



Market Risk Guidance Notes

Prudential Supervision Department
Document BS6

Issued: March 2008

GUIDANCE NOTE ON:**THE MEASUREMENT OF EXPOSURE TO MARKET RISK
FOR RESERVE BANK CAPITAL ADEQUACY AND DISCLOSURE PURPOSES**

The purpose of this guidance note is to explain the methodology to be used by all registered banks for disclosing exposure to interest rate, currency, and equity risk, which also determines the capital that New Zealand-incorporated registered banks must hold against those risks.

Introduction

1. The market risk measurement approach contained in the Reserve Bank's capital adequacy framework determines the capital that a registered bank must hold to cover economic losses arising from adverse movements in market prices.

Coverage

2. The framework captures changes in the economic value of recognised and unrecognised financial assets and financial liabilities of a banking group arising from movements in interest rates, exchange rates, and equity prices. Not included in the framework are fixed assets (land and buildings), commodity instruments, and those equity instruments which constitute the "shareholders' funds" of the banking group.
3. The values of fixed assets are influenced by movements in interest rates, exchange rates and equity prices, but are not included in the framework, because of a desire to reduce complexity, and because fixed assets are generally not an important component of banks' asset holdings. Similarly, commodity risk – economic losses arising from adverse movements in the price of commodity instruments – is not included in the market risk measurement framework, because registered banks in New Zealand generally do not have significant exposures to commodity risk.
4. Equity instruments representing the shareholders' funds of the banking group are not encompassed within the market risk framework since, from an economic point of view, the potential for change in the value of these instruments due to market risk mirrors the potential for losses captured by the capital requirements for market risk (because equity represents the difference between assets and liabilities). Equity instruments represent banks' capacity to absorb losses arising from market risk exposures.
5. The framework captures end-of-day exposures only. Market risk exposures which arise in the course of a business day (intra-day exposures) are not covered.

Capital Requirement

6. The calculation of the total capital that a New Zealand-incorporated registered bank must hold against market risk exposures is set out in Part 10 of “Capital adequacy framework (standardised approach)” (BS2A) for banks subject to that approach, and is duplicated in Part 7 of “Capital adequacy framework (internal models based approach)” (BS2B) for banks subject to that approach. Total capital for market risk is the sum of the aggregate capital charge for interest rate risk, the aggregate capital charge for foreign currency risk, and the aggregate capital charge for equity risk.

Main Disclosure Requirements

7. The disclosure Orders in Council (the “Orders”) require New Zealand-incorporated banks to disclose their aggregate capital charge for each type of market risk - both as an amount and as a percentage of the banking group’s equity. This forms part of the disclosure of all the components of the bank’s total capital requirement. Overseas-incorporated banks are required to disclose notional capital charges for market risk, calculated in the same way, but described as notional charges to reflect the fact that they are not subject to actual Reserve Bank capital requirements in relation to their New Zealand business. All banks are also required to disclose the implied risk-weighted exposure for each category of market risk, calculated as 12.5 x capital charge. This is a measure of gross exposure to each risk, and is intended to be on a comparable basis with actual or implied risk-weighted exposures for other risks.
8. The disclosures are required in respect of banks' end-of-period exposures, and peak exposures over the most recent quarter of the reporting period. The disclosure of peak market risk exposures is important because significant exposures can be (dis)established in a short period of time. Accordingly, if the market risk disclosure regime is to be effective and meaningful, disclosure of peak exposures is an essential element of the framework.
9. For New Zealand-incorporated banks, the denominator of the ratio disclosures – “equity” – is as defined in the “New Zealand Equivalent to the IASB Framework for the Preparation and Presentation of Financial Statements” approved by the Accounting Standards Review Board. For New Zealand branches of overseas-incorporated banks, the equity used for disclosure purposes can be either the latest publicly disclosed equity of the overseas-incorporated bank, or its equity at the reporting date.

Derivation Of Aggregate Market Risk Capital Charges

10. For the purposes of the end-period capital requirement and disclosure, aggregate market risk capital charges must be derived using the prescribed standard models set out in BS2A and BS2B.
11. To calculate the peak intra-period capital charge against each category of market risk, a registered bank can either calculate its end-of-day capital charge against that risk for each day over the period using the prescribed standard model, or can use any other method, such as an approach based on its own internal models, provided that that method does not yield amounts which are materially lower than the amounts which would have been derived under the standard models.

