South Africa

Banks Act, 1990

Regulations relating to Banks' Financial Instrument Trading, 1998

Government Notice R1058 of 1998

Legislation as at 1 October 2001

FRBR URI: /akn/za/act/gn/1998/r1058/eng@2001-10-01

There may have been updates since this file was created.

PDF created on 16 April 2024 at 08:27.

Check for updates

About this collection

The legislation in this collection has been reproduced as it was originally printed in the Government Gazette, with improved formatting and with minor typographical errors corrected. All amendments have been applied directly to the text and annotated. A scan of the original gazette of each piece of legislation (including amendments) is available for reference.

Regulations relating to Banks' Financial Instrument Trading, 1998
Contents

South Africa

Banks Act, 1990

Regulations relating to Banks' Financial Instrument Trading, 1998

Government Notice R1058 of 1998

Published in Government Gazette 19165 on 21 August 1998

Commenced on 1 October 1998

[This is the version of this document as it was from 1 October 2001 to 31 December 2002.]

[Amended by Regulations relating to Banks' Financial Instrument Trading, 1998: Amendment (Government Notice R1006 of 2001) on 1 October 2001]

The Minister of Finance has under section 90 of the Banks Act, 1990 (Act No. 94 of 1990), made the regulations contained in the Schedule.

Chapter 1
Definitions

1. Definitions

In these Regulations, "**the Act**" means the Banks Act, 1990 (Act No. 94 of 1990), and any word or expression to which a meaning has been assigned in the Act or the Regulations relating to Banks shall bear the meaning so assigned thereto and, unless the content otherwise indicates—

"**associate**"—

(a) in relation to a juristic person—

(i) which is a company, means any subsidiary or holding company of that company, any other subsidiary of that holding company and any other company of which that holding company is a subsidiary;

(ii) which is a close corporation registered under the Close Corporations Act, 1984 (Act No. 69 of 1984), means any member thereof;

(iii) which is not a company or a close corporation as contemplated in this definition, means another juristic person that would have been a subsidiary of the first-mentioned juristic person—

(aa) had such first-mentioned juristic person been a company; or

(bb) in the case when that other juristic person, too, is not a company, had both the first-mentioned juristic person and that other juristic person been a company;

(iv) means any person in accordance with whose directions or instructions the board of directors of or, in the case when such juristic person is not a company, the governing body of such juristic person is accustomed to act; and

(b) in relation to any person—

(i) means any juristic person of which the board of directors or, in the case when such juristic person is not a company, of which the governing body is accustomed to act in accordance with the directions or instructions of the person first-mentioned in this paragraph; and

(ii) includes any trust controlled or administered by that person;

"**bank**" means an institution that is registered as a—

(a) bank in terms of the Banks Act; or

(b) mutual bank in terms of the Mutual Banks Act;

"**connected persons**" means two or more persons—

(a) that are predominantly engaged in financial activities;

(b) one or more of which is a bank;

(c) each of which is an associate of any one of the others; and

(d) that—

(i) owing to the fact that one of them directly or indirectly owns or exercises control over the other or others, constitutes a single financial entity; or

(ii) are so interconnected that should one of them experience financial difficulties, another one or all of them would be likely to be adversely affected,

irrespective of whether any of those persons are not domiciled in the same country as the other or others;

"**financial asset**" means—

(a) cash;

(b) a contractual right to—

(i) receive cash or another financial asset from another person;

(ii) exchange financial instruments with another person under conditions that are potentially favourable; or

(c) an equity instrument;

"**financial instrument**" means any instrument that gives rise to a financial—

(a) asset of one person; and;

(b) liability or equity instrument of another person;

"**financial liability**" means an obligation to—

(a) deliver cash or another financial asset to another person; or

(b) exchange financial instruments with another person under conditions that are potentially unfavourable;

"**holding of a financial instrument**" means the holding of a financial instrument by a bank—

(a) on behalf of a buyer or seller;

(b) for purposes of the management and control of such financial instrument;

(c) within the limited or unlimited discretion of the bank; and

(d) for any length of time;

"**long position**" means the position when a person has bought a financial instrument in order to establish a market position and such market position has not yet been closed out by means of an offsetting sale;

"**market value**" means the amount obtainable from the sale, or payable on acquisition, of a financial instrument in the market;

"**Mutual Banks Act**" means the Mutual Banks Act, 1993 (Act No.124 of 1993), as amended from time to time;

"**net market value**" means the aggregated market value of all the long and short positions in a particular financial instrument category;

"**netting**" means the process whereby—

(a) a person's long position in a financial instrument is off-set against that person's short position in the financial instrument; and

(b) that person's short position in a financial instrument is off-set against his long position in the financial instrument,

in order to ascertain the net position of the person in question;

"**particular instrument**" means an interest-rate future, forward rate agreement or forward commitment to buy or sell loan stock;

"**qualifying capital**" for purposes of a bank's trading activities includes tertiary capital;

"**realisable value**" means a fair estimate of the market value at which a position could be sold without unduly affecting the market price of the instrument;

"**Regulations relating to Banks**" means the Regulations relating to Banks as promulgated in Government Notice No. R.628 of 26 April 1996, as amended from time to time;

"**short position**" means the position when a person has sold a financial instrument in order to establish a market position and such market position has not been closed out by means of a matching purchase;

"**stock position**" includes—

(a) commodities when the full contract price has been paid for;

(b) work-in-progress and finished goods resulting from the processing of commodities; or

(c) raw materials that will be combined with commodities to produce a finished processed commodity;

"**tertiary capital**" means—

(a) accrued current-period uncapitalised profits derived from the trading book; or

(b) capital obtained by means of an unsecured subordinated loan for a period of not less than two years subject at least to the condition that—

(i) the prior written approval of the Registrar is obtained before the proceeds of such loan may qualify as capital;

(ii) the underlying debt instrument shall not be payable to bearer;

(iii) the loan may be repaid before maturity only at the option of the bank concerned and with the prior written approval of the Registrar;

(iv) no asset of the borrowing bank may be pledged or otherwise encumbered as security for any liability by virtue of the loan; and

(v) in the event of the borrowing bank's qualifying capital falling below the prescribed minimum amount, the Registrar may require that interest and capital payments in respect of the loan be deferred for such a period of time and subject to such conditions, if any, as the Registrar may deem fit;

"**trading book of a bank**" includes—

(a) proprietary positions in financial instruments that are held for resale or that are taken on by the bank with the intention of benefitting, in the short term, from actual or expected differences between their buying and selling prices, or from other price or interest-rate variations, or positions

in financial instruments arising from matched principal broking, or positions taken in order to hedge other elements of the trading book;

(b) exposures due to unsettled transactions, free deliveries and over-the-counter ("OTC") derivative instruments, including exposures resulting from—

(i) repurchase agreements and securities lending based on securities included in the trading book, as contemplated in paragraph (a);

(ii) resale agreements and securities borrowing transactions;

and subject to at least the following conditions—

(i) exposures are marked to market on a daily basis;

(ii) collateral is adjusted in order to take account of material changes in the value of the underlying securities involved in the agreement or transaction in question; and

(iii) an agreement exists that allows the claims of the bank to be automatically and immediately offset against the claims of its counterparty in the event of default;

(c) exposures, in the form of fees, commission, interest, dividends, and margin on exchange-traded derivatives, that are directly related to the items included in paragraph (a) or (b).

Chapter 2
General

2. Capital

(1) Subordinated debt qualifying as secondary capital for purposes of a bank's trading activities may not exceed 50 per cent of the primary capital allocated for trading activities.

(2) Secondary capital used to meet the trading book requirements of a bank may not exceed 100 per cent of the primary capital allocated for trading activities.

(3) The total amount of secondary and tertiary capital may not exceed the amount of primary capital allocated for trading purposes, except with the prior written approval of the Registrar; in which event the total amount of secondary and tertiary capital may not exceed 250 per cent of the primary capital allocated for trading purposes.

(4) Tertiary capital may be used only to cover the capital requirements for market risk, including foreign-exchange: risk and commodities risk.

