APPENDIX C TO TIB VOLUME TWO, NO. 4, NOVEMBER 1990

Recent Determinations Issued By the Commissioner

Determination G22: Optional Conversion Convertible Notes Denominated in New Zealand Dollars Convertible at the Option of the Holder

This determination may be cited as "Determination G22: Optional Conversion Convertible Notes Denominated in New Zealand Dollars Convertible at the Option of the Holder"

1. Explanation (which does not form part of the determination)

(1) An optional conversion Convertible Note is a financial arrangement. The note is evidence that the holder has provided money to a company. This money is repayable at a future date in either cash or company shares. Coupon Interest Payments may be made between the date of issue and the redemption date. The amounts payable in relation to the Convertible Note may be in New Zealand currency or a foreign currency.

This determination applies to those optional conversion Convertible Notes where conversion into company shares is at the option of the holder and the convertible note is denominated in New Zealand dollars.

This determination allows a person to calculate income or expenditure in relation to such a note.

(2) A Convertible Note has a debt and equity component. The accruals regime is not intended to deal with equity and therefore classifies a share (which is equity in a business) as an excepted financial arrangement. In the case of a Convertible Note, the equity component is the option to convert repayment to shares.

Any income or expenditure that is attributable to an excepted financial arrangement is not included when calculating income or expenditure under the accruals regime.

(3) Thus, when calculating income or expenditure as it relates to a Convertible Note, it is necessary to separate the debt and equity components of the note. This is done for two purposes:

(a) Firstly, this determination sets out the method to separate the acquisition price into debt and equity components for the purpose of calculating income or expenditure during the term of the note.

(i) The method used isolates the amount of the core acquisition price attributable to the option to convert to shares. The core acquisition price minus the present value of the person's cashflows equals the amount attributable to the option to acquire shares. This amount, being the equity component, is excluded from the calculations to determine income or expenditure.

(ii) Income or expenditure for all years, bar the final year, of the financial arrangement can then be calculated. The calculation uses the yield to maturity method (or an alternative method producing not materially different results) and the cashflows in relation to the debt component of the Convertible Note.

(b) Secondly, the determination sets out the method for separating the amount of the consideration payable by the issuer or receivable by the holder into debt and equity components as required for the base price adjustment. This is done in three stages:

(i) The amount of consideration payable by the issuer or receivable by the holder is isolated.

(ii) The equity component of the consideration is distinguished from the debt component.

(iii) The amounts relating to the debt component are used when calculating the base price adjustment.

(4) This determination states that when calculating consideration for the purposes of the base price adjustment:

(i) All Coupon Interest Payments are attributable to the debt component of the note and are included in the amount of consideration.

(ii) All of the Cash Redemption Amount is attributable to the debt component and is to be included in the amount of consideration.

(iii) If a Convertible Note is converted into, redeemed or paid by the issue or delivery of shares, the value of the shares is presumed to be equal to or greater than the Cash Redemption Amount.

(iv) If a Convertible Note is converted into, redeemed or paid by the issue or delivery of shares, and the value of the shares is more than the Cash Redemption Amount, then this excess belongs to the equity component and is not included in the amount of consideration.

(5) It is assumed that the holder of the Convertible Note, when deciding whether to redeem the note in shares or cash will only decide on shares if the value of the shares is greater than or equal to the Cash Redemption Amount.

If this is not the case, any loss made by the holder is attributable to the equity component. That is, the loss is excluded from calculations to determine the holders income or expenditure in relation to the financial arrangement.

The treatment of Convertible Notes, therefore, is the same whether the shares or the Cash Redemption Amount is taken.

(6) If Convertible Notes are sold or otherwise disposed of before Redemption Date, the seller must calculate how much of the price received for the notes is attributable to that part of the Convertible Note which is subject to the accruals regime. The seller achieves this by calculating the acquisition price of the Convertible Note as if:

(a) He or she were the buyer (that is, the new holder); and

(b) The sale price was the only consideration provided by the buyer.

The amount so calculated is included in variable “a” of the base price adjustment. Any brokerage paid by the seller will be included in variable “b” of the base price adjustment, as brokerage is an amount paid in respect of the financial arrangement.

(7) The effect of this determination is that the holder and issuer of the Convertible Note are taxed as if the Convertible Note were a bond which:

(a) Is issued at a price which excludes an amount paid or received for the option to convert to shares (equity component); and

(b) Is redeemable in cash (the Cash Redemption Amount); and

(c) May have Coupon Interest Payments paid during the term of the note.

2. Reference

This determination is made pursuant to section 64E(1)(e) of The Act.

3. Scope

This determination shall apply to any Convertible Note in relation to which a person is a holder or an issuer where -

(a) All amounts payable are denominated in New Zealand dollars; and

(b) The person becomes a party to the Convertible Note after the day on which this determination is made; and

(c) At the date upon which the Convertible Note is acquired in relation to the holder or issued in relation to the issuer -

(i) The Cash Redemption Amount; and

(ii) The acquisition price and, where the acquisition price is to be paid by instalments, the amount of instalments and instalment payment dates; and

(iii) Coupon Interest Payment dates; and

(iv) The Exercise Date -

in relation to the Convertible Note are known not later than the first balance date after the Convertible Note was issued or acquired as the case may be; and

(d) The holder (and not the issuer) of the Convertible Note may elect whether the liability of the issuer is to be discharged by the issue or delivery of shares or by payment of the Cash Redemption Amount; and

(e) The option to acquire shares is not detachable.

4. Principle

(1) An optional conversion Convertible Note is a hybrid financial arrangement which has a debt and an equity component. The equity component is an option to acquire or to sell

shares. Options to acquire or to sell shares are excepted financial arrangements.

(2) This determination sets out the method for determining the part of the acquisition price and the part of the consideration receivable by the holder or payable by the issuer that is attributable to the excepted financial arrangement. These amounts, if any, are not taken into account in any calculations to determine income derived or expenditure incurred or the base price adjustment under sections 64B to 64M of The Act.

(3) The effect of this determination is that the holder and issuer of the Convertible Note are taxed as if the Convertible Note were a bond, issued at a price which excludes an amount paid or received for the option to convert to shares, and redeemable at the Cash Redemption Amount with Coupon Interest Payments throughout the term of the note if applicable.

(4) It is assumed that a person will not forgo a cash payment where the value of the alternative is less than the amount of the cash payment; and in particular a person will elect to receive cash rather than shares unless the value of the shares is greater than the amount of the cash payment available, in which case the excess is attributed to the excepted financial arrangement.

(5) It is assumed that a person will not suffer a net loss in order to give any other person the right to create a claim over the first mentioned person; and in particular a company will not pay any person to take up a call option on the company for the company shares.

5. Interpretation

(1) In this determination, unless the context otherwise requires-

Words and expressions used shall have the same meaning as in The Act, except that, where there is a conflict between the meaning of an expression in sections 64B to 64M of The Act and the meaning of the expression elsewhere in The Act, the expression shall have the same meaning as in the said sections 64B to 64M:

"Acceptable Present Value Calculation Method" means Method A of Determination G10B: Present Value Calculation Methods, or an alternative method producing not materially different results.

"The Act" means the Income Tax Act 1976:

"Cash Redemption Amount" in respect of a Convertible Note means the consideration that, according to the terms of the Convertible Note, the holder of the Convertible Note may elect to:

(a) Receive in substitution for issue or delivery of shares; or

(b) Surrender the right to receive in consideration for the issue or delivery of shares:

"Convertible Note" means any debenture, bond certificate, document, note, or writing issued or given by a person:

(a) Evidencing, acknowledging, creating, or relating to a loan to the person or any money subscribed to the person or any other liability of the person, whether or not there is a charge over the undertaking or any of the assets or the person securing the whole or any part of the amount in respect of which the person has issued or given the note; and

(b) Providing, pursuant to a trust deed or otherwise, and whether exclusively or not, for that amount, with or without interest thereon and whether at par or otherwise at the option of holder of the Convertible Note -

(i) To be redeemed by payment of the Cash Redemption Amount; or

(ii) To be converted into, or to be redeemed or paid by the issue or delivery of, shares in the capital of any company -

and includes any subsidiary or collateral agreement fixing the amount of coupon payment required to be made under the Convertible Note:

"Coupon Interest Payment" or "Coupon Interest Payments" in respect of a Convertible Note means any amount or amounts payable on the note by the note issuer to the note holder other than the Cash Redemption Amount:

"Exercise Date" in respect of a Convertible Note means the date when the holder of the Convertible Note may elect to receive payment of the Cash Redemption Amount:

"Redemption Date" in respect of a Convertible Note means the date on which the Convertible Note is converted, redeemed or paid:

"Specified Rate" at any date shall be calculated pursuant to Determination G23: Specified Rate:

"Term Of The Convertible Note" is the period from the issue, in the case of an issuer, or acquisition, in the case of a holder, until the Exercise Date:

(2) Any reference in this determination to another determination made by the Commissioner shall be construed as referring to any fresh determination made by the Commissioner to vary, rescind, restrict or extend that determination.

(3) For convenience, words and phrases defined in this determination are indicated by initial capital letters, but the absence of a capital letter shall not alone imply that the word or phrase is used with a meaning different from that given by its definition.

6. Method

(1) The amount of the core acquisition price of a Convertible Note attributable to the option to buy or sell shares, which is an excepted financial arrangement, is:

$$y - s$$

where-

y is the core acquisition price of the Convertible Note determined in accordance with section 64BA(1)(d) of The Act; and

s is the present value of the cashflows in respect of the Convertible Note and the person:

Provided that the amount so calculated shall not be less than zero.

(2) For the purpose of determining the present value of the cashflows in respect of a Convertible Note and a person as required by subclause (1) -

(a) The cashflows are -

(i) Coupon Interest Payments during the Term Of The Convertible Note; and

(ii) Contingent fees; and

(iii) Non contingent fees to the extent that they exceed 2 percent of the core acquisition price; and

(iv) The Cash Redemption Amount:

(b) If future Coupon Interest Payments are not known at the date of acquisition or issue, as the case may be, because the Convertible Note has a reviewable or variable coupon rate determined by a fixed relationship to a market or indicator rate, it is to be assumed, for the purpose of determining the present value of the cashflows, that the coupon rate applicable to the first period also applies to future periods:

(c) The present value shall be calculated using the Specified Rate determined in accordance with Determination G23: Specified rate:

(d) An Acceptable Present Value Calculation Method must be used to calculate the present value of the cashflows during the Term Of The Convertible Note.

(3) For the purposes of calculating the amount that shall be deemed to be income or expenditure of a Convertible Note of any person pursuant to section 64C of The Act regard shall be had to all consideration provided to the person and by the person in relation to the Convertible Note except-

(a) The amount of consideration not contingent on the financial arrangement provided it is less than 2 per cent of the core acquisition price (item "z" as defined in section 64BA(2) or (3)); and

(b) The amount of (y - s) being the part of the core acquisition price attributable to the excepted financial arrangement calculated in accordance with subclauses (1) and (2) of this clause.

(4) For the purposes of the base price adjustment the amount of the acquisition price of a Convertible Note shall be the amount calculated in accordance with sections 64BA(2) or (3) of The Act less the amount of the core acquisition price attributable to the excepted financial arrangement calculated in accordance with subclauses (1) and (2) of this clause. This amount is variable "b" of the base price adjustment.

(5) For the purposes of determining the amount of the consideration receivable by the holder or payable by the issuer for the purposes of the base price adjustment -

(a) No part of the Coupon Interest Payments is attributable to the excepted financial arrangement; and

(b) No part of the Cash Redemption Amount is attributable to the excepted financial arrangement; and

(c) Where a Convertible Note is converted into, redeemed or paid by the issue or delivery of, shares the value of the shares is deemed to be equal to or greater than the Cash Redemption Amount; and

(d) Where a Convertible Note is converted into, redeemed or paid by the issue or delivery of, shares any excess in value of the shares over the Cash Redemption Amount is attributable to the excepted financial arrangement.

(6) Where a Convertible Note is acquired other than at issue the amount of income derived or expenditure incurred and the acquisition price of the Convertible Note shall be determined by the new holder of the note in accordance with The Act and subclauses (1) to (4) of this clause.

Position of vendor on sale of Convertible Note

(7) Where a Convertible Note is sold by a holder to any person before the Redemption Date the amount of the sale price that is attributable to the debt component of the Convertible Note shall be equal to the acquisition price of the new holder calculated in accordance with subclauses (1) to (4) of this clause as if the sale price were the only consideration provided by the new holder.