Audit Requirements

12. The market risk and capital adequacy disclosures made at the end of a financial year are subject to a full external audit, and those at the half year period to a limited scope review by an external auditor. For the full year, an audit opinion is required to be given as to whether the information disclosed in accordance with the Orders gives a true and fair view of the matters to which it relates, and for the half year, whether anything has come to the auditor's attention which would cause the auditor to believe that the information disclosed does not present a true and fair view of the matters to which it relates.
13. The full audit requirements in respect of market risk information are set out in clause 19 and Schedule 1 of the full and half year Orders. No audit requirement applies in the off-quarters, although as for other disclosures, banks may voluntarily subject that information to audit or review.

International Comparability

14. The Basel market risk framework provides for the use of either a standard model, or banks' internal models, subject to the latter being approved by the relevant supervisory authority.
15. The standard models set out in BS2A and BS2B are based on the standard models within the Basel capital adequacy framework, and similarly to Basel, fixed assets and equity instruments representing shareholders' funds are not included. There are some significant differences, though, between the two frameworks:
 - The Basel framework permits banks to use their own internal models to determine their capital requirement for market risk. The Reserve Bank has not implemented this element of the Basel framework to date, but intends to do so in due course. However, the Reserve Bank does allow banks to use alternative methods to calculate their intra-period peak capital charges for market risk.
 - The Basel model captures interest rate risk in the trading book only, and it is a matter of national supervisory discretion as to whether interest rate risk is additionally monitored from a broader viewpoint, that is, with respect to the bank as a whole. The framework contained in BS2A and BS2B captures banks' total exposure to interest rate risk to recognise that it is important to measure exposure to interest rate risk irrespective of whether that risk arises in the trading book or the banking book. If banks wish to separately disclose interest rate risk in the trading or banking books, they are permitted, but not required, to do so.
 - Unlike the Basel framework, the New Zealand framework does not capture commodity risk. This is because, as noted above, commodity risk is generally not significant for registered banks. However, the Reserve Bank will continue to monitor whether the disclosure of exposure to such risks, or a capital charge against them, should be required.

16. The standard model of interest rate risk in the Reserve Bank’s capital adequacy framework directly produces a figure for the amount at risk from interest rate exposure, and this is the capital charge. By contrast, the capital charges for currency and equity risk are derived by first calculating the gross exposure and then multiplying that amount by 8%. This is designed to ensure that the different forms of market risk exposure are placed on a comparable scale, that is, the required capital charge, which is intended to cover the value at risk.

Interest Rate Exposure

Standard Model

17. The standard model for calculating the capital charge for interest rate risk is set out in Part 10 of “Capital adequacy framework (standardised approach)” (BS2A) and also in Part 7 of “Capital adequacy framework (internal models based approach)” (BS2B). Under the standard model, banks' exposure to interest rate risk is measured using interest rate repricing schedules. Banks should refer to relevant financial reporting standards for additional guidance, particularly concerning the meaning of financial terms. Appendix 1 contains an example which illustrates the use of interest rate repricing schedules to measure interest rate risk using the standard methodology set out in BS2A and BS2B.

Interest Rate Repricing Schedules

18. Banks must allocate financial instruments to specified time bands in a manner which reasonably reflects their assessment of the interest rate repricing date of those instruments. In allocating financial instruments across time bands, banks should use the New Zealand dollar carrying values of recognised financial instruments and the New Zealand dollar contract (or face) values of unrecognised financial instruments.
19. The time bands and time zones used in the repricing schedule are broadly consistent with the Basel model, but in some zones there are fewer time bands than under the Basel model. The specified time bands and zones are as follows:

Time bands	Time zones
up to 1 month 1-6 months 6-12 months	Zone 1
1-2 years 2-4 years	Zone 2
4-6 years 6-10 years over 10 years	Zone 3

