporting bank shall only offset positions in the said future or forward contract and its relevant underlying when a readily identifiable underlying security that is most profitable for the person with the short position to deliver, exists, the price of which security, often referred to as the "cheapest-to-deliver", and the price of the said future or forward contract are likely to move in close alignment;

(iii) the reporting bank shall in no case apply offsetting between positions in different currencies, that is, the reporting bank shall include in the relevant calculation of each currency the relevant separate legs relating to any cross-currency swap or forward foreign exchange contract, which legs shall be recorded as notional positions in the relevant instruments;

(iv) the reporting bank may fully offset opposite positions in the same category of instruments, including the relevant delta-equivalent value in respect of options, provided that the said positions shall relate to the same underlying instruments, be of the same nominal value and be denominated in the same currency, and in the case of-

(aa) any future contract the offsetting positions in the notional or underlying instruments to which the future contract relates shall be for identical products and mature within seven days of each other;

(bb) any floating rate position arising from a swap or FRA contract the reference rate shall be identical and the coupon shall be closely matched, that is, the coupon shall be within 15 basis points;

(cc) any swap, FRA or forward contract, the next interest fixing date or, in the case of any fixed coupon position or forward, the residual maturity-

(i) shall be the same day for positions less than one month hence;

(ii) shall be within seven days for positions between one month and one year hence;

(iii) shall be within thirty days for positions over one year hence;

(v) subject to the prior written approval of and such conditions as may be specified in writing by the Registrar, a bank with a large swap book may use alternative formulae in order to calculate the swap positions to be included in the relevant maturity or duration ladder specified in this paragraph (b), provided that-

(aa) all relevant positions shall be denominated in the same currency;

(bb) the calculated positions shall fully reflect the sensitivity of the cash flows to interest rate changes; and

(cc) the reporting bank shall capture all relevant calculated positions in the appropriate time bands.

For example, a bank may first convert the payments required by the swap into the respective present values by discounting each payment using zero coupon yields, in which case, based on the relevant requirements, general risk framework and time band specified above, the bank shall capture a single net amount relating to the present value of the cash flows in the appropriate time band by applying the relevant procedures that apply to zero or low coupon bonds. Alternatively the reporting bank may calculate the sensitivity of the net present value implied by the change in yield specified in the maturity or duration method and allocate the said sensitivity measures into the relevant time bands specified in this paragraph (b).

(vi) in the case of any interest rate or currency swap, FRA, forward foreign exchange contract, interest rate future or future on an interest rate index such as JIBAR, no specific risk requirement shall apply;

(vii) in the case of any future contract in respect of which the underlying instrument is a debt security, or an index representing a basket of debt securities, the reporting bank shall, based on the credit risk of the issuer and the relevant requirements specified in this paragraph (b), calculate the relevant specific risk requirement;

(viii) subject to the specific exemptions specified in this item (C), based on the relevant requirements specified in this paragraph (b), the reporting bank shall calculate a general risk requirement in respect of all relevant positions in derivative instruments, in a manner similar to any cash position.

(c) Matters relating to equity instruments and equity position risk

(i) Based on the relevant requirements specified in this paragraph (c), in respect of any relevant long or short equity position held by the reporting bank in its trading book-

(A) including-

(i) any instrument that exhibits market behaviour similar to equities;

(ii) any ordinary shares, irrespective whether or not the said shares have voting rights attached to them;

(iii) any commitment to buy or sell equity securities;

(iv) any convertible instrument that trades in a manner similar to an equity instrument,

(B) excluding non-convertible preference shares, which preference shares are subject to the requirements specified in paragraph (b) above,

the reporting bank shall separately calculate the relevant minimum required amount of capital and reserve funds relating to specific risk and general risk, provided that, unless specifically otherwise provided in this paragraph (c), the bank may report long positions and short positions in respect of the same issue on a net basis.

(ii) Matters relating to specific risk

In respect of a bank's gross equity positions, that is, the sum of all relevant long equity positions **and** all relevant short equity positions, held in the bank's trading book, a bank that adopted the standardised approach for the measurement of the bank's exposure to market risk shall on a market by market basis, that is, in respect of each relevant national market or currency in which the reporting bank holds equities, calculate and maintain a minimum required amount of capital and reserve funds relating to specific risk, which required amount of capital and reserve funds-

(A) shall in the case of a less liquid equity portfolio that complies with such requirements or criteria as may be specified in writing by the Registrar be equal to twelve per cent of the said gross equity position;

(B) shall in all other cases be equal to eight per cent of the said gross equity position.

(iii) Matters relating to general risk

In respect of a bank's net position in a specific equity market or equity index, that is, the **difference** between the sum of all relevant long equity positions and the sum of all relevant short equity positions in a particular national equity market or equity index, held in the bank's trading book, a bank that adopted the standardised approach for the measurement of the bank's exposure to market risk shall calculate and maintain a minimum required amount of capital and reserve funds relating to general risk equal to eight per cent of the said net equity position.

(iv) Matters relating to equity derivative instruments

A bank that adopted the standardised approach for the measurement of the bank's exposure to market risk shall include in its measurement system all equity derivative instruments and off-balance sheet positions that are affected by changes in equity prices, including any future or swap contract on individual equities or stock indices, provided that-

(A) the bank shall measure and report any equity position arising from an option contract in accordance with the relevant requirements specified in paragraph (f) below instead of in accordance with the requirements specified in this paragraph (c);

(B) the reporting bank shall convert all relevant derivative positions into notional equity positions in the relevant underlying instruments;

(C) when equities form part of a forward contract, a future contract or an option contract, irrespective whether equities are to be received or delivered, the reporting bank shall report the relevant leg of the contract that relates to any interest rate or foreign currency exposure in accordance with the relevant requirements specified in this subregulation (7);

(D) the reporting bank shall report any future or forward contract relating to an individual equity at the current market price;

(E) the reporting bank shall report futures relating to stock indices as the marked-to-market value of the relevant notional underlying equity portfolio;

(F) the reporting bank shall treat any equity swap contract as two notional positions.

For example, the bank shall treat an equity swap contract in terms of which the bank receives an amount based on the change in value of one particular equity or stock index and pays a different index as a long position in the former and a short position in the latter.

When one of the legs involves receiving/paying a fixed or floating interest rate, the bank shall report the relevant exposure in accordance with the relevant requirements for interest rate related instruments specified in paragraph (b) above.

(G) the reporting bank shall either “carve out” any equity option or stock index option with its associated underlying or, based on the relevant requirements of the delta-plus method specified in paragraph (f)(iii) below, incorporate the relevant position in the measure of general market risk.

(v) Matters relating to the calculation of minimum required capital and reserve funds

In calculating its minimum required amount of capital and reserve funds relating to specific risk and general risk, a bank that adopted the standardised approach for the measurement of the bank’s exposure to market risk may fully offset matched positions in respect of each identical equity or stock index in each relevant market in order to obtain a single net short or long position to which the bank shall apply the relevant requirements specified for specific risk and general market risk, that is, the bank, for example, may fully offset a future in a particular equity instrument against an opposite cash position in the same equity instrument, provided that-

(A) the bank shall report any related interest rate risk arising from a derivative contract in accordance with the relevant requirements specified in paragraph (b);

(B) the bank shall in respect of any relevant net long or short position relating to an index contract maintain a specific risk capital requirement of 8 per cent in addition to the general market risk requirement of 8 per cent and the further capital requirement of 2 per cent to make provision for factors such as execution risk,

(C) when the reporting bank implements a futures related arbitrage strategy, that is, when the bank-

(i) enters into an opposite position in exactly the same index at different dates, or in different market centres; or

(ii) established an opposite position in contracts at the same date in different but similar indices, and the two indices contain sufficient common components that justify offsetting,

the bank may apply the additional two per cent capital requirement specified in item (B) only to one index, that is, the opposite position shall be exempted from a capital requirement;

(D) when the bank implements an arbitrage strategy, in terms of which strategy a futures contract on a broadly-based index matches a basket of instruments, the bank may “carve out” both positions from the standardised method and apply a minimum capital requirement equal to four per cent, that is, two per cent of the gross value of positions on each side in order to reflect divergence and execution risks, even when all instruments comprising the index are held in identical proportions, provided that-

(i) the bank shall deliberately enter into and separately control the relevant exposure;

(ii) the composition of the basket of instruments shall represent at least 90 per cent of the index when broken down into its notional components;

(iii) the bank shall treat any excess value of the instruments comprising the basket over the value of the futures contract or excess value of the futures contract over the value of the basket as an open long or short position;

(E) the bank also may offset the relevant position when the bank establishes a position in depository receipts against an opposite position in the underlying equity or identical equities in different markets, provided that the bank-

(i) shall fully take into account any relevant costs on conversion;

(ii) shall report any foreign exchange risk arising from the relevant positions in accordance with the relevant requirements specified in paragraph (d) below.