(8) Any amount of fees paid by the holder in relation to the sale shall then be deducted from the acquisition price for the purposes of the base price adjustment.

(9) The amount calculated in accordance with subclause (7) of this clause shall be treated as a part of variable “a” in the base price adjustment for the vendor. The vendor will already have calculated the acquisition price at the time of acquisition of the Convertible Note in accordance with subclauses (1) to (4) of this clause.

7. Examples

A New Zealand public company, XYZ Limited, raises $100 million through an optional conversion Convertible Note issue dated 28 April 1991. XYZ Ltd has a 31 March balance date.

The notes were issued at a par value of $1.00. Coupon interest of 12% per annum is payable half-yearly in arrears. The earliest possible conversion date is 5 years from the date of issue. The conversion terms are 1:1 or cash at par.

The rate for like term Government Stock at the time of issue, determined in accordance with Determination G13A: Prices or Yields, is 10%.

The cost of the issue (arrangement fees etc.) to XYZ Ltd was $1,100,000 being contingent fees of $1,000,000 and non-contingent fees of $100,000.

(a) XYZ Ltd is an “issuer” for the purposes of the accruals legislation.

The cashflows in relation to the Convertible Note issue are:

	$	
28 April 1991	100,000,000	principal
	(1,000,000)	contingent fee
	(100,000)	non-contingent fee
28 October 1991	(6,000,000)	interest
28 April 1992	(6,000,000)	
28 October 1992	(6,000,000)	
28 April 1993	(6,000,000)	
28 October 1993	(6,000,000)	
28 April 1994	(6,000,000)	
28 October 1994	(6,000,000)	
28 April 1995	(6,000,000)	
28 October 1995	(6,000,000)	
28 April 1996	(106,000,000)	cash redemption amount plus interest

[N.B. Brackets denote payments made by the issuer.]

The core acquisition price, being the value of all consideration provided to the issuer, is $100 million determined in accordance with section 64BA(1)(d)(ii) of The Act.

The present value of the cashflows is determined in accordance with Method A, Determination G10B with variables:

R = 10.0%
N = 2
F = 0.05

The Specified Rate, R, is selected using Determination G23: Specified Rate.

The present value is $107,721,734. The contingent fees of $1,000,000 must be added to this amount giving a total present value of $108,721,734.

Therefore, the amount of the core acquisition price attributable to the option to acquire shares is zero determined in accordance with clause 6(1) of this determination. Note that the result is zero due to the operation of the proviso in clause 6(1):

y - s = 0
y = $100,000,000
s = $108,721,734

In order to calculate accrual expenditure the yield to maturity method is applied i.e. Determination G3: Yield to Maturity Method, G11A: Present Value Based Yield to Maturity Method or any other determination that may apply, or an alternative method producing not materially different results.

The yield of the financial arrangement is 12.22735%. The only cashflow excluded from the yield calculation (as the amount of the core acquisition price attributable to the excepted financial arrangement is zero) is non-contingent fees of $100,000. The deductibility of this amount is governed by ordinary (non-accrual) income tax rules.

Using Determination G3 the following table can be constructed:

Period Ending	Principal Outstanding	Expenditure in respect of period	Payments made at end of period
	$	$	$
28/10/91	99,000,000	6,075,382	6,000,000
28/4/92	99,089,885	6,080,008	6,000,000
28/10/92	99,168,645	6,084,918	6,000,000
28/4/93	99,252,237	6,090,129	6,000,000
28/10/93	99,340,957	6,095,660	6,000,000
28/4/94	99,435,119	6,101,531	6,000,000
28/10/94	99,535,058	6,107,761	6,000,000
28/4/95	99,641,128	6,114,374	6,000,000
28/10/95	99,753,705	6,121,393	6,000,000
28/4/96	99,873,187	6,128,844	106,000,000
		61,000,000	160,000,000

Expenditure is spread between income years in accordance with Determination G1A: Apportionment of Income and Expenditure on a Daily Basis.

In the year ended 31 March 1997 the base price adjustment is calculated-

a = amount of all consideration that has been paid
= $100,000,000 + $60,000,000 + $1,100,000
= $161,100,000
b = acquisition price determined in accordance with The Act and clause 6(4) of this determination
= $100,100,000
c = expenditure incurred less income derived in previous income years
= $60,062,254 - 0

a - (b + c) = $937,746 which being a positive amount is expenditure incurred by the issuer in the final income year.

(b) An institution purchases $50,000 worth of XYZ Limited notes at issue on the 28 April 1991.

The institution is a “holder” for the purposes of the accruals legislation.

The core acquisition price of the parcel of notes determined in accordance with section 64BA(1)(d)(i) is $50,000.

The present value of the cashflows discounted at a Specified Rate of 10% using Method A, Determination G10B is $53,860. The amount of the core acquisition price attributable to the option to acquire shares is zero determined in accordance with clause 6(1) of this determination. Note that the result is zero due to the operation of the proviso in clause 6(1):

y - s = 0
y = $50,000
s = $53,860

The yield to maturity of the arrangement is 12%. This rate is used to calculate income derived from holding the Convertible Notes in accordance with Determination G3: Yield to Maturity Method. Income derived is spread between income years in accordance with Determination G1A.

In the final period the base price adjustment is calculated -

a = all consideration paid to the person
= $50,000 + $30,000
b = acquisition price determined in accordance with The Act and clause 6(4) of this determination
= $50,000
c = income derived less expenditure incurred in previous income years
= $29,541 - 0
a - (b + c) = $459

As this is a positive amount it is income derived by the holder of the Convertible Notes in the final income year.

(c) A cash basis holder buys $1000 of XYZ Limited notes at issue.

The cash basis holder accounts for income from the investment on a cash basis. Income is therefore equal to the coupon interest received in any year.

When the note matures, or is sold, the cash base price adjustment is calculated and the amount of the core acquisition price attributed to the excepted financial arrangement needs to be known. In this case the amount attributed to the excepted financial arrangement is zero, as the present value of the cashflows ($1077) is greater than the core acquisition price ($1000) determined in accordance with section 64BA(1)(d)(i) of The Act.

There were no non contingent fees therefore the acquisition price for the purposes of the cash base price adjustment is $1000.

Where the notes are held to maturity the Cash Redemption Amount, which is part of all consideration received by the holder for the purposes of the base price adjustment, is $1000. It makes no difference whether the shares or the cash are taken as any excess in the value of the shares over the Cash Redemption Amount is attributed to the excepted financial arrangement.

The base price adjustment is calculated:

a = sum of all consideration derived
= $1000 + $600
b = acquisition price
= $1000
c = income derived in previous income years
= $540

a - (b + c) = $60 which being a positive amount is income derived in the income year.

(d) A parcel of 50,000 XYZ Limited Convertible Notes is sold by an institution on the sharemarket on 28 April 1993 at an ex interest price of $1.10 per note to Company K ("the new holder"). The notes were purchased by the institution at issue on 28 April 1991 for $50,000.

The like term Government Stock rate on 28 April 1993 determined in accordance with Determination G23: Specified Rate and Determination G13A: Prices and Yields is 13%.

(i) Company K, the buyer of the notes and "new holder", would use The Act and determinations to account for income derived from the convertible notes in each income year for which they are held.

The core acquisition price of the Convertible Notes, being the value of all consideration provided by the holder, is $56,000, that being the price of the Convertible Notes, $55,000, plus brokerage paid of $1000 determined in accordance with section 64BA(1)(d)(i) of The Act.

The present value of the cashflows is determined in accordance with Method A, Determination G10B with variables:

R = 13.0%
N = 2
F = 0.065

The Specified Rate, R, is selected using Determination G23: Specified Rate.

The present value is $48,789. The contingent fees of $1000 are added to this amount giving a total present value of $49,789 on 28 April 1993.

The amount of the core acquisition price attributable to the option to acquire shares is:

y - s = $6211
y = $56,000
s = $49,789

determined in accordance with clause 6(1) of this determination. The amount $6211 relates to the excepted financial arrangement and is excluded from calculations to determine income derived or expenditure incurred under the accrual rules.

In order to calculate accrual expenditure Determination G3: Yield to Maturity Method (or alternatively Determination G11A: Present Value Based Yield to Maturity Method) is applied. The relevant cashflows for calculating the yield to maturity determined in accordance with The Act and clause 6(4) of this determination are -

	$	
28 April 1993	(48,789)	payment for bond
	(6,211)	payment for option
	(1,000)	brokerage
28 October 1993	3,000	interest
28 April 1994	3,000	
28 October 1994	3,000	
28 April 1995	3,000	
28 October 1995	3,000	
28 April 1996	53,000	

The yield of the financial arrangement is 12.1721%. (The cashflow excluded from the yield calculation is the amount of the core acquisition price attributable to the excepted financial arrangement which is $6,211). This rate is used to calculate income derived from the issue of Convertible Notes in accordance with Determination G3: Yield to Maturity Method. Income derived is spread between income years in accordance with Determination G1A.

In the final period the base price adjustment is calculated-

a = all consideration paid to the person
  = $50,000 + $18,000
b = acquisition price determined in accordance with The Act and clause 6(4) of this determination
  = $49,789
c = income derived less expenditure incurred in previous income years
  = $17,755
a - (b + c)
  = $456

As this is a positive amount it is income derived by the holder of the Convertible Notes in the final income year.

(ii) The institution, the vendor of the notes and original holder, would use The Act and this determination to calculate the base price adjustment in the year the convertible notes were sold.

For the vendor of the Convertible Note the amount of the sale price that is attributable to the debt component of the Convertible Note is equal to the acquisition price of the "new holder" calculated as if the only consideration provided by the "new holder" was the sale price. This amount is part of variable "a", the amount of all consideration that has been paid to the holder, of the base price adjustment.

Brokerage fees of $1500 were paid on the sale. This amount is accounted for in variable "b" of the base price adjustment which is the value of all consideration provided by the holder in relation to the financial arrangement.

Therefore, the core acquisition price is $55,000 being the sale price of the notes, and the only consideration provided by the "new holder", determined in accordance with section 64BA(1)(d)(i) of The Act and this determination.

The present value of the future cashflows determined in accordance with Method A, Determination G10B, where R=13%, N=2 and F=0.065, is $48,789.

The amount of the core acquisition price attributable to the option to purchase shares is $55,000 less $48,789 which is $6211.

As the sale price is the only consideration provided by the "new holder" the amount of consideration received in respect of the convertible note on sale is $48,789.

The base price adjustment is calculated:

a = all consideration paid to the holder
  = $48,789 + $12,000 (interest)
b = acquisition price determined in accordance with The Act and clause 6(4) of this determination
  = $50,000[acquisition price as calculated in example (b)] + $1500 [brokerage fees on sale]
c = income derived in previous years less expenditure incurred
  = $11,541 - 0
a - (b + c) = -$2252

The amount of $2252 being a negative amount is deemed to be an allowable deduction in the year of sale of the financial arrangement.

This determination is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Determination G23: Specified Rate

This determination may be cited as"Determination G23: Specified Rate".

1. Explanation (which does not form part of the determination)

(1) This determination applies where for the purposes of calculating income or expenditure it is necessary to determine an annual yield or interest rate for valuation purposes. This rate is called the specified rate. The rate may be required where the present value of an amount payable or receivable under a financial arrangement is to be calculated. Such a calculation is necessary, for example, in Determination G22: Optional Conversion Convertible Notes Denominated in New Zealand Dollars Convertible at the Option of the Holder.

(2) When a financial arrangement is denominated in New Zealand dollars the specified rate is the market yield applying to Bank Bills of a similar Term to the Term of the financial arrangement; if the Term is longer than 12 months the market yield on New Zealand Government Stock must be used.

(3) When a financial arrangement is denominated in a currency other than New Zealand dollars the specified rate is -

(a) The interbank bid or offer rate for the currency and the Term of the financial arrangement; or

(b) An implied foreign currency interest rate calculated by reference to appropriate forward and spot exchange rates and the New Zealand Bank Bill or New Zealand Government Stock rates appropriate to the Term of the financial arrangement.

(4) An implied foreign currency interest rate will generally be calculated when it is not easy to find a quoted interbank interest rate for the currency and Term of a financial arrangement.

(5) The specified rate will be required by other determinations which will detail the method or methods to be applied to determine income derived or expenditure incurred in relation to a particular class of financial arrangement. That method will include the date at which the specified rate is to be determined, the currency of the financial arrangement and the Term.

