Appendix to TIB Volume Ten, No.5 **May 1998**

Accrual Determinations

Inland Revenue
Te Tari Taake

Determination G9B: Financial arrangements that are denominated in a currency other than New Zealand dollars: an expected value approach

This determination may be cited as "Determination G9B: Financial Arrangements that are Denominated in a Currency other than New Zealand Dollars: An Expected Value Approach".

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

When do you use this determination?

You may use this determination if you have financial arrangements where the rights and obligations under the financial arrangement are fixed or otherwise determined in a currency other than NZD**,** including variable rate financial arrangements that are denominated in a currency other than NZD.

However, this determination only applies to financial arrangements where the payment dates are known not later than your first balance date after you become a party to the financial arrangement; and forward rates for the currency in which the financial arrangements are denominated can be determined.

What methods can be used to calculate income or expenditure in relation to a financial arrangement that comes within the scope of this determination?

Expected Value Approach

This determination sets out an expected value approach to calculate gross income or expenditure from a financial arrangement where any rights and obligations of the parties are expressed in a base currency other than New Zealand dollars. This base currency might be a foreign currency or a commodity. This expected value approach can only be used for financial arrangements within the scope of this determination, which is narrower than *Determination G9A: Financial Arrangements that are Denominated in a Currency or Commodity other than New Zealand Dollars*. If you elect to use this determination, you must not use *Determination G9A* for any such financial arrangement, and you must not use *Determination G14: Forward Contracts for Foreign Exchange and Commodities* for any forward contract within the scope of *Determination G14A: Forward Contracts for Foreign Exchange and Commodities: An Expected Value Approach*.

Mark to Spot Approach

You can use *Determination G9A: Financial Arrangements that are Denominated in A Currency or Commodity other than New Zealand Dollars* to calculate gross income or expenditure of any financial arrangement within the scope of this determination if you have not used this determination or *Determination G14A: Forward Contracts for Foreign Exchange and Commodities: An Expected Value Approach*.

Alternatively, you may use the mark to market method if you satisfy the requirements of section EH 1(6) of the Act.

You may also use a method allowed by the proviso to section EH 1(5)(a) of the Act.

How do I use the method set out in this determination?

Under this method, the gross income or expenditure from a financial arrangement where the rights and obligations of the parties are expressed in a base currency other than New Zealand dollars is the total of an expected component and an unexpected component. To apply this method:

- determine the expected component by taking into account all the base currency payments and payment dates in relation to the financial arrangement when you become a party to the financial arrangement.
- use the initial interest rate to calculate the base currency payments under a variable rate financial arrangement denominated in a base currency other than NZD, and assume that this rate will apply throughout the term of the financial arrangement.
- translate the base currency payments into expected NZD payments on the basis of the forward rates available at the time you become a party to the financial arrangement.
- spread the expected NZD net amount under the yield to maturity method and allocate it to each income year over the term of the financial arrangement on a daily basis.
- measure the unexpected component at the end of each balance date as the difference between actual and expected NZD payments.
- calculate the gross income or expenditure of a financial arrangement entered into before the income year you elect to use this determination as set out above, except that you must:

  (a) use actual NZD payments up to the income year you elect to use this determination and expected NZD payments for the remaining term of the financial arrangement in determining the expected component of the gross income or expenditure; and

(b) use the relevant forward rates at the end of the income year you elect to use this determination for the purpose of calculating the expected NZD payments.

How do I elect to use the method outlined in this determination?

You may elect to use this determination by returning your gross income or expenditure on the basis of this determination for the 1998-1999 income year, or the 1999-2000 income year, or in the first income year in which you become a party to the financial arrangement that is within the scope of this determination.

In the income year you elect to use this determination to calculate gross income or expenditure from a financial arrangement entered into before the income year, you must perform a transitional adjustment calculation. This determination provides for a transitional adjustment calculation that is comparable to *Determination G25: Variations in the Terms of a Financial Arrangement*.

How do I calculate the transitional adjustment?

The transitional adjustment must be made in the income year you elect to use this determination. The transitional adjustment calculation must be made for each financial arrangement entered into before the income year you elect to use this determination. It requires that you treat the difference between the total amount that would have been gross income or expenditure calculated as described in this determination and the total amount actually recognised over the previous income years, as gross income or expenditure in the income year of the adjustment.

How is income or expenditure calculated in the year the financial arrangement matures or is disposed of?

Regardless of which method you choose to use, you must calculate income or expenditure under the base price adjustment in section EH 4 of the Act.

Miscellaneous Issues

This determination requires that where a financial arrangement involves or is expressed in more than one currency or commodity, each separate currency or commodity tranche is to be treated as a separate financial arrangement.

Where a facility provides for the rollover of a financial arrangement, the financial arrangement matures when the rollover occurs. Section EH 4 of the Act applies in the income year the rollover occurs. Any payment arising from the rollover of a financial arrangement will be taken into account under section EH 4 of the Act unless the payment is related to a separate financial arrangement.

2. Reference

This determination is made pursuant to section 90(1)(c) of the Tax Administration Act 1994.

3. Scope

(1) This determination applies to the calculation of gross income or expenditure from a financial arrangement, to the extent that any right or obligation under the financial arrangement is fixed or otherwise determined in a currency other than NZD and is not fixed in NZD. The payment dates under the financial arrangement must be known not later than the first balance date of the issuer or holder after issue or acquisition.

(2) This Determination does not apply to –

(a) A futures contract;

(b) A security arrangement;

(c) A financial arrangement denominated in a currency where the forward rates of the currency cannot be determined; or

(d) Any financial arrangements covered by the following determinations-

Determination G14: Forward Contracts for Foreign Exchange and Commodities;

Determination G19: Exchange Traded Option Contracts;

Determination G20: Discounted Value of Amounts Payable in Relation to Trade Credits Denominated in a Foreign Currency;

Determination G21: Discounted Value of Amounts Payable in Relation to Deferred Property Settlements Denominated in a Foreign Currency;

Determination G21A: Agreements for Sale and Purchase of Property Denominated in Foreign Currency: Discounted Value of Amounts Payable;

Determination G27: Swaps;

Determination G29: Agreements for Sale and Purchase of Property Denominated in Foreign Currency: Exchange Rate to Determine the Acquisition Price and Method for Spreading Income and Expenditure;

except as specifically allowed by those determinations.

(3) You may use this determination if

(a) an election to use this determination is made by returning your income or expenditure on the basis of this determination in the 1998-1999 income year or the 1999-2000 income year or the first income year in which you become a party to the financial arrangements within sub-paragraphs (1) and (2) above; and

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(b) *Determination G9A: Financial Arrangements that are Denominated in a Currency or Commodity other than New Zealand Dollars* is not used to calculate gross income or expenditure of any financial arrangement that is within sub-paragraphs (1) and (2) above; and

(c) *Determination G14: Forward Contracts for Foreign Exchange and Commodities* is not used to calculate gross income or expenditure of any forward contract that is within the scope of *Determination G14A: Forward Contracts for Foreign Exchange and Commodities: An Expected Value Approach*.