3. Interest-rate swaps

(1) Interest-rate swaps shall for purposes of interest-rate risk be treated on the same basis as on-balance-sheet instruments.

(2) An interest-rate swap under which a bank receives a floating-rate interest flow shall be treated as being equivalent to a long position in a floating-rate instrument of a maturity equivalent to the period until the next interest-rate fixing and a short position in a fixed-rate instrument with the same maturity as the interest-rate swap itself.

4. Netting

(1) In the calculation of the net position, positions in derivative instruments shall be treated as positions in the underlying or notional securities.

(2) A bank's investment in its own stock shall be disregarded in the calculation of specific risk.

(3) Netting shall not be allowed between a convertible instrument and an offsetting position in the instrument underlying it, unless the likelihood that a particular convertible instrument may be converted is taken into account or a capital provision exists to cover any loss that may arise on conversion of the instrument.

5. Repurchase agreements

In the calculation of capital requirements under these Regulations in respect of a repurchase agreement in securities and a securities-lending agreement, the underlying securities shall, in the case where the bank is the transferor of these securities, be included in the calculation.

6. Specific and general risk

(1) Specific and general risk includes the position risk on traded loan stock or securities (or derivatives thereof), which shall be divided into two components for purposes of calculation of the capital requirement.

(2) The first component shall be the specific risk component, that is, the risk of a price change in the underlying instrument owing to factors related to the issuer of the instrument, or, in the case of a derivative, the issuer of the underlying instrument.

(3) The second component shall be the general risk component, that is, the risk of a price change in the underlying instrument owing (in the case of a traded loan-stock instrument or loan-stock derivative) to a change in the level of interest rates or (in the case of a security or security derivative) to a broad market movement unrelated to any specific attributes of the individual securities.

7. Stock position

(1) A stock position shall be regarded as being associated with a bank's investment book, as opposed to the trading book, if the contract was concluded for investment, rather than trading purposes.

(2) In ascertaining whether a stock position was acquired for investment purposes, notice may be taken of whether—

(a) it is traded on a recognised or designated financial exchange; or

(b) the price performance thereof is ensured by such an exchange or by a recognised clearing house; or

(c) there are rules for the payment or provision of margin calls.

(3) Factors that may indicate that a contract is concluded for trading purposes are that-

(a) the terms specify delivery of the product within seven days;

(b) either or each of the contracting parties is a producer of the commodity or uses it in its business or the purchaser takes or intends to take delivery of the commodity.

8. Trading book: capital requirements

For purposes of CAR, capital requirements are imposed on the trading activities of a bank, in respect of:

(1) Position-risk for debt and equities.

(2) Settlement and counterparty risk.

(3) Large exposures.

(4) Foreign-exchange risk.

9. Applicability to mutual banks

These regulations shall apply *mutatis mutandis* to the trading activities of mutual banks.

Chapter 3
Capital

10. Capital-adequacy requirement returns

(1) Unaudited current-year profits or losses, in accordance with the form DI 200 submitted, shall be verified by a bank's external auditors on a six-monthly basis, in the case of a bank—

(a) registered in terms of the Banks Act, in terms of regulation 6 of the Regulations relating to Banks; or

(b) registered in terms of the Mutual Banks Act, in terms of regulation 6 of the Regulations relating to Mutual Banks.

(2) Subject to the provisions of regulation 11 (4)(a), a bank shall be able to convert its trading assets into cash within a three-month period at all times.

11. Capital-adequacy requirements relating to trading books of banks

(1) Subject to the provisions of subregulation (2) below, a bank shall at all times hold allocated capital equal to the higher of—

(a) three months' (13 weeks') operating costs (calculated in terms of subregulation (4)(b) below); or

(b) the amount of capital applicable to the bank's specific category of business, as determined in accordance with Table 1 hereunder:

Table 1

Category of business	Capital requirement
Banks that do not have access to the cash or scrip of any client without referral to the client or its agent.	R200 000
Banks that have access to the cash or scrip of a client without referral to the client or its agent.	R400 000

(2) A bank shall in addition to the amount of capital held in terms of subregulation (1) above hold allocated capital in respect of the following risks—

(a) position;

(b) counterparty/settlement;

(c) large exposures.

(3) The provisions of subregulation (1)(b) above shall not apply in the case where a bank is conducting business for its own account or agency business for other banks, if all such business is fully guaranteed in terms of a written agreement with a clearing member of a financial exchange.

(4) For purposes of subregulations (1) and (2) above—

(a) allocated capital shall be calculated as set out in Table 2, hereunder:

Table 2

Allocated capital	
The sum of— (i) Primary share capital; (ii) Secondary capital (iii) Tertiary capital	(A)
The sum of— (iv) Excess or (shortfall) of market value over book value of investments in securities and financial instruments relating to the trading book (v) Excess of net realisable value over book value of other assets relating to the trading book (vi) Revaluation reserve relating to the aforementioned assets (vii) Long-term subordinated loans, provided such loans are substantiated in law, relating to the trading book that do not qualify as primary, secondary or tertiary capital	(B)
The sum of— (viii) Intangible assets relating to the trading book (ix) Any assets that are not convertible into cash within a three-month period relating to the trading book (x) Investments in unlisted shares relating to the trading book (xi) Guarantees given relating to the trading book (xii) Amounts paid to cover risk exposures in the formal or informal markets relating to the trading book (xiii) Current-year losses relating to the trading book (xiv) Tax provisions relating to the trading book	(C)

A + B - C = ALLOCATED CAPITAL	

(b) the operating cost of a bank's trading activities shall be calculated to represent one quarter of the amounts that appear in its most recent audited annual financial statements and that relate to trading activities, calculated as follows:

(i) total revenue plus

(ii) loss before taxation;

less the aggregate of the following items:

(iii) profit before taxation;

(iv) bonuses paid out of relevant year's profits and which were not guaranteed;

(v) profit shares and other appropriations of profit except for a fair (market-related) or guaranteed remuneration that is payable even if the bank makes a loss for the year;

(vi) commissions paid other than to employees, or appointed representatives of the bank;

(vii) fees, brokerage and other charges paid to clearing houses, clearing firms, exchanges and intermediate brokers for the purpose of executing, registering or clearing transactions, excluding charges not related to the continuation of trading activities;

(viii) interest that is trade related (such as that applicable to repurchase agreements) to be paid to counterparties;

(ix) abnormal or extraordinary items, with the prior written approval of the Registrar;

(x) losses arising on the conversion of foreign-currency balances in the trading book,

(c) when a bank does not have interim audited financial statements, the following shall apply—

(i) when the bank has just commenced trading activities or has not been trading long enough to have submitted audited financial statements, the bank shall calculate its relevant expenditure on a budgeted or a business plan that has been submitted with its application for registration; or

(ii) when the bank's accounts do not represent a 12-month period the bank shall, with the prior written approval of the Registrar, calculate its relevant expenditure on an annualised basis.

(d) the Registrar may adjust the relevant annual expenditure in instances where—

(i) there has been a significant change in the circumstances or trading activities of a bank; or

(ii) the bank has a material proportion of its expenditure borne on its behalf by a subsidiary and such expenditure is not fully recovered from the bank.

Chapter 4
Position risk

12. Principles of calculation

(1) For measuring position risk, the bank shall, at its discretion, use one of the following alternative methodologies—

(a) the first alternative shall be to measure the position risks in a standardised manner, using one of the measurement frameworks prescribed in regulation 13, read with regulations 14 and 15; or

(b) the second alternative, which is subject to the fulfilment of certain conditions and the use of which is conditional upon the prior written approval of the Registrar, is prescribed in chapter 7. This method allows the bank to use risk measurements derived from the internal risk-management model only, or a combination of such an internal model and one of the standardised methodologies set out in regulations 14 and 15, respectively.

(2) One of the standardised methodologies employs a "building-block" approach whereby specific risk and the general market risk arising from debt and equity positions are calculated separately. The focus of most internal models is the general market-risk exposure, typically leaving specific risk (that is, exposures to specific issuers of debt securities or equities) to be measured mainly through the separate credit-risk measurement system.