Treatment of Financial Instruments

20. Banks are generally free to place instruments in the time bands according to their assessments of the interest rate repricing dates of those instruments.
21. But, in allocating instruments to the relevant time bands, banks are expected to comply with the following guidelines:
 - securities in the banking book should receive the same treatment as securities in the trading book;
 - impaired assets can be treated as non-interest bearing, with banks making their own judgements as to the duration of the asset;
 - the duration of other assets should generally be determined by their contractual repricing date or residual maturity whichever is the earlier. Where banks have an element of discretion in applying interest rate changes they can make their own judgements about the effect of any lag on the duration of the asset;
 - embedded options should not generally be taken into account. However, if a bank has hedged an embedded option then the overall position can be treated as the contractual one;
 - wholesale term liabilities and retail term deposits (excluding those identified below) should be treated according to their contractual term.
22. Banks which have systems that allocate financial instruments according to different time bands may use those systems and re-allocate instruments to the time bands identified above on a pro-rata basis. If banks have a near-hedge arrangement, whereby the asset and liability straddles a time band boundary by no more than a few days, they may allocate the asset and liability to the same time band.
23. Financial instruments can be allocated to the above time bands after adjustment for the actual duration of the instrument. However, in calculating the "actual" risk-weighted position in each time band, banks must use the assumed change in interest rates outlined in Table 1 (below).
24. Banks must allocate financial instruments across time bands on a **gross basis**, unless a financial asset and an offsetting financial liability meet the netting criteria outlined below. Specifically assets, "positive liabilities", and long securities, derivatives or off-balance sheet positions should be separated from liabilities, "negative assets" and short securities, derivatives or off-balance sheet positions in the interest rate repricing schedules.

Interest Rate Insensitive Retail Products

25. Interest rate insensitive retail products (RIRP's) are any financial asset or financial liability, or part thereof, for which the bank considers the interest rate earned/paid is insensitive to changes in the general level of interest rates.
26. RIRP's comprise mainly zero and low interest retail savings and transaction accounts, eg cheque account balances, saving accounts earning say 3 per cent interest or less. RIRP's can also include zero or low interest lending, eg credit card balances.
27. RIRP's can be allocated to one of two categories: core or seasonal RIRP's. Seasonal RIRP's are that proportion of RIRP's which are sensitive to intra-year seasonal patterns, ie - tax or Christmas flows. Observed variations in RIRP's over more than one year, or expected variations in RIRP's arising from future marketing strategies or technological change, are not seasonal variations. No more than 20 per cent of the end-of-period RIRP balances should be allocated to the seasonal category.
28. Seasonal RIRP's can be allocated across time bands based on banks' observations of the interest rate repricing behaviour of these funds. The 20 per cent "cap" on the amount of RIRP's that can be allocated to the seasonal category is designed to facilitate interbank comparisons of interest rate exposures. The 20 per cent threshold is based on a survey of banks' allocation of RIRP's into seasonal and core categories.
29. Core or non-seasonal RIRP's must be allocated across time bands in the following manner:

Time bands	Percentage of core RIRP's
0-1 month	5%
1-6 months	5%
6-12 months	10%
1-2 years	20%
2-4 years	40%
4-6 years	20%

30. This allocation of core RIRP balances represents an industry average treatment. While individual banks may have different assumptions about the repricing behaviour of these instruments, it is important that all banks allocate their core RIRP's across time bands in the manner outlined above so that a bank's exposure to interest rate risk can be compared with the exposures of other banks.

Derivatives

31. The following provides guidance on the treatment of foreign exchange contracts and derivative products:
 - An interest rate swap in which the bank agrees to swap fixed rate interest payments (or receipts) for floating rate payments (or receipts) should be treated as a financial asset (or liability) with a maturity equivalent to the term of the

underlying fixed rate agreement and a financial liability (or asset) with a maturity equivalent to the term of the underlying floating rate agreement. The value of the notional financial asset and financial liability for an interest rate swap agreement is the notional value of the swap contract.

- A forward rate agreement under which a bank agrees to invest (or borrow) funds for a "fixed term", at an agreed interest rate, after a "specified elapsed time" (spanning today and the agreed future start date) should be treated as an interest bearing financial asset (or liability) with a maturity equal to the "fixed term" plus the "specified elapsed time" and an interest bearing financial liability (or asset) with maturity equal to the "specified elapsed time". The value of the notional financial asset and liability underlying a forward rate agreement should be the contract amount.
- Banks may determine separately the interest rate risk in a single currency arising from options using their own methodology and add this risk to the total interest rate risk in that currency. Alternatively banks can use the methods for measuring risk on options contained in the Basel market risk papers. Note that banks which trade significantly in options should use the delta-plus methods to capture gamma and vega risks.
- Compound or hybrid financial instruments comprising more than one notional underlying financial instrument of the type specified above, should be decomposed into separate financial instruments and treated in the manner outlined above.