2. Reference

This determination is made pursuant to section 64E(1)(a) to (f) of the Income Tax Act 1976.

3. Scope

This determination shall be used to select a yield or interest rate as required by any other determination issued pursuant to section 64E of the Income Tax Act 1976.

4. Principle

(1) The specified rate is a market base rate for borrowing in a particular currency for a particular Term.

(2) Where the base rate in a currency is not readily obtainable it may be calculated from spot and forward exchange rates for converting the currency to New Zealand dollars and New Zealand dollar interest rates.

5. Interpretation

(1) In this determination, unless the context otherwise requires-

Expressions used have the same meanings as in The Act and where a word or expression is given a particular meaning for the purposes of sections 64B to 64M of The Act it shall have the same meaning as in the said sections 64B to 64M:

"Acceptable Present Value Calculation Method" means Method A of Determination G10B: Present Value Calculation Methods, or an alternative method producing not materially different results:

"The Act" means the Income Tax Act 1976:

"Bank Bill" means an order to pay drawn upon and accepted by a person who is a registered bank for the purposes of the Reserve Bank Act, 1989:

"Base Currency" in relation to a financial arrangement means the currency in respect of which a specified rate is to be calculated:

"Forward Rate" means the rate for a forward contract determined in a manner consistent with Determination G6C: Foreign Currency Rates provided that the currency in respect of which the Forward Rate is to be found need not be one of the currencies referred to in Determination G6C:

"Interbank Rate" means the bid or offer rate quoted for deposits in the Base Currency determined in a manner consistent with Determination G13A: Prices and Yields provided that the market in respect of which the rate is to be found need not be one of the markets referred to in Determination G13A:

"Spot Rate" means the rate for a spot contract determined in a manner consistent with Determination G6C: Foreign Currency Rates provided that the currency in respect of which the Spot Rate is to be found need not be one of the currencies referred to in Determination G6C:

"Term" means the Term of the financial arrangement specified in the determination which requires a specified rate to be used.

(2) Any reference in this determination to another determination made by the Commissioner shall be construed as including a reference to any fresh determination made by the Commissioner to vary, rescind, restrict or extend that determination.

(3) For convenience, words or phrases defined in this determination are indicated by initial capital letters, but the absence of a capital letter shall not alone imply that the word or phrase is used with a meaning different from that given by its definition.

6. Method

(1) The specified rate at any date in relation to a financial arrangement denominated in New Zealand currency is -

(a) Where the Term of the financial arrangement is twelve months or less, the yield for Bank Bills of a similar Term to the Term of the financial arrangement;

(b) In any other case, the yield for New Zealand Government Stock of a similar Term to the Term of the financial arrangement -

determined in accordance with Determination G13A: Prices or Yields.

(2) The specified rate at any date in relation to a financial arrangement denominated in a foreign currency is -

(a) The Interbank Rate for the Base Currency and the Term of the financial arrangement; or

(b) A rate derived by -

(i) Converting the final amount payable or receivable in relation to the financial arrangement from the Base Currency to New Zealand currency at the forward exchange rate appropriate to the Term of the financial arrangement; and

(ii) Calculating the present value of the amount thus calculated using an Acceptable Present Value Calculation Method and a rate determined in accordance with clause 6(1) (a) or (b); and

(iii) Converting the amount thus calculated to the Base Currency at the Spot Rate for the currency; and

(iv) Calculating the rate such that if an Acceptable Present Value Calculation Method where applied to the final payment in the Base Currency over the Term of the financial arrangement the present value so calculated would be equal to the amount calculated in subparagraph (iii) above.

7. Example

A company is required to calculate the present value of US$100,000 payable on the 30 June 1991 as at balance date, 31 March 1991, as part of a method detailed in another determination to ascertain income derived or expenditure incurred from a financial arrangement.

This determination approves two methods of selecting a specified rate:

(a) The US interbank dollar offer rate (LIBOR or SIBOR) on 31.3.91 for 90 days is 8.6% p.a. (the specified rate) ascertained using a method consistent with Determination G13A: Prices or Yields; or

(b) The company calculates an implied rate by the steps below:

Convert the amount of US$100,000 using a forward exchange rate to New Zealand dollars. The Forward Rate for US dollars ascertained on 31 March 1991 for delivery in 90 days is USD / NZD 0.5688.

US$100,000 / 0.5688 = NZ$175,809

Assume that the yield for NZ Bank Bills of a 90 day Term is 13.46% p.a., ascertained at 31 March 1991 in accordance with Determination G13A: Prices or Yields.

Foreign currency Spot Rate ascertained in accordance with Determination G6C: Foreign Currency Rates, as at 31 March 1991 is USD / NZD 0.5752.

Method A of Determination G10B: Present Value Calculation Methods, is applied to calculate the present value as at 31 March 1991 as follows -

A = 0
B = NZ$175,809
C = 0
R = 13.46%
N = 4
F = 0.03365

$$\text{Present Value} = \frac{A + B - C}{1 + F} = \text{NZ\$170,085}$$

This amount is converted to US dollars using the Spot Rate on 31 March 1991, NZ$170,085 x 0.5752 = US$97,833.

The specified rate is that which results in the US$100,000 when discounted being equal to US$97,827. The rate calculated in accordance with Determination G3: Yield to Maturity Method, is 8.86% p.a.

This determination is signed by me on the 24th day of October 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Determination G13A: Prices or Yields

This determination may be cited as "Determination G13A: Prices or Yields".

1. **Explanation** (which does not form part of the determination)

   (1) This determination rescinds and replaces Determination G13: Prices or Yields made on the 8th day of February 1989.

   (2) This determination applies where for the purpose of calculating the income or expenditure of a person it is necessary to determine a price or yield for valuation purposes. This may arise where a person wishes to calculate income or expenditure in relation to a financial arrangement pursuant to section 64C(4) of the Act. (For example, in the application of a market valuation method for calculating the amount of income derived by a person in respect of New Zealand Government Stock in an income year.)

   (3) Apart from minor amendments, this determination differs from Determination G13: Prices or Yields by allowing the use of prices or yields other than those at which the person could deal. The method for finding such an alternative price or yield must be adopted for financial reporting purposes and must produce a price or yield that does not result in a more favourable result for tax purposes. For example, where the holder of Government Stock values its holdings for financial reporting purposes by taking the price mid-way between the buy and sell price, it may also use this method for calculating its income or expenditure for tax purposes.

   (4) The criteria for approval of a market for this purpose are similar to those required for the approval of a foreign currency market (Determination G6C: Foreign Currency Rates refers). These are the indicators of a "free" and accessible market.

   (5) Where it is necessary to ascertain a price or yield for the purpose of section 64C(4) of the Act (market value methods of accounting), the price or yield to be used is found by reference to a market in which the person could deal. For example, where there is a Euromarket and a domestic market in the same class of securities, the person is required to use prices from the market to which the person has access. It is assumed that where a person has access to two such markets, arbitrageurs will ensure that prices in the two markets will not differ materially.

(6) Where a person owns securities or has bought securities for forward delivery (i.e. is "long in the security"), the price to be used is the buying or bid price (i.e. the price at which the market would be prepared to buy the security for the appropriate delivery date). Where the person has "short sold" securities, the price to be used is the selling or offer price (i.e. the price at which the market would be prepared to sell the security for the appropriate delivery date). Alternatively, in either case, the person may use a method which finds a price which falls between the two prices. This method must be adopted for financial reporting purposes and produce a result which is no more favourable for tax purposes.

(7) Where sources of information for approved markets do not show price or yield quotations for the maturity of the security to be priced, commercially acceptable forms of interpolation or extrapolation may be used based on quoted prices or yields for securities of different maturities that are otherwise identical to the security in question.

(8) Section 64C(4) of the Act may not be applied in relation to a financial arrangement if no market or method or source of information for the financial arrangement is approved in a determination made by the Commissioner.

2. Reference

(1) This determination is made pursuant to section 64E(1)(d) and section 64E(6) of the Income Tax Act 1976.

(2) This determination rescinds and replaces Determination G13: Prices or Yields made on the 8th day of February 1989.

3. Scope of Determination

This determination shall apply where it is necessary for the purposes of section 64C(4) of the Act to determine the price or yield of a financial arrangement.

4. Principle

(1) For the purposes of the calculation of the income or expenditure of a person, pursuant to section 64C(4) of the Act, markets are approved having regard to the following criteria -

(a) The number of participants in the market or having access to the market;

(b) The frequency of trading in the market;

(c) The nature of trading in the market, how the prices or yields are determined and how the financial arrangements are traded on the market;

(d) The potential or demonstrated capacity of a person or group of persons to significantly influence the market;

(e) Significant barriers to entry;

(f) Discrimination on the basis of the quantity bought and sold unless based on the risks involved or transaction costs or economies of scale.

(2) Sources of information in relation to a market are approved having regard to the following criteria -

(a) Reliance on the source of information;

(b) The accessibility of the source of information to participants in the market;

(c) Whether the persons providing the information at a source are prepared to act upon the information supplied at the source.

(3) Methods of obtaining prices or yields at the end of the income year for the purpose of valuing a financial arrangement are approved if -

(a) The price or yield is obtained at the Cut-off Time; and

(b) The method for determining the Cut-off Time adopted by the person will be consistently applied in respect of each income year.

(4) Transactions that take place after Cut-off Time shall be accounted for in the next income year.

5. Interpretation

(1) In this determination, unless the context otherwise requires -

"the Act" means the Income Tax Act 1976:

"Approved Source of Information" means a source of information approved in this determination:

"Bank Bill" means an order to pay drawn upon and accepted by a person who is a registered bank for the purposes of the Reserve Bank Act 1989:

"Contributor Page", in relation to a Market in financial arrangements, means a page of information, provided by a person that is active in the Market, that is displayed on a screen provided by Reuters New Zealand Ltd or Telerate New Zealand Limited:

"Cut-off Time", in relation to a person and an income year, means the New Zealand Standard Time chosen by the person on the last day of the income year when, in terms of this determination, all financial arrangements, in relation to which the person is a holder or an issuer, are valued for the purpose of determining the assessable income of the person in the income year:

"Extrapolation" means extrapolation on a linear or curvilinear basis according to the practice of persons active in the market:

"Identical Financial Arrangement", in relation to a financial arrangement, mqans a financial arrangement similar, in all respects material to investors, to the first-mentioned financial arrangement:

"Income Year" means -

(a) If a taxpayer furnishes a return of income under section 15 of the Act for an accounting year ending with an annual balance date other than the 31st day of March, the annual accounting period ending on that balance date:

(b) In respect of the income of any other person, the year in which that income has been derived by that person:

"Interpolation" means interpolation on a linear or curvilinear basis according to the practice of persons active in the Market:

"Longer Maturing Financial Arrangement", in relation to a financial arrangement, means another financial arrangement similar in all respects material to investors to the first-mentioned financial arrangement, except that the maturity of the other financial arrangement will occur after the maturity of the first-mentioned financial arrangement:

"Market", in relation to a financial arrangement, includes -

(a) A spot market;

(b) A forward market;

(c) An options market;

(d) A futures market approved by either Determination G7B: New Zealand Futures and Options Markets or Determination G18: International Futures and Options Markets:

"Multicontributor Page" means a multicontributor page of information that is displayed on a screen provided by Reuters New Zealand Limited or Telerate New Zealand Limited:

"Shorter Maturing Financial Arrangement", in relation to a financial arrangement, means another financial arrangement similar in all respects material to investors to the first-mentioned financial arrangement, except that the maturity of the other financial arrangement will occur before the maturity of the first-mentioned financial arrangement:

"Reuters New Zealand Limited" means Reuters New Zealand Limited or any company that is an associated person in relation to Reuters New Zealand Limited and is in the business of providing financial information in the form of multicontributor screens or contributor screens:

"Telerate New Zealand Limited" means Telerate New Zealand Limited or any company that is an associated person in relation to Telerate New Zealand Limited and is in the business of providing financial information in the form of multi-contributor screens or contributor screens.

(2) For convenience, words and phrases defined in this determination are indicated by initial capital letters, but the absence of a capital letter shall not alone imply that the word or phrase is used with a meaning different from that given by this determination.

(3) In this determination, unless the context otherwise requires, expressions used except those expressions defined in paragraph (1) of this clause have the same meanings as in sections 2 and 64B to 64M of the Act.

(4) Any reference in this determination to another determination made by the Commissioner shall be construed as referring to any fresh determination made by the Commissioner to vary, rescind, restrict, or extend that determination.