(Note: A determination to which *Determination G9B* refers may be changed or rescinded by a new determination made by the Commissioner. In such a case, a reference to the old determination is extended to the new determination.)

4. Principle

(1) If you are a party to a financial arrangement to which this determination applies, the gross income or expenditure in respect of the financial arrangement is calculated by taking into account all amounts arising from the fluctuations of exchange rates or commodity prices.

(2) The gross income or expenditure from the financial arrangement is the total of an expected component and an unexpected component. You must measure the expected component at the time you become a party to the financial arrangement. You must also recognise the unexpected component when it is realised.

(3) To measure the expected component you must convert the base currency payments into expected NZD payments on the basis of forward rates at the time you become a party to the financial arrangement, and spread the expected NZD net amount over the term of the financial arrangement.

(4) You must measure the unexpected component as the difference between the actual NZD payments and the expected NZD payments.

(5) You may use this determination to calculate gross income or expenditure of financial arrangements entered into before the income year in which you made the election and in respect of which section EH 4 of the Act does not apply. You must then use this determination for all such financial arrangements. In this case, you must follow the principle set out above except that you must calculate the expected NZD net amount using actual NZD payments up to the end of the income year in which you elect to use this determination and the forward rates at the end of that income year.

Transitional Adjustment

(6) You must perform the transitional adjustment calculation in the income year in which you elect to use this determination to calculate gross income or expenditure of any financial arrangement entered into before that income year.

(7) This adjustment ensures that the gross income or expenditure up to the end of the income year in which you elect to use this determination is equal to that that would have been returned if the actual NZD payments and the forward rates, as described in sub-paragraph (5), and this determination had been used since you become a party to the financial arrangement.

5. Interpretation

In this determination:

(1) A reference to the "Act" is a reference to the Income Tax Act 1994.

(2) "Base currency" in relation to a financial arrangement means the currency or commodity in which rights and obligations under the financial arrangement are fixed.

"Covered interest parity" means the proposition that the differential between forward and spot exchange rates is equal to the interest differentials. That is, the forward rate for a foreign currency exchange at time t for 1 period ahead is equivalent to the spot rate at time t, $S_{t,}$ multiplied by one plus the foreign interest rate, i_f, divided by one plus the domestic interest rate, i_d. Forward rates at time t for n periods, $Fwd_{t,n}$, can thus be derived based on the principle of covered interest parity as

$$Fwd_{t,n} = S_t \frac{(1 + i_f)^n}{(1 + i_d)^n}$$

"Currency" includes any commodity used as a medium of exchange or account, whether in general use or for the purpose of an arrangement.

"Exchange rate" means the price of one currency expressed in another currency.

"Forward rate" means the exchange rate for a forward contract as defined in *Determination G6D: Foreign Currency Rates* or the forward exchange rate calculated using the principle of covered interest parity or other methods that are commercially acceptable. In the case where the base currency is a commodity, the forward rate is the future value of the commodity (in NZD).

"Financial arrangement" has the same meaning as in the Act: Provided that, where a financial arrangement creates obligations in two or more currencies or commodities and the consideration to be given and received in respect of the obligations in each of the currencies is separately identifiable, the consideration to be given and received in respect of the obligations in each currency will be treated as relating to separate financial arrangements.

"Floating rate arrangement" means a financial arrangement where the interest rate is reset periodically according to a predetermined formula, linking the interest rate to an indicator rate such as the bank bill or interbank rate.

"Future value" in relation to a commodity and a future date means the value of the commodity at the future date, on a given date, derived from any commercially acceptable, market-based method of valuation.

"GBP" means the currency of the United Kingdom.

"Initial interest rate" in relation to a financial arrangement means the interest rate that applies to the first period after the date of issue or acquisition of the financial arrangement.

"Interest" means any periodic payment in relation to the financial arrangement, to the extent intended to provide a return to the lender on the sums provided to the borrower. It does not include fees, discounts, or premiums, or payments effecting a reduction of principal.

"NZD" means the currency of New Zealand.

"Period" means a term commencing immediately after a payment is payable or receivable, and ending when the next payment is payable or receivable.

"Reviewable rate arrangement" means a financial arrangement where the interest rate is set periodically in line with market rates.

"Spot rate" means the exchange rate for a spot contract as defined in *Determination G6D: Foreign Currency Rates* or in the case of a commodity, the spot value (in NZD) of the commodity.

"Spot value" in relation to a commodity and a day means the value of the commodity on that day derived from any commercially acceptable method of valuation.

"USD" means the currency of the United States of America.

"Variable rate financial arrangement" means a floating rate arrangement or a reviewable rate arrangement.

(3) All other terms used have the same meaning given to them for the purpose of the qualified accruals rules in the Act.

6. Method

(1) Your gross income or expenditure in an income year from a financial arrangement under this determination is the total of:

(A) the expected component, calculated in accordance with sub-paragraphs (2) to (5); and

(B) the unexpected component, calculated in accordance with sub-paragraph (6) of this section.

(2) You must calculate the expected component for each income year of the remaining term of the financial arrangement at the time you become a party to the financial arrangement. The expected component is calculated by first taking into account all base currency payments in relation to the financial arrangement.

(3) You must calculate the base currency payments of a variable rate financial arrangement denominated in a currency other than NZD using the initial interest rate and assuming that this rate will apply throughout the term of the financial arrangement.

(4) You must convert the base currency payments into NZD using forward rates at the time you became a party to the financial arrangement.

(5) You must spread the expected NZD net amount using the yield to maturity method consistent with *Determination G3* and, where necessary, allocate it to the income year on the basis of *Determination G1A*. This will give the expected component for each income year.

(6) The unexpected component is the difference between the actual NZD value of the payments during the year and the expected NZD value of those payments as calculated under sub-paragraph (4).

Transitional Adjustment for Existing Financial Arrangements

(7) If you elect to use this determination to calculate gross income or expenditure of any financial arrangement entered into before the income year you made the election, you must follow the method set out in sub-paragraphs (1) to (6) to calculate gross income or expenditure of these financial arrangements, except that

(a) the NZD net amount to be spread under sub-paragraph (5) consists of actual NZD payments that have occurred since you become a party to the financial arrangement until the end of the income year you elect to use this determination, and expected NZD payments in the remaining term of the financial arrangement; and

(b) the expected NZD payments in the remaining term of the financial arrangement must be calculated on the basis of the forward rates available at the end of the income year you elect to use this determination.

(8) You must perform a transitional adjustment calculation in the income year in which you elect to use this determination to calculate gross income or expenditure of any financial arrangement entered into before the income year you made the election. You must perform the transitional adjustment calculation for each of those financial arrangements in accordance with the following formula:

$$a - b - c + d$$

where

a is the sum of all amounts that would have been income in respect of the financial arrangement from the time it was entered into until the end of the income year, if this determination was applied from the time you become a party to the financial arrangement;

b is the sum of all amounts that would have been expenditure in respect of the financial arrangement from the time it was entered into until the end of the income year, if this determination was applied from the time you become a party to the financial arrangement;

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c is the sum of all income in respect of the financial arrangement since it was acquired until the end of the previous income year;

d is the sum of all expenditure in respect of the financial arrangement since it was acquired until the end of the previous income year.