Netting

32. Banks may exclude perfect hedges or near-perfect hedges from the measure of interest rate risk, provided they meet the netting criteria set out in Part 10 of BS2A and in Part 7 of BS2B. These criteria are drawn from the Basel standard models.

Calculation of aggregate capital charge for interest rate risk

33. Banks' aggregate capital charge for interest rate risk is derived by measuring interest risk exposure in a single currency, then aggregating the interest rate exposures across all currencies.

Interest rate exposure in a single currency

34. Interest rate risk in a single currency is the sum of the directional interest rate risk, yield curve risk, and basis risk in that currency.

Directional interest rate risk

35. After the financial instruments have been allocated to the appropriate time bands in the manner described above, the net open position in each time band can be calculated. The net open position in a time band is calculated by subtracting the amount of financial liabilities in the time band from the financial assets in that band.

36. The net open position in each time band is then risk weighted based on the duration of financial instruments in that time band and the assumed change in interest rates. Thus, the risk-weighted net open position measures the change in banks' net financial assets for an assumed change in interest rates. Banks which have the capacity to calculate the actual modified duration of their financial assets and liabilities, can derive their exposure to directional risk using their own systems, provided the assumed changes in interest rates are no less conservative than those contained in Table 1.
37. Alternatively banks can apply the standard risk weights contained in Table 1. These are broadly consistent with the Basel standard model. Specifically the modified durations are derived using the Basel assumption of an eight per cent coupon on all financial instruments. The assumed changes in interest rates are also consistent with Basel. Small differences in the risk weights arise because Table 1 contains fewer time bands than the Basel model.

Table 1: Standard Duration Weights, Interest Rate Changes, and Risk Weights

	up to 1 mth	1-6 mths	6-12 mths	1-2 yrs	2-4 yrs	4-6 yrs	6-10 yrs	10+ yrs
Duration Weights	0	0.3	0.7	1.4	2.5	4.3	5.8	7.3
Interest Rate Changes (%)	1.0	1.0	1.0	0.9	0.8	0.7	0.6	0.6
Risk Weights (%)	0	0.3	0.7	1.3	2.0	3.0	3.5	4.4

38. The sum of the risk-weighted open positions in each time band is the exposure to directional interest rate risk. This risk may be either positive or negative.

Yield curve risk

39. The implied assumption in the measure of directional interest rate risk is that interest rate movements in each of the time bands are perfectly correlated. Accordingly, the measure of interest rate risk in a single currency needs to be adjusted to account for yield curve risk or imperfect correlation in interest rates across the yield curve.
40. The approach taken to adjust for yield curve risk is the same as the Basel "standard model". The methodology involves making a set of "horizontal disallowances" where positions in one time band are used to offset positions in another time band, ie - a proportion of the offset is added back to the risk figure. The proportion of the offset which is added back varies according to the proximity of the time bands to one another. The further apart the time bands, the greater the add-on arising from imperfect correlation along the yield curve. The horizontal methodology is as follows. (The example in Appendix 1 illustrates this methodology.)

41. The yield curve is split into three time zones as identified below. There are two categories of horizontal disallowances (or add-ons):- intra-zone horizontal disallowances for divergent yield curve movements within a time zone, and inter-zone horizontal disallowances for divergent curve movements between time zones.

Intra-zone disallowances

42. The aggregate risk-weighted long and short positions in each time zone are calculated. The risk-weighted matched position in a particular time zone is the lesser of the absolute value of the risk-weighted long open positions and the absolute value of the risk-weighted short open positions in that time zone. The residual position in each time zone is the difference between the sum of the risk-weighted long and short positions in that time zone. The residual position is used to calculate inter-zone disallowances (refer below).
43. The matched position in a time zone is multiplied by a disallowance factor to determine the value of the intra-zone horizontal disallowance for that zone. The intra-zone disallowance factors are the same as those used in the Basel standard model and are as follows:

Time Zones	Disallowance factors
Zone 1	40%
Zone 2	30%
Zone 3	30%

44. The higher intra-zone disallowance factor for zone 1 reflects the lower correlation between interest rates in neighbouring time bands on short dated securities vis-à-vis long dated securities.