6. Method

(1) Approved Domestic Markets - The Markets in the following securities are approved -

(a) New Zealand Government Treasury Bills;

(b) New Zealand Government Stock;

(c) Bank bills.

(2) Approved Foreign Markets - The Markets in the securities issued by the central governments of the following countries are approved-

Canada
Commonwealth of Australia
Federal Republic of Germany
French Republic
Japan
Kingdom of the Netherlands
Republic of Italy
Swiss Confederation
United Kingdom of Great Britain and Northern Ireland
United States of America.

(3) Approved sources of information - In relation to an approved Market referred to in the preceding sub-clauses of this clause, the following sources of information are approved-

(a) A Multicontributor Page that quotes prices or yields for securities traded in the Market;

(b) A Contributor Page or other noticeboard that quotes prices or yields at which the persons posting prices or yields are prepared to buy from and sell to any other person;

(c) A person active in the Market.

(4) Selecting prices or yields - Where, for the purpose of determining the income or expenditure of a person in respect of a financial arrangement and an Income Year, it is necessary to refer to the price or yield for an Identical Financial Arrangement and a Market referred to in this determination, the price or yield shall be determined -

(a) Where the first mentioned financial arrangement is -

(i) A debt or debt instrument, and the person is a holder of the financial arrangement, by reference to the price or yield at which the person could sell or otherwise dispose of the financial arrangement (i.e., the market "bid" or buy price);

(ii) A debt or debt instrument, and the person is not a holder of the financial arrangement, by reference to a price or yield at which the person could purchase or otherwise acquire the financial arrangement (i.e., the market "sell" price);

(iii) A forward or futures contract, by reference to the price at which the person could close out the contract;

(iv) An exchange-traded option, by reference to the price at which the person could make an offsetting contract;

(b) Notwithstanding paragraph (a) of this subclause, but subject to the other provisions of this determination, the price or yield selected may be determined where the first mentioned financial arrangement is -

(i) A debt or debt instrument, by reference to a price or yield which falls at a point between the price or yield at which the person could sell or otherwise dispose of the financial arrangement and a price or yield at which the person could buy or otherwise acquire the financial arrangement;

(ii) A forward or futures contract, by reference to a price which falls at a point between the price at which the person could close out the contract and the price at which the person could enter into an Identical Financial Arrangement;

(iii) An exchange-traded option, by reference to a price which falls at a point between the price at which the person could make an offsetting contract and the price at which the person could enter into an Identical Financial Arrangement;

Provided that the point at which the price or yield falls is adopted by the person and is or will be consistently applied in respect of all such financial arrangements for financial reporting purposes and gives a price or yield which results in the allocation to each Income Year of amounts which are no more favourable to the person for tax purposes than the amounts that would be allocated using a price or yield determined in accordance with paragraph (a) of this sub-clause.

(5) Application of Cut-off Time - Where the price or yield of any financial arrangement is used by a person for the purpose of calculating the income derived or expenditure incurred by the person in respect of any financial arrangement in an Income Year pursuant to this determination, the price or yield shall be determined at the Cut-off Time in relation to the person and Income Year:

Provided that where there is no active market in financial arrangements of the same class at the Cut-off Time in relation to the person and the Income Year, the price or yield applied shall be the price or yield determined at -

(a) The end of trading in the Market in the class of financial arrangements by the person in the Income Year; or

(b) The commencement of trading in the Market in the class of financial arrangements by the person in the immediately succeeding Income Year.

(6) Method for determining Cut-off Time - The method adopted by a person for the purpose of determining the Cut-Off time in respect of an Income Year shall be adopted and consistently applied by that person in respect of every Income Year.

(7) Approved methods - Where for the purpose of determining the income or expenditure of a person in respect of a financial arrangement and an Income Year, it is necessary to refer to the price or yield for an Identical Financial Arrangement and a Market referred to in this determination, the price or yield shall be determined -

(a) By reference to the price or yield quoted, in relation to the Identical Financial Arrangements and the Market, on a Multicontributor Page;

(b) Where the price or yield cannot be determined pursuant to the preceding paragraph of this sub-clause, by reference to the arithmetic mean of three prices or yields quoted in relation to the Identical Financial Arrangements and the Market on a Contributor Page or by a broker active in the Market;

Provided that -

(i) Where quotes are available on Contributor Pages these shall be used in preference to quotes from persons active in the Market;

(ii) All quotes used shall be from persons acting independently of any other.

(c) Where -

(i) The price or yield cannot be determined pursuant to the preceding paragraphs of this sub-clause; and

(ii) The prices or yields for Shorter Maturing Financial Arrangements and for Longer Maturing Financial Arrangements in relation to the Identical Financial Arrangements and the Market are quoted on a Multicontributor Page;

by Interpolation between the price or yield so quoted for the Shorter Maturing Financial Arrangement that matures closest in time to the maturity of the financial arrangement and the price or yield so quoted for the Longer Maturing Financial Arrangement that matures closest in time to the maturity of the financial arrangement.

(d) Where -

(i) The price or yield cannot be determined pursuant to the preceding paragraphs of this sub-clause; and

(ii) The price or yield for a Shorter Maturing Financial Arrangement and for a Longer Maturing Financial Arrangement in relation to the Identical Financial Arrangements and the Market are quoted on not less than three Contributor Pages;

by Interpolation between the arithmetic mean of the prices or yields quoted on not less than three Contributor Pages for the Shorter Maturing Financial Arrangement that matures closest in time to the maturity of the financial arrangements and the arithmetic mean of the prices or yields quoted on not less than three Contributor Pages for the Longer Maturing Financial

Arrangement that matures closest in time to the maturity of the financial arrangement;

(e) Where the price or yield cannot be determined pursuant to the preceding paragraphs of this sub-clause, and the price or yield for any Shorter Maturing Financial Arrangement or any Longer Maturing Financial Arrangement is quoted on a Multicontributor Page, by Extrapolation from the price or yield so quoted for -

(i) The Shorter Maturing Financial Arrangement; or

(ii) The Longer Maturing Financial Arrangement;

as the case may be, that matures closest in time to the maturity of the financial arrangement.

(f) Where the price or yield cannot be determined pursuant to the preceding paragraphs of this sub-clause, and the price or yield for -

(i) A Shorter Maturing Financial Arrangement; or

(ii) A Longer Maturing Financial Arrangement;

is quoted on not less than three Contributor Pages, by Extrapolation from the arithmetic mean of the prices or yields quoted on not less than three Contributor Pages for the Shorter Maturing Financial Arrangement that matures closest in time to the maturity of the financial arrangement, or the arithmetic mean of the prices or yields quoted on not less than three Contributor Pages for the Longer Maturing Financial Arrangement that matures closest in time to the maturity of the financial arrangement as the case may be.

(8) Where the price or yield cannot be determined pursuant to the preceding sub-clause, no method is approved by this determination for the purposes of subsection 64C(4) of the Act.

7. Example

On its balance date of 30 September 1991, a corporate investor held $2,000,000 face value of New Zealand Government Stock maturing 15 August 1994 bearing a coupon of 14%.

(a) At the Cut-off Time on 30 September 1991 the Reuters Multicontributor Page, NZGS, had quotes of 16.42% (buy) and 16.38% (sell).

A rate of 16.42% would be appropriate for the valuation of this holding as at 30 September 1991 in accordance with clause 6(3)(a), clause 6(4)(a), and clause 6(7)(a) of this determination.

Note: To obtain the value of the Government Stock it is necessary to use this rate in an appropriate valuation formula.

(b) At the Cut-off Time on 30 September 1992 there were no Multicontributor quotations available.

However, for an identical issue of Government Stock the following quotes were obtained from a broker active in the market and from Contributor Pages supplied by brokers active in the market:

	Buy	Sell
Broker's quote	15.90%	15.85%
Contributor page 1	15.85%	15.80%
Contributor page 2	15.89%	15.85%

The appropriate rate, determined in accordance with clause 6(7)(b) of this determination, is the arithmetic mean of the buy quotes, i.e. 15.88%.

(c) At the Cut-off Time on 30 September 1993 there were no Multicontributor quotations available for this particular stock.

The following quotations were available from the Multicontributor Page, NZGS, for two similar stocks:

	Buy	Sell
14% coupon maturity 15/6/94	15.10%	15.05%
14% coupon maturity 15/9/94	15.06%	15.00%

Clause 6(7) of this determination applies and a form of Interpolation between these quotations is to be used.

If the corporate investor chooses to use linear interpolation, the required yield is calculated as follows:

The relevant buy quotes and terms are:

	Buy	Term Relative to 15/8/94
14% coupon maturity 15/6/94	15.10%	61 days
14% coupon maturity 15/9/94	15.06%	31 days

From 15/6/94 to 15/9/94: 92 days

The required valuation yield is calculated under straight line interpolation:

((31 x 15.10) + (61 x 15.06))/92 = 15.07%

(d) An alternative method: At the Cut-off Time on 30 September 1991 the Reuters Multicontributor Page, NZGS, had quotes of 16.42% (buy) and 16.38% (sell).

The corporate investor uses the mid point between the buy and sell rate for financial reporting purposes and a rate of 16.40% would be appropriate for the valuation of this holding as at 30 September 1991 in accordance with clause 6(3)(a), clause 6(4)(b) and clause 6(7)(a) of this determination.

Note: To obtain the value of the Government Stock it is necessary to use this rate in an appropriate valuation formula.

This determination is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Determination G10B: Present Value Calculation Methods

This determination may be cited as "Determination G10B: Present Value Calculation Methods".

1. Explanation (which does not form part of the determination).

(1) This determination rescinds and replaces Determination G10A: Present Value Calculation Methods, made by the Commissioner on 23 April 1990. This determination differs from Determination G10A by modifying present value Method A to enable it to apply to perpetuities.

(2) For the purposes of the accrual tax accounting regime it may be necessary to calculate present values for a variety of reasons, for example:

(a) To calculate the yield to maturity of a financial arrangement. The yield to maturity is the interest rate at which the first amount payable under the financial arrangement is equal to the present value of all subsequent amounts payable under the financial arrangement calculated as at the due date of the first payment:

(b) To calculate present values at intermediate times during the term of a financial arrangement in order to calculate the amount of the income derived or expenditure incurred by a person in respect of the financial arrangement.

(3) The present value of a financial arrangement as at a date excludes any amounts payable under the financial arrangement on that date.

(4) This determination specifies approved methods of calculating present values for use in other determinations. These methods may be added to or removed from time to time.

Method A is a general purpose method suitable for many applications and gives very similar results to Determination G3: Yield to Maturity Method. Method A may be used on either a 360 or 365 day basis. Method A is applicable both to perpetuities in which all coupons are the same after some period, and to financial arrangements which have a final payment.

Method B is used to calculate prices of government or local authority stock, and other financial arrangements having similar characteristics, employing the formula approved by the International Association of Bond Dealers and used in calculators such as the HP12C. It differs from Method A in two respects -

(a) Coupons must be payable at regular halfyearly or quarterly intervals, and

(b) Compound interest is used in the first period, unless it is also the last period in which case simple daily interest is used (Method A always uses simple daily interest in the first period).

Both methods calculate the present value at the beginning of a period by taking the present value at the end of the period, adding or subtracting the net cashflows at the end of the period, and discounting the total at a Specified Discount Rate.

(5) Alternative approved methods may not generate exactly identical results.

(6) Once a person has elected to use an approved method of calculating the present value of a financial arrangement, that method shall be used by the person over the life of the financial arrangement unless the prior consent of the Commissioner is obtained to adopt another method.

(7) This determination is for use in conjunction with other determinations, for example Determination G11A: Present Value Based Yield to Maturity Method.

2. Reference

(1) This determination is made pursuant to section 64E(1)(a) and 64E(6) of the Income Tax Act 1976.

(2) Determination G10A: Present Value Calculation Methods is hereby rescinded with effect from the day on which this Determination G10B is signed.

3. Scope

This determination shall be used as required by any other determination which will specify -

(a) The date at which the present value shall be calculated (the "Specified Date"); and

(b) The interest rate that shall be used in the calculation (the "Specified Discount Rate"); and

(c) The amounts and due dates for which the present value shall be calculated -

and which may specify the method to be used.

4. Principle

This determination specifies alternative methods for calculating the present value of a financial arrangement, equal to the sum of the values as at the Specified Date of all amounts payable under the financial arrangement after that date, discounted at the Specified Discount Rate.

5. Interpretation

(1) For convenience, words and phrases defined in this determination are indicated by initial capital letters, but the absence of a capital letter shall not alone imply that the word or phrase is used with a meaning different from that given by its definition.