A positive net amount is gross income while a negative net amount is gross expenditure in the income year you elect to use this determination.

7. Examples

(1) A New Zealand investor holds a United States Treasury Bond on its balance date of 30 June 2000. The bond has a term of five years and bears 10% interest payable semi-annually on 1 September and 1 March. It has a face value of USD $10 million. The bond was purchased at issue for USD $8,300,000 and matures on 1 September 2004.

(2) The New Zealand investor has to calculate the expected NZD net amount on the basis of forward rates available at the time it becomes a party to the financial arrangement. It then has to spread and allocate the expected NZD net amount to the income years over the term of the financial arrangement in accordance with *Determination G3* and *Determination G1A*. In each of those income years, the investor also has to determine the unexpected component of the gross income or expenditure. The unexpected component is measured as the difference between the actual NZD payments and the expected NZD payments.

Signed on the 27th day of April 1998.

Robin Oliver
General Manager, Policy

Example A: Discounted bond

A NZ investor holds a United States Treasury Bond on its balance date of 30 June 2000. The bond has a term of five years and bears 10% interest payable semi-annually on 1 September and 1 March. It has a face value of USD $10 million. The bond was purchased at issue for USD $8,300,000 and matures on 1 September 2004.

The following table presents the spot rates at the relevant dates and the forward rates at the time of contract out to the relevant dates. The forward rates were estimated based on the principle of covered interest parity using the interest rates in the US (US,I), the domestic interest rates (NZ,I) and the spot rate at the time of contract. In this simple example the (US,I) and the (NZ,I) were assumed to be 10% per annum and 8% per annum, respectively, and they remain constant throughout the entire period (assuming a horizontal yield curve so that a 6 month bond and a 5 year bond have the same rate).

Date	Spot	Fwd (0,t)	US,I	NZ,I
1-Sep-99	0.6310	0.6310	0.05	0.04
1-Mar-00	0.6455	0.6371	0.05	0.04
1-Sep-00	0.6500	0.6432	0.05	0.04
1-Mar-01	0.6550	0.6494	0.05	0.04
1-Sep-01	0.6570	0.6556	0.05	0.04
1-Mar-02	0.6580	0.6619	0.05	0.04
1-Sep-02	0.6400	0.6683	0.05	0.04
1-Mar-03	0.6380	0.6747	0.05	0.04
1-Sep-03	0.6150	0.6812	0.05	0.04
1-Mar-04	0.6150	0.6878	0.05	0.04
1-Sep-04	0.6150	0.6944	0.05	0.04

At the time of contract – 1 September 1999

Given the above assumptions, the payments in USD expected at the time of contract (See column (a)), could be converted to NZD based on the forward rates at each relevant date (See column (b)). The expected NZD net amount represents a yield of approximately 12% per annum over the five-year period and the yield is spread in a way consistent with *Determination G3*. The value of NZD $848,432, for instance, is the expected component of the gross income for the NZ investor for the six-month period ending 1-Mar-2000.

	(a) USD Cash	(b) Expected Cash (NZD)	(c) Expected Income
1-Sep-99	-8300000	-13153724	
1-Mar-00	500000	784846	848432
1-Sep-00	500000	777372	852533
1-Mar-01	500000	769968	857381
1-Sep-01	500000	762635	863020
1-Mar-02	500000	755372	869494
1-Sep-02	500000	748178	876855
1-Mar-03	500000	741052	885155
1-Sep-03	500000	733995	894450
1-Mar-04	500000	727004	904800
1-Sep-04	10500000	15121690	916268
	6700000	8768389	8768389
6-Month YTM	7%	6%	

When cash is subsequently received at the relevant dates, the NZD values of the payments are likely to differ from those expected at the contract date. Where the NZD values of these subsequent payments deviate from the expected NZD values, they give rise to unexpected component of the gross income or expenditure. For example, on 1-Mar-2000 the actual payment was NZD $774,593 while the expected payment was NZD $784,846. The discrepancy of NZD $10,253 is the unexpected component for the period ending 30-Jun-2000.

	Expected Cash (NZD)	Actual Cash (NZD)	Unexpected Income/ Expenditure
1-Sep-99	-13153724	-13153724	
1-Mar-00	784846	774593	-10253
1-Sep-00	777372	769231	-8141
1-Mar-01	769968	763359	-6609
1-Sep-01	762635	761035	-1600
1-Mar-02	755372	759878	4506
1-Sep-02	748178	781250	33072
1-Mar-03	741052	783699	42647
1-Sep-03	733995	813008	79013
1-Mar-04	727004	813008	86004
1-Sep-04	15121690	17073171	1951480
	8768389		2170119

At the first balance date – 30 June 2000

There are two components to the income or expenditure for the financial arrangement in this income year: the gains expected at the contract date and the unexpected losses. The expected gains as summarised above are allocated to the income year in a way consistent with *Determination G1A*. Therefore, the gross income or expenditure for the year ended 30 June 2000 is

($848,432) + (121/184 x $852,533) – $10,253
= $1,398,812

where NZD $1,398,812 is gross income of the NZ investor.

At the second balance date – 30 June 2001

The gross income or expenditure at 30 June 2001 is calculated as

(63/184 x $852,533) + ($857,381) +
(121/184 x $863,020) – $8,141 – $6,609 = $1,702,060

where NZD $1,702,060 is gross income of the NZ investor.

At the third balance date – 30 June 2002

The gross income or expenditure at 30 June 2002 is calculated as

(63/184 x $863,020) + ($869,494) +
(121/184 x $876,855) – $1,600 + $4,506 = $1,744,518

where NZD $1,744,518 is gross income of the NZ investor.

On 30 September 2002 the bond is sold for USD $10 million (i.e. an approximate yield of 16% p.a.). At this date the USD/NZD spot rate was 0.6320. At this date the investor is subject to the base price adjustment of section EH 4:

$$a - (b + c)$$

where:

a is all consideration that has been paid to the investor:
500,000/.6455 + 500,000/.6500 + 500,000/.6550 + 500,000/.6570 + 500,000/.6580 + 500,000/.6400 + 10,000,000/.6320 = $20,432,131 NZD

b is the acquisition price of the bond:
8,300,000/.6310 = $13,153,724 NZD

c is all the amounts of income derived under section EH 1:
1398812 + 1702060 + 1744518 (as calculated above)
= $4,845,390 NZD

So the Base Price Adjustment is

a – (b + c)
= 20,432,131 – (13,153,724 + 4,845,390)
= $2,433,017 NZD.

Since this is a positive amount it is gross income of the NZ investor in this income year.