(d) Matters relating to foreign exchange risk, including gold

(i) Based on the relevant requirements specified in this paragraph (d), a bank that adopted the standardised approach for the measurement of the bank's exposure to market risk shall in the calculation of the bank's minimum required amount of capital and reserve funds relating to foreign exchange risk, including gold, separately calculate-

(A) the bank's exposure in respect of each relevant single foreign currency;

(B) the risks inherent in the bank's mix of all relevant long and short positions in different foreign currencies.

(ii) Matters relating to exposure in each single foreign currency

In respect of each relevant foreign currency, a bank that adopted the standardised approach for the measurement of the bank's exposure to market risk shall calculate its net open foreign-currency position as the sum of-

(A) the bank's net spot position, that is, all relevant asset items less all relevant liability items, including any relevant amount of accrued interest;

(B) the bank's net forward position, that is, all relevant amounts to be received less all relevant amounts to be paid in respect of any forward foreign exchange transaction or futures transaction, including any currency future and the principal amount relating to a currency swap not included in the spot position;

(C) any relevant guarantee or similar instrument that is certain to be called, and is likely to be irrecoverable;

(D) any net future income/expense not yet accrued but already fully hedged;

(E) any other relevant item representing a profit or loss in foreign currency;

(F) the net delta equivalent value relating to all relevant foreign currency and gold options, provided that the reporting bank shall either separately calculate the relevant minimum required amount of capital and reserve funds in respect of gamma risk and vega risk in accordance with the relevant requirements specified in the delta-plus approach in paragraph (f)(iii) below or calculate the relevant capital requirements relating to option contracts and their underlying instruments in accordance with one of the other methods and its related requirements specified in paragraph (f) below.

Provided that-

(i) the bank shall separately report all relevant positions in composite currencies, provided that, in order to measure the reporting banks' open foreign-currency position, the bank may either treat the said currencies as a currency in its own right or split the said currency into its component parts;

(ii) the bank shall separately report any relevant position in gold;

(iii) when gold forms part of a forward contract, the bank shall report any relevant interest rate or foreign currency exposure arising from the other leg of the contract in accordance with the relevant requirements specified in this subregulation (7);

(iv) the bank may treat as a single currency any currency pair that is subject to a legally enforceable inter-governmental agreement in terms of which the respective currencies are linked;

(v) the reporting bank shall include as a position any accrued interest, that is, interest earned but not yet received, or accrued expenses;

(vi) the reporting bank may exclude from its calculation any unearned but expected future interest and anticipated expenses unless the said amounts are certain and the bank has entered into a hedge in respect of the said interest or expense item, provided that when the bank includes in its calculation any future income or expense as envisaged in this sub-item (vi) the bank shall consistently include the said amounts in all relevant calculations and not selectively include only expected future flows that reduce the bank's foreign-currency position;

(vii) in respect of any relevant forward currency or gold position the reporting bank shall value the said position based on current spot market exchange rates instead of forward exchange rates, provided that when the bank reports in its management accounts the net present values of the said forward positions the bank shall use the said net present value in respect of each relevant forward or gold position, which positions shall be discounted using current interest rates and valued based on current spot rates in order to measure the bank's forward currency or gold position;

(viii) subject to the prior written approval of and such further conditions as may be specified in writing by the Registrar, the bank may exclude from the calculation of its net open foreign-currency positions any structural positions deliberately taken by the bank solely to hedge the bank's capital base against the adverse effects of exchange rate movements, provided that-

(aa) the said positions shall be of a structural nature, that is, of a non-trading nature;

(bb) during the remaining life of the relevant assets or other items, the bank shall treat the relevant hedge in a consistent manner;

(ix) the bank may exclude from its relevant calculation of minimum required capital and reserve funds relating to foreign exchange risk items such as investments in non-consolidated subsidiaries, which investments constitute impairments against the bank's capital and reserve funds;

(x) subject to the prior written approval of and such further conditions as may be specified in writing by the Registrar, the bank may exclude from its relevant calculation of minimum required capital and reserve funds relating to foreign exchange long-term participations denominated in foreign currency, which participations-

(aa) are reported in the bank's published accounts at historic cost;

(bb) shall be deemed to constitute a structural position.

(iii) Matters relating to a portfolio of foreign currency positions, and gold

In order to measure a bank's exposure to foreign exchange risk arising from a portfolio of foreign currency positions, and gold, the bank may either apply the shorthand method specified in this subparagraph (iii), in terms of which shorthand method all relevant currencies are treated in an equal manner, or the internal models approach specified in subregulation (8) below, which internal models approach, based on the composition of the bank's portfolio of foreign currency and gold positions, takes into account the bank's actual degree of foreign exchange risk, provided that-

(A) when the reporting bank adopts the shorthand method-

(i) the bank shall convert into Rand, at the relevant spot rates, the relevant nominal amount or net present value, as the case may be, of the net position calculated in respect of each relevant foreign currency, and gold;

(ii) the bank's overall net open foreign-currency position shall be deemed to be equal to-

(aa) the greater of the sum of the bank's net short positions or the sum of the bank's net long positions; **plus**

(bb) the bank's net absolute position in gold, that is, the bank's net position in gold irrespective whether the said net position is a long or short position;

(iii) the bank's required amount of capital and reserve funds shall be equal to eight per cent of the overall net open foreign-currency position calculated in accordance with the requirements specified in sub-item (ii) above;

(B) subject to the prior written approval of and such further conditions as may be specified in writing by the Registrar a bank doing negligible business in foreign currency and which does not take foreign exchange positions for its own account may be exempted from the capital requirements specified in this paragraph (d) in respect of the said foreign exchange positions, provided that-

(i) the sum of the bank's gross long positions and gross short positions in all relevant foreign currencies shall at no time exceed 100 per cent of the bank's allocated qualifying capital and reserve funds relating to market risk; and

(ii) the bank's overall net open foreign-currency position calculated in accordance with the requirements specified in item (A)(ii) above shall at no time exceed 2 per cent of the bank's allocated qualifying capital and reserve funds relating to market risk.

(e) Matters relating to commodity risk

(i) For the measurement of a bank's exposure to commodity position risk arising from commodity positions held in either the bank's banking book or trading book, which commodity position risk may arise from positions held in respect of precious metals, agricultural products, minerals, oil or base metals, but not gold, since gold is subject to the requirements specified in paragraph (d) above, a bank may-

(A) at the discretion of the bank, adopt the simplified approach specified in subparagraph (ii) below, which simplified approach shall be available for a bank that conducts only a limited amount of commodity business;

(B) at the discretion of the bank, adopt the maturity ladder approach specified in subparagraph (iii) below, which maturity ladder approach-

(i) separately captures forward gap and interest rate risk;

(ii) shall be available for a bank that conducts only a limited amount of commodity business;

(C) subject to the prior written approval of and such conditions as may be specified in writing by the Registrar, adopt the internal models approach specified in subregulation (8) below, which internal models approach shall ultimately be adopted by a bank that conducts material business in commodities,

Provided that-

(i) the bank shall in the case of any spot or physical trading duly manage its exposure to directional risk that may arise from an adverse change in the spot price of open commodity positions;

(ii) when the bank applies a portfolio strategy that involves forward and derivative contracts the bank shall duly manage its exposure, amongst others-

(aa) to basis risk, that is, the risk that the relationship between the prices of similar but not identical commodities alters over time;

(bb) to interest rate risk, that is, the risk of an adverse change in the carrying cost for forward positions and options;

(cc) to forward gap risk, that is, the risk that the forward price may change due to reasons other than a change in interest rates;

(iii) in all cases the bank shall duly manage its exposure to counterparty credit risk in respect of all relevant over-the-counter derivative contracts;

(iv) the bank shall report any relevant interest rate or foreign exchange exposure arising from the bank's funding of commodity positions in accordance with the relevant requirements specified in this subregulation (7);

For example, when a commodity forms part of a forward contract, the bank shall report any interest rate exposure or foreign currency exposure that arises from the other leg of the contract in accordance with the relevant requirements specified in this subregulation (7).

(v) the bank may omit from its commodity risk calculation, positions that are purely stock financing, that is, when physical stock has been sold forward and the cost of funding has been locked in until the date of the forward sale, provided that the relevant position shall be subject to the relevant interest rate and counterparty risk requirements.