Inter-zone disallowances

45. Inter-zone disallowances are derived by matching the residual positions in a particular time zone (as derived above) with the residual positions in the corresponding time zone. This method is outlined in Part 10 of BS2A and Part 7 of BS2B and is illustrated in the example in Appendix 1. The disallowance factors are the same as those contained in the Basel standard model and are as follows:

Time Zones	Disallowance factors
Zone 1&2	40%
Zone 2&3	40%
Zone 1&3	100%

46. Banks should calculate the inter-zone (horizontal) disallowances in the following order to avoid overstating the measure of risk: Zones 1&2, Zones 2&3, and then Zones 1&3.

47. Horizontal disallowances (both intra-zone and inter-zone) should always increase a bank's risk in a particular currency. Thus, if a bank's directional risk in a particular currency is negative (positive), the horizontal disallowances should be negative (positive).

Basis risk

48. Basis risk has been accounted for by applying the Basel vertical disallowance methodology. When there are matched positions (ie where gross financial assets have been offset or netted against gross financial liabilities) in a time band, the amount of the matched position (ie the lesser of the absolute value of the risk-weighted financial assets and the absolute value of the risk-weighted liabilities in the band), is multiplied by a vertical disallowance factor to derive the amount of basis risk. (The example in Appendix 1 illustrates this methodology.)
49. Financial assets and financial liabilities are classified into two categories for the purposes of applying vertical disallowances: RIRP's and "securities" (financial instruments other than RIRP's). The vertical disallowance factors for these categories are as follows:

When at least one of the instrument types in the matched position is a RIRP	20%
When the matched position comprises only securities:	5%

50. The procedure for determining the vertical disallowance amount in a time band is as follows:
- (a) Derive the risk-weighted matched position in the time band (sum of the risk-weighted long or short position in that time band, whichever is the smaller).
 - (b) Derive the absolute risk-weighted value of the RIRP's in that time band (sum the RIRP assets and liabilities, irrespective of sign).
 - (c) If the absolute risk-weighted matched position is less than or equal to the absolute risk-weighted value of the RIRP's, then the vertical disallowance amount is the risk-weighted matched position times 20%.
 - (d) If the risk-weighted matched position is more than the absolute risk-weighted value of the RIRP's, then the vertical disallowance amount is:
 - (i) the absolute risk-weighted value of RIRP's times 20%; plus
 - (ii) the remainder of the risk-weighted matched position (ie, the difference between the risk-weighted matched position and the absolute risk-weighted RIRP's) times 5%.

51. Vertical disallowances should always increase a bank's risk in a particular currency. Thus, if a bank's directional risk in a particular currency is negative (positive), the amount of vertical disallowance should be negative (positive).

Aggregate capital charge for interest rate risk

52. A bank's aggregate capital charge for interest rate risk across all currencies is the greater of the absolute value of the sum of long individual currency positions and the absolute value of the sum of the short individual currency positions. This aggregation rule accounts, at least in part, for correlations in interest rate movements across currencies. This approach is less conservative than the standard Basel model which requires the aggregation of the absolute positions across currencies. Banks disclose the aggregate capital charge for interest rate risk, which is a positive number – they do not have to disclose whether they are exposed to an increase in interest rates (ie have an aggregate long position) or a decrease in interest rates (ie have an aggregate short position).

Peak Capital Charge

53. One option for banks to comply with the requirement to disclose the intra-period peak capital charge (actual or notional) is to derive their capital charge at the end of each day using the standard methodology.
54. The alternative, as noted previously, is for banks to use their own internal models to derive the peak interest rate risk capital charge. They may do this provided they are satisfied that the peak capital charge is not materially lower than that which would have been derived using the standard model. Banks can use this option if they do not have the capacity, or would not find it efficient, to recalculate their capital charge, using the standard methodology, every time there is a significant change in the end-of-day interest rate repricing profile of traded or variant instruments.
55. A common "own value-at-risk method" used for peak reporting is a scalar approach. Under this method, the end-of-period capital charge, as derived using the standard model, is scaled by the ratio of peak capital charge (using the bank's internal value-at-risk method) to end-of-period capital charge (using the internal value-at-risk method). Under this approach, bank directors would have to be satisfied of a number of factors including that the correlation between the internal method and the Reserve Bank's method is high and stable over time or, if it is not, that the bank's own internal model results in an upward error.

Foreign Currency Exposure

Standard Model

56. The standard model for deriving the capital charge for foreign currency risk is set out in Part 10 of “Capital adequacy framework (standardised approach)” (BS2A) and also in Part 7 of “Capital adequacy framework (internal models based approach)” (BS2B).