Example B: Discounted bond entered into before the 1998-1999 income year

A NZ investor holds a United States Treasury Bond on its balance date of 30 June 1999. The bond has a term of five years and bears 10% interest payable semi-annually on 1 September and 1 March. It has a face value of USD $10 million. The bond was purchased at issue for USD $8,300,000 and matures on 1 September 2002.

This is effectively the same as Example A except that the discounted bond was acquired on 1 September 1997. The following table presents the spot rates at the relevant dates and the forward rates at the time of contract out to the relevant dates as in Example A.

Date	Spot	Fwd(0,t)	US,I	NZ,I
1-Sep-97	0.6310	0.6310	0.05	0.04
1-Mar-98	0.6455	0.6371	0.05	0.04
1-Sep-98	0.6500	0.6432	0.05	0.04
1-Mar-99	0.6550	0.6494	0.05	0.04
1-Sep-99	0.6570	0.6556	0.05	0.04
1-Mar-00	0.6580	0.6619	0.05	0.04
1-Sep-00	0.6400	0.6683	0.05	0.04
1-Mar-01	0.6380	0.6747	0.05	0.04
1-Sep-01	0.6150	0.6812	0.05	0.04
1-Mar-02	0.6150	0.6878	0.05	0.04
1-Sep-02	0.6150	0.6944	0.05	0.04

In the 1998-1999 income year – 30 June 1999

The gross income or expenditure under the discounted bond has been calculated in previous income years according to *Determination G9A*. The corporate has already recognised gross income of $1,398,812 and $1,702,060 in the 30 June 1997 and 30 June 1998 income year, respectively.

However, the corporate has decided to adopt this determination from the 1998-1999 income year. The expected NZD net amount to be spread under this determination must, therefore, be determined at the end of the 1998-1999 income year. The following table summarises the actual payments from 1 September 1997 to the end of the 1998-1999 income year and the expected NZD payments for the remaining term of the financial arrangement. These expected NZD payments

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were calculated on the basis of the forward rates at 30 June 1999 out to the relevant dates. For the sake of simplicity, these forward rates are assumed to be the same, in this example, as those measured at the time of contract. In practice, however, the forward rates measured at the time of contract are rarely the same as the forward rates measured at a later date.

Date	Expected Cash NZD	Expected Income
1-Sep-97	-13153724	
1-Mar-98	7745931	845427
1-Sep-98	769231	849980
1-Mar-99	763359	855170
1-Sep-99	762635	861071
1-Mar-00	755372	867397
1-Sep-00	748178	874598
1-Mar-01	741052	882723
1-Sep-01	733995	891829
1-Mar-02	727004	901973
1-Sep-02	15121690	913219
	8743386	
6-Month YTM	6%	

At the end of the 1998-1999 income year, the expected NZD net amount in relation to the discounted bond is NZD $8,743,386, representing an annual yield of approximately 12%. The expected NZD net amount is spread over the term of the financial arrangement in a way consistent with *Determination G3*.

The transitional adjustment in the 1998-1999 income year is

$$a - b - c + d$$

where

a the sum of all amounts that would have been income from the time the financial arrangement was entered into until the end of the 1998-1999 income year
= 845427 + 849980 + 855170 + 861071 × 121/184
= $3,116,825

b the sum of all amounts that would have been expenditure from the time the financial arrangement was entered into until the end of the 1998-1999 income year
= 0

c the sum of all income in respect of the financial arrangement since it was acquired until the end of the previous income year
= 1398812 + 1702060
= $3,100,872

d the sum of all expenditure in respect of the financial arrangement since it was acquired until the end of the previous income year
=0

The net amount of NZD$15,953 is gross income in the 1998-1999 income year.

The income or expenditure in relation to the discounted bond in subsequent income years will be calculated as in Example A. The expected component of the gross income or expenditure is determined as summarised in the table above while the unexpected component is calculated as in Example A.

Example C: Multicurrency loan facility with early repayment

A corporate borrower has a multi-currency loan facility that allows funds to be drawn down in any of three currencies – US Dollars (USD), Sterling (GBP) and Deutschemarks (DM). The total initial amount of the loan is $100 million USD and may be taken in any combination of the three currencies. The term of the loan facility is 10 years and any tranche may be repaid at any time by payment of the principal outstanding. The mixture of currencies can be changed at each six monthly interest payment date. Interest is payable in the currency of the principal amount at rates depending on the currency as shown below.

The loan is initially drawn down on 1 October 1998 in the configuration below. Interest is payable six monthly in arrears on 1 February and 1 August. The corporate borrower has a 31 March balance date. Its base currency is New Zealand dollars (NZD).

Initial drawn down configuration

Currency	Amount	Spot rate (against USD)	USD equiv	Interest rate
USD	$55m		$55m	9%
GBP	STG36m	0.5500	$19.8m	11%
DM	DM60m	2.4500	$2.5m	5%
		Total	$99.3m	

For the purpose of illustration, the spot rates and the forward rates at the initial drawn down date out to the relevant dates for GBP/NZD are presented below. The forward rates were estimated based on the principle of covered interest parity using the interest rates in the UK (UK,I), the domestic interest rates (NZ,I) and the spot rate at the initial drawn down date. In this simple example the (UK,I) and the (NZ,I) were assumed to be 10% per annum and 8% per annum, respectively, and they remain constant throughout the entire period (assuming a horizontal yield curve so that a 6 month bond and a 10 year bond have the same rate).

Date	Actual Spot	CIP: Fwd(0,t)	Expected UK,I	Expected NZ,I
1-Oct-98	0.33	0.3300	0.05	0.04
1-Feb-99	0.3345	0.3332	0.05	0.04
1-Aug-99	0.334	0.3364	0.05	0.04
1-Feb-00	0.331	0.3396	0.05	0.04
1-Aug-00	0.3184	0.3429	0.05	0.04
1-Feb-01	0.3046	0.3462	0.05	0.04
1-Aug-01	0.3387	0.3495	0.05	0.04
1-Feb-02	0.3024	0.3529	0.05	0.04
1-Aug-02	0.2829	0.3563	0.05	0.04
1-Feb-03	0.3503	0.3597	0.05	0.04
1-Aug-03	0.3736	0.3631	0.05	0.04
1-Feb-04	0.3773	0.3666	0.05	0.04
1-Aug-04	0.3874	0.3702	0.05	0.04
1-Feb-05	0.4034	0.3737	0.05	0.04
1-Aug-05	0.4225	0.3773	0.05	0.04
1-Feb-06	0.4435	0.3809	0.05	0.04
1-Aug-06	0.4414	0.3846	0.05	0.04
1-Feb-07	0.4296	0.3883	0.05	0.04
1-Aug-07	0.3955	0.3920	0.05	0.04
1-Feb-08	0.3953	0.3958	0.05	0.04
1-Aug-08	0.3953	0.3996	0.05	0.04
1-Oct-08	0.3953	0.4034	0.05	0.04

For taxation purposes each of these tranches is treated as a separate financial arrangement. The following example illustrates the way gross income or expenditure with respect to the Sterling (GBP) tranche is calculated at the initial drawn down date and the subsequent balance dates.