(ii) Matters relating to the simplified approach

A bank that adopted the simplified approach for the measurement of the bank's exposure to commodity risk arising from commodity positions held in either the bank's banking book or trading book-

(A) shall include in all relevant calculations all commodity derivative contracts and all off-balance sheet positions that are affected by changes in commodity prices, including any commodity future, any commodity swap contract, and options when the bank adopts the "delta plus" method specified in paragraph (f)(iii) below, provided that when the bank adopts an approach other than the delta-plus approach in order to measure the bank's exposure to options risk, the bank shall exclude from the simplified approach all relevant options and their associated underlying instruments;

(B) may in order to calculate the bank's open position in respect of a particular commodity, offset or net any relevant long position and short positions in the specific commodity;

(C) shall not in the calculation of the bank's open position in respect of a particular commodity offset or net positions in different commodities;

(D) shall express each relevant commodity position, that is, any relevant spot or forward position, in terms of the relevant standard unit of measurement, which standard unit of measurement, for example, may be barrels, kilograms or grams, and convert the relevant net position in the specific commodity into the reporting currency at current spot rates;

(E) shall calculate and maintain a capital requirement equal to 15 per cent of the relevant net position in the specific commodity, irrespective whether the net position is a long or short position;

(F) shall in order to protect the bank against basis risk, interest rate risk and forward gap risk, based on the current spot price of all relevant positions, calculate and maintain an additional capital requirement in respect of each relevant commodity equal to 3 per cent of the bank's gross positions, that is, the sum of the relevant long positions and short positions in respect of the particular commodity.

(iii) Matters relating to the maturity ladder approach

A bank that adopted the maturity ladder approach for the measurement of the bank's exposure to commodity risk arising from commodity positions held in either the bank's banking book or trading book-

(A) shall include in all relevant calculations all commodity derivative contracts and all off-balance sheet positions that are affected by changes in commodity prices, including any commodity future, any commodity swap contract, and options when the bank adopts the "delta plus" method specified in paragraph (f)(iii) below, provided that-

(i) when the bank adopts an approach other than the delta-plus approach in order to measure the bank's exposure to options risk, the bank shall exclude from the maturity ladder approach all relevant options and their associated underlying instruments;

(ii) in the case of any relevant future or forward contract relating to a particular commodity the bank shall incorporate into its measurement system the relevant notional amount of barrels, kilos or other standard unit, as the case may be, and shall, based on the relevant expiry date of the relevant contract, assign the said contract to the relevant time band;

(iii) in the case of any commodity swap contract in respect of which one leg is a fixed price and the other leg the current market price, the bank shall incorporate the said contract into its measurement system as a series of positions equal to the notional amount of the said contract, with one position corresponding with each payment on the swap and assigned to the relevant maturity ladder and relevant time band;

(iv) in the case of a commodity swap contract in respect of which the relevant legs are in different commodities, the bank shall incorporate the relevant commodity positions into the relevant maturity ladder for each relevant commodity, that is, the bank shall not apply offsetting between different commodity positions;

(B) may, in order to calculate the bank's open position in respect of a particular commodity, offset or net any relevant long position and short positions in the specific commodity;

(C) shall not in the calculation of the bank's open position in respect of a particular commodity offset or net positions in different commodities;

(D) shall express each relevant commodity position, that is, any relevant spot or forward position, in terms of the relevant standard unit of measurement, which standard unit of measurement may be barrels, kilograms or grams;

(E) shall convert any relevant net position in respect of each relevant commodity at current spot rates into the required reporting currency;

(F) shall in respect of each relevant commodity apply a separate maturity ladder in accordance with the relevant requirements specified in table 7 below, that is, based on the requirements specified in table 7 below, the bank shall capture all relevant positions relating to a particular commodity, provided that-

(i) the bank shall express any relevant position in the relevant standard unit of measurement for the said commodity;

(ii) the bank shall capture any physical stock in the first time band;

(iii) in order to capture forward gap and interest rate risk within a particular time band, which risks together are often referred to as curvature or spread risk, all relevant matched long positions and short positions in each relevant time band shall be subject to a specified capital requirement;

(iv) in respect of each relevant time band, the bank shall multiply the sum of short positions and long positions that are matched firstly with the relevant spot price for the particular commodity and secondly with the spread rate specified for the particular time band, as set out in table 7 below;

(v) the bank may subsequently carry forward and offset residual net positions from nearer time bands against exposures in time bands that are further out, provided that-

(aa) in order to recognise that hedging of positions across different time bands is imprecise the bank shall in respect of each specified time band apply a further capital requirement equal to 0.6 per cent of the residual net position carried forward;

(bb) based on the spread rates specified in table 7 below, the bank shall apply an additional capital requirement in respect of each matched amount created by carrying residual net positions forward;

(vi) in respect of the relevant residual long or short positions that remain at the end of the aforementioned process the bank shall apply a capital requirement equal to 15 per cent.

Table 7
Time-bands and spread rates

Time band	Spread rate
0 ≤ 1 month	1,50%
> 1 ≤ 3 months	1,50%
> 3 ≤ 6 months	1,50%
> 6 ≤ 12 months	1,50%
> 1 ≤ 2 years	1,50%
> 2 ≤ 3 years	1,50%
> 3 years	1,50%

For example, assume that, based on the relevant requirements specified above, the positions in respect of a particular commodity are as follows:

Time band	Position	Spread rate	Capital calculation	Capital requirement
0 ≤ 1 month		1,50%		
> 1 ≤ 3 months		1,50%		
> 3 ≤ 6 months	Long = R800 Short = R1000	1,50%	Matched position is R800 long plus R800 short x 1,50% R200 short carried forward to the 1 to 2 year time band means- R200 x 2 x 0,6%	24,00 2,40
> 6 ≤ 12 months		1,50%		
> 1 ≤ 2 years	Long = R600	1,50%	Matched position is R200 long plus R200 short x 1,50% R400 long carried forward to the more than 3 year time-band means R400 x 2 x 0,6%	6,00 4,80
> 2 ≤ 3 years		1,50%		
> 3 years	Short = R600	1,50%	Matched position is R400 long plus R400 short x 1,50% Net residual position is R200 which means R200 x 15%	12,00 30,00

The bank's aggregate capital requirement in respect of the relevant commodity shall be equal to R79,20.

(iv) Matters relating to internal models

A bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk arising from commodity positions held in either the bank's banking book or trading book-

(A) shall continuously comply with the relevant requirements specified in subregulation (8) below;

(B) may, based on empirical correlations that fall within a range specified in writing by the Registrar and subject to such conditions as may be specified in writing by the Registrar, offset all relevant long positions and short positions in different commodities;

(C) shall ensure that the bank's models duly capture and reflect the impact of all relevant market characteristics, including any relevant delivery dates and the scope provided to traders to close out positions.

(f) Matters relating to options

(i) For the measurement of a bank's exposure to price risk arising from option positions, a bank-

(A) that solely uses purchased options or hedges all written option positions with perfectly matched long positions in exactly the same options may adopt the simplified approach specified in subparagraph (ii) below;

(B) that also writes options shall adopt the delta-plus approach, scenario approach or comprehensive risk management model approach respectively specified in subparagraphs (iii) and (iv), and in subregulation (8) below,

provided that-

(i) the bank shall adopt the more sophisticated approaches specified in this paragraph (f) when the bank's trading activities in options become significant or when the bank conducts business in exotic options;

(ii) a bank that wishes to adopt the scenario approach or internal models approach shall obtain the prior written approval of the Registrar and shall comply with such conditions as may be specified in writing by the Registrar in addition to such conditions as may be specified in these Regulations.

(ii) Matters relating to the simplified approach

A bank that adopted the simplified approach for the measurement of the bank's exposure to price risk arising from option positions-

(A) shall "carve-out" the relevant option positions and their associated underlying, irrespective whether the said positions are cash or forward positions, and separately calculate the relevant capital requirements in respect of the said positions in accordance with the relevant requirements specified in this subparagraph (ii), which requirements incorporate both general risk and specific risk, that is, instead of applying the standardised methodology envisaged in this subregulation (7) the bank shall "carve-out" all relevant option positions and associated underlying positions and separately calculate the bank's capital requirements in respect of the said positions;

(B) shall add to the relevant capital requirements relating to the bank's relevant category of instruments or exposures the relevant capital requirements calculated in accordance with the relevant requirements specified in this subparagraph (ii), that is, for example, interest rate related instruments, equity instruments, foreign exchange or commodities, as the case may be, calculated in accordance with the relevant requirements specified in this subregulation (7);

(C) shall, based on the relevant requirements specified in table 8 below, calculate the bank's required amount of capital and reserve funds in respect of the said option positions.

Table 8
Simplified approach: capital requirements

Relevant position	Capital requirement
Long cash and long put or Short cash and long call	The bank's capital requirement shall be equal to the market value of the relevant underlying instrument[1, 2] multiplied by the sum of specific risk and general risk for the said underlying instrument, less the extent to which the option is in the money[3]
Long call or Long put	The bank's capital requirement shall be equal to the lesser of: (i) the market value of the underlying instrument multiplied by the sum of the specific and general risk requirement relating to the said underlying instrument; or (ii) the market value of the option.