(3) A separate charge for specific risk shall apply when the internal model is used to the extent that the model does not cover specific risk. The total specific risk charge applied to debt securities or to equities using the internal model should not be less than half the specific risk charge calculated according to the standardised method.

(4) In the measurement of the price risk for options under the standardised approach, the rule shall apply that the more a bank is engaged in writing options, the more sophisticated its measurement method shall have to be. In the longer term, banks that are significant traders in options shall be expected to change to comprehensive value-at-risk models and shall become subject to the full range of quantitative and qualitative standards set out in chapter 7.

(5) When a bank is required, in terms of subregulation (4) above, to change to a comprehensive value-at-risk model, the bank shall be expected to monitor and report the level of position risk against which the capital requirement is to be applied. The overall minimum capital requirement shall then be—

(a) the credit-risk requirements, excluding debt and equity securities in the trading book and all positions in commodities, but including the credit counterparty risk on all over-the-counter derivatives, whether in the trading or the banking book; plus

(b) capital requirements for market risks described in regulations 14 and 15, summed arithmetically; or

(c) the measure of market risk derived from the models approach set out in chapter 7; or

(d) a combination of (b) and (c), aggregated arithmetically.

(6) All transactions, including forward sales and purchases, shall be included in the calculation of capital requirements as from the dates on which they were entered into. Although reporting shall take place monthly, banks shall manage the market risk in their trading book in such a way that the capital requirements are being met on a continuous basis, that is, at the close of each business day. Banks shall also maintain strict risk-management systems in order to ensure that intraday exposures are not excessive.

13. Calculation of position risk: standardised methods

Subject to the provisions of regulation 12, a bank shall on a daily basis calculate its position risk requirement, at the discretion of the bank, either in accordance with Method 1, as set out in regulation 14, or Method 2, as set out in regulation 15.

14. Method 1: Calculation of position risk-requirement in terms of simplified method, as set out in Table 3, hereunder:

Table 3

(1) Loan stock	Required capital
(a) Government or Government-guaranteed loan stock	(Market value "MV")
(i) Less than 1 year to maturity	2% of MV
(ii) Less than 3 years to maturity	5% of MV
(iii) More than 3 years to maturity	10% of MV
(b) Instruments issued or accepted by a bank	
(i) Less than 90 days to maturity	2% of MV
(c) Marketable securities (excluding floating-rate notes) issued by other parties	
(i) Less than 1 year to maturity	10% of MV
(ii) Less than 3 years to maturity	20% of MV
(iii) More than 3 years to maturity	30% of MV
(d) Floating-rate notes	
(i) Less than 20 years to maturity	5% of MV
(ii) 20 years and more to maturity	10% of MV
(2) Securities	**Required capital**
(a) Securities listed on a licenced local financial exchange	
(i) Mining securities	40% of MV
(ii) Other securities	30% of MV
(b) Securities traded on a foreign financial exchange (designated by the Registrar of Banks)	35% of MV

(c) Other securities	100% of MV
(3) Commodities	**Required capital**
Stock positions in physical commodities associated with a bank's securities trading business	30% of realisable value
(4) Futures, options and contracts for differences	**Required capital**
(a) Exchange traded futures or options	2 x margin requirement
(b) Unlisted forward contracts or written put or call options	The appropriate percentage shown in subregulations (1), (2) and (3) above should be applied to the market value of the underlying instruments' position
(c) Unlisted purchased put or calf options	As for over-the-counter ("OTC") written options, but limited to the current market value of the option
(d) Contracts for differences	20% of the market value of the contract
(5) Other investments	**Required capital**
(a) Units in a registered unit trust scheme	20% of realisable value
(b) Kruger rand	10% of realisable value
(c) An interest in an unregistered futures or options fund	50% of realisable value
(d) With-profit life-insurance policies	20% of surrender value
(e) Any other investments	100% of amount of asset value

15. Method 2: Calculation of position risk: building-block method

(1) In the case of interest-rate products, a bank shall classify the net positions according to the currency in which these positions are denominated and shall calculate the capital requirement in each individual currency separately and with regard to—

(a) specific risk: a bank shall assign its net positions, as calculated in accordance with the definition of the long or short position, to the appropriate categories set out in Table 4, hereunder, on the basis of the net positions' residual maturities and shall then multiply these positions by the weightings shown. The aggregate of the weighted positions (regardless

of whether they are long or short) shall be used to the calculate the capital requirement for specific risk.

Table 4

Central Government	Qualifying items			Banks in RSA and OECD countries	Other items
(All loan stock issued by the central Government or instruments guaranteed by the central Government)	**(All loan stock listed on the Bond Market Exchange, or any other financial exchange listed loan stock approved by the Financial Services Board)**				
	Up to 6 months	**Over 6 and up to 24 months**	**Over 24 months**		
0,00 %	0,25 %	1,00 %	1,60 %	2,00%	10,00 %

[paragraph (a) substituted by section 2 of Government Notice R1006 of 2001]

(b) general risk: a bank shall use, at its discretion, either the maturity-based calculation method, as set out in subparagraph (i) hereunder, or the duration-based calculation method, as set out in subparagraph (ii) hereunder, in order to calculate the general risk of its exposures in loan stock.

(i) **In terms of the maturity-based method:**

(A) The procedure for the calculation of capital requirements relating to general risk involves two basic steps. Firstly, all positions shall be weighted according to maturity (as explained in item (B) below) in order to calculate the capital requirement. Secondly, allowance shall be made for this capital requirement to be reduced when a weighted position is held alongside an opposite weighted position within the same maturity band. A reduction in the capital requirement shall also be allowed when the opposite weighted positions fall into different maturity bands, with the size of this reduction depending on whether the two positions fall into the same time zone, and in accordance with the particular time zones into which they fall. There are three time zones (groups of maturity bands), as set out in Table 5.

(B) A bank shall assign its net positions to the appropriate maturity bands set out in column 2 of Table 5 below. It shall do so on the basis of residual maturity in the case of fixed-rate instruments and on the basis of the period until the interest rate is next set in the case of instruments in respect of which the interest rate is variable before final maturity. The bank shall then multiply each of these net positions by the weighting for the maturity band in question as set out in column 4 of Table 5 below.

(C) The aggregate of the weighted long positions, and the aggregate of the weighted short positions, in each maturity band shall be calculated. The

aggregate of the former that are matched by the latter in a given maturity band shall be the matched weighted position in that time band, whereas the residual long or short position shall be the unmatched weighted position for the same time band. The total of the matched weighted positions in all time bands shall then be calculated.

(D) The bank shall calculate the aggregate of the unmatched weighted long positions for the time bands included in each of the time zones set out in Table 5, below, in order to determine the unmatched weighted long position for each time zone. Similarly, the aggregate of the unmatched weighted short positions for each time band in a particular time zone shall be aggregated to determine the unmatched weighted short position for that time zone. That part of the unmatched weighted long position for a given time zone that is matched by the unmatched weighted short position for the same time zone shall be the matched weighted position for that time zone. That part of the unmatched weighted long position or unmatched weighted short position for a time zone that cannot be matched shall be the unmatched weighted position for that time zone.

(E) The amount of the unmatched weighted long or short position in time zone one that is matched by the unmatched weighted short or long position in time zone two shall then be calculated. This is referred to in item (I) below as the matched weighted position between time zones one and two. The same calculation shall then be undertaken with regard to that part of the unmatched weighted residual position in time zone two and the unmatched weighted position in time zone three in order to calculate the matched weighted position between time zones two and three.

(F) A bank may reverse the order contemplated in item (E) above so as to calculate the matched weighted position between time zones two and three before calculating the matched weighted position between time zones one and two.

(G) The remainder of the unmatched weighted position in time zone one shall be matched with the residual of that for time zone three, after the latter's matching with time zone two, in order to determine the matched weighted position between time zones one and three.

(H) The residual positions, following the three separate matching calculations described in items (E), (F) and (G) above, shall be aggregated.