(2) In this determination unless the context otherwise requires -

"The Act" means the Income Tax Act 1976:

"Income Year" has the same meaning as in sections 64B to 64M of The Act:

"Period" and "Period Between Payments" in relation to a person means a term -

(a) Commencing immediately after -

(i) A Specified Date in relation to a financial arrangement; or

(ii) A date on which an amount is payable under a financial arrangement as the case may be; and

(b) Ending on the next succeeding date on which an amount is payable under a financial arrangement.

Provided that if a Period or a Period Between Payments exceeds one year it shall be deemed to comprise one or more Periods each of one year followed (or preceded, at the option of the person) by a Period of not more than one year:

"Specified Date" in relation to a financial arrangement means the date at which the present value of the financial arrangement is required to be calculated:

"Specified Discount Rate" in relation to a financial arrangement and a person means the annual rate of interest at which the present value of the financial arrangement is required to be calculated.

(3) The number of days in a Period calculated on a 365 day basis is the actual number of days in the Period including the ending date of the Period but excluding the starting date of the Period.

(4) The number of days in a Period calculated on a 360 day basis means the number of days falling within the Period including the ending date of the Period but excluding the starting date of the Period and calculated as if every calendar month of the Period had exactly 30 days;

Provided that if the ending date is the 31st day of the month and -

(a) The starting date of the Period is not the 30th or 31st day of a month, the ending date shall be included in the number of days in the Period;

(b) The starting date of the Period is the 30th or 31st day of a month, the ending date shall be deemed to be the 30th day of the month.

(5) In this determination, unless the context otherwise requires, expressions used that are not defined in this clause have the same meaning as in sections 2 and 64B to 64M of The Act.

(6) Any reference in this determination to another determination made by the Commissioner shall be construed as referring to any fresh determination made by the Commissioner to vary, rescind, restrict, or extend that determination.

6. Method

(1) A person shall elect to use a method allowed under a determination made by the Commissioner under section 64E(1)(a) of The Act for the purpose of calculating a present value in relation to a financial arrangement, and shall apply that method consistently in respect of that financial arrangement, until it matures or is remitted, sold or otherwise transferred by the person unless the prior consent of the Commissioner (which may be given conditionally) to adopt another method is obtained.

(2) Method A

(a) For the purpose of applying clause 6(2)(b) of this determination, in relation to any person N shall be calculated as follows:

(i) Where the greatest common divisor of all Periods Between Payments is -

(A) A year or 12 months, N shall be taken as 1;

(B) A halfyear or 6 months, N shall be taken as 2;

(C) A quarter or 3 months, N shall be taken as 4;

(D) A month, N shall be taken as 12;

(E) A fortnight, N shall be taken as 26;

(F) A week, N shall be taken as 52;

Provided that where 1 or 2 of the Periods are shorter or longer than all the other Periods this fact shall be disregarded in determining the greatest common divisor, and for the shorter or longer Period or Periods N shall be, at the option of the person, taken as -

(G) 365 divided by the number of days in the Period calculated on a 365 day basis; or

(H) 360 divided by the number of days in the Period calculated on a 360 day basis.

(ii) Where N cannot be determined according to the foregoing subparagraph it shall be, at the option of the person, taken as -

(A) 365 divided by the number of days in the Period calculated on a 365 day basis -

(B) 360 divided by the number of days in the Period calculated on a 360 day basis -

for all of the Periods.

(b) The amount of the present value of a financial arrangement calculated according to Method A as at a date shall -

(i) Where the given date is a date on which an amount is payable under a financial arrangement, and the same amount is payable at the end of every period following the given date, be calculated according to the following formula:

$$\frac{E}{F};$$

(ii) In any other case, be calculated according to the following formula:

$$\frac{A + B - C}{1 + F}$$

where -

A is the present value (if any) as at the end of the Period immediately following the given date; and

B is the sum of the amounts receivable by the holder or payable by the issuer at the end of the Period immediately following the date; and

C is the sum of the amounts payable by the holder or receivable by the issuer at the end of the Period immediately following the given date; and

E is the same amount receivable by the holder or payable by the issuer at the end of every Period following the given date; and

F is the amount calculated in relation to the financial arrangement and the person and the period immediately following the date according to the following formula:

$$\frac{R}{100 \times N}; \quad \text{and}$$

R is the Specified Discount Rate.

(3) Method B

(a) A person shall apply Method B only to financial arrangements which are debt instruments under which all payments after the issue or acquisition date are at regular half-yearly or quarterly intervals.

(b) For purposes of applying clause 6(3)(c) of this determination in relation to any person -

(i) If amounts are payable at regular halfyearly intervals, N shall be taken as 2 and the preceding due date shall be taken as the date 6 calendar months prior to the date on which the first amount is payable on or after the date of issue or acquisition;

(ii) If amounts are payable at regular quarterly intervals, N shall be taken as 4 and the preceding due date shall be taken as the date 3 calendar months prior to the date on which the first amount is payable on or after the date of issue or acquisition.

(c) The amount of the present value of a financial arrangement calculated according to Method B as at a date shall be calculated according to the following formula:

$$\frac{A + B - C}{D}$$

where -

A is the present value (if any) as at the end of the Period immediately following the date; and

B is the sum of the amounts receivable by the holder or payable by the issuer at the end of the Period immediately following the date; and

C is the sum of the amounts payable by the holder or receivable by the issuer at the end of the Period immediately following the date; and

D is (a) Where an amount is payable at the end of the Period immediately following the date is the last amount payable under the financial arrangement, an amount calculated according to the following formula:

$$= 1 + \frac{F \times T1}{T2}$$

(b) In any other case, an amount calculated according to the following formula:

$$(1 + F)^{\frac{T1}{T2}} \quad ;\text{and}$$

F means an amount calculated according to the following formula:

$$\frac{R}{100 \times N} \quad ; \text{and}$$

R is the Specified Discount Rate; and

T1 is the number of days in the Period immediately following the date calculated on a 365 day basis; and

T2 is the sum of T1 and -

(i) Where an amount is payable on the date, zero; or

(ii) In any other case, the number of days between the preceding due date and the date calculated on a 365 day basis.

7. Example

(1) Example A

(a) This example illustrates Method A, using the same example as in Determination G3: Yield to Maturity Method (except for the dates) and Determination G11A: Present Value Based Yield to Maturity Method, Example A. The example shows that the present value at the beginning of a Period is the same as the principal outstanding during the Period.

On 12 March 1991 (the Specified Date) a holder acquires for $1,012,500 the right to receive the following income -

15 May 1991	$70,000
15 November 1991	$70,000
15 May 1992	$70,000
15 November 1992	$1,070,000

The greatest common divisor of all Periods except the first is 6 months, so that N = 2; in the first (broken) Period ending on 15 May 1991

$$N = \frac{365}{64} = 5.703125$$

The Specified Discount Rate R is 16.2308% per annum, which in this case is also the yield to maturity as is verified in the schedule below.

Therefore F = 0.028459 in the Period ending 15/5/1991 and 0.081154 in all the remaining Periods.

(b) The following schedule may then be constructed, starting at the bottom and working up:-

Period Ending	Present Value at Beginning	Payments by Issuer B	Payments by Holder C	Present Value at End A
15/5/91	1,012,500	70,000	-	971,315
15/11/91	971,315	70,000	-	980,141
15/ 5/92	980,141	70,000	-	989,683
15/11/92	989,683	1,070,000	-	-

The present value at the beginning of the first Period is the same as the acquisition price, verifying that the Specified Discount Rate is equal to the yield to maturity for this particular transaction. Note that this will often not be the case.

(2) Example B

(a) This example illustrates Method B, using the same example as in Determination G3: Yield to Maturity Method (except for the dates) and Determination G11B: Present Value Based Yield to Maturity Method, Example B.

On 12 March 1991 (the Specified Date) a holder acquires for $1,012,500 the right to receive the following income -

15 May 1991	$ 70,000
15 November 1991	$ 70,000
15 May 1992	$ 70,000
15 November 1992	$1,070,000

All amounts are expressed in New Zealand dollars.

Amounts are payable at regular halfyearly intervals, so that N = 2 and the preceding due date is 6 months prior to 15 May 1991, namely 15 November 1990

Also, T1 = T2 except for the first (broken) Period ending on 15 May 1991 for which

T1 = 15/5/91 - 12/3/91 = 64 days, and
T2 = 64 days + 12/3/91 - 15/11/90
= 181 days.

The Specified Discount Rate R is 16.265% per annum, derived in Example B of Determination G11A: Present Value Based Yield to Maturity Methods.

Therefore F = 0.081325, and
D = 1.028032 in the ending 15/5/91 (that being (1+F) to the power of 64/181) and 1.081325 in all the remaining Periods.

(b) The following schedule may then be constructed, starting at the bottom and working up:

Period Ending	Present Value at Beginning	Payments by Issuer B	Payments by Holder C	Present Value at End A
15/ 5/91	1,012,500	70,000	-	970,884
15/11/91	970,884	70,000	-	979,841
15/ 5/92	979,841	70,000	-	989,527
15/11/92	989,527	1,070,000	-	-

(See footnote to this Example B for details of the present value calculations using the HP-12C calculator.)

The present value at the beginning of the first Period is the same as the acquisition price, verifying that the Specified Discount Rate is equal to the yield to maturity for this transaction.

Footnote: Calculating the present values

The "Present Values at Beginning" shown in the schedule may be calculated on an, HP12C or equivalent calculator, directly using the BOND PRICE function. The following steps reproduce the value at 15 November 1991 for example:

Specified Discount Rate	16.265	(i)
Coupon % pa	14	(PMT)
Value date	15.111987	(ENTER)
Maturity date	15.111988	(f) (PRICE)
		97.984116
Add accrued interest	(zero)	(+)
		97.984116

which is the per $100 nominal price corresponding to $979,841.

(3) Example C

(a) This illustrates the calculations involved in applying Method A to a straightforward perpetual security.

The perpetual has a face value of 100, a yearly coupon of 10% payable half yearly, and was issued at 78.00 on 1 August 1991. This issuer is a New Zealand resident taxpayer with a 30 June balance date.

The Specified Discount Rate, R, corresponding to this issue price is 12.82% p.a., derived in Example C of Determination G11A: Present Value Based Yield to Maturity Method.

Therefore F = 12.82 / (100 x N)
= 0.06410

in all periods, since N = 2.

(b) At any payment date the formula (i) for Method A applies, and the present value is

E / F = 5 / 0.06410
= 78.00

(4) Example D

(a) This example illustrates the application of Method A to a more complicated perpetual note than in Example C. The note was issued at 90.00 on 1 February 1991. It has a nominal capital of 100, and has coupon interest at 14% p.a. commencing 1 August 1993 and payable halfyearly thereafter on 1 February and 1 August each year in perpetuity. The nominal capital is repayable only if the issuer defaults on an interest payment. The issuer is a New Zealand resident taxpayer with a 30 June balance date.

The Specified Discount Rate, R, corresponding to this issue price is 12.261% p.a., derived in Example D of Determination G11A: Present Value Based Yield to Maturity Method.

Therefore F = 12.261 / (100 x N)
= 0.061305

in all periods, since N = 2.

(b) The following schedule may then be constructed, starting in any period commencing on or after 1 February 1993:

Period Ending	Present Value at Beginning	Payments by Issuer	Payments by Holder	Present Value at End
		B or E*	C	A
1/8/91	90.00	-	-	95.52
1/2/92	95.52	-	-	101.37
1/8/92	101.37	-	-	107.58
1/2/93	107.58(2)	-	-	114.18
1/8/93	114.18(1)	7.0	-	114.18
1/2/94	114.18	7.0	-	114.18
1/8/94	114.18	7.0	-	114.18
....	....	.....	..	....

* B for periods ending prior to 1/8/93 during which formula (ii) applies; E thereafter when formula (i) applies.

(1) E = 7, F = 0.61305, E / F = 114.18
(2) A = 114.18, B = 0, C = 0, F = 0.061305

$$\frac{A + B - C}{1 + F} = 107.58$$

This Determination is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Determination G11A: Present Value Based Yield to Maturity Method

This Determination may be cited as "Determination G11A: Present Value Based Yield to Maturity Method".

1. **Explanation** (which does not form part of the determination).

   (1) This determination rescinds and replaces Determination G11: Present Value Based Yield to Maturity Method made by the Commissioner on 21 November 1988. This determination differs from Determination G11 by the addition of an example of its application to perpetuities in which all payments are the same after some period.