1. When the market value of the underlying instrument may be zero, such as caps and floors, or swaptions, the bank shall use the relevant nominal value.

2. When it is unclear which side is the "relevant underlying instrument", such as in the case of foreign exchange, the bank shall base its calculation on the asset that will be received when the option is exercised.

3. In the case of options with a residual maturity of more than six months the bank shall compare the strike price with the forward price instead of the current price, otherwise the in-the-money amount shall be deemed to be equal to zero.

For example, when a bank that holds 100 shares currently valued at R10 each has an equivalent put option with a strike price of R11, the bank's capital requirement shall be equal to R1,000 x 16 per cent, that is, 8 per cent specific risk plus 8 per cent general risk, which is equal to R160, less the amount the option is in the money, that is, (R11 - R10) x 100, which is equal to R100. Therefore the bank's aggregate capital requirement in respect of the said position is equal to R60.

(iii) Matters relating to the delta-plus approach

A bank that adopted the delta-plus approach for the measurement of the bank's exposure to price risk arising from option positions, which approach incorporates specified sensitivity parameters associated with options-

(A) shall incorporate the relevant delta-weighted position relating to each relevant option position, that is, the market value of the underlying instrument multiplied with the absolute value of the relevant delta, into the relevant standardised framework specified in this subregulation (7)-

(i) which standardized framework may relate to debt securities and other interest rate related instruments, equity instruments, foreign exchange risk which includes gold, or commodity risk;

(ii) which delta value measures the sensitivity of the value of the option with respect to a change in the price of the underlying asset or instrument;

(iii) which delta-equivalent amount, for example, shall be subject to the relevant general risk requirement;

(B) shall, based on the relevant requirements specified in this subparagraph (iii), in addition to the relevant requirements for delta risk and in respect of each relevant option position, separately calculate the bank's required amount of capital and reserve funds in respect of gamma sensitivity, which gamma sensitivity measures the relevant rate of change in the delta value, and vega sensitivity, which vega sensitivity measures the sensitivity of the value of the option with respect to a change in volatility, which sensitivity parameters are associated with each relevant option position and shall be calculated in the manner approved or specified in writing by the Registrar, provided that-

(i) in respect of the said calculation the bank shall treat the positions specified below as the same underlying:

(aa) In the case of interest rates and in respect of each relevant maturity ladder per currency, each relevant time band specified in table 4 in paragraph (b), provided that a bank that adopted the duration method shall use the

relevant time bands specified in table 6 in paragraph (b).

(bb) In the case of equities and stock indices, each relevant national market sector.

(cc) In the case of foreign currencies and gold, each relevant currency pair and gold.

(dd) In the case of commodities, each relevant individual commodity.

(ii) in respect of the relevant options relating to the same underlying the bank shall aggregate the relevant gamma impact value calculated in respect of each relevant option, which value may be either positive or negative, in order to determine a net gamma impact for each relevant underlying, which net gamma impact may be either positive or negative, provided that in the calculation of the bank's required amount of capital and reserve funds-

(aa) the bank shall include only negative net gamma impacts;

(bb) the total gamma capital requirement shall be equal to the sum of the absolute value of the net negative gamma impacts calculated in accordance with the relevant requirements specified in this subparagraph (iii);

(iii) in respect of volatility risk the bank shall calculate its required amount of capital and reserve funds by firstly multiplying the sum of the relevant vega values for all options relating to the same underlying by a proportional shift in volatility of ± 25 per cent and then by aggregating the absolute value of the said individual capital requirements calculated for vega risk;

(C) shall separately calculate the bank's capital requirements in respect of specific risk by multiplying the relevant delta-equivalent amount of each relevant option position with the relevant specific risk weights specified in paragraphs (b) and (c) above;

(D) shall in the case of a delta-weighted position with a debt security or interest rate instrument as the underlying instrument include the said position in the relevant interest rate time band specified in paragraph (b) above in a manner similar to other derivative instruments, that is, based on a two legged approach, provided that the bank shall treat any floating rate instruments with caps or floors as a combination of floating rate instruments and a series of European-style options.

For example-

(i) in respect of the reporting month of April, based on the relevant delta-equivalent value, the bank shall report a bought call option on a June three-month interest-rate future as a long position with a maturity of five months and a short position with a maturity of two months, and a written option as a long position with a maturity of two months and a short position with a maturity of five months;

(ii) in respect of the reporting month of April, based on the relevant delta-equivalent value, the bank shall report a two months call option on a bond future in respect of which delivery of the bond takes place in September as a long position in respect of the bond and short a five months deposit;

(iii) when the bank holds a three-year floating rate bond indexed to six month JIBAR with a cap of 15 per cent, the bank shall report a debt security that reprices in six months' time and a series of five written call options on a FRA with a reference rate of 15 per cent, each with a negative sign at the time the underlying FRA takes effect and a positive sign at the time the underlying FRA matures.

(E) shall in the case of an option with an equity instrument as the underlying instrument, based on the relevant delta-weighted position, include the relevant position in the bank's measurement framework in accordance with the relevant requirements specified in paragraph (c) above, provided that the bank shall treat each relevant national market as a separate underlying;

(F) shall in the case of an option in respect of a foreign exchange or gold position, based on the relevant delta equivalent of the said foreign currency or gold option, include the said position in the measurement of the bank's exposure in respect of the relevant currency or gold position in accordance with the relevant requirements specified in paragraph (d) above;

(G) shall in the case of an option in respect of a commodity, based on the relevant requirements of the simplified or maturity ladder approach specified in paragraph (e) above, and the relevant delta-weighted position, include the said option position;

(H) shall in respect of each relevant option position separately calculate the gamma impact according to a Taylor series expansion as:

gamma impact = ½ x gamma x VU^2

where:

VU is the variation in the price of the relevant underlying instrument of the option, which VU value-

(i) shall in the case of an interest rate option in respect of which the underlying instrument is a bond be calculated by multiplying the market value of the said underlying instrument with the relevant risk weight specified in table 4 in paragraph (b), provided that the bank shall do a similar calculation when the underlying is an interest rate, in which case the bank's calculation shall be based on the relevant assumed change in the yield specified in table 4 in paragraph (b);

(ii) shall in the case of an option in respect of an equity or equity index be calculated by multiplying the market value of the relevant underlying instrument with 8 per cent;

(iii) shall in the case of an option in respect of foreign exchange or gold be calculated by multiplying the market value of the relevant underlying instrument with 8 per cent;

(iv) shall in the case of an option in respect of a commodity be calculated by multiplying the market value of the said underlying instrument with 15 per cent.

(iv) Matters relating to the scenario approach

A bank that obtained the approval of the Registrar to adopt the scenario approach, which approach makes use of simulation techniques in order to calculate changes in the value of an options portfolio based on simultaneous changes in the relevant underlying rates or prices and the volatility of those rates or prices-

(A) shall separately calculate the bank's relevant capital requirements in respect of specific risk by multiplying the relevant delta-equivalent amount of each relevant option position with the relevant specific risk weights specified in paragraphs (b) and (c) above;

(B) shall in order to calculate the bank's relevant required amount of capital and reserve funds in respect of general risk arising from all relevant option positions develop a scenario grid, that is, a matrix that contains a specified combination of underlying price and volatility changes, provided that-

(i) based on the relevant requirements specified in the delta-plus approach, in subparagraph (iii)(B)(i) above, the bank-

(aa) shall duly define the relevant underlying positions, provided that, subject to the prior written approval of and such conditions as may be specified in writing by the Registrar, a bank that conducts significant business in options may in respect of its interest rate options base the relevant required calculations on a minimum of six sets of time bands, provided that in no case shall the bank combine more than three of the relevant specified time bands;

(bb) shall develop a separate matrix for each relevant individual underlying;

(ii) in order to calculate the bank's relevant required amount of capital and reserve funds, the bank shall revalue the relevant option portfolio by making use of the said matrices for simultaneous changes in the option's underlying rate or price and the volatility of that rate or price;

(iii) the bank shall evaluate the relevant options and the related hedging positions over the ranges specified in this sub-item (iii),

(aa) which ranges are specified above and below the current value of the relevant underlying;

(bb) which range shall in the case of interest rates be consistent with the assumed changes in yield specified in table 4 in paragraph (b), provided that a bank that obtained the approval of the Registrar to combine time bands in respect of interest rate options shall in respect of each relevant combined time band apply the highest of the assumed changes in yield applicable to the relevant group to which the time band belongs.

For example, when the bank combines time bands 3 to 4 years, 4 to 5 years and 5 to 7 years the highest assumed change in yield of the said three bands shall be equal to 0.75.