Table 5

Maturity band			Weighting (in %)	Assumed interest-rate change (in %)
Time	**Higher than 3% coupon**	**Less than 3% coupon**		
Zone one maturity band	0 ⩽ 1 month > 1 ⩽ 3 months > 3 ⩽ 6 months > 6 ⩽ 12 months	0 ⩽ 1 month > 1 ⩽ 3 months > 3 ⩽ 6 months > 6 ⩽ 12 months	0,00 0,20 0,40 0,70	- 1,00 1,00 1,00
Zone two maturity band	> 1 ⩽ 2 years > 2 ⩽ 3 years > 3 ⩽ 4 years	> 1,0 ⩽ 1,9 years > 1,9 ⩽ 2,8 years > 2,8 ⩽ 3,6 years	1,25 1,75 2,25	0,90 0,80 0,75
Zone three maturity band	> 4 ⩽ 5 years > 5 ⩽ 7 years > 7 ⩽ 10 years > 10 ⩽ 15 years > 15 ⩽ 20 years > 20 years	> 3,6 ⩽ 4,3 years > 4,3 ⩽ 5,7 years > 5,7 ⩽ 7,3 years > 7,3 ⩽ 9,3 years > 9,3 ⩽ 10,6 years > 10,6 ⩽ 12,0 years > 12,0 ⩽ 20,0 years > 20 years	2,75 3,25 3,75 4,50 5,25 6,00 8,00 12,50	0,75 0,70 0,65 0,60 0,60 0,60 0,60 0,60

(I) A bank's capital requirement for the trading book shall be calculated as the sum of:

(aa) 10 per cent of the sum of the matched weighted positions in all maturity bands;

(bb) 40 per cent of the matched weighted position in the time zone one maturity band;

(cc) 30 per cent of the matched weighted position in the time zone two maturity band;

(dd) 30 per cent of the matched weighted position in the time zone three maturity band;

(ee) 40 per cent of the matched weighted position between time zones one and two and between the time zone two and three maturity band (see item (E) above);

(ff) 100 per cent of the matched weighted position between the time zone one and three maturity band;

(gg) 100 per cent of the residual unmatched weighted positions

(ii) **In terms of the duration-based method:**

(A) a bank shall ascertain the market yield to maturity of each fixed-rate loan stock, using the value implied by a loan-stock's all-in market value when trading is based on price, rather than on yield. In the case of floating-rate loan stock, the bank shall use the market value of each instrument in order to calculate its yield, on the assumption that the principal is due on the date on which the interest rate can be changed.

(B) a bank shall calculate the modified duration of each debt instrument on the basis of the following formula—

$$\text{modified duration} = \frac{\text{duration}(D)}{(1+r)}$$

where:

$$D = \frac{\sum_{T=1}^{M} \frac{tC_t}{(1+r)^1}}{\sum_{T=1}^{M} C_t}$$

where:

r = yield to maturity (see item (A) above);

C_t = cash payment in time t;

M -total maturity (see item (A) above).

(C) a bank shall allocate each instrument to the appropriate maturity time zone set out in Table 6, hereunder, on the basis of the modified duration of each instrument.

Table 6

Time zone	Modified duration (in years)	Assumed interest (change in %)
One	> 0 < 1,0	1,0
Two	> 1,0 < 3,6	0,85
Three	> 3,6	0,7

(D) a bank shall calculate the duration-weighted position for each instrument by multiplying the market price by its modified duration and by the assumed interest-rate change for an instrument with that particular modified duration (see column 3 of Table 6 above).

(E) a bank shall calculate the duration-weighted long and short positions within each time zone. The amount of the former that are matched by the latter within each time zone shall be the matched duration-weighted position for that time zone.

(F) a bank's capital requirement for the trading book shall be calculated as the sum of:

(aa) 2 per cent of the matched duration-weighted position for each time zone;

(bb) 40 per cent of the matched duration-weighted positions between time zones one and two and between time zones two and three:

(cc) 100, per cent of the matched duration-weighted position between time zones one and three;

(dd) 100 per cent of the residual unmatched duration-weighted positions.

(2) In the case of securities, a bank shall aggregate all its net long positions and all its net short positions in accordance with the definition of the long or the short position. The sum shall be the bank's overall gross position. The difference shall be the bank's overall net position. The bank shall calculate its capital requirement with regard to—

(a) specific risk, as follows: a bank shall multiply the overall gross position by the percentage reflected in Table 7, hereunder, in order to calculate the capital requirement (for purpose of this calculation, the classification of shares are either liquid, normal or illiquid in accordance with the capital-adequacy liquidity parameters set by the Johannesburg Stock Exchange).

Table 7

	Liquid	Normal	Illiquid
Mining shares	5 %	10 %	20 %
Other shares	5 %	10%	20 %

and

(b) general risk, as follows: the capital requirement for general risk shall include the overall net position of the trading book multiplied by 20 per cent for mining shares and 10 per cent for other shares.

(c) share-index futures, as follows:

(i) The said futures shall be allocated into positions in each of the constituent equities, and these positions shall be treated as underlying positions in the equities in question. These positions may therefore be netted against opposite positions in the underlying equities themselves.

(ii) Adequate capital shall be held in order to ensure that positions that have been netted off in one or more of the equities constituting a share-index future, against one or more positions in the share-index future itself, thereby covering the risk of loss caused by the future's values not moving fully in line with that of its constituent equities. When a bank holds opposite positions in share-index futures that are not identical in respect of either their maturity or their composition, or both, adequate capital shall be held.

(iii) Notwithstanding the provisions of subparagraphs (i) and (ii) above, share-index futures that are exchange traded and that may reasonably be regarded to represent broadly diversified indices, shall attract a capital requirement against general risk and a requirement against specific risk, as set out in Table 8 hereunder:

Table 8

A	Industrial index	10%
B	All share index	13%
C	Gold index	20%

(iv) Share-index futures shall be included in the calculation of the overall net position, but shall be ignored in the calculation of the overall gross position.

(v) Share-index futures that are not analysed into its underlying positions, shall be treated as though they were individual equities. The specific risk on such individual equity can, however, be ignored if the share-index future in question is exchange traded and represents a broadly diversified index.

(3) Underwriting of loan stock or securities may with the prior written approval of the Registrar be included in the calculation of a bank's net open position and capital requirements. Once the approval of the Registrar has been obtained, the following method shall be applied:

(a) The net positions shall be calculated by deduction of the underwriting positions that are subscribed or sub-underwritten by third parties on the basis of formal agreements;

(b) the net positions shall be reduced by the following reduction factors, as set out in Table 9 hereunder:

Table 9

Working day	Factor
0 *	100%
1	90%
2 to 3	75%
4	50%
5	25%
Longer than 5	0%

(c) the capital requirement shall be calculated by using the reduced underwriting positions, calculated in accordance with paragraphs (a) and (b), above. The bank shall ensure that it holds sufficient capital against the risk of loss that exists between the time of the initial commitment and working day 1.

(4) In the case of commodities, the trading positions in physical commodities shall be 30 per cent of the realisable value.

(5) In the case of other investments in—

(a) regulated collective investment schemes, the capital requirement shall be 20 per cent of realisable value;

(b) unregistered futures or options fund, the capital requirement shall be 50 per cent of realisable value;

(c) with-profit life policies, the capital requirement shall be 20 per cent of surrender value; and

(d) other risk-based investments (excluding cash), the capital requirement shall be 100 per cent of assets.

*

(Working day zero shall be the working day on which a bank becomes unconditionally committed to accepting a known quantity of securities at an agreed price)

16. Treatment of options

(1) Having regard to the wide diversity of banks' activities in options and the difficulties of measuring price risk for options, the following alternative approaches are allowed:

(a) When options are bought, a bank shall be allowed to use the simplified approach described in regulation 17; or

(b) when options are written, a bank will be expected to use the delta-plus approach, as set out in regulation 18, or a comprehensive risk-management model in terms of the provisions of chapter 7.

(2) Use of the simplified approach implies that the positions for the options and the associated underlying instrument, cash or forward are not subject to the standardised methodology, but, instead, are "carved-out" and are subject to separately calculated capital charges that Incorporate both market risk and specific risk. The results thus calculated shall be aggregated in order to calculate the capital requirement for the relevant category.