   (2) This Determination states how the yield to maturity method shall be applied to a financial arrangement to calculate income derived or expenditure incurred for purposes of Section 64C of the Income Tax Act 1976.

   (3) This Determination is an alternative to Determination G3: Yield to Maturity Method and will give very similar answers when used with Method A of Determination G10B: Present Value Calculation Methods.

   (4) The Determination applies to any financial arrangement where all the amounts and dates are known (or in the case of perpetuities the amounts of all payments due after a certain date, and the intervals at which they are payable, are able to be determined) not later than the first balance date of the issuer or holder after issue or acquisition, as the case may be, and determined in a single currency.

   (5) The approach adopted is to define a constant annual interest rate representing the yield to maturity of all the cash flows in the financial arrangement. Income derived and expenditure incurred is assumed to be compounded on the date of each payment. The calculations are simplified by using regular periods such as half years, months or weeks, where most of all of the cash flows occur at such intervals. However, where a period between payments is longer than one year, income derived and expenditure incurred must be compounded at yearly intervals.

   (6) In general, there is no explicit formula for a yield to maturity in terms of the cash flows. For purposes of this Determination, the yield to maturity is defined as the interest rate at which the Present Value of all amounts payable after the date of issue or acquisition is equal to the amount payable on that date.

   (7) The formulae and method for calculating the Present Value will depend on the nature of the financial arrangement and a number of alternatives will be published in Determination G10B: Present Value Calculation Methods for this purpose.

   (8) Persons may use either Determination G3: Yield to Maturity Method or this Determination for the purpose of applying the yield to maturity method to a financial arrangement. Once the person has elected to use Determination G3: Yield to Maturity Method or this Determination for a particular financial arrangement, the method set out in that Determination shall be used by the person over the life of that financial arrangement, unless the prior consent of the Commissioner is obtained to change methods.

   (9) At each balance date after the date of issue or acquisition, the Present Value of the arrangement is recalculated using the same formula and method as was used originally to calculate yield to maturity (see paragraph (6) above).

   (10) It will be noted that in the case of perpetuities there may not ever be a base price adjustment (see Example D).

   (11) The amount of income derived or expenditure incurred by the holder or issuer in respect of the Income Year ending on that balance date will be -

   (a) The Present Value at the balance date, *less*

   (b) Any amounts payable by the holder or receivable by the issuer (as the case may be) during the Income Year, *plus*

   (c) Any amounts payable by the issuer or receivable by the holder (as the case may be) during the Income Year, *less*

   (d) The Present Value as at the preceding balance date (or date of issue or acquisition if later).

   In most normal commercial financial arrangements, the yield to maturity will be unique, positive and less than 100 percent per annum;

arrangements that do not meet these criteria are excluded and may be submitted for individual consideration by the Commissioner.

2. Reference

(1) This Determination is made pursuant to Section 64E(1)(a) and section 64E(6) of the Income Tax Act 1976.

(2) Determination G11: Present Value Based Yield to Maturity Method is hereby rescinded with effect from the day on which this Determination G11A is signed.

3. Scope of Determination

This Determination applies to the class of financial arrangements that has the following attributes -

(a) All amounts payable or receivable under the financial arrangement, and the dates on which those amounts are payable or receivable, are known (or, in the case of perpetuities, able to be determined) not later than the first balance date of the issuer or holder following the date of issue or acquisition, as the case may be; and

(b) All amounts are determined in a single currency,

but does not apply to any financial arrangement in respect of which the Annual Yield To Maturity Rate as defined in clause 5 of this Determination would be -

(a) Not unique; or

(b) Less than zero; or

(c) Greater than 100 percent.

4. Principle

The yield to maturity method apportions the total income or expenditure under a financial arrangement between income years so that the principal outstanding and accrued interest calculated as at any balance date represents the then Present Value of all amounts payable after that balance date, calculated in accordance with the formulae and method used to calculate the yield to maturity rate as at the date of issue or acquisition of the financial arrangement.

5. Interpretation

(1) In this Determination, unless the context otherwise requires -

"Annual Yield To Maturity Rate", in relation to a person and a financial arrangement, means the constant annual rate of interest at which the Present Value of all amounts payable to and by the person after the date of acquisition or issue of the financial arrangement, calculated as at that date, is equal to the net amount payable to or by the person on that date;

"Income Year" has the same meaning as in Sections 64B to 64M of the Act;

"Present Value", in relation to a person and a financial arrangement and a day, means the discounted value on that day of all amounts payable to or by the person after that day, calculated in accordance with a formula and method specified in Determination G10B: Present Value Calculation Methods, the amounts being discounted at a constant annual rate of interest; and for this purpose the Present Value of a financial arrangement shall be calculated using the Annual Yield To Maturity Rate in accordance with the formula and method that were used in the calculation of the Annual Yield To Maturity Rate of that financial arrangement.

(2) For convenience, words and phrases defined in this Determination are indicated by initial capital letters, but the absence of a capital letter shall not alone imply that the word or phrase is used with a meaning different from that given by its definition.

(3) In this Determination, unless the context otherwise requires, expressions used that are not defined in clause 5(1) have the same meanings as in Sections 2 and 64B to 64M of the Income Tax Act 1976.

(4) Any reference in this Determination to another Determination made by the Commissioner shall be construed as referring to any fresh Determination made by the Commissioner to vary, rescind, restrict or extend that Determination.

6. Method

(1) This Determination may, at the election of the taxpayer, be used instead of Determination G3: Yield to Maturity Method. Once a taxpayer has made the election to use this

Determination to apply the yield to maturity method to a financial arrangement the taxpayer shall then apply this Determination in respect of the financial arrangement until it matures or is remitted, sold or otherwise transferred by the taxpayer unless the prior consent of the Commissioner is obtained to change methods. Any such consent may be given conditionally.

(2) The amount of income derived or expenditure incurred by the holder or issuer in respect of any Income Year (other than an Income Year to which Section 64F of the Income Tax Act 1976 applies) shall be -

(a) The Present Value of the financial arrangement as at the balance date on which the Income Year ends, *less*

(b) Any amounts payable by the holder or receivable by the issuer (as the case may be) during the Income Year, *plus*

(c) Any amounts payable by the issuer or receivable by the holder (as the case may be) during the Income Year, *less*

(d) The Present Value (if any) of the financial arrangement as at the balance date on which the immediately preceding Income Year ended.

7. Examples

(1) Example A

(a) This is the same example as in Determination G3: Yield to Maturity Method (except for the dates). It is used to demonstrate that the methods give similar results.

On 12 March 1991 a holder acquires for $1,012,500 the right to receive the following income:-

	$
15 May 1991	70,000
15 November 1991	70,000
15 May 1992	70,000
15 November 1992	1,070,000
	$1,280,000

The holder balances on 31 March. All amounts are in New Zealand currency.

It will be found that the Annual Yield To Maturity Rate (R) is 16.2308% per annum; see Example A in Determination G10B: Present Value Calculation Methods.

(b) The present values at the end of each Income Year, calculated according to Determination G10B: Present Value Calculation Methods, are set out in the following schedule -

Year ending 31 March	1991	1992
Next period - End date	15/5/87	15/5/88
Present Value (A) (see note)	$971,315	$989,683
Payment at period end by issuer (B)	$70,000	$70,000
Payment at Period end by holder (C)	-	-
Days from 31/3 to 15/5	45	45
N = 365/45	8.11111	8.11111
F = R/(100 x N)	0.02001	0.02001
R = 16.2308		
Present Value = (A + B - C)/(1 + F)	$1,020,887	$1,038,895

NOTE: See example A in Determination G10B: Present Value Calculation Methods for these present values

(c) The following schedule may then be constructed, showing the income in respect of each Income Year -

Year ending 31 March	Present value at year end	Payment by holder	Payments by issuer	Income earned by holder
	(a) or (d) $	(b) $	(c) $	
1991	1,020,887	1,012,500	-	8,387[1]
1992	1,038,895	-	140,000	158,008[2]
1993	-	-	1,140,000	101,105[3]
				$267,500

NOTE: [1] $1,020,887 - $1,012,500 = $8,387

[2] $1,038,895 - $1,020,887 + $140,000 = $158,008

[3] Calculated using the formula for the base price adjustment in Section 64F (2) of the Act:

a - (b + c)

Where

a = $70,000 + $70,000 + $70,000 + $1,070,000 = $1,280,000, the sum of all amounts payable to the holder, and

b = $1,012,500, the acquisition price, and

c = $8,387 + $158,008 = $166,395, the amount of income derived to date by the holder.

Note that this is confirmed by extending the same calculation procedure used for 1991 and 1992, into 1993 as follows:-

a = 0, the Present Value at the end of the 1993 Income Year.

b = 0

c = $1,140,000, the payments by the issuer in the year.

d = $1,038,895, the Present Value at the previous balance date.

Hence
a - b + c - d = $101,105.

(2) Example B

(a) This example is also similar to that in Determination G3: Yield to Maturity Method (except for the dates).

On 12 March 1991 a holder acquires for $1,012,500 the right to receive the following income:-

	$
15 May 1991	70,000
15 November 1991	70,000
15 May 1992	70,000
15 November 1992	1,070,000
Total	$1,280,000

The holder balances on 31 March. All amounts are in New Zealand currency.

This income would be typical of a New Zealand Government Stock with a 14% coupon maturing 15 November 1992.

Under Method B of calculating the Present Value of a financial arrangement, it is calculated that the Annual Yield To Maturity Rate is 16.265%. This is the interest rate at which the Present Value of payments due after 12 March 1991 is equal to $1,012,500. See the foot note to this Example B for details of calculation using the HP-12C calculator.

(b) The present values at the end of each Income Year are calculated using Method B of Determination G10B: Present Value Calculation Methods. The method is the same as that adopted by the International Association of Bond Dealers and used in the HP-12C and similar calculators.

The calculation of present values in Example B may be made using the BOND PRICE function on the HP12C (or equivalent) calculator. The following steps reproduce the "Present Value at year end" for the Income Year ending 31 March 1991:

(g) (D.MY)

Specified rate	16.265	(i)	
Coupon % pa	14	(PMT)	
Value date	31.031987	(ENTER)	
Maturity date	15.111988	(f) (PRICE)	96.824919
Add accrued interest		(+)	102.084588

which is the per $100 nominal price corresponding to $1,020,846.

(c) The following schedule may then be constructed:

Year ending 31 March	Present Value at Year End $	Payment by Holder $	Payments by Issuer $	Income Earned by Holder $
1991	1,020,846	1,012,500	-	8,346 [1]
1992	1,039,241	-	140,000	158,395 [2]
1993	-	-	1,140,000	100,759 [3]
			Total	$267,500

NOTE: [1] $1,020,846 - $1,012,500 = $8,346

[2] $1,039,241 - $1,020,846 + $140,000 = $158,395

[3] Calculated using the formula for the base price adjustment in Section 64F (2) of the Act.

a - (b + c)

Where:

a = $70,000 + $70,000 + $70,000 + $1,070,000 = $1,280,000, the sum of all amounts payable to the holder,

b = $1,012,500, the acquisition price, and

c = $8,346 + $158,395 = $166,741, the amount of income derived to date by the holder.

Note that this is confirmed by extending the same calculation procedure used for 1991 and 1992, into 1993 as follows:-

a = 0, is the Present Value at the end of the 1993 Income Year.

b = 0

c = $1,140,000, are the payments by the issuer in the year.

d = $1,039,241, is the Present Value at the previous balance date.

Hence

a - b + c - d = $100,759.

Footnote:

The calculations may be made using the BOND PRICE function on the HP-12C (or equivalent) calculator.

Calculating the Specified Discount Rate, R

The HP-12C assumes that the purchase price excludes accrued interest, whereas the actual purchase price of $1,012,500 includes accrued interest from 15 November 1990 to 12 March 1991. This accrued interest is calculated as follows, per $100 nominal:

Set up		(g) (D.MY)
Any YTM	0	(i)
Coupon Percent Pa.	14	(PMT)
Purchase date	12.031987	(STO)1
		(ENTER)
Maturity date	15.111988	(STO)2
		(f)(PRICE)
		($X \gtrless Y$)4.524862

This accrued interest is then subtracted from the purchase price per $100 nominal, of $101.25, to give the ex-accrued interest purchase price.