At the initial drawn down date – 1 October 1998

At the initial drawn down date, the expected payments in GBP and NZD over the ten-year period are as follows:

	(a) GBP Cash	(b) Expected Cash NZD	(c) Expected Expenditure
1-Oct-98	36000000	109090909	
1-Feb-99	-1320000	-3961905	4646006
1-Aug-99	-1980000	-5886259	4675141
1-Feb-00	-1980000	-5830199	4623561
1-Aug-00	-1980000	-5774673	4572173
1-Feb-01	-1980000	-5719676	4520960
1-Aug-01	-1980000	-5665203	4469909
1-Feb-02	-1980000	-5611249	4419003
1-Aug-02	-1980000	-5557808	4368227
1-Feb-03	-1980000	-5504877	4317565
1-Aug-03	-1980000	-5452450	4266999
1-Feb-04	-1980000	-5400521	4216513
1-Aug-04	-1980000	-5349088	4166088
1-Feb-05	-1980000	-5298144	4115706
1-Aug-05	-1980000	-5247686	4065347
1-Feb-06	-1980000	-5197708	4014993
1-Aug-06	-1980000	-5148206	3964624
1-Feb-07	-1980000	-5099175	3914217
1-Aug-07	-1980000	-5050612	3863751
1-Feb-08	-1980000	-5002511	3813205
1-Aug-08	-1980000	-4954868	3762554
1-Oct-08	-36660000	-90866409	3711775
Total	-39600000	-88488316	88488316
6-Month YTM	5%	4%	

On 1 October 1998 the corporate borrower received GBP 36 million, which is equivalent to NZD $109,090,909. On 1 February 1999, the interest payment in arrears for the four months from the initial drawn down date amounts to GBP $1,320,000, which is equivalent to NZD $3,961,905 (valued at the relevant forward rate of 0.3332 at the initial drawn down date). The subsequent interest payments were also converted to NZD in the same way. Overall NZD net amount of $88,488,316 represent an expected yield of approximately 8% per annum. The expected yield is spread according to *Determination G3* (See column (c)).

The actual NZD payments will deviate from the expected NZD payments due to fluctuations in the exchange rates. For instance, the actual NZD payment on 1 February 1999 was NZD $3,946,188 instead of NZD $3,961,905 anticipated at the initial drawn down date. This created an unexpected component of NZD $15,716 for the gross income or expenditure in respect of the financial arrangement. The following table presents the unexpected component of the gross income or expenditure over the term of the financial arrangement.

	Expected Cash NZD	Actual Cash NZD	Unexpected Income/ Expenditure
1-Oct-98	109090909	109090909	
1-Feb-99	-3961905	-3946188	-15716
1-Aug-99	-5886259	-5928144	41885
1-Feb-00	-5830199	-5981873	151674
1-Aug-00	-5774673	-6218593	443920
1-Feb-01	-5719676	-6500328	780652
1-Aug-01	-5665203	-5845881	180678
1-Feb-02	-5611249	-6547619	936370
1-Aug-02	-5557808	-6998940	1441131
1-Feb-03	-5504877	-5652298	147421
1-Aug-03	-5452450	-5299786	-152664
1-Feb-04	-5400521	-5247813	-152708
1-Aug-04	-5349088	-5110996	-238091
1-Feb-05	-5298144	-4908280	-389865
1-Aug-05	-5247686	-4686391	-561295
1-Feb-06	-5197708	-4464487	-733221
1-Aug-06	-5148206	-4485727	-662479
1-Feb-07	-5099175	-4608939	-490237
1-Aug-07	-5050612	-5006321	-44291
1-Feb-08	-5002511	-5008854	6343
1-Aug-08	-4954868	-5008854	53986
1-Oct-08	-90866409	-92739691	1873282
Total	-88488316		2616778

At the first balance date – 31 March 1999

Expected component =
4646006 + (4675141 x 59/181) = $6,169,947

Unexpected component = $15,716

Total gross expenditure =
$6,169,947 - $15,716 = $6,154,231

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At the second balance date – 31 March 2000

Expected component = (122/181 x 4675141) + 4623561 + (4572173 x 59/181) = $9,265,138

Unexpected component =
$41,885 + $151,674 = $193,559

Total gross expenditure =
$9,265,138 + $193,559 = $9,458,697

On 1 June 2000 the corporate borrower decides to switch out of GBP and borrow more USD. For the purpose of calculating the corporate's gross income or expenditure, the GBP tranche is deemed to be repaid and is subject to the Base Price Adjustment in this income year. The spot rate GBP to NZD was 0.3200 on the date of repayment.

The Base Price Adjustment is given in section EH 4 of the Income Tax Act 1994. It calculates an amount by application of the formula:

a – (b + c); where

a is all consideration that has been paid by the corporate borrower. This is the interest payments made plus the deemed principal repayment amount.

This amount is equal to:
1.32m/.3345 + 1.98 m/.3340 + 1.98m/.3310 + 36m/.3200 = NZD $128,356,205

b is the acquisition price of the facility. This is equal to the amount of GBP drawn down i.e. 36 m/.3300 = NZD $109,090,909

c is the amounts of gross expenditure less the amounts of gross income as calculated under section EH 1. The gross expenditure for the previous two years of the loan facility were

For the year ended 31 March 1989	$ 6,154,231
For the year ended 31 March 1990	$ 9,458,697
The total gross expenditure is NZD	$15,612,928

The Base Price Adjustment is therefore:

128,356,205 – (109,090,909 + 15,612,928)
= NZD $3,652,368

This amount is gross expenditure of the corporate borrower in this income year in accordance with section EH 4 of the Act.

Example D: Variable rate financial arrangement

This is a similar example as Example D in *Determination G26: Variable Rate Financial Arrangements*. This example illustrates how this determination could be applied to a variable rate financial arrangement.

A New Zealand company purchased a USD note with a face value of $10,000 for a term of 3 years at a discount of 10% ($1,000). The Interest rate is equal to market interest plus 1% p.a., and Interest is payable half yearly in arrears. There are no fees. The Interest rate is 10% in the first period after issue.

Assuming that this interest rate holds throughout the term of the notes, the yield to maturity is 14.2% p.a., calculated at half yearly rests. The table below summarises the expected base currency payments and the relevant spot and forward exchange rates.

t	USD Cash	Spot	Fwd(0,t)	US,I	NZ,I
0	-9000	0.6310	0.6310	0.05	0.04
1	500	0.6455	0.6371	0.05	0.04
2	500	0.6500	0.6432	0.05	0.04
3	500	0.6550	0.6494	0.05	0.04
4	500	0.6570	0.6556	0.05	0.04
5	500	0.6580	0.6619	0.05	0.04
6	10500	0.6400	0.6683	0.05	0.04
	14.2%				

At the time of entering into the floating arrangement, the New Zealand company needs to make the following calculation:

t	USD Cash	Expected Cash NZD	Expected Income
0	-9000	-14263	
1	500	7851	868
2	500	777	873
3	500	770	879
4	500	763	885
5	500	755	893
6	10500	15712	901
	4000	5299	5299
	14.2%	12.2%	

The base currency payments, calculated on the basis of the initial interest rate (i.e. 10%), are translated into expected NZD payments on the basis of forward rates available at the time the company entered into the financial arrangement. The expected NZD net amount of NZD $5,299, representing a yield of 12.2%, is spread using the yield to maturity method consistent with *Determination G3*. The expected component of the gross income or expenditure for each half-year period over the term of the arrangement is presented in the final column of the table above.