Coverage

57. Structural positions denominated in foreign currencies that are of a fixed long-term nature such as capital instruments issued by the banking group, financial instruments issued by associates of the registered bank, or investments in premises, are not included in the measure of foreign currency exposure. All other financial instruments involving an identifiable and definite foreign currency risk should be included in the measure of exposure.

Single Foreign Currency Exposure

58. A bank’s exposure in a single foreign currency is the aggregate amount of its financial assets (both recognised and unrecognised) less the aggregate amount of its financial liabilities (both recognised and unrecognised) denominated in that foreign currency. A foreign currency is a currency other than New Zealand dollars.
59. Recognised financial instruments should be valued at the New Zealand dollar carrying amount. Unrecognised financial instruments should be valued at the New Zealand dollar contract or face value. However, where banks have the capacity to value financial instruments on a present value basis, they may do so for the purposes of deriving their exposure in a single currency.
60. The New Zealand dollar value of a financial instrument is the foreign currency value of that instrument converted to New Zealand dollars at the mid-point of market bid and offer rates applying at the close of business on the relevant day.

Treatment of Financial Instruments

61. The following financial instruments should be included in the measure of foreign currency exposures:
- Recognised financial instruments. This covers foreign currency assets and liabilities recorded in the bank's financial statements, including all foreign currency borrowings, deposits, loans, bills and investments, and liquid assets (including funds lodged with overseas banks and in money market securities).
 - Unrecognised financial instruments. This covers foreign currency transactions not recorded or disclosed under conventional double-entry accounting procedures, but which entail an identifiable foreign currency commitment. Gross amounts of outstanding sale and purchase contracts are to be reported. Unrecognised financial instruments include:

- undelivered spot purchases/sales: for the purpose of this methodology, a spot transaction is defined as one contracted for receipt or delivery within two business days from report date. Undelivered spot transactions refer to all outstanding spot contracts written but not delivered. This also includes forwards due to be delivered 'within spot', all undelivered legs of 'less than spot' swaps and the undelivered 'spot' legs of spot/forward swaps;
- forward purchases/sales: a forward transaction is defined as one contracted for receipt or delivery beyond two business days from report date. Forward purchases/sales refer to the gross amount of outstanding forwards, other than those to be delivered 'within spot'. These instruments also include both legs of forward/forward swaps and outstanding forward legs of spot/forward swaps;
- futures/options contracts: this refers to the equivalent net open position of all foreign currency futures/options contracts outstanding at report date.

Aggregate Foreign Currency Exposure and Capital Charge

62. A bank's aggregate foreign currency exposure is the greater of the absolute value of the sum of long individual foreign currency positions and the absolute value of the sum of the short individual foreign currency positions. This aggregation rule accounts, at least in part, for correlations in exchange rate movements, and is consistent with the standard Basel model.
63. The aggregate capital charge for foreign currency risk is the aggregate foreign currency exposure multiplied by 0.08. The capital charge is a positive number - banks do not have to disclose whether they have an aggregate long position or an aggregate short position in foreign currencies. The 8 per cent scalar is the amount of capital the Basel standard model applies to the aggregate foreign currency exposure.

Equity Exposure

Standard Model

64. The standard model for deriving the capital charge for equity risk is set out in Part 10 of "Capital adequacy framework (standardised approach)" (BS2A) and also in Part 7 of "Capital adequacy framework (internal models based approach)" (BS2B).

Coverage

65. Structural positions, such as equity investments in associates of the banking group, are not included in the measure of equity exposure. (Equity investments in subsidiaries of the registered bank are excluded in consolidation and would not be captured in the equity exposure of the banking group.) Non-convertible preferred shares which are reported in the interest rate exposure methodology are not captured in the measure of equity exposure.

Equity Exposure in a Single Currency

66. A bank's equity exposure in a single currency is the aggregate amount of its equity instrument claims or assets (both recognised and unrecognised) less the aggregate amount of its equity instrument obligations or liabilities (both recognised and unrecognised) in that currency. This methodology includes equity exposures in all currencies including New Zealand dollars.
67. Recognised financial instruments should be valued at the New Zealand dollar carrying amount. Unrecognised financial instruments should be valued at the New Zealand dollar contract or face value. However, where banks have the capacity to value financial instruments on a present value basis, they may do so for the purposes of deriving their exposure in a single currency.