Purchase price	101.25	($X \gtrless Y$)
		(-)96.725138

The Specified Discount Rate (R) can then be calculated using the BOND YTM function;

Ex-accrued interest price	(PV)
Purchase date	(RCL)1
Maturity date	(RCL)2
	(f)(YTM) 16.265%

(3) Example C

(a) This example illustrates the application of this determination to a straightforward perpetual security. It is identical to Example C in Determination G10B: Present Value Calculation Methods.

The perpetual has a face value of 100, a yearly coupon of 10% paid half yearly, and was issued at 78.00 on 1 August 1991. The issuer is a New Zealand resident taxpayer with a 30 June balance date.

First we have to calculate the Annual Yield to Maturity Rate. Although outside the scope of this determination this can be done as follows:

Since all payments are the same, Method A formula (i) of Determination G10B: Present Value Calculation Methods applies. The present value is 78.00 at the date of issue which is equal to:

$$\frac{E}{F}$$

where, E is the halfyearly coupon, 5%.

Therefore,

$$78.00 = \frac{5.00}{F}$$

whence

$$F = \frac{5.00}{78.00}$$

$$= 0.06410$$

and so the Specified Discount Rate in Determination G10B: Present Value Calculation Methods is

$$\begin{aligned} R &= 100 \times N \times F \\ &= 100 \times 2 \times 0.06410 \\ &= 12.82\% \end{aligned}$$

and this is the Annual Yield to Maturity Rate.

(b) Since the balance date is not a date on which an amount is payable, formula (ii) of Method A must be used to calculate the present value at the balance date, using the present value as at the immediately succeeding payment date and the payment then due.

(c) There are 32 days from 30 June to 1 August so that in all years -

$$N = \frac{365}{32}$$

F = R / (100 x N)

= 12.82 / (100 x 365 / 32)

= 0.01124

1 + F = 1.01124

From Example C of Determination G10B: Present Value Calculation Methods, the present values at each balance date are calculated as follows:

Balance date	Next Period End Date	Present value A	Payments by issuer B	Present value at balance date (1)
30/6/91	1/8/91	78.00	5.0	82.08
30/6/92	1/8/92	78.00	5.0	82.08
30/6/93	1/8/93	78.00	5.0	82.08

Note: C = 0 in all cases

(1) calculated as (A + B - C) / (1 + F)

(d) The following schedule may then be constructed, showing the expenditure incurred by the issuer in respect of each income year:

Year ending 30 June	Present value at year end	Payments in year by - Holder	Issuer	Expenditure incurred by issuer
	(a) or (d)	(b)	(c)	
1991	82.08	78.00	-	4.08[1]
1992	82.08	-	10.00	10.00[2]
1993	82.08	-	10.00	10.00[2]
1994	82.08	-	10.00	10.00[2]

Notes:
[1] 82.08 - 78.00 = 4.08
[2] 82.08 + 10.00 - 82.08 = 10.00

The constant expenditure from 30 June 1992 income year onwards is to be expected, and would only change if the issuer's balance date changed, or there was a change in the terms of the security.

Unless the perpetual security is repaid under the terms of its issue (such as default), there will never be a base price adjustment.

(4) Example D

(a) This example illustrates the application of Method A to a more complicated perpetual note than in Example C. It is identical to Example D in Determination G10B: Present Value Calculation Methods.

The note was issued at 90.00 on 1 February 1991. It has a nominal capital of 100 and has coupon interest at 14%p.a. commencing on 1 August 1993 and payable halfyearly thereafter on 1 February and 1 August each year in perpetuity. The nominal capital is repayable only if the issuer defaults on a coupon payment. The issuer is a New Zealand resident taxpayer with a 30 June balance date.

The first step is to determine the Annual Yield To Maturity Rate. This must be done by trial and error.

The process is as follows:

(i) Estimate F, the interest rate per period in decimal form. (For example, an Annual Yield To Maturity Rate of 14% payable quarterly gives F = 0.035).

(ii) Using Method A formula (i) of Determination G10B: Present Value Calculation Methods, calculate the present value as at the first payment date after which all amounts payable are the same, in this case as at 1/2/93.

(iii) Then calculate the present value at the issue date, using Method A formula (ii) of Determination G10B. Often this can be accomplished quickly on a financial calculator.

(iv) Compare this present value to the issue price and make a better estimate of F.

(v) If F is not sufficiently accurate (generally ascertained by comparing it with the previous value, or comparing the present value to the issue price) go back to step (i).

In the present case, the following HP-12C program will enable successive estimates of F to be tested:

Setup

4	(n)	Number of halfyear periods from issue to first coupon payment date
0	(PMT)	No coupon for 4 periods

90 (STO)1 Save issue price

7 (STO)2 Save coupon per period

Program

(f) (R / S) to start
(RCL) 2
(RCL) (i)
.01 (x)
(-)
:
This gives the present value E / F as at 1 / 2 / 93 of all payments after that date.

(FV)
(PV)
(RCL) 1
(+)

This gives the difference between the issue price and the present value.

(g) (GTO) 00
(f) (R / S) to end.

Calculating

Estimate half yearly interest rate, press (i), then press (R / S).

Estimate	Difference
6.000	- 2.411
6.250	2.118
6.150	0.352
6.140	0.172
6.130	- 0.009
6.131	0.009
6.1305	0.000

Therefore the Annual Yield to Maturity Rate is

2 x 6.1305% = 12.261% p.a.

Other programs might be needed in other examples.

(b) Since the balance date is not a date on which an amount is payable, formula (ii) of Method A must be used to calculate the present value as the balance date, using the present value as at the immediately succeeding payment date and the payment then due.

(c) There are 32 days from 30 June to 1 August so that in all years -

N = 365 / 32
F = R / (100 x N)
= 12.261 / (100 x 365 / 32)
= 0.01075
1 + F = 1.01075

From Example D of Determination G10B: Present Value Calculation Methods, the present values at each balance date are calculated as follows:

Balance date	Next Period End Date	Present value A	Payments by issuer B	Present value at balance date (1)
30/6/91	1/8/91	95.52	-	94.50[1]
30/6/92	1/8/92	107.58	-	106.44[2]
30/6/93	1/8/93	114.18	7.0	119.89[3]
30/6/94	1/8/94	114.18	7.0	119.89

1 Calculated as (A + B - C) / (1 + F) where -

A = Present Value at the end of the period immediately following the given date
= 95.52
B = amounts receivable by the holder / payable by issuer at end of the period following the given date
= nil
C = amounts payable by holder / receivable by issuer at the end of the period immediately following the given date
= nil (in all cases in this example)
1 + F = 1.01075 (as above)

therefore (A + B - C) / (1 + F) = (95.52 + 0 - 0) / 1.01075
= 94.50

2 (A + B - C) / (1 + F) = 107.58 + 0 - 0 / 1.01075
= 106.44

3 (A + B - C) / (1 + F) = (114.18 + 7 - 0) / 1.01075
= 119.89

(d) The following schedule may then be constructed, showing the expenditure incurred by the issuer in respect of each Income Year:

Year ending 30 June	Present value at year end	Payments in year by -		Expenditure incurred by issuer
		Holder	Issuer	
	(a) or (d)	(b)	(c)	
1991	94.50	90.00	-	4.50[1]
1992	106.44	-	-	11.94[2]
1993	119.89	-	-	13.45[3]
1994	119.89	-	14.00	14.00[4]
1995	119.89	-	14.00	14.00[4]

Notes:

[1] 94.50 - 90.00 = 4.50
[2] 106.44 - 94.50 = 11.94
[3] 119.89 - 106.44 = 13.45
[4] 119.89 + 14.00 - 119.89 = 14.00

The constant expenditure from the 30 June 1994 income year onwards is to be expected, and would only change if the issuer's balance date changed, or there was a change in the terms of the security.

Unless the note is repaid under the terms of its issue (such as default) or sold, then there will never be a base price adjustment.

This Determination is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Determination G6C: Foreign Currency Rates

This Determination may be cited as "Determination G6C: Foreign Currency Rates".

1. Explanation (which does not form part of the determination)

This determination rescinds and replaces Determination G6B: Foreign Currency Rates, made on the 23rd day of April 1990.

Apart from minor amendments, this determination differs from Determination G6B: Foreign Currency Rates in the replacement of paragraph 6(3)(b)(ii) only. The new paragraph 6(3)(b)(ii), which sets out the exchange rate to be used where a cashflow is converted, is as per paragraph 6(4)(b)(ii) in Determination G6A: Foreign Currency Rates.

This determination applies where, for the purpose of calculating the income or expenditure of a person in respect of a financial arrangement denominated in a foreign currency, it is necessary to establish the rate in New Zealand currency of a foreign currency. This will be required in the circumstances outlined in clause 3 of this determination.

This determination sets out the approved markets, sources of information and method, to be used for determining the rate for foreign currency conversion.

2. Reference

This determination is made pursuant to section 64E(1)(a) to (f) and section 64E(6) of the Income Tax Act 1976.

This determination rescinds and replaces Determination G6B: Foreign Currency Rates, made on 23 April 1990.

3. Scope of Determination

This determination applies where it is necessary for the purposes of sections 64B to 64M of the Income Tax Act 1976 to ascertain the value in New Zealand currency of:

(a) A cashflow paid or received in a foreign currency under a financial arrangement; or

(b) A financial arrangement denominated in a foreign currency using a method that has regard to market valuation; or

(c) In any other circumstances, an amount expressed in foreign currency.

4. Principle

(1) Markets in foreign currencies are approved having regard to the following criteria-

(a) The number of participants in the market or having access to the market;

(b) Frequency of trading in the market;

(c) The nature of trading in the market - how the rate for the foreign currency is determined and how the foreign currency is traded on the market;

(d) The potential or demonstrated capacity of a person or group of persons to significantly influence the market;

(e) Significant barriers to entry;

(f) Discrimination on the basis of the quantity bought and sold unless based on the risks involved or the transaction costs or economies of scale.

(2) Sources of information for foreign currency rates are approved having regard to the following criteria-

(a) Reliance on the sources of information by participants in the market;

(b) The accessibility of the sources of information for participants in the market.

(3) Methods of obtaining a rate for foreign currency at the end of the income year for the purposes of valuing a financial arrangement are approved if-

(a) The rate is obtained at the cut-off time; and

(b) The method for determining the cut-off time adopted by a person will be consistently applied in respect of each income year.

5. Interpretation

(1) In this determination, unless the context otherwise requires -

Expressions used, except the expression "income year", have the same meanings as in sections 2 and 64B to 64M of the Income Tax Act 1976:

"Approved foreign exchange dealer" means a foreign exchange dealer that is a registered bank for the purposes of the Reserve Bank Act 1989 and is active in the market:

"Contributor page" means a page of information provided by an approved foreign exchange dealer that is displayed on a screen provided by Reuters New Zealand Limited or Telerate New Zealand Limited:

"Cut-off time", in relation to a person and an income year, means the time at the end of the income year when all financial arrangements held or issued by the person are valued in order to determine the assessable income of the person for the income year:

"Forward contract" means a contract, other than a futures contract traded on any futures market or a spot contract, for the sale or purchase of a foreign currency for delivery at a specified future time:

"Futures contract" means a contract traded on the New Zealand Futures Exchange:

"Income year" means-

(a) Where a taxpayer furnishes a return of income under section 15 of the Income Tax Act 1976 for an accounting year ending with an annual balance date other than the 31st day of March, the annual accounting period ending on that balance date:

(b) In respect of the income of any other person, the year in which that income has been derived by that person:

"New Zealand foreign currency market" means the market in spot contracts and forward contracts:

"Spot contract" means a contract for the sale or purchase of a foreign currency for delivery in 2 days:

"Multicontributor page" means a multicontributor page of information that is displayed on a screen provided by Reuters New Zealand Limited or Telerate New Zealand Limited.

(2) Any reference in this determination to another determination made by the Commissioner shall be construed as referring to any fresh determination made by the Commissioner to vary, rescind, restrict, or extend that determination.