(3) The delta-plus method employs the sensitivity parameters or "Greek letters" associated with options in order to measure the market risk and the capital requirement. For this method, the delta-equivalent position of each option becomes part of the standardised methodology set out in regulation 13, read with regulations 14 and 15, with the delta equivalent amount being subject to the applicable market-risk charge. Separate capital charges are applied to the gamma and vega risks of the option positions. The delta-plus method employs the specific risk capital charges, which are determined separately by multiplying the delta-equivalent of each option by the specific risk weightings set out in regulation 18.

17. Simplified approach

When a limited range of purchased options is handled, a bank shall use the simplified approach set out in Table 10, hereunder, for particular trades. A similar methodology applies to options when the underlying instrument is a foreign currency, an interest-rate related instrument or a commodity.

Table 10 Simplified approach: capital charges

Type of option	Capital charge
Long cash and long put or Short cash and long call	The capital charge shall be the market value of the underlying security multiplied by the sum of specific and market risk
Long call or Long put	The capital charge shall be the lesser of: (i) the market value of the underlying security multiplied by the aggregate of specific and market-risk charges for the underlying instrument; or (ii) the market value of the option

18. Delta-plus approach

(1) A bank that writes options shall include delta-weighted option positions in the standardised methodology set out in regulation 13, read with regulations 14 and 15. These options shall be reported as a position equal to the market value of the underlying instrument multiplied by the delta. Since the delta does not sufficiently cover the risks associated with option positions, the bank shall in addition measure the gamma sensitivity (which measures the rate of change of delta) and the vega sensitivity (which measures the sensitivity of the value of an option with respect to a change in volatility) in order to calculate the total capital charge. These sensitivity analyses shall be calculated according to an approved model or according to the bank's proprietary options valuation model, subject to the prior written approval of the Registrar.

(2) Delta-weighted positions on debt securities, or interest rates as the underlying instrument, shall be included in the interest-rate time bands, as set out in regulation 15, in accordance with the following procedure:

(a) Delta-weighted positions shall include other derivatives, requiring one entry at the time at which the underlying contract takes effect and a second entry at the time at which the underlying contract matures. (For example, in the case of a broad call option on a June three-month interest-rate future, this option will be valued in April on the basis of its delta-equivalent as a long position with a maturity of five months and as a short position with a maturity of two months);

(b) a written option shall similarly be regarded as a long position with a maturity of two months and a short position with a maturity of five months in the same example; and

(c) floating-rate instruments with caps or floors shall be treated as a combination of floating-rate securities and a series of European-style options. (For example, the holder of a three-year floating-rate bond indexed to six months LIBOR with a cap of 15 per cent shall be treated as a debt security that reprices in six months' time and as a series of five written call options on a forward rate agreement with a reference rate of 15 per cent, each having a negative sign at the time at which the underlying forward rate agreement takes effect, and a positive sign at the time at which the underlying forward rate agreement matures).

(3) The capital-adequacy charge for options with equities as the underlying instruments shall also be calculated on the delta-weighted method, which shall be incorporated in the measurement of market risk described in regulation 15. For purposes of such a calculation, each market jurisdiction shall be treated separately with regard to its underlying instruments.

(4) The capital-adequacy charge for options on foreign exchange and gold positions shall be based on the method set out in regulation 14. For the calculation of delta risk, the net delta-based equivalent of the foreign currency and gold options shall be incorporated into the measurement of the exposure for each currency (or gold) position. The capital-adequacy charge for options on commodities shall be based on either the simplified method or the maturity ladder method set out in regulations 14 and 15. The delta-weighted positions shall be incorporated in the measurement described in regulation 15.

(5) In addition to the capital-adequacy calculation referred to in this regulation, arising from delta risk, there shall be a further capital-adequacy calculation for gamma risk and for vega risk. A bank using the delta-plus method shall calculate the gamma and vega for each option position (including hedge positions) separately. The capital-adequacy charge shall be calculated in the following manner:

(a) For each individual option, a "gamma impact" shall be calculated according to a Taylor series expansion as;

gamma impact = 1/2 x gamma x VU^2

where VU = variation of the underlying option;

(b) VU shall be calculated as follows:

(i) For interest-rate options when the underlying instrument is a bond, the market value of the underlying instrument shall be multiplied by the risk weighting set out in Table 4 of regulation 15. An equivalent calculation shall be performed in the case of the underlying instrument being an interest rate, based on the assumed changes in the corresponding yield in Table 5 of regulation 15;

(ii) for options on equities and equity indices, the market value of the underlying instrument shall be multiplied by 8 per cent;

(iii) for foreign exchange and gold options, the market value of the underlying instrument shall be multiplied by 8 per cent; and

(iv) for options on commodities, the market value of the underlying instrument shall be multiplied by 15 per cent.

(c) For the purpose of the calculation contemplated in this subregulation (5), the positions shall be treated as follows:

(i) For interest rates, as for each time band as set out in Table 5 of regulation 15;

(ii) for equities and stock indices, as for each market jurisdiction;

(iii) for foreign currencies and gold, as for each currency pair and gold; and

(iv) for commodities, as for each individual commodity.

(6) Every option on the same underlying instrument will have a gamma impact that is either positive or negative. These individual gamma impacts shall be aggregated, resulting in a net gamma impact for each underlying instrument that is either positive or negative. The net gamma impacts that are negative shall be included in the capital-adequacy calculation.

(7) The gamma capital-adequacy charge shall be the sum of the absolute value of the net negative gamma impacts calculated.

(8) For volatility risk, a bank shall calculate the capital adequacy by multiplying the sum of the vegas for all options on the same underlying instrument, as defined, by a proportional shift in volatility of ± 25 per cent.

(9) The total capital-adequacy charge for vega risk shall be the sum of the absolute value of the individual capital-adequacy charges calculated for vega risk.

Chapter 5
Counterparty risk

19. Explanatory terms for purposes of calculation of counterparty risk

(1) "Potential loss positions" means that potential profits may not be offset against potential losses.

(2) "Difference" means the differential between purchase price and current market price.

(3) "Market value" means the market value of the security or contract.

(4) "Notional value" means the notional or actual value of the security underlying the contract.

(5) "Free delivery" means—

(a) the delivery of securities or physical commodities that takes place before the seller or agency broker receives payment; or

(b) payment made in settlement of a credit balance arising from a sale on behalf of a counterparty or a purchase from a counterparty in respect of which the securities are undelivered.

20. Exceptions

A bank shall hold sufficient capital in order to meet the counterparty-risk requirement except when:

(1) Specific provision made against a counterparty balance may reduce the counterparty exposure on which the requirement is calculated, up to the extent of such provision; and

(2) amounts are due to, or owed by, connected persons.

21. Calculation of counterparty-risk requirement

A bank shall calculate on a daily basis the risk exposures arising from trading with counterparties in accordance with Table 11, hereunder:

Table 11

Counterparty risk			Factor
1.	Transactions in unsettled securities and physical commodities (see definition of long and short position):		
	1.1	Cash held against documented transactions:	
		• 0-3 days after settlement date	Nil
		• 4-6 days after settlement date	50% of price difference
		• over 6 days after settlement date	100% of price difference
	1.2	Settlement on balance of transactions: Through the central clearing house system, with approved guarantees:	
		• debit items outstanding for more than 6 days since settlement date	full amount
		• undelivered securities within 6 days of settlement date	100% of price difference
	1.3	Free deliveries (see definition of stock position):	
		1.3.1 Free delivery amount in respect of:	
		• non-payment against securities delivered	amount due
		• non-receipt of securities against payment due	full market value
		Free delivery amount, multiplied by the following percentage:	
		1.3.2 Guaranteed transactions:	
		• 0-6 days since delivery/payment	0 per cent (nil)