(cc) which range shall in the case of equities be equal to ± 8 per cent;

(dd) which range shall in the case of foreign exchange and gold be equal to ± 8 per cent;

(ee) which range shall in the case of commodities be equal to ± 15 per cent,

Provided that for each relevant risk category, in order to divide the relevant total range into equally spaced intervals, the bank shall use the number of observations specified in writing by the Registrar, which number of observations shall in no case be less than seven observations or price points and shall include the relevant current observation.

(iv) in respect of the second dimension of each relevant matrix the bank shall apply a single change in the volatility of the underlying rate or price equal to +25 per cent and -25 per cent, provided that the Registrar may require a bank-

(aa) to apply a different change in volatility; and/or

(bb) to calculate intermediate points on the relevant grid;

(v) in respect of each relevant underlying the bank's capital requirement shall be equal to the largest loss contained in the relevant matrix, that is, after calculating the relevant amounts in respect of each relevant matrix each relevant cell in the matrix shall reflect the relevant net profit or loss of the option and the underlying hedge instrument, and the bank's capital requirement shall be equal to the largest loss contained in the relevant matrix;

(C) shall in addition to the risks specified in this paragraph (f) duly monitor all other relevant risks arising from option positions, such as rho, that is, the rate of change in the value of an option with respect to the interest rate, and theta, that is, the rate of change in the value of the option with respect to time;

(D) may in the calculation of the bank's minimum required amount of capital and reserve funds in respect of interest rate risk include rho.

(g) The reporting bank's total capital requirement in terms of the standardised approach for the measurement of the bank's exposure to market risk shall be equal to the sum of the respective capital requirements calculated in accordance with the relevant requirements and instruments specified in this subregulation (7).

(8) *Method 2: Internal models approach*

(a) A bank that wishes to adopt the internal models approach for the measurement of the bank's exposure to market risk arising, *inter alia*, from positions held in the bank's trading book-

(i) shall obtain the prior written approval of the Registrar;

(ii) shall at all times comply with the relevant conditions and requirements specified in this subregulation (8);

(iii) shall at all times comply with such additional conditions or requirements as may be specified in writing by the Registrar,

Provided that the Registrar-

(A) may specify a period of initial monitoring and testing of the bank's internal models before the models are used by the bank to calculate the bank's relevant required amount of capital and reserve funds;

(B) shall not grant approval for a bank to apply the internal models approach for the measurement of the bank's exposure to market risk unless-

(i) the Registrar is satisfied that the bank's risk management system is conceptually sound and implemented with integrity;

(ii) the bank has demonstrated to the satisfaction of the Registrar that the bank has a sufficient number of sufficiently skilled staff-

(aa) in the use of sophisticated models in the bank's trading area;

(bb) in risk control;

(cc) in audit; and

(dd) in all relevant back-office areas;

(iii) the bank has demonstrated to the satisfaction of the Registrar that its models have a proven track record of reasonable accuracy in the measurement of the bank's relevant risk exposures;

(iv) the bank has demonstrated to the satisfaction of the Registrar that the bank regularly conducts relevant stress tests in accordance with the relevant requirements specified in paragraph (f) below.

(b) A bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk shall, based on the relevant requirements relating to the standardised approach specified in subregulation (7), separately calculate a capital requirement in respect of the bank's exposure to specific risk arising from specific issuers of debt securities or equities unless the bank complies with the requirements relating to specific risk specified in paragraph (h) below, in which case the bank may use its internal models in order to calculate the bank's exposure to specific risk and the related required amount of capital and reserve funds.

(c) Qualitative requirements

A bank that wishes to adopt the internal models approach for the measurement of the bank's exposure to market risk in respect of relevant positions held in the bank's trading book and/or banking book-

(i) shall have in place models and risk management systems that are conceptually sound and implemented with integrity;

(ii) as a minimum, shall continuously comply with the qualitative requirements specified in regulation 39(14)(b).

(d) Matters relating to the specification of relevant market risk factors

In order to sufficiently capture the risks inherent in a bank's portfolio of on-balance-sheet and off-balance-sheet trading positions, as part of the bank's internal market risk measurement system, the bank shall specify an appropriate set of market risk factors, that is, market rates and prices that affect the value of the bank's trading positions, provided that-

(i) any factor deemed relevant by the bank for pricing purposes shall be included as a risk factor in the bank's value-at-risk model.

When a risk factor is incorporated in the bank's pricing model but not in its value-at-risk model, the bank shall duly motivate, to the satisfaction of the Registrar, the omission of the said risk factor from the bank's value-at-risk model;

(ii) the bank's value-at-risk model shall duly capture-

(A) nonlinearities associated with options and other relevant products, such as mortgage-backed securities, tranched exposures or n-th-to-default credit derivative instruments;

(B) correlation risk and basis risk, for example, between credit default swaps and bonds;

(iii) the bank shall demonstrate to the satisfaction of the Registrar that any proxy used by the bank in its value-at-risk model has a good track record in respect of the actual position held by the bank, such as an equity index used for a position in an individual instrument;

(iv) in the case of interest rates-

(A) based on the nature of the bank's trading strategies, the bank shall specify an appropriate set of risk factors that correspond to the relevant interest rates in each relevant currency in which the bank holds interest-rate-sensitive on-balance-sheet or off-balance-sheet positions, that is, a bank with a portfolio of various types of security across many points of the yield curve and that engages in complex arbitrage strategies, for example, requires a greater number of risk factors to accurately capture the bank's exposure to interest rate risk;

(B) the bank's risk measurement system, amongst other things-

(i) shall model the yield curve, for example, by estimating forward rates of zero coupon yields;

(ii) shall incorporate separate risk factors to capture spread risk, for example, between bonds and swaps.

A bank may use a variety of approaches to capture the spread risk arising from less than perfectly correlated movements between government and other fixed-income interest rates.

For example, the bank may model a completely separate yield curve for non-government fixed-income instruments, such as swaps or municipal securities, or estimate the spread over government rates at various points along the yield curve.

(C) in order to capture variation in the volatility of rates along a yield curve, the bank shall divide the yield curve into appropriate maturity segments and specify no less than one risk factor corresponding to each relevant maturity segment;

(D) in respect of material exposure to interest rate movements in major currencies and markets, the bank shall model a yield curve using no less than six risk factors;

(v) in the case of exchange rates, which include gold-

(A) the bank shall, as a minimum, specify relevant risk factors in respect of the exchange rate between the domestic currency and each foreign currency in which the bank has a significant exposure;

(B) the bank's risk measurement system shall incorporate the said risk factors relating to the individual foreign currencies in which the bank's positions are denominated.

(vi) in the case of equities-

(A) the sophistication and nature of the bank's modelling technique for a particular market shall correspond-

(i) to the bank's exposure to the overall market; and

(ii) to the bank's concentration in individual equity issues in the said market;

(B) the bank shall, as a minimum, specify relevant risk factors in respect of each of the equity markets in which the bank holds significant positions, that is, based on the bank's exposure to the overall market and the bank's concentration in individual equity issues in the said market-

(i) the bank shall, as a minimum, specify a risk factor designed to capture market-wide movements in equity prices, such as a market index, and, for example, express positions in individual securities or in sector indices as "beta-equivalents" relative to the said market-wide index;

(ii) the bank shall specify risk factors in respect of the various sectors of the overall equity market, such as industry sectors or cyclical and non-cyclical sectors, and, for example, express positions in individual instruments within each sector as beta-equivalents relative to the sector index;

(iii) the bank shall specify risk factors relating to the volatility of individual equity issues.

(vii) in the case of commodities the bank shall specify relevant risk factors in respect of each relevant commodity market in which the bank holds significant positions, provided that-

(A) a bank with limited positions in commodity-based instruments may specify only one risk factor in respect of each commodity price to which the bank is exposed;

(B) a bank that actively trades in commodities shall duly take account of any variation in the convenience yield between derivatives positions, such as forwards and swaps, and cash positions in the commodity, which yield-

(i) reflects the benefits from direct ownership of a physical commodity, such as the ability to profit from temporary market shortages;

(ii) is affected by market conditions and factors such as physical storage cost;

(C) the bank shall duly manage its exposure to directional risk, forward gap and interest rate risk, and any relevant basis risk.