6. Method

(1) Approved Markets

The New Zealand foreign currency market in European Currency Units and in the currencies of the following countries and territories are approved-

Japan
The Independent State of Papua New Guinea
Canada
French Republic
Republic of Ireland
The Territory of Hong Kong
Portuguese Republic

Commonwealth of Australia
Republic of Austria
Republic of Singapore
Kingdom of Sweden
The Swiss Confederation
Kingdom of Denmark
Federal Republic of Germany
Republic of Italy
The United States of America
Kingdom of Norway
Kingdom of the Netherlands
Kingdom of Spain
Republic of Turkey
United Kingdom of Great Britain and Northern Ireland
The Hellenic Republic
The Federation of Malaysia
Finland

(2) Sources of Information

The following sources of information for foreign currency rates are approved-

(a) In relation to spot contracts, a multicontributor page that quotes rates for spot contracts:

(b) In relation to forward contracts, a multicontributor page or a contributor page that quotes rates for forward contracts:

(c) Where a person does not have access to a multicontributor page or a contributor page or where the rates for a forward contract are not available from a multicontributor page, advice as to the buy and sell rates for a forward contract or spot contract given to that person by an approved foreign exchange dealer, which rates shall be derived from an approved source and shall be the rates at which the approved foreign exchange dealer would perform the foreign exchange transaction.

(3) Spot Contracts

(a) Where, for the purposes of determining the income or expenditure of a person in respect of a financial arrangement, it is necessary to determine the rate for a spot contract at the end of an income year, the rate for the spot contract shall be the midpoint between the buy and sell rates for that spot contract.

(b) Where, for the purposes of determining the income or expenditure of a person in respect of a financial arrangement, it is necessary to ascertain in New Zealand currency the value of a cashflow paid or received in a foreign currency, the rate of exchange to be applied shall be-

(i) Where the cashflow is not converted to New Zealand currency on the day it is paid or received, the midpoint between the buy and sell rates for a spot contract for that currency at any time on that day; or

(ii) Where the cashflow is converted to New Zealand currency on the day it is paid or received, the rate of exchange obtained in relation to the cashflow.

(c) Where a buy and sell rate for a spot contract is not quoted on a multicontributor page, the rate for the spot contract shall be the cross rate calculated by reference to:

(i) The rate quoted on a multicontributor page for the foreign currency against the United States Dollar; and

(ii) The rate quoted on a multicontributor page for the United States Dollar against the New Zealand Dollar.

(4) Forward Contracts

Where, for the purposes of determining the income or expenditure of a person in respect of a financial arrangement, it is necessary to determine the rate for a forward contract at the end of the income year, and-

(a) Where the buy and sell points for the forward contract are quoted on a multicontributor page, the rate for the forward contract shall be the midpoint between the buy and sell rates for that forward contract obtained by reference to the multicontributor page;

(b) Where the buy and sell points for the forward contract are not quoted on a multicontributor page, but the buy and sell points for similar forward contracts of shorter term ("the shorter contract") and of longer term ("the longer contract") are quoted on a multicontributor page, then the rate shall be the rate obtained by reference to the multicontributor page using straight line interpolation of the midpoints between the buy and sell rates for the shorter contract and the longer contract which have terms closest to the term of the forward contract;

(c) Where the rate cannot be obtained by reference to points on a multicontributor page and where the rate for that forward contract is available by reference to contributor pages, then the rate shall be the arithmetic mean of the midpoints of not less than 3 buy and sell rates for the forward contract obtained from contributor pages;

(d) Where the rate cannot be obtained by reference to paragraphs 6(4)(a) to (c) of this determination, the rate shall be the arithmetic mean of not less than three rates being any of-

(i) the midpoints of the buy and sell rates quoted for the forward contract by one or more approved foreign exchange dealers; or

(ii) where the points for similar forward contracts of shorter term ("the shorter contact") and of longer term ("the longer contract") are quoted on a contributor page, then the rate shall be the rate obtained by reference to the contributor page using straight line interpolation of the midpoints between the buy and sell rates for the shorter contract and the longer contract which have terms closest to the forward contract.

(5) A person applying paragraphs 6(3)(a) or 6(4) of this Determination may obtain the rate for a spot contract or forward contract using the method prescribed in those paragraphs at any time on the last day of the income year:

Provided that-

(a) The rate applied is the rate obtained at the cut-off time in relation to the person and the income year; and

(b) The method for determining the cut-off time adopted by that person is consistently applied in respect of each income year:

Provided further that where there is no market at the cut-off time, the rate shall be-

(c) The rate obtained at the later of-

(i) The end of trading in forward contracts or spot contracts by that person in the income year:

(ii) 3.00 pm New Zealand Standard Time on the last day in the income year on which there was a market; or

(d) The rate for the earlier of-

(i) The commencement of trading in forward contracts or spot contracts by that person in the following income year:

(ii) 7.30 am New Zealand Standard Time on the first day in the following income year on which there was a market.

7. Example

This is an example of the application of the averaging process and straight line interpolation required for certain forward foreign exchange contracts under the determination.

On its balance date of 30 June 1991 a New Zealand corporate had a forward foreign exchange contract for delivery of 1.2 million New Zealand Dollars for 612,000 United States Dollars on 1 August 1992.

The contract therefore is to be fulfilled in approximately 13 months time.

At the balance date the foreign exchange quotations for the New Zealand Dollar against the United States Dollar were (from the multicontributor page ASAP on the Reuters system):

	Buy	Sell
Spot Rate	0.6095	0.6100

Also at that date the quotations of forward foreign exchange points for the United States Dollar against the New Zealand Dollar by three market participants were (as provided on their Reuters screens):

Forward Points

FX DEALER 1:		
Delivery in 1 year	585	555
Delivery in 2 years	1030	960
FX DEALER 2:		
Delivery in 1 year	580	530
Delivery in 2 years	1040	970
FX DEALER 3:		
Delivery in 1 year	575	540
Delivery in 2 years	1035	965

Note that to obtain the forward rates the forward points need to be subtracted from the spot rate.

The mid-rates for use in the interpolation formula are therefore:

Forward Rate	Buy	Sell	Mid-Rate
FX DEALER 1:			
Delivery in 1 year	0.5510	0.5545	0.55275
Delivery in 2 years	0.5065	0.5140	0.51025
FX DEALER 2			
Delivery in 1 year	0.5515	0.5570	0.55425
Delivery in 2 years	0.5055	0.5130	0.50925
FX DEALER 3			
Delivery in 1 year	0.5520	0.5560	0.55400
Delivery in 2 years	0.5060	0.5135	0.50975

The arithmetic mean of the midpoints of the forward rates is calculated to be:

Delivery in 1 year	0.55366
Delivery in 2 years	0.50975

A suitable formula for straight line interpolation to obtain the required rate is:

$$\text{So } Px = P1 + \frac{(Tx - T1)}{(T2 - T1)} \times (P2 - P1)$$

P1 is the mid-rate for the forward contract with the shorter term (= 0.55366).

P2 is the mid-rate for the forward contract with the longer term (= 0.50975).

Px is the required rate.

T1 is the term till delivery (expressed in days) of the forward contract with the shorter term (= 365).

T2 is the term till delivery (expressed in days) of the forward contract with the longer term (= 730).

Tx is the term till delivery of the contract held (= 398).

The required rate is therefore calculated as follows:

$$\text{So } Px = P1 + \frac{(Tx - T1)}{(T2 - T1)} * (P2 - P1)$$

$$= 0.55366 + \frac{(398 - 365)}{(730 - 365)} * (0.50975 - 0.55366)$$

$$= 0.55366 + \frac{33}{365} * (-\,0.04391)$$

$$= 0.54969$$

The current value of the 612,000 United States Dollars receivable on 1 August 1992 is therefore 1,113,354.80 New Zealand Dollars.

This determination is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

Exemption D2: Exemption from the Requirements of Section 64H(1) of the Income Tax Act 1976

1. Explanation

Section 64H(1) of the Income Tax Act 1976 requires the disclosure of all financial arrangements that are interrelated arrangements.

This exemption removes the disclosure requirement in respect of certain commonly encountered interrelated arrangements.

2. Reference

This exemption is made pursuant to section 64H(2) of the Income Tax Act 1976.

3. Scope of exemption

This exemption shall apply to the income year commencing on the 1st day of April 1990 and ending on the 31 March 1991.

4. Interpretation

In this exemption, unless the context otherwise requires -

(a) Expressions used have the same meaning as in the Income Tax Act 1976:

(b) Every reference to an income year shall, where a person furnishes a return of income under section 15 of the Income Tax Act 1976 for an accounting year ending with a day other than the 31st day of March, be deemed to be a reference to the accounting year corresponding with that income year:

(c) A person (the "directing person") controls another person where the directing person or any person controlled by the directing person is able by any means whatsoever (including by exercise of legal or equitable right or by exercise of economic influence) to secure that the affairs of the other person are conducted in accordance with the wishes of the directing person, whether or not that ability is exercised and, without limiting the generality of the foregoing, the directing person controls another person where the other person is -

(i) A company and more than 50% of the -

(A) Voting power; or
(B) Nominal capital; or
(C) Paid up capital; or
(D) Rights that persons have to acquire capital -

in the company are held by or for the benefit of the directing person or any person that is controlled by the directing person:

(ii) The directing person, or any person controlled by the directing person, acting in a fiduciary capacity in relation to assets or rights of any person:

(iii) Acting in a fiduciary capacity in relation to assets or rights of the directing person or any person controlled by the directing person -

whether or not the directing person or the other person are resident in New Zealand; and "controlled", and "controls" have corresponding meanings:

(d) "Associated persons" means associated persons as determined by section 8 of the Income Tax Act 1976, and also includes any two persons -

(i) That are controlled by the same person or persons; or

(ii) Where one of the persons controls the other person;

and "persons associated with each other" has a corresponding meaning:

(e) "Exempt security arrangement" means a security arrangement other than a security arrangement that includes -

(i) A share in a company which does not rank equally with ordinary shares in the company in terms of voting rights and rights to distributions; or

(ii) An arrangement pursuant to which -

(A) A person has entered into two or more financial arrangements with another person or persons (being persons associated with each other in any case where more than one other person is involved); and

(B) Those financial arrangements are dependent upon one another; and

(C) Any obligation is to be performed outside New Zealand:

(f) "Interrelated arrangement" means a financial arrangement that consists of two or more arrangements, whether or not those arrangements are themselves financial arrangements:

(g) "Value", in relation to any arrangement, means -

(i) In relation to any variable principal debt instrument, other than an interrelated arrangement, the amount of money owing to the holder pursuant to the arrangement:

(ii) In relation to any fixed principal debt instrument, other than an interrelated arrangement or an instrument involving a notional principal, the greater of the acquisition price of the arrangement or the nominal or face value of the arrangement:

(iii) In relation to any security arrangement, the greater of -

(A) The amount of the maximum liability of the surety under the security arrangement:

(B) The sum of the values of the financial arrangements wholly or partially secured by the security arrangement:

(iv) In relation to any financial arrangement involving a notional principal (for example, certain types of interest rate or currency swaps, forward rate agreements, certain futures contracts) the amount of the notional principal:

(v) In relation to any arrangement which is not a financial arrangement, the total amount of consideration required to be provided under the arrangement by the person having the greatest liability under the arrangement:

(vi) In relation to any interrelated arrangement, the sum of the values of the arrangements (other than exempt security arrangements) that constitute the interrelated arrangement:

Provided that where, under an interrelated arrangement, consideration is required to be passed between persons more than once and as a consequence an amount would, but for this proviso, be required to be taken into account more than once in calculating the value of an inter-related arrangement, that amount shall not be taken into account more than once in calculating the value of the financial arrangement:

Provided also that where the value can be ascertained pursuant to more than one of the foregoing subparagraphs, the value shall be ascertained pursuant to the subparagraph that provides the greatest value.

5. Exemption

Any person who in an income year is party to an interrelated arrangement shall be exempt from the requirements of section 64H(1) of the Income Tax Act 1976 in respect of the inter-related arrangement and the income year where -

(a) The making of the interrelated arrangement is a generally accepted commercial practice; and

(b) The interrelated arrangement is of a kind specified in the Schedule hereto.

This exemption is signed by me on the 24th day of October in the year 1990.

R D Adair
Deputy Commissioner of Inland Revenue

SCHEDULE

1. Any interrelated arrangement the value of which does not exceed $10 million at any time in the income year.

2. Any interrelated arrangement that consists only of -

   (a) One or more financial arrangements, none of which is an exempt security arrangement; and

   (b) One or more exempt security arrangements -

   and which would not be an interrelated arrangement but for the existence of the exempt security arrangement or exempt security arrangements.

3. Any interrelated arrangement that has no material purpose and effect other than to achieve the exchange of a sum of money in one currency for an equivalent sum of money in another currency, such exchange not being subject to any agreement to reverse the exchange at some future date.

4. Any interrelated arrangement, in relation to a person, -

   (a) That comprises only obligations (conditional or otherwise) to be fulfilled outside New Zealand; and

   (b) None of the parties to which is an associated person of the person.