		• after 6 days	100 per cent (full market value)
		1.3.3 Other counterparties:	
		• 0-3 days since delivery/payments	0 per cent (nil)
		• after 3 days	100 per cent (full market value)
2.	Options purchased for counterparties:		
	• non-payment of purchase price after 3 days		Difference between purchase price and market value of the option
	• option premium paid to writer of the option		100% of option premium
3.	Exchange-traded, margined transactions (including initial margin and variation margin):		
	• 0-3 days since margin shortfall		Nil
	• 4 days and more since margin shortfall		100% of shortfall
4.	Repurchase or resale agreements (including lending and borrowing, and sale of buy-back agreements):		
	• qualifying debt instruments		market value less 105% of related funds or collateral
	• other securities notional value		notional value less 110% of related funds or collateral

5.	Swaps, forward contracts, over-the-counter options, contracts for differences and off-exchange futures (credit-equivalent amount)		
	5.1	Interest-rate swaps in a single currency:	
		• under 1 year to maturity	mark-to-market
		• over 1 year to maturity	mark-to-market + 0,5% of notional value
	5.2	Cross currency swaps:	
		• under 1 year to maturity	mark-to-market + 1 % of notional value
		• over 1 year to maturity	mark-to-market + 5% of notional value
	5.3	Forward rate agreements, over-the-counter futures, options, etc., based on interest rates:	
		• under 1 year to maturity	mark-to-market
		• over 1 year to maturity	mark-to-market + 0,5% of notional value
	5.4	Future rate agreements, over-the-counter futures, options, based on currency-exchange rates, commodity prices or equity prices:	
		• under 14 days to maturity	nil
		• 14 days to 1 year to maturity	mark to market + 1 % of notional value

		• over 1 year to maturity	mark to market + 5% of notional value
	The counterparty-risk requirement shall be calculated as follows:		
	• Multiply the counterparty exposure by:		
		• Central government/S A Reserve Bank	0%
		• Intragroup contracts with group banks	0%
		• Non-central government public sector bodies	10%
		• Transactions to be settled through a formalised exchange	10%
		• Banks in RSA and OECD countries	20%
		• any other counterparty	100%
	• The risk-weighted counterparty exposure shall be multiplied by a minimum of 8 per cent, or such a higher percentage as may be determined by the Registrar in consultation with the Governor of the S A Reserve Bank		
6.	Loans to counterparties: • when the loan exceeds the value of securities and is not property secured		100% of amount by which the loan is not properly secured
7.	Subunderwriting agreements: • any management or other fees owed and outstanding for more than 30 days		100% of amount owed
8.	Other receivables and accrued income not covered elsewhere in this section		100% of amount due

[regulation 21 substituted by section 3 of Government Notice R1006 of 2001]

Chapter 6
Large exposures

22. Large-exposure requirements ("LER")

(1) A bank shall on a daily basis calculate its risk exposures arising from large exposures to a third party or a group of connected third parties in accordance with regulation 23.

(2) Exposures mean the amount at risk before application of the appropriate position-risk requirement ("PRR") or counterparty-risk requirement ("CRR") with regard to—

(a) the excess, if positive, of the market value of a bank's long positions over its short positions in all the financial instruments issued by a third party;

(b) in the case of underwriting commitments, the market value of a bank's net exposure to a third party;

(c) counterparty exposures arising from unsettled securities transactions, repurchase agreements, resale agreements, securities lending and borrowing transactions, derivatives and other financial instruments, calculated either in accordance with Method 1 or Method 2, as set out in regulations 14 and 15, respectively, of the position-risk requirement or in accordance with Chapter 7; and

(d) all other assets and off-balance-sheet items constituting claims on third parties (for example, commissions and fees receivable).

(3) Exposures that are excluded from the definition of large exposures and which a bank shall exclude from its LER calculations are the following:

(a) Exposures or guarantees underwritten by the Government of the Republic of South Africa or the South African Reserve Bank;

(b) exposures secured by collateral consisting of securities issued by the Government of the Republic of South Africa or the South African Reserve Bank;

(c) exposures secured by cash collateral deposited with the bank, the bank's connected credit institutions or the Trustees of the Johannesburg Stock Exchange on behalf of the bank or the bank's connected credit institutions; and

(d) exposures with maturities of less than one year to regulated South African financial and banking institutions, recognised clearing houses, exchanges and approved exchanges in financial instruments that do not constitute their capital requirements.

(4) For the purposes of this regulation and regulation 23, groups of connected third parties mean two or more corporates or natural persons that are interconnected to the extent that the financial performance or soundness of one would be materially affected by the financial performance or soundness of the other or others. This interconnectivity would be evidenced, *inter alia*, when one corporate derives more than 20 per cent of its earnings from another or when counterparties are linked by cross guarantees.

23. Calculations

(1) In instances where the sum of the exposures to a third party or a group of connected third parties exceeds 25 per cent of a bank's adjusted allocated capital, the bank shall calculate an LER for each such exposure as follows:

(a) Calculate the excess of the exposures over 25 per cent of adjusted allocated capital;

(b) rank the exposures on the basis of specific risk requirement in the case of position risk and the requirement in the case of counterparty exposures, in descending order;

(c) aggregate the constituent exposures, starting with the exposure attracting the highest risk requirement, until the aggregation equals the excess referred to in (a) above;

(d) the LER aggregate shall be 200 per cent of the specific risk requirements and CRRs applicable to those exposures forming the excess. The LER shall, however, be limited to such amount as, together with the PRRs or CRRs on the exposures constituting such excess, equals 100 per cent of any exposure included in the excess.

(2) A bank that determines its PRR according to the simplified method shall treat the consolidated PRR commensurate with that method as the specific risk requirement for purposes of calculating its LER in terms of subregulation (1).

Chapter 7
Use of internal models

24. General criteria

(1) The use of an internal model in order to calculate position risk shall be subject to the prior written approval of the Registrar.

(2) The Registrar shall consider granting approval only if, as a minimum—

(a) he is satisfied that a bank's risk-management system is conceptually sound and is managed with integrity;

(b) a bank has adequately skilled staff operating the sophisticated models, not only in the trading area but also in the risk control, audit, and where applicable, back-office areas;

(c) a bank's models have a proven track record of accuracy in the measurement of risk; and

(d) a bank regularly performs stress tests, as prescribed in regulation 28.

(3) A bank's proposed internal model shall be subject to a period of initial monitoring and live testing, to the satisfaction of the Registrar, before it may be used for the calculation of capital adequacy.

(4) In addition to any other criteria, a bank using internal models for capital-adequacy purposes will also be subject to the requirements set out in regulations 24 to 29.

25. Qualitative standards

(1) A bank shall use models with risk-management systems that are conceptually sound and that are implemented with integrity. The extent to which a bank meets the qualitative criteria set out to subregulation (2) may influence the level at which the Registrar will set the multiplication factor referred to in regulation 27(10). Only a bank whose model is in full compliance with the said qualitative criteria shall be eligible to apply for the minimum multiplication factor.

(2) The qualitative criteria are as follows:

(a) A bank shall operate an independent risk-control unit that is responsible for the design and implementation of the risk-management system. The risk-control unit shall produce and analyse daily reports from the output of the bank's risk-measurement model, including an evaluation of the relationship between measurements of risk exposure and trading limits. This risk-control unit shall be independent from business trading units and shall report directly to a senior manager in the bank;

(b) the risk-control unit shall conduct a regular back-testing programme, that is, an ex-post comparison of the risk measurement generated by the internal model against actual daily changes in portfolio value over longer periods of time, including hypothetical changes based on static positions;

(c) the board of directors and senior management shall be actively involved in the risk-control process and shall regard risk control as an essential aspect of the business to which significant resources shall be devoted. In this regard, the daily reports prepared by the independent risk-control unit shall be reviewed by a manager with sufficient seniority and authority to enforce both reductions of positions taken by individual traders and reductions in the bank's overall risk exposure;

(d) a bank's internal risk-measurement model shall be closely integrated into the day-to-day risk-management process of a bank. The output shall accordingly be an integral part of the process of planning, monitoring and controlling a bank's market risk profile;

(e) the risk-measurement system shall incorporate internal trading and exposure limits. In this regard, trading limits shall be related to the bank's risk-measurement model in a manner that is consistent over time and that is well understood by both traders and senior management;