(e) Quantitative requirements relating to, among other things, minimum statistical parameters for the measurement of a bank's exposure to market risk

(i) A bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk arising from relevant positions held in the bank's trading book and/or banking book-

(A) shall on a daily basis calculate the bank's value-at-risk ("VaR") amount, which VaR amount-

(i) shall be based on a 99^{th} percentile, one-tailed confidence interval;

(ii) shall be based on an instantaneous price shock equivalent to a ten day movement in market prices, that is, a minimum "holding period" of ten trading days, provided that when the bank is unable to determine the required value-at-risk amounts based on a ten day holding period, and the bank's VaR amount is based on a holding period of less than ten trading days, the bank shall scale up the relevant calculated VaR amounts to ten trading days by making use of, for example, the relevant square root of time formula for the treatment of options, provided that a bank that does make use of such square root of time formula to scale up its relevant calculated VaR amount to ten trading days shall periodically demonstrate to the satisfaction of the Registrar the continued reasonableness of the said calculation;

(iii) shall be based on a historical observation period or sample period of no less than one year, provided that-

(aa) the Registrar may require a bank to calculate its value-at-risk amount based on a shorter observation period when, in the opinion of the Registrar, the said calculation is justified by a significant upsurge in market price volatility;

(bb) a bank that uses a weighting scheme or other methods in respect of the historical observation period shall ensure that the "effective" observation period is no less than one year, that is, the weighted average time lag of the individual observations shall not be less than six months, or the method used by the bank shall result in a required amount of capital and reserve funds at least as conservative as the amount calculated in accordance with the requirement related to the aforesaid observation

period;

(B) shall update its data sets no less frequently than once every month, provided that the bank shall reassess the relevant data sets whenever market prices are subject to material changes, that is, the bank's internal processes related to the updating of data sets shall be sufficiently flexible to allow for the frequent updating of all relevant data sets;

(C) may recognise empirical correlations **within** broad risk categories such as interest rates, exchange rates, equity prices and commodity prices, including related option volatilities in respect of each relevant risk-factor category, provided that, subject to the prior written approval of and such further conditions as may be specified in writing by the Registrar, a bank may also recognise empirical correlations **across** broad risk factor categories;

(D) shall have in place a robust risk measurement system, which risk-measurement system-

(i) among other things, shall duly capture the unique risks associated with options within each of the specified broad categories of risk, that is, the bank's model shall accurately capture the non-linear price characteristics associated with option positions, provided that-

(aa) ultimately the bank shall move towards the application of a full 10-day price shock to option positions or positions that display option-like characteristics;

(bb) the Registrar may require a bank to adjust its capital measure for option risk through the application of methods such as periodic simulations or stress testing, the results of which simulations or stress testing shall be duly documented;

(ii) shall contain a set of risk factors that captures the volatilities of the rates and prices underlying all relevant option positions, that is, vega risk, provided that a bank with large and/or complex option portfolios shall have in place detailed specifications of the relevant volatilities, that is, based on the relevant different maturities of the bank's option positions, the bank shall measure the relevant volatilities relating to all relevant option positions.

(E) shall, in addition to the aforesaid VaR calculation, calculate a stressed value-at-risk ("sVaR") measure, which sVaR-

(i) replicates a value-at-risk calculation that would be generated on the bank's current portfolio if the relevant market factors were subject to a period of significant stress;

(ii) shall be based on a 10-day, 99th percentile, one-tailed confidence interval value-at-risk measure of the bank's current portfolio, with model inputs calibrated to historical data from a continuous 12-month period of significant financial stress relevant to the bank's portfolio, such as a 12-month period relating to significant losses incurred during the 2007/2008 financial market crisis, which period shall regularly be reviewed by the bank;

(iii) shall be calculated at least once every week;

(iv) calculation and any related matter, including the relevant 12-month period of significant financial stress, shall be subject to such further conditions or requirements as may be specified in writing by the Registrar;

(ii) No particular type of model is prescribed, that is, a bank may, at the discretion of the bank, for example, use models based on variance-covariance matrices, historical simulations, or Monte Carlo simulations, provided that the model used by the bank shall capture all relevant material risks incurred by the bank.

(iii) On a daily basis, as a minimum, subject to any relevant requirement related to the calculation and/or maintenance of a minimum required amount of capital and reserve funds that may be specified in the form BA 700 or in regulation 38 of these Regulations, a bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk shall maintain a capital requirement in respect of the said exposure, equal to the sum of-

(A) the higher of-

(i) the previous day's VaR amount, that is, VaR_{t-1}, measured in accordance with the relevant parameters and requirements specified in this subregulation (8); or

(ii) the average amount of the daily VaR amount, that is, VaR_{avg}, calculated in accordance with the relevant parameters and requirements specified in this subregulation (8), in respect of each of the preceding sixty business days, multiplied by the multiplication factor, m_c, envisaged in subparagraph (iv) below;

and, or plus-

(B) the higher of-

(i) the latest available sVaR amount, that is, $sVaR_{t-1}$, measured in accordance with the relevant parameters and requirements specified in this subregulation (8); or

(ii) the average amount of the sVaR amount, that is, $sVaR_{avg}$, calculated in accordance with the relevant parameters and requirements specified in this subregulation (8), in respect of the preceding sixty business days, multiplied by the multiplication factor, m_s, envisaged in subparagraph (iv) below;

that is, the bank's required amount of capital and reserve funds shall be equal to:

$$\max\{VaR_{t-1}; m_c \times VaR_{avg}\} + \max\{sVaR_{t-1}; m_s \times sVaR_{avg}\}$$

(iv) Based on, among other things, the Registrar's assessment of the quality of a bank's risk management system and related processes, the Registrar shall specify in writing the aforesaid multiplication factors, m_c and m_s, which multiplication factors shall in no case be less than three, and a "plus-factor", which plus-factor-

(A) shall directly relate to the ex-post performance of the bank's model, thereby providing a built-in incentive for the bank to maintain or improve the predictive quality of the model;

(B) based on the outcome of backtesting, may range between zero and one, that is, when the backtesting results of the relevant bank-

(i) are satisfactory, and the bank complies with all the qualitative standards specified in regulation 39(14)(b), the plus factor may be equal to zero; or

(ii) fall into the red zone specified by the Registrar from time to time, the multiplication factor applicable to the said bank's model shall automatically increase by one, to four.

(C) shall be based on the outcome of backtesting in respect of the bank's VaR amount, and not the bank's sVaR amount.

(f) Specific matters relating to stress testing

(i) A bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk shall have in place a rigorous and comprehensive programme or process of stress testing-

(A) which programme or process of stress testing-

(i) shall be sufficiently robust to identify events or influences that may have a material impact on the bank's exposure to risk;

(ii) shall form an integral part of the bank's assessment of its capital adequacy;

(iii) shall duly make provision for stress scenarios that cover a range of factors that may cause extraordinary losses or gains in respect of the bank's trading positions and portfolios, or complicate the control of the relevant risks in the said portfolios-

(aa) which factors shall include low probability events in all major types of risk, including the various components of market risk, credit risk and operational risks;

(bb) which stress scenarios shall provide sufficient information relating to the impact of the said events on positions that display linear and/or non-linear price characteristics, that is, options and instruments with option-like characteristics;

(iv) shall be quantitative and qualitative in nature, incorporating, among other things, market risk and liquidity aspects of market disturbances-

(aa) which quantitative criteria shall identify plausible stress scenarios to which the bank may be exposed;

(bb) which qualitative criteria shall include-

(i) an evaluation of the capacity of the bank's capital and reserve funds to absorb potential material losses;

(ii) the identification of steps that the bank can take in order to reduce the bank's exposure to risk, or to conserve capital;

(v) shall be sufficiently robust to combine stress scenarios specified by the Registrar with stress tests developed by the bank in order to reflect the specific risk characteristics of the bank.

(B) the results of which stress testing-

(i) shall routinely be communicated to the bank's senior management and board of directors;

(ii) shall form an integral part of determining and evaluating the bank's management strategy;

(iii) shall be duly documented.

(ii) At the request of the Registrar, the reporting bank shall conduct the tests and provide the information relating to the matters specified below:

(A) Supervisory scenarios not requiring any simulation by the bank

For review by the Registrar, a bank shall have available detailed information relating to the largest losses experienced by the bank during a particular reporting period, which information-

(i) may be compared to the level of required and allocated capital and reserve funds calculated in terms of a bank's internal models;

(ii) shall be sufficient to indicate to the Registrar how many days of peak day losses would have been covered by a given value-at-risk estimate.

(B) Scenarios requiring simulation by the bank

At the request of the Registrar, the reporting bank-

(i) shall subject its portfolios to a series of simulated stress scenarios, which scenarios-

(aa) may include a test of the bank's current portfolio against previous periods of significant disturbance, such as the sharp fall in equity markets during 1987 or the 2007/2008 sub-prime and financial market crisis, incorporating large price movements and a sharp reduction in liquidity associated with such events;

(bb) may evaluate the sensitivity of the bank's market risk exposure to changes in the assumptions relating to volatilities and correlations. Application of this test would require an evaluation of the historical range of variation for volatilities and correlations and an evaluation of the bank's current positions against the extreme values associated with the said historical range;

(cc) may include or evaluate such other matters or assumptions as may be specified in writing by the Registrar;

(ii) shall in writing provide to the Registrar the results of the aforesaid simulated stress scenarios,

Provided that in respect of the aforesaid stress scenarios, the bank shall consider the impact of sharp variations that may have occurred in a matter of days during periods of significant market disturbance in the past. For example, at the height of some of the historic financial market stress events or scenarios, correlations within risk factors approached the extreme values of 1 or -1 for several days.