Treatment of Equity Instruments

68. Equity instruments which should be included in the measure of equity exposure include:
- voting and non-voting ordinary shares;
 - warrants that give the holder the right to acquire equity instruments;
 - convertible securities under the terms of which the holder has the right to convert the security into an equity instrument at a fixed conversion price;
 - commitments and other rights or obligations to buy or sell equity instruments;
 - equity futures;
 - equity swaps (treated as two notional positions in the same manner as currency swaps); and
 - equity options.
69. Recognised equity instruments should be valued at the New Zealand dollar carrying amount. Unrecognised equity instruments should be valued at the New Zealand dollar contract or face value.
70. The New Zealand dollar value of an equity financial instrument denominated in a foreign currency is the foreign currency value of that instrument converted to New Zealand dollar equivalents at the mid-point of market bid and offer rates applying at the close of business on the relevant day.

Aggregate Equity Exposure and Capital Charge

71. A bank's aggregate equity exposure is the sum of the absolute value of the individual long equity positions and the absolute value of the short individual equity positions. This aggregation rule does not account for correlations in equity price movements in different countries. This aggregation approach is consistent with the standard Basel model.
72. The aggregate capital charge for equity risk is the aggregate equity exposure multiplied by 0.08. The capital charge is a positive number - banks do not have to disclose whether they have an aggregate long position or an aggregate short position in equities. The 8 per cent scalar is the amount of capital the Basel standard model applies to the aggregate equity exposure.

APPENDIX 1

Interest Rate Risk

XYZ Bank - End of Period		Class for	Vertical	Zone 1			Zone 2		Zone 3		
Residual Maturities		Peak	Disallowance	0-1	1-6	6-12	1-2	2-4	4-6	6-10	over 10
		Reporting	Category	Months			Years				
(\$ Millions)	(NZD Millions)										
Assets											
Cash	5	Securities	Securities	5							
Balances with other financial institutions	95	Invariant	Securities	95							
Trading Securities (Gross)	10,000	Variant	Securities	500	1,000	0			2,000	5,000	1,500
Core credit card lending	1,000	Invariant	RIRP's	50	50	100	200	400	200		0
Mortgages & Loans	12,000	Invariant	Securities	1,000	2,000	6,000				2,000	1,000
Debt (Investment/Hedge) Securities (Gross)	2,000	Invariant	Securities	100				2,000			
Other Recognised Financial Assets	100	Invariant	Securities								
TOTAL	25,200			1,750	3,050	6,100	200	2,400	2,200	7,000	2,500
Liabilities											
Balances from other financial institutions	-200	Variant	Securities	-200							
Call deposits from customers											
- core	-8,000	Invariant	RIRP'S	-400	-400	-800	-1,600	-3,200	-1,600		
- seasonal	-1,000	Invariant	RIRP'S	-500	-500						
Term deposits	-3,000	Invariant	Securities			-3,000					
Trading Liabilities (Gross)	-3,000	Variant	Securities			-3,000					
Subordinated Debt	-2,000	Invariant	Securities								-2,000
Other Recognised Financial Liabilities	0	Invariant	RIRP'S								
Total Liability or Short Positions	-17,200			-1,100	-900	-6,800	-1,600	-3,200	-1,600	0	-2,000
Net Recognised Position				650	2,150	-700	-1,400	-800	600	7,000	500
Unrecognised Financial Instruments											
Swaps											
- swap 1	5,000	Variant	Securities	20,200					-20,200		
- swap 2	2,000	Variant	Securities	-2,000					2,000		
Futures (gross)	500	Variant	Securities				-500	500			
FRA (gross)	200	Variant	Securities	-200	500						
Foreign Exchange	1,000	Variant	Securities					1,000			
Net Position - Total				18,650	2,650	-700	-1,900	700	-17,600	7,000	500