(f) a routine and rigorous programme of stress testing shall be in place as a supplement to the risk analysis based on the day-to-day output of the bank's risk-measurement model. The results of stress testing shall be reviewed periodically by senior management and shall be reflected in the policies and limits set by management and the board of directors. When stress tests reveal particular vulnerability to a given set of circumstances, prompt steps shall be taken to manage those risks timeously and appropriately (for example, by hedging against that outcome or reducing the size of the bank's exposures);

(g) a bank shall have a routine procedure in place for ensuring compliance with a documented set of internal policies, controls and procedures concerning the operation of the risk-measurement system. A bank's risk-measurement system shall be well documented, for example, through a risk-management manual that describes the basic principles of the risk-management system and that provides an explanation of the empirical techniques used to measure market risk;

(h) an independent review of the risk-measurement system shall be carried out regularly in the bank's own internal auditing process. This review shall include both the activities of the business trading units and of the independent risk-control unit. A review of the overall risk-management process shall take place at regular intervals (ideally not less than once a year) and should specifically address, as a minimum, the—

(i) adequacy of the documentation of the risk-management system and process;

(ii) organisation of the risk-control unit;

(iii) integration of market-risk measures into daily risk management;

(iv) approval process for risk-pricing models and valuation systems used by front-office and back-office personnel;

(v) validation of any significant change in the risk-measurement process;

(vi) scope of market risks captured by the risk-measurement model;

(vii) integrity of the management-information system;

(viii) accuracy and completeness of position data;

(ix) verification of the consistency, timelines and reliability of data sources used to run internal models, including the independence of such data sources;

(x) accuracy and appropriateness of volatility and correlation assumptions;

(xi) accuracy of valuation of risk-transformation-calculations; and

(xii) verification of the model's accuracy through frequent back-testing, as described in paragraph (b) above.

26. Specification of market-risk factors

(1) An important part of a bank's internal market-risk measurement system is the specification of an appropriate set of market-risk factors, that is, the market rates and prices that affect the value of the bank's trading positions. The risk factors contained in a market-risk measurement system shall be sufficient to capture the risk inherent in the bank's portfolio of on- and off-balance-sheet trading, positions. Although banks will have some discretion in specifying the risk factors for their internal models, there shall be compliance with the following guidelines:

(a) For interest rates, there shall be a set of risk factors corresponding to interest rates in each currency in which the bank has interest-rate-sensitive on or off-balance-sheet positions;

(b) the risk-measurement system shall model the yield curve using one of a number of generally accepted approaches, for example, by estimating forward rates of zero coupon yields. The yield curve shall be divided into various maturity segments in order to capture variation in the volatility of rates along the yield curve; there shall typically be one risk factor corresponding to each maturity segment. For material exposures to interest-rate movements in the major currencies and markets, banks shall model the yield curve using a minimum of six risk factors. The number of risk factors used should, however, ultimately be determined by the nature of the bank's trading strategies. For instance, a bank with a portfolio of various types of securities across many points of the yield curve and that engages in complex arbitrage strategies would require a greater number of risk factors in order to capture interest rate risk accurately; and

(c) the risk-measurement system shall incorporate separate risk factors in order to capture spread risk (for example, between bonds and swaps). A variety of approaches may be used in order to capture the spread risk arising from less than perfectly correlated movements between Government and other fixed-income interest rates, such as specification of a completely separate yield curve for non-Government fixed-income instruments (for instance, swaps or municipal securities) or estimation of the spread over Government rates at various points along the yield curve.

(2) For exchange rates (which may include gold), the risk-measurement system shall incorporate factors to the individual foreign currencies in which a bank's position is denominated. Since the value-at-risk figure calculated by the risk-measurement system will be expressed in the bank's domestic currency, any net position denominated in a foreign currency will introduce a foreign-exchange risk. Thus, there shall be risk factors corresponding to the exchange rate between the domestic currency and each foreign currency to which a bank has a significant exposure.

(3) For equity prices, there shall be risk factors corresponding to each of the equity markets in which a bank holds significant positions:

(a) As a minimum, there shall be a risk factor that is designed to capture market wide movements in equity prices (for example, a market index). Positions in individual securities or in sector indices could be expressed in "beta-equivalents" relative to this market-wide index.

(b) A more detailed approach would be to have risk factors corresponding to various sectors of the overall equity market (for instance, industry sectors or cyclical and non-cyclical sectors). As above, positions in individual stocks within each sector shall be expressed in beta-equivalents relative to the sector index.

(c) The most extensive approach is that risk factors shall correspond to the volatility of individual equity issues.

(d) The sophistication and nature of the modelling technique for a given market shall correspond to the bank's exposure to the overall market, as well as its concentration in individual equity issues in the market.

(4) For commodity prices, there shall be risk factors corresponding to each of the commodity markets in which the bank holds significant positions:

(a) For a bank with relatively limited positions in commodity-based instruments, a straightforward specification of risk factors shall apply. Such a specification would likely entail one risk factor for each commodity price to which a bank is exposed. In cases when the aggregate positions are relatively small, the bank shall use a single risk factor for a broad subcategory of commodities (for instance, a single risk factor for all types of oil).

(b) For more active trading, the model shall also take account of variation in the "convenience yield" between derivatives positions such as forwards and swaps and cash positions in the commodity.

27. Quantitative standards

In devising the precise nature of their models, banks shall apply the following minimum standards for the purpose of calculating the capital-adequacy requirement:

(1) "Value at risk" shall be computed on a daily basis.

(2) In the calculation of the value at risk, a 99th percentile, one-tailed confidence interval shall be used.

(3) In the calculation of value at risk, an instantaneous price shock equivalent to a 10-day movement in prices shall be used, that is, the minimum "holding period" is ten trading days. A bank may use value-at-risk numbers calculated according to shorter holding periods, scaled up to ten days by the square root of time for the treatment of options (see subregulation (8) below).

(4) The choice of historical observation period (sample period) for the calculation of valueat-risk is confined to a minimum period of one year. For banks that use a weighting scheme or other methods for the historical observation period, the "effective" observation period shall be at least one year (that is, the weighted average time lag of the individual observations shall not be fess than six months).

(5) A bank shall update its data sets every three months and shall also reassess them whenever market prices are subject to material changes. The Registrar may require a bank to calculate its value at risk using a shorter observation period if, in his judgement, this is justified by a significant upsurge in price volatility.

(6) No particular type of model is prescribed. Each model used shall capture all the material risks run by a bank. A bank will be free to use models based, for example, on variance-covariance matrices, historical simulations, or Monte Carlo simulations.

(7) A bank has a discretion to recognise empirical correlations within broad risk categories (for example, interest rates, exchange rates, equity prices and commodity prices, including related options volatilities in each risk-factor category). The Registrar may also recognise empirical correlations across broad risk factor categories, provided that he is satisfied that the bank's system for measuring correlations is sound and implemented with integrity.

(8) A bank's model shall accurately capture the unique risks associated with options within each of the broad risk categories. The following criteria shall apply to the measurement of options risk:

(a) A bank's model shall capture the non-linear price characteristics of options positions;

(b) a bank shall ultimately move towards the application of a full 10-day price shock to options positions or positions that display option-like characteristics. In the interim, the Registrar may require a bank to adjust its capital measurement for options risk through other methods, for example, periodic simulations or stress testing; and

(c) each bank's risk-measurement system shall have a set of risk factors that captures the volatilities of the rates and prices underlying option positions, that is, vega risk. A bank

with large and/or complex option portfolios shall have detailed specifications of the relevant volatilities. This means that a bank shall measure the volatilities of option positions broken down by different maturities.

(9) A bank shall meet, on a daily basis, a capital-adequacy requirement expressed as the higher of its previous day's value-at-risk measured according to the parameters specified in this regulation or the average of the daily value-at-risk measures on each of the preceding sixty business days, multiplied by a multiplication factor.

(10) The multiplication factor is set by the Registrar on the basis of his assessment of the quality of a bank's risk-management system, subject to an absolute minimum of three. A bank shall add to this factor a "plus" directly related to the ex-post performance of the model, thereby introducing a built-in incentive to maintain the predictive quality of the model. The plus will range from 0 to 1, based on the outcome of "backtesting". If the backtesting results are satisfactory and the bank meets all of the qualitative standards set out in regulation 25, the plus factor could be zero.