(C) Scenarios developed by the bank in order to capture the specific characteristics of its portfolio

In addition to the scenarios envisaged in items (A) and (B) above, based on the characteristics of the bank’s relevant portfolio, the reporting bank shall develop its own stress tests and scenarios identified by the bank to be most adverse, which scenarios, for example, may include problems experienced in a key region of the world combined with a sharp change in oil prices or prices of other commodities traded in the particular region, provided that-

(i) the bank shall in writing provide the Registrar with a description of the methodology used by the bank to identify and conduct the aforesaid scenarios, and a description of the results;

(ii) the results of the aforesaid stress tests and scenarios shall regularly be reviewed by the senior management of the bank and shall be duly reflected in the relevant policies approved and limits set by the bank’s senior management and board of directors.

Provided that when the aforesaid results reveal particular vulnerability to a particular set of circumstances, the bank shall take prompt actions in order to appropriately manage the relevant risks, which actions may include hedging against or reducing the extent of the bank’s exposure to market risk.

(g) Matters relating to external validation

From time to time the Registrar may require that a process of external validation be conducted in respect of the accuracy of the models of a bank that obtained the approval of the Registrar to adopt the internal models approach for the measurement of the bank's exposure to market risk, which external validation-

(i) may be conducted by external consultants, external auditors, the Registrar or such other person as may be specified in writing by the Registrar;

(ii) as a minimum, shall provide reasonable assurance to the Registrar that-

(A) the internal validation processes envisaged in regulation 39(14)(b) are duly functioning;

(B) the formulae used-

(i) in the calculation of the bank's risk exposure and required amount of capital and reserve funds; and

(ii) in the pricing of options and other complex instruments,

are regularly validated by a qualified unit, which unit shall in all cases be independent from the relevant trading areas;

(C) the structure of the said internal models is adequate in relation to the bank's activities and geographical coverage;

(D) based on the results of, amongst other things, the backtesting process of the bank's internal measurement system, during which process the bank's value-at-risk estimates are compared to actual profits and losses, it is concluded that the models provide a reliable measure of potential losses that may be suffered by the bank over time, for which purposes, when requested, the bank shall make available the results of and the underlying inputs to its value-at-risk calculations;

(E) data flows and processes associated with the bank's risk-measurement system are transparent and accessible, that is, whenever necessary and provided that the appropriate procedures have been followed, the bank shall ensure easy access to the specifications and parameters of the relevant models.

Provided that the provisions of this paragraph (g) do not in any way derogate from the general requirement imposed on banks that wish to obtain the approval of the Registrar to adopt the internal models approach for the measurement of their exposure to market risk to ensure that the accuracy of their internal models is subject to a robust process of external validation.

(h) Matters specifically related to the treatment of specific risk

(i) A bank that has in place a VaR model that measures and incorporates specific risk arising from equity positions, debt securities or other interest rate related instruments, other than securitisation or resecuritisation exposures and n-th-to-default credit derivative instruments, held in the bank's trading book, which model, in addition to the relevant requirements specified in this paragraph (h) and in regulation 39(14)(c) of these Regulations, to the satisfaction of the Registrar, meets all the relevant qualitative and quantitative requirements relating to general market risk models envisaged or specified in paragraphs (c) to (e) of this subregulation (8), may, subject to the prior written approval of and such conditions as may be specified in writing by the Registrar, base the bank's required amount of capital and reserve funds relating to specific risk on the bank's modelled estimate of specific risk, provided that-

(A) a bank that is unable to comply with the additional criteria and requirements specified in this paragraph (h) shall calculate its relevant required amount of capital and reserve funds relating to specific risk in accordance with the relevant requirements specified in the standardised method, in subregulation (7);

(B) unless specifically otherwise provided in this paragraph (h), in the case of securitisation or resecuritisation exposure and n-th-to-default credit derivative instruments, the bank shall calculate its relevant required amount of capital and reserve funds relating to specific risk in accordance with the relevant requirements specified in the standardised method, in subregulation (7);

(C) as a minimum, the bank's model-

(i) shall capture all relevant material components of price risk;

(ii) shall be responsive to relevant changes in market conditions and compositions of portfolios;

(iii) shall duly explain the historical price variation in the portfolio by way of, for example, the application of "goodness-of-fit" measures such as an R-squared measure from regression methodology, or such measure as may be approved in writing by the Registrar;

(iv) shall duly capture concentrations that include magnitude and changes in composition, that is, the bank shall demonstrate to the satisfaction of the Registrar that the model is sensitive to changes in portfolio construction and reflects higher capital requirements in respect of portfolios with increasing concentrations relating to particular names or sectors;

(v) shall be sufficiently robust to an adverse environment, that is, the bank shall demonstrate to the satisfaction of the Registrar that the model signals rising risk in an adverse environment, which, for example, may be achieved by incorporating in the historical estimation period of the model at least one full credit cycle and ensuring that the model duly reflects the impact of the downward portion of the cycle;

(vi) shall duly capture name-related basis risk, that is, the bank shall demonstrate to the satisfaction of the Registrar that the model is sensitive to material idiosyncratic differences between similar but not identical positions such as, for example, debt positions with different levels of subordination or maturity mismatches, or credit derivative instruments that specify different default events;

(vii) shall duly capture event risk which, in the case of debt positions, shall include migration risk, and, for example, in the case of equity positions, events that are reflected in large changes or jumps in prices, such as merger break-ups or takeovers;

(viii) shall be validated through relevant and robust backtesting;

(ix) shall conservatively assess risk arising from less liquid positions and/or positions with limited price transparency under realistic market scenarios;

(x) shall only make use of proxies when available data is insufficient or not reflective of the actual volatility of a position or portfolio, and only when the said proxies are appropriately conservative;

(D) when the bank is exposed to event risk that is not duly reflected in the bank's estimate of VaR due to the event, for example, being beyond the 10-day holding period or 99th per cent confidence interval, that is, low probability and high severity events, the bank shall factor into its internal assessment of economic capital the said impact, for example, through stress testing;

(E) in the case of interest rate related instruments or positions, that is, instruments or positions subject to specific interest rate risk, other than securitisation or resecuritisation exposures and n-th-to-default credit derivative instruments, the bank's internally developed approach shall duly capture incremental default and migration risks, that is, risks that are incremental to the relevant risks specified in item (C) above, provided that-

(i) the bank's incremental risk requirement (IRC) shall as a minimum estimate-

(aa) the default risk, that is, the potential for direct loss due to an obligor's default as well as the potential for indirect losses that may arise from a default event, including losses caused by broader market-wide events affecting multiple issues or issuers; and

(bb) the migration risks, that is, the potential for direct loss due to an internal or external rating downgrade or upgrade as well as the potential for indirect losses that may arise from a credit migration event,

of all relevant unsecuritised credit products over a one-year capital horizon at a confidence level of 99.9 per cent, taking into account the liquidity horizons of all relevant positions or sets of positions;

(ii) the bank's approach and models used to capture incremental risks shall meet a soundness standard comparable to the standard specified in respect of the IRB approach for credit risk, specified in regulation 23 of these Regulations, under the assumption of a constant level of risk, and adjusted where appropriate to reflect the impact of liquidity, concentrations, hedging, and optionality;

(iii) as stated hereinbefore, for each IRC-covered position, the bank's model shall capture the impact of rebalancing positions at the end of their liquidity horizons so as to achieve a constant level of risk over a one-year capital horizon, that is-

(aa) the bank shall rebalance or roll over the relevant positions over the one-year capital horizon in a manner that maintains the initial risk level, as indicated by a metric such as VaR or the profile of exposure by credit rating and concentration.

Rebalancing positions does not imply, as the IRB approach for the banking book does, that the same positions will be maintained throughout the capital horizon. Particularly for more liquid and more highly rated positions, this provides a benefit relative to the treatment under the IRB framework.

However, a bank may use a one-year constant position assumption, as long as it does so consistently across all relevant portfolios.

(bb) the bank shall incorporate the effect of replacing positions of which the credit characteristics have improved or deteriorated over the liquidity horizon with positions that have risk characteristics equivalent to those that the original position had at the start of the liquidity horizon;

Provided that the frequency of the aforesaid assumed rebalancing shall be governed by the liquidity horizon for a given position;

(iv) the liquidity horizon-

(aa) shall represent the time required to sell the relevant position or hedge all material risks covered by the IRC model in a stressed market;

(bb) shall be measured under conservative assumptions, and shall be sufficiently long that the act of selling or hedging, in itself, does not materially affect market prices;

(cc) shall be subject to a floor of three months for any relevant position or set of positions;

(dd) shall be greater for positions that are concentrated-

(i) to reflect the longer period needed to liquidate such positions; and

(ii) to provide adequate capital against two types of concentration, namely issuer concentration and market concentration.