Interest Rate Risk

XYZ Bank - End of Period	Vertical	Zone 1			Zone 2		Zone 3			Risk Amount
		0-1	1-6	6-12	1-2	2-4	4-6	6-10	over 10	
Residual Maturities	Disallowance	Months			Years					
Category										
(NZD Millions)										
"IRIRD" Assets or long positions - Seasonal	RIRP'S	0	0	0	0	0	0			
"IRIRD" Assets or long positions - Core	RIRP'S	50	50	100	200	400	200			
Securities (variant) / Limits		20700								
Securities (invariant)		1200	3500	6000	0	3500	4000	7000	2500	
Total Assets or Long Positions		21950	3550	6100	200	3900	4200	7000	2500	
Securities (variant) / Limits		(2,400)	-	(3,000)	(500)	-	(20,200)	-		
Securities (invariant)		-	-	(3,000)	-	-	-	-	(2,000)	
"IRIRD" Liabilities - Seasonal	RIRP'S	(500)	(500)	-	-	-	-	-	-	
"IRIRD" Liabilities - Core	RIRP'S	(400)	(400)	(800)	(1,600)	(3,200)	(1,600)			
Total Liability or Short Positions		(3,300)	(900)	(6,800)	(2,100)	(3,200)	(21,800)	-	(2,000)	
Net Position		18,650	2,650	(700)	(1,900)	700	(17,600)	7,000	500	
Risk Weights %		0	0	1	1	2	3	4	4	
Directional Risk		0	8	-5	-25	14	-528	245	22	-269
Vertical Disallowances										
IRIRDs		0	3	6	3	64	54	0	0	
	20%	0	1	1	1	13	11	0	0	-26
Securities		0	0	36	0	0	72	0	88	
	5%	0	0	2	0	0	4	0	4	-10
			1	3	1	13	14	0		-36
Horizontal Disallowances										
		Long	Short	Residual			Offset	Disallowance		
Zone 1		8	-5	3			5	0		-2
Zone 2		14	-25	-11			14	0		-4
Zone 3		267	-528	-261			267	0		-80
				Net Residual						
				Zone 1 after 1&2	0	Zones 1&2	3	0		-1
				Zone 2 after 1&2	-8	Zones 2&3	0	0		0
				Zone 3 after 2&3	-261	Zones 1&3	0	1		0
										-87
Options										0
Total Interest Rate Risk										-392

Interest Rate Risk

XYZ Bank - Peak	Vertical	Zone 1			Zone 2		Zone 3			Risk Amount
		Disallowance	0-1	1-6	6-12	1-2	2-4	4-6	6-10	
	Category	Months			Years					
(NZD Millions)										
"IRIRD" Assets or long positions - Seasonal	RIRP'S	0	0	0	0	0	0			
"IRIRD" Assets or long positions - Core	RIRP'S	50	50	100	200	400	200			
Securities (variant) / Limits		20,700	1,500	0	0	1,500	4,000	5,000	1,500	
Securities (invariant)		1,200	2,000	6,000	0	2,000	0	2,000	1,000	
Total Assets or Long Positions		21,950	3,550	6,100	200	3,900	4,200	7,000	2,500	
Securities (variant) / Limits		0	0	0	0	0	-50,000	-10,000	0	
Securities (invariant)		0	0	-3,000	0	0	0	0	-2,000	
IRIRD liabilities - seasonal	RIRP'S	-500	-500	0	0	0	0	0	0	
IRIRD liabilities - core	RIRP'S	-400	-400	-800	-1,600	-3,200	-1,600			
Total Liability or Short Positions		-900	-900	-3,800	-1,600	-3,200	-51,600	-10,000	-2,000	
Net Position		21,050	2,650	2,300	-1,400	700	-47,400	-3,000	500	
Risk Weights %		0	0.3	0.7	1.3	2	3	3.5	4.4	
Directional Risk		0	8	16	-18	14	-1,422	-105	22	-1,485
Vertical Disallowances										
IRIRDs		0	3	6	3	64	54	0	0	
	20%	0	1	1	1	13	11	0	0	-26
Securities		0	0	20	0	0	72	245	88	
	5%	0	0	1	0	0	4	12	4	-21
			1	2	1	13	14	12		-47
Horizontal Disallowances										
		Long	Short	Residual			Offset	Disallowance		
Zone 1		24	0	24			0	40%		0
Zone 2		14	-18	-4			14	30%		-4
Zone 3		22	-1,527	-1,505			22	30%		-7
				Net Residual						
		Zone 1 after 1&2		20		Zones 1&2	4	40%		-2
		Zone 2 after 1&2		0		Zones 2&3	0	40%		0
		Zone 3 after 2&3		-1,505		Zones 1&3	20	100%		-20
										-32
Options										0
Total Interest Rate Risk										-1,565