When payments are subsequently made, the actual NZD payments may differ from the expected NZD payments due to fluctuations in both the interest rates and the exchange rates. The final outcomes are presented in the following table.

t	Actual US,I	Actual Cash USD	Expected Cash NZD	Actual Cash NZD	Unexpected Income/ Expenditure
		-9000	-14263	-14263	0
1	0.1	500	785	775	-10
2	0.11	550	777	846	69
3	0.09	450	770	687	-83
4	0.09	450	763	685	-78
5	0.08	400	755	608	-147
6	0.08	10400	15712	16250	538

At the first balance date

There are two components to the gross income or expenditure in relation to the floating rate financial arrangement for the New Zealand company. These include:

Expected component = $ 868 + $873 = $1741; and
Unexpected component = -$10 + $69 = $59.

The gross income for the first balance date is therefore $1,800.

At the second balance date

The gross income consists of:

Expected component = $879 + $885 = $1764; and
Unexpected component = -$83 - $78 = -$161.

The gross income for the second balance date is therefore $1,603.

At the final balance date

The New Zealand company has to perform a base price adjustment under section EH 4 of the Act:

$$a – (b + c)$$

where:

a is all consideration that has been paid to the company:
= 775 + 846 + 687 + 685 + 608 + 16250
= $19,851 NZD

b is the acquisition price of the note:
= $14,263 NZD

c is all the amounts of gross income under section EH 1:
1800 + 1603 = $3,403 NZD

So the base price adjustment is

a – (b + c)
19851 – (14263 + 3403)
= $2185 NZD

Since this is a positive amount, it is gross income of the New Zealand company in this income year.

Determination G14A: Forward contracts for foreign exchange and commodities: an expected value approach

This determination may be cited as "Determination G14A: Forward Contracts for Foreign Exchange and Commodities: An Expected Value Approach".

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

What is a Forward Contract for Foreign Exchange and Commodities?

A forward contract for foreign exchange or commodities is a contract to buy or sell specified amounts of foreign currency or commodities at some future date at a specified contract rate. For example, a forward contract for foreign currency is a contract to buy or sell specified amounts of a currency at a future date at a price fixed (in terms of another currency) at the time the contract is entered into. Each party contracts simultaneously to sell one currency and purchase another currency. The same forward contract can always be viewed as either the sale of one currency or the purchase of the other currency. For example, a person who sells NZD forward against purchase of USD can view the contract as either –

- The forward sale of NZD, or
- The forward purchase of USD.

A forward contract has characteristics that are very similar to a swap contract. In fact, swaps are often structured as a series of forward contracts. If you are a party to a swap, however, you may not apply this Determination as swaps are subject to *Determination G27*. The only exception is a swap contract for fixed amounts, to be exchanged at a single fixed date. This type of swap is, in substance, a forward contract. Therefore, if you are a party to this type of financial arrangement, you have to apply this determination instead of *Determination G27*.

What methods can be used to calculate income or expenditure under a Forward Contract for Foreign Exchange and Commodities?

Expected Value Approach

This determination sets out an expected value approach to calculate gross income or expenditure from a forward contract. This expected value approach can only be used for forward contracts within the scope of this determination, which is narrower than *Determination G14: Forward Contracts for Foreign Exchange and Commodities*. If you elect to use this determination, you must not use *Determination G14* for any such forward contract, and you must not use *Determination G9A: Financial Arrangements that are Denominated in a Currency or Commodity other than New Zealand Dollars* for any financial arrangement within the scope of *Determination G9B: Financial Arrangements that are Denominated in a Currency other than New Zealand Dollars: An Expected Value Approach*.

Mark to Spot Approach

You can use *Determination G14: Forward Contracts for Foreign Exchange and Commodities* to calculate gross income or expenditure of any forward contract within the scope of this determination if you have not used this determination or *Determination G9B: Financial Arrangements that are Denominated in a Currency Other than New Zealand Dollars: An Expected Value Approach*.

Alternatively, you may use the mark to market method if you satisfy the requirements of section EH 1(6) of the Act.

You may also use a method allowed by the proviso to section EH 1(5)(a) of the Act.

How do I use the method set out in this determination?

Under this method, the gross income or expenditure from a forward contract is the total of an expected component and an unexpected component. A typical forward contract drawn at the forward rate for no consideration, however, has no expected component. To apply this method:

- ignore any offsetting of payments between the parties, so that every amount that would be payable under the forward contract is taken into account under this determination.
- choose one of the currencies under the forward contract as a base currency.
- determine the expected component by taking into account all the base currency payments and payment dates in relation to the forward contract when you become a party to the contract.
- the base currency payments in relation to the forward contract consist of:
  - (a) the base currency value of the payment or receipt, if any, made in consideration of entering into the contract;
  - (b) the base currency value of the non-base currency payment to be made under the contract valued at the forward rate; and
  - (c) the base currency value of the non-base currency payment to be made under the contract valued at the contract rate.
- convert the expected base currency payments, where the base currency is not NZD, into expected NZD payments on the basis of forward rates available at the time you become a party to the forward contract.

- spread the expected NZD net amount over the term of the forward contract.
- calculate the gross income or expenditure of a forward contract entered into before the income year you elect to use this determination as set out above, except that you must:

  (a) use actual NZD payments up to the income year you elect to use this determination and expected NZD payments for the remaining term of the financial arrangement in determining the expected component of the gross income or expenditure; and

  (b) use the relevant forward rates at the end of the income year you elect to use this determination for the purpose of calculating the expected NZD payments.
- perform the base price adjustment under section EH 4 of the Act when the forward contract you are a party to matures or is disposed of. This adjustment contains the unexpected component of the gross income or expenditure of the forward contract.

How do I elect to use the method outlined in this determination?

You may elect to use this determination by returning your gross income or expenditure on the basis of this determination for the 1998-1999 income year, or the 1999-2000 income year, or in the first income year in which you become a party to any forward contract that is within the scope of this determination.

In the income year you elect to use this determination to calculate gross income or expenditure from a forward contract entered into before the income year, you must perform a transitional adjustment calculation. This determination provides for a transitional adjustment calculation that is comparable to *Determination G25: Variations in the Terms of a Financial Arrangement*.

How do I calculate the transitional adjustment?