(11) A bank using internal models shall be subject to a separate capital-adequacy charge to cover the specific risk of interest-rate related instruments and equity securities as defined in the standardised approach to the extent that this risk is not incorporated into its models. For a bank using internal models, however, the total specific risk charge applied to interest-rate related instruments or to equities shall in no case be less than half the specific risk charges calculated according to the standardised methodology.

28. Stress testing

(1) A bank that uses the internal model approach for the calculation of position-risk requirements shall have in place a rigorous and comprehensive stress testing programme. Stress testing shall identify events or influences that could greatly impact on a bank and is a key component of the bank's assessment of its capital-adequacy position.

(2) A bank's stress scenarios need to cover a range of factors that can create extraordinary losses or gains in trading portfolios, or that can render the control of risk in those portfolios very difficult. These factors include low-probability events in ail major types of risk, including the various components of market, credit, and operational risks. Stress scenarios shall shed light on the impact of such events on positions that display both linear and non-linear price characteristics (that is, options and instruments that have options-like characteristics).

(3) A bank's stress tests shall be both of a quantitative and qualitative nature, incorporating both market risk and liquidity aspects of market disturbances. Quantitative criteria shall identify plausible stress scenarios to which a bank could be exposed. Qualitative criteria should emphasise two major goals of stress testing, namely, evaluation of the capacity of the bank's capital to absorb potential losses and identification of steps that the bank can take to reduce its risk and to conserve capital. This assessment is integral to setting and evaluating the bank's management strategy, and the results of stress testing shall be routinely communicated to senior management and to the bank's board of directors.

(4) A bank shall combine the use of stress scenarios with stress tests developed by the bank itself in order to reflect its specific risk characteristics. The Registrar may request a bank to provide information in the three broad areas set out in paragraphs (a) to (c) below:

(a) Supervisory scenarios requiring no simulations by the bank: A bank shall have information on the largest losses experienced during the reporting period available for supervisory review. This loss information could be compared to the level of capital that results from a bank's internal measurement system. The information must provide the Registrar with a picture of how many days of peak-day losses would have been covered by a given value-at-risk estimate;

(b) scenarios requiring a simulation by a bank: A bank shall subject its portfolios to a series of simulated stress scenarios and shall provide, the Registrar with the results. These scenarios shall include testing the current portfolio against past periods of significant

disturbance, incorporating both the large price movements and the sharp reduction in liquidity associated with such events. A second type of scenario could evaluate the sensitivity of the bank's market-risk exposure to changes in the assumptions about volatilities and correlations. Application of this test would require an evaluation of the historical range of variation for volatilities and correlations and evaluation of the bank's current positions against the extreme values of the historical range. Consideration shall be given to the sharp variation that has at times occurred in a matter of days during periods of significant market disturbance. (The 1987 equity crash, for example, involved correlations within risk factors approaching the extreme values of 1 or -1 for several days at the height of the disturbance): and

(c) scenarios developed by a bank itself in order to capture the specific characteristics of its portfolio: In addition to the scenarios prescribed by the Registrar under (a) and (b) above, a bank shall also develop its own stress tests, which it identifies as most adverse, based on the characteristics of its portfolio (for example, problems in a key region of the world combined with a sharp move in oil prices). A bank shall provide the Registrar with a description, in writing, of the methodology used in order to identify and carry out the scenarios, as well as with a description of the results derived from these scenarios.

(5) Stress results shall be reviewed periodically by senior management and shall be reflected in the policies and limits set by management and the board of directors. When the testing reveals particular vulnerability to a given set of circumstances, the Registrar may require the bank to take prompt steps in order to manage those risks appropriately (for example, by hedging against that outcome or reducing the size of its exposures).

29. External validation

The validation of the accuracy of models by external consultants and/or the Registrar shall as a minimum include:

(1) Verifying, that the internal validation processes described in regulation 25 are operating properly;

(2) ensuring that the formulae used in the calculation process, as well as for the pricing of options and other complex instruments, are validated by a qualified unit, which in all cases shall be independent from the trading area;

(3) ensuring that the structure of internal models is adequate with respect to the bank's activities and geographical coverage;

(4) ensuring that the results of a bank's back-testing of its internal measurement system (that is, comparing value-at-risk estimates with actual profits and losses) in order to validate that the model provides a reliable measure of potential losses over time. This means that a bank shall make the results, as well as the underlying inputs to its value-at-risk calculations, available to the Registrar and/or external consultants on request; and

(5) ensuring that data flows and processes associated with the risk-measurement system are transparent and accessible. In particular, it is necessary that the consultants and the Registrar are in a position to have easy access, whenever they deem it necessary and under appropriate procedures, to the specifications and parameters of the models.

30. Combination of internal models and the standardised methodology

(1) When a bank's exposure to a particular risk, for example, with regard to commodity prices, is insignificant, the internal model approach in principle requires a bank to have an integrated risk-measurement system that evaluates the risk categories (that is, interest rates, exchange rates (which may include gold), equity prices and commodity prices, with related option volatilities included in each risk-factor category). When a bank starts to use models for one or more risk categories, it shall be expected over time to extend the models to measure all market risks. In cases when a bank has developed one or more models, it will no longer be allowed to revert to measuring the risk according to one of the standardised methodologies mentioned in regulations

14 and 15, respectively. Pending further experience regarding the procedure to change to a model-based approach, prior written approval shall be obtained from the Registrar to use a combination of internal models and one of the standardised methodologies for the time frame required to migrate to a comprehensive model.

(2) The following conditions shall apply to a bank using such combinations:

(a) Each risk category shall be assessed using a single approach (either internal models or the standardised approach), that is, no combination of the two methods shall be permitted within a risk category or across the bank's different risk centres for the same type of risk;

(b) all the criteria prescribed in this chapter shall apply to the models being used;

(c) a bank shall not modify the combination of the two approaches that it uses without the prior written approval of the Registrar;

(d) no element of market risk may escape measurement, that is, the exposure in respect of all the various risks, whether calculated according to the standardised approach or internal models, shall be captured; and

(e) the capital-adequacy requirement calculated In accordance with the standardised approach and in accordance with the internal model approach are to be aggregated according to the aggregation method.

Chapter 8
Reporting

31. General

The reporting by a bank of its trading activities as envisaged in these Regulations shall be *mutatis mutandis* in accordance with the prescriptions with regard to the risk-based returns and instructions, directives and interpretations relating to the completion thereof contained in the Regulations relating to Banks.

32. Risk-based returns

Unless expressly otherwise provided, a bank shall report its trading activities to the Registrar by means of the risk-based returns prescribed in the Regulations relating to Banks at the intervals and within the time periods as prescribed by such Regulations in respect of such returns.

33. Directives pertaining to reporting of Information pertaining to trading activities

(1) A bank shall report—

(a) its on-balance sheet items relating to its trading book on the form DI 100: Balance sheet; and

(b) its off-balance sheet items relating to its trading book on the form DI 110: Off-balance-sheet activities.

(2) Each element of allocated capital calculated in terms of regulation 11 (4)(a) shall be reported in line items 45 to 67 opposite its corresponding element in the form DI 400: Capital adequacy (hereinafter referred to as "the form DI 400").

(3) The base requirement calculated in terms of regulation 11 shall be reported in line item 69 of the form DI 400.

(4) The position risk requirement calculated as envisaged in regulation 12 shall be reported in line item 70 of the form DI 400.

(5) The counterparty risk requirement calculated in terms of regulation 21 shall be reported in line item 71 of the form DI 400.

(6) The large exposure requirement calculated in terms of regulation 23 shall be reported in line item 72 of the form DI 400.

(7) A bank shall report its currency risk relating to its trading activities on the form DI 600: Currency risk.

34. Short title and commencement

These Regulations shall be called the Regulations relating to Banks' Financial Instrument Trading, and shall come into operation on 1 October 1998.