Provided that a bank may assess liquidity by position or on an aggregated basis (“in buckets”).

When an aggregated basis is used, such as investment-grade corporate exposures not part of a core CDS index, the aggregation criteria shall be defined in a way that meaningfully reflect differences in liquidity.

(v) the bank’s incremental risk requirement shall include the impact of correlations between default and migration events among obligors since dependence among obligors may cause a clustering of default and migration events;

(vi) consistent with the principle contained in these Regulations not to allow any diversification benefit when combining capital requirements for credit risk and market risk, the bank's incremental risk requirement shall not incorporate or reflect any diversification benefit between default or migration events and other market variables, that is, the capital requirement for incremental default and migration risk shall be added to the bank's VaR-based capital requirement for market risk;

(vii) the bank's incremental risk requirement shall appropriately reflect issuer and market concentrations, including concentrations that can arise within and across product classes under stressed conditions.

Therefore, other things being equal, a concentrated portfolio shall attract a higher incremental risk capital requirement than a more granular portfolio.

(viii) within the bank's IRC model, consistent with the principle relating to gross balances, contained in these Regulations, exposure amounts shall be captured on a gross basis, provided that long and short positions that relate to the same financial instrument may be netted, that is, hedging or diversification effects associated with long and short positions involving different instruments or different securities of the same obligor ("intra-obligor hedges"), as well as long and short positions in different issuers ("inter-obligor hedges"), shall not be recognised through the netting of exposure amounts;

(ix) the bank's incremental risk requirement shall duly reflect significant basis risks by product, seniority in the capital structure, internal or external rating, maturity, vintage for offsetting positions as well as differences between offsetting instruments, such as different payout triggers and procedures;

(x) for trading book risk positions that are hedged via dynamic hedging strategies, the bank may recognize a rebalancing of the hedge within the liquidity horizon of the hedged position, provided that-

(aa) the bank shall model the rebalancing of the hedge consistently over the relevant set of trading book risk positions;

(bb) the bank shall demonstrate to the satisfaction of the Registrar-

(i) that the said inclusion of rebalancing results in a better risk measurement;

(ii) that the markets for the instruments serving as a hedge are liquid enough to allow for this kind of rebalancing, even during periods of stress;

(iii) that any residual risks resulting from the bank's dynamic hedging strategies are duly incorporated into the bank's capital requirement;

(xi) the bank's IRC model shall reflect the impact of optionality, that is, the bank's models shall include the nonlinear impact of options and other positions with material nonlinear behavior with respect to price changes, and the bank shall duly consider and evaluate the model risk inherent in the valuation and estimation of price risks associated with such products;

(xii) the bank's model may incorporate correlation effects among the modelled risk factors, subject to the validation standards specified in regulation 39(14)(c);

(xiii) the bank's internally developed approach to capture incremental default and migration risks shall comply with the relevant additional qualitative requirements specified in regulation 39(14)(c);

(xiv) the bank may choose to consistently include all listed equity and derivative positions based on listed equity in its incremental risk model when such inclusion is consistent with how the bank internally measures and manages this risk at the trading desk level, provided that when equity securities are included in the computation of incremental risk, default shall be deemed to occur when the related debt defaults;

(xv) when computing the bank's incremental risk requirement, the bank shall in no case incorporate into its IRC model any securitisation positions, even when securitisation positions are regarded by the bank as hedging underlying credit instruments held in the bank's trading book;

(xvi) the bank's internally developed approach and IRC model shall be subject to the "use test", that is, the bank's approach and model shall be consistent with the bank's internal risk management policies, processes, procedures and methodologies for identifying, measuring, and managing its trading risks;

(xvii) a bank that does not capture the said incremental risks through its internal models shall calculate the relevant required amount of capital and reserve funds for specific risk in accordance with the relevant requirements specified in subregulation (7) above;

(F) the bank's correlation trading portfolio shall be subject to the further conditions and requirements specified in subparagraph (ii) below;

(G) the bank shall regularly conduct backtesting specifically aimed at assessing whether or not specific risk is duly captured, that is, the bank shall conduct separate backtests in respect of each relevant sub-portfolio approved by the Registrar using daily data in respect of the said sub-portfolio subject to specific risk;

(H) the bank shall have in place a robust process in order to analyse exceptions identified through the backtesting of specific risk, which process, among other things, shall serve as a basis for correcting the bank's model for specific risk when the model becomes inaccurate.

(ii) Subject to the prior written approval of and such conditions as may be specified in writing by the Registrar, a bank may incorporate in its internally developed approach and models, the bank's correlation trading portfolio, provided that-

(A) the bank shall demonstrate to the satisfaction of the Registrar-

(i) that the bank complies with the qualitative requirements specified or referred to in this paragraph (h);

(ii) that the bank has sufficient market data to ensure that it fully captures the salient risks of all relevant exposures;

(iii) that the bank's risk measures can appropriately explain, for example through backtesting, the historical price variation of the relevant instruments or products;

(iv) that the bank is able to separate the instruments or positions for which it obtained approval to incorporate them in the bank's comprehensive risk measure from the instruments or positions for which the bank did not obtain the said approval;

(v) that the bank regularly applies a set of specific predetermined stress scenarios-

(aa) which stress scenarios shall be applied at least weekly;

(bb) the results of which stress scenarios, including comparisons with the capital requirements implied by the banks' internal model for estimating comprehensive risks as envisaged in this subparagraph (ii), shall be reported in writing to the Registrar on a frequent basis, but not less frequently than once a quarter;

Provided that any instances where the stress tests indicate a material shortfall of the comprehensive risk measure shall immediately be reported in writing to the Registrar.

(cc) which stress scenarios, as a minimum, shall examine the implications of stresses-

(i) to default rates;

(ii) to recovery rates;

(iii) to credit spreads;

(iv) to correlations on the correlation trading desk's profit and loss;

(dd) based on which stress testing results, the Registrar may impose a supplemental capital requirement against the bank's correlation trading portfolio, which requirement shall be in addition to the bank's relevant internally calculated capital requirement;

(B) the said approach and models shall duly capture not only incremental default and migration risks as stated hereinbefore, but all relevant components of price risk, that is, the bank shall have in place a comprehensive risk measurement approach in respect of its correlation trading portfolio that captures all relevant components of price risk that impact the value of the relevant instruments or products, including-

(i) the cumulative risk arising from multiple defaults, including the ordering of defaults, in tranched products;

(ii) credit spread risk, including the relevant gamma and cross-gamma effects;

(iii) volatility of implied correlations, including the relevant cross effect between spreads and correlations;

(iv) basis risk, including both-

(aa) the basis between the spread of an index and those of its constituent single names; and

(bb) the basis between the implied correlation of an index and that of bespoke portfolios;

(v) recovery rate volatility, as it relates to the propensity for recovery rates to affect tranche prices; and

(vi) to the extent that the comprehensive risk measure incorporates the benefits from dynamic hedging, the risk of hedge slippage and the potential cost of rebalancing such hedges.

(C) this exception shall be available only to banks that actively buy and sell the relevant instruments or products;

(D) the bank's required amount of capital and reserve funds relating to exposures included in the bank's internally developed approach and models shall not be less than eight per cent of the specific risk requirement calculated in accordance with the relevant requirements specified in subregulation (7);

(E) the relevant exposures shall be incorporated into both the value-at-risk and stressed value-at-risk measures of the bank;

(F) the bank shall at least weekly, or more frequently when directed in writing by the Registrar, calculate the incremental risk measure according to the relevant requirements specified in subparagraph (i)(E) above, and the comprehensive risk measure according to the requirements specified in this subparagraph (ii);

(G) the bank's capital requirement-

(i) for incremental risk shall be equal to the higher of-

(aa) the average of the incremental risk measures over 12 weeks; and

(bb) the most recent incremental risk measure,

multiplied by a scaling factor of 1.0.

(ii) for comprehensive risk shall be equal to the higher of-

(aa) the average of the comprehensive risk measures over 12 weeks; and

(bb) the most recent comprehensive risk measure,

multiplied by a scaling factor of 1.0.

(iii) shall be the sum of the aforesaid two amounts, calculated in accordance with the requirements specified in sub-items (i) and (ii) of this item (F).

Provided that for the purposes of these Regulations no adjustment shall be made in respect of any potential double counting between the comprehensive risk measure and any other relevant risk measure.

(iii) For the purposes of these Regulations the presumption shall be that models that incorporate specific risk are not eligible for approval when the stress-testing and backtesting results of the model, at sub-portfolio level, produce a number of exceptions commensurate with the red zones specified in writing by the Registrar in respect stress-testing and backtesting from time to time.