The transitional adjustment must be made in the income year you elect to use this determination. The transitional adjustment calculation must be made for each forward contract entered into before the income year you elect to use this determination. It requires that you treat the difference between the total amount that would have been gross income or expenditure calculated as described in this determination and the total amount actually recognised over the previous income years, as gross income or expenditure in the income year of the adjustment.

How is income or expenditure calculated in the year the forward contract matures or is disposed of?

Regardless of which method you choose to use, you must calculate income or expenditure under the base price adjustment in section EH 4 of the Act.

If you are a party to a forward contract, you are both a vendor and a purchaser. As such, you are a holder under the definition of "holder" in section OB 1 of the Act. This categorisation is important for the purpose of calculating income or expenditure in accordance with section EH 4 of the Act.

2. Reference

This determination is made pursuant to section 90(1)(c) of the Tax Administration Act 1994.

3. Scope

(1) This determination applies to the calculation of gross income or expenditure from a forward contract for foreign exchange and commodities.

(2) This Determination will not apply to –

(a) A futures contract;

(b) A security arrangement;

(c) A forward contract for foreign exchange and commodities where the forward rates of the currency cannot be determined; or

(d) Any financial arrangements covered by the following determinations-

Determination G19: Exchange Traded Option Contracts;

Determination G20: Discounted Value of Amounts Payable in Relation to Trade Credits Denominated in a Foreign Currency;

Determination G21: Discounted Value of Amounts Payable in Relation to Deferred Property Settlements Denominated in a Foreign Currency;

Determination G21A: Agreements for Sale and Purchase of Property Denominated in Foreign Currency: Discounted Value of Amounts Payable;

Determination G27: Swaps;

Determination G29: Agreements for Sale and Purchase of Property Denominated in Foreign Currency: Exchange Rate to Determine the Acquisition Price and Method for Spreading Income and Expenditure;

except as specifically allowed by those determinations.

(3) You may use this determination if

(a) an election to use this determination is made by returning your income or expenditure on the basis of this determination in the 1998-1999 income year or the 1999-2000 income year or the first income year in which you become a party to a forward contract within sub-paragraphs (1) and (2) above; and

(b) *Determination G14: Forward Contracts for Foreign Exchange and Commodities* is not used to calculate gross income or expenditure of any forward contract that is within sub-paragraphs (1) and (2) above; and

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(c) *Determination G9A: Financial Arrangements that are Denominated in a Currency or Commodity other than New Zealand Dollars* is not used to calculate gross income or expenditure of any financial arrangement that is within the scope of *Determination G9B: Financial Arrangements that are Denominated in a Currency or Commodity other than New Zealand Dollars: An Expected Value Approach*.

(NOTE: A determination to which *Determination G14A* refers may be changed or rescinded by a new determination made by the Commissioner. In such a case, a reference to the old determination is extended to the new determination.)

4. Principle

(1) If you are a party to a forward contract to which this determination applies, the gross income or expenditure in respect of the forward contract is calculated by taking into account all amounts arising from the fluctuations of exchange rates or commodity prices.

(2) The gross income or expenditure from the forward contract is the total of an expected component and the unexpected component. You must measure the expected component at the time you become a party to the forward contract. You must also recognise the unexpected component by performing the base price adjustment required under section EH 4 of the Act.

(3) To measure the expected component you must convert the base currency payments into expected NZD payments on the basis of forward rates at the time you become a party to the forward contract, and spread the expected NZD net amount over the term of the contract.

(4) You may use this determination to calculate gross income or expenditure of forward contracts entered into before the income year in which you made the election and in respect of which section EH 4 of the Act does not apply. You must then use this determination for all such forward contracts. In this case, you must follow the principle set out above except that you must calculate the expected NZD net amount using actual NZD payments up to the end of the income year in which you elect to use this determination and the forward rates at the end of that income year.

Transitional adjustment

(5) You must perform the transitional adjustment calculation in the income year in which you elect to use this determination to calculate gross income or expenditure of any forward contract entered into before that income year.

(6) This adjustment ensures that the gross income or expenditure up to the end of the income year in which you elect to use this determination is equal to that that would have been returned if the actual NZD payments and the forward rates, as described in sub-paragraph (4), were known and this determination had been used since you become a party to the forward contract.

5. Interpretation

In this determination:

(1) A reference to the "Act" is a reference to the Income Tax Act 1994.

(2) "Base currency" in relation to a person and a forward contract, means the currency under the forward contract which is adopted by the person as a reference currency for the purposes of this determination.

"Commencement date" of a forward contract means the date on which the contract was entered into, or the date on which it was acquired, if later.

"Contract rate", in relation to a forward contract means the price of one currency expressed in terms of the other currency under the forward contract.

"Covered interest parity" means the theoretical proposition that the differential between forward and spot exchange rates is equal to the interest differentials. That is, the forward rate for a foreign currency exchange at time t for 1 period ahead is equivalent to the spot rate at time t, S_t, multiplied by one plus the foreign interest rate, i_f, divided by one plus the domestic interest rate, i_d. Forward rates at time t for n periods, $Fwd_{t,n}$, can thus be derived based on the principle of covered interest parity as:

$$Fwd_{t,n} = S_t \frac{(1 + i_f)^n}{(1 + i_d)^n}$$

"Currency" includes any commodity used as a medium of exchange or account, whether in general use or for the purpose of an arrangement.

"Exchange rate" means the price of one currency expressed in another currency.

"Forward rate" means the exchange rate for a forward contract as defined in *Determination G6D: Foreign Currency Rates* or the forward exchange rate calculated using the principle of covered interest parity or other methods that are commercially acceptable. In the case of a forward contract for commodities, the forward rate is the future value of the commodities (in NZD).

"Future value" in relation to a commodity and a future date means the value of the commodity at the future date, on a given date, derived from any commercially acceptable, market-based method of valuation.

"NZD" means the currency of New Zealand.

"Non-base currency" means the currency under a forward contract that is not the base currency.

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

"Spot rate" means the exchange rate for a spot contract as defined in *Determination G6D: Foreign Currency Rates* or in the case of a commodity, the spot value (in NZD) of the commodity.

"Spot value" in relation to a commodity and a day means the value of the commodity on that day derived from any commercially acceptable method of valuation.

"USD" means the currency of the United States of America.

(3) All other terms used have the same meaning given to them for the purpose of the qualified accruals rules in the Act.

6. Method

(1) Your gross income or expenditure in an income year from a forward contract under this determination is the total of:

(A) the expected component, calculated in accordance with sub-paragraphs (4) to (7); and

(B) the unexpected component, calculated in accordance with sub-paragraph (8).

(2) To calculate the income or expenditure in relation to a forward contract, you must first nominate a base currency.

(3) If the terms of the forward contract provide for the netting off or offsetting of any amounts payable to or by one party to the forward contract with any amounts payable to or by the other party to the forward contract, you must ignore such netting off or offsetting for the purpose of this determination.

(4) You must calculate the expected component for each income year of the remaining term of the forward contract at the time you become a party to the contract. The expected component is calculated by first taking into account all base currency payments in relation to the forward contract. The base currency payments of a forward contract consist of:

(a) the base currency value of the payment or receipt, if any, made in consideration of entering into the forward contract;

(b) the base currency value of the non-base currency payment to be made under the contract valued at the forward rate; and

(c) the base currency value of the non-base currency payment to be made under the contract valued at the contract rate.

(5) You must convert the base currency payments into NZD using forward rates at the time you become a party to the financial arrangement, if the base currency is not NZD.

(6) The expected NZD net amount is the difference between items (b) and (c) in sub-paragraph (4), adjusted for any amount as described in item (a). You must spread the expected NZD net amount using the yield to maturity method consistent with *Determination G3* and, where necessary, allocate it to the income year on the basis of *Determination G1A*. This will give the expected component for each income year.

(7) You must spread the expected NZD net amount of a forward contract that has been written for no consideration at a rate other than the forward rate using the straight-line method.

(8) The unexpected component is the difference between the actual NZD value of the payments during the year and the expected NZD value of those payments as calculated under sub-paragraph (5). You need not calculate the unexpected component separately as it is part of the base price adjustment required under section EH 4 of the Act.

Transitional Adjustment for Existing Forward Contracts for Foreign Exchange and Commodities

(9) If you elect to use this determination to calculate gross income or expenditure of any forward contract entered into before the income year you made the election, you must follow the method set out in sub-paragraphs (1) to (8) to calculate gross income or expenditure of these contracts, except that

(a) the NZD net amount to be spread under sub-paragraph (6) consists of actual NZD payments that have occurred since you become a party to the forward contract until the end of the income year you elect to use this determination, and expected NZD payments in the remaining term of the forward contract; and

(b) the expected NZD payments in the remaining term of the forward contract must be calculated on the basis of the forward rates available at the end of the income year you elect to use this determination.

(10) You must perform a transitional adjustment calculation in the income year in which you elect to use this determination to calculate gross income or expenditure of any forward contract entered into before the income year you made the election. You must perform the transitional adjustment calculation for each of those forward contracts in accordance with the following formula:

$$a - b - c + d$$

where

a is the sum of all amounts that would have been income in respect of the forward contract from the time it was entered into until the end of the income year, if this determination was applied from the time you become a party to the forward contract;

b is the sum of all amounts that would have been expenditure in respect of the forward contract from the time it was entered into until the end of the income year, if this determination was applied from the time you become a party to the forward contract;

c is the sum of all income in respect of the forward contract since it was acquired until the end of the previous income year;

d is the sum of all expenditure in respect of the forward contract since it was acquired until the end of the previous income year.

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A positive net amount is gross income while a negative net amount is gross expenditure in the income year you elect to use this determination.

7. Examples

(1) A New Zealand corporate borrower enters into a long term forward foreign exchange contract to buy 1 million US dollars (USD) against delivery of New Zealand dollars (NZD) in two years time. The contract was entered into on 30 April 1999 for no consideration and the corporate borrower has a balance date of 30 June. The contract rate is 0.5919 USD to 1 NZD, so settlement will require delivery of NZD $1,689,475. The corporate chooses NZD as the base currency for this contract.

(2) At the time the New Zealand corporate becomes a party to the forward contract, the expected NZD net amount is zero and so the expected component of the gross income or expenditure from the forward contract is zero. The New Zealand corporate will recognise the unexpected component of the gross income or expenditure from the forward contract when performing the base price adjustment under section EH 4 of the Act.

Signed on the 27th day of April 1998.

Robin Oliver
General Manager, Policy

For the purpose of examples A to C assume that the spot rates and the forward rates for USD/NZD on the relevant dates are as follows:

	Actual Spot	CIP: Fwd (0,t)	CIP: Fwd (1,t)	CIP: Fwd (2,t)	Expected US,I	Expected NZ,I
30-Apr-98	0.635	0.6350			0.04	0.06
30-Apr-99	0.6149	0.6230	0.6149		0.04	0.06
30-Apr-00	0.575	0.6113	0.6033	0.5750	0.04	0.06
30-Apr-01	0.557	0.5997	0.5919	0.5642	0.04	0.06

The forward exchange rates are derived on the principle of covered interest parity (CIP) using the expected interest rates in the United States of America (US, I) and the expected domestic interest rates (NZ, I). Fwd(0,t) represents the forward rates at 30 April 1998 out to period, t, while Fwd(1,t) and Fwd(2,t) represent the forward rates at 30 April 1999 and 30 April 2000, respectively, out to period, t. For convenience in these examples when calculating the base price adjustment, the same buy/sell spot rates have been used at date of delivery. In practice this would not normally be the case.

Example A: Seller of base currency (NZD); contract rate is equal to market rate

A New Zealand corporate borrower enters into a long term forward foreign exchange contract to buy 1 million US dollars (USD) against delivery of New Zealand dollars (NZD) in two years time. The contract was entered into on 30 April 1999 for no consideration and the corporate borrower has a balance date of 30 June. The contract rate is 0.5919 USD to 1 NZD, so settlement will require delivery of NZD $1,689,475. The corporate chooses NZD as the base currency for this contract.

At the time the contract was entered into – 30 April 1999

The expected base currency payments in relation to the forward contract consist of :

- the base currency value of the payment or receipt made in consideration of entering into the forward contract = 0;
- the base currency value of the non-base currency payment to be made under the contract valued at the forward rate = NZD $1,689,475; and
- the base currency value of the non-base currency payment to be made under the contract valued at the contract rate = NZD $1,689,475.

Since the forward contract was entered into at the forward rate for no consideration, the expected NZD net amount is 0. So, there is no expected component to be spread under the accrual rules.

At the final balance date – 30 June 2001

In the 30 June 2001 income year, the base price adjustment given in section EH 4 of the Act is calculated by applying the formula:

$$a – (b + c)$$

where -

a = Consideration paid or payable to the holder
= 1,000,000/0.557
= NZD $1,795,332

b = Acquisition price
= consideration provided by the holder
= NZD $1,689,475

c = Income already derived – expenditure already incurred
= 0

Therefore, the base price adjustment = $1,795,332 – ($1,689,475 + 0) = $105,857 and since this is positive, the amount of NZD $105,857 is gross income of the New Zealand corporate for the 30 June 2001 income year.

Example B: Seller of base currency (NZD); contract rate is equal to the market rate

A New Zealand corporate borrower enters into a long term forward foreign exchange contract to buy 1 million US dollars (USD) against delivery of New Zealand dollars (NZD) in three years time. The contract was entered into on 30 April 1998 for no consideration and the corporate borrower has a balance date of 30 June. The contract rate is 0.5997 USD to 1 NZD, so settlement will require delivery of NZD $1,667,416. The corporate chooses NZD as the base currency for this contract.

Assume that the New Zealand corporate has been using an alternative method to calculate the income or expenditure of the forward contract in the 1997-1998 income year. In fact, the corporate has recognised NZD$32,982 as gross income in respect of the forward contract for the year ending 30 June 1998. However, the corporate has decided to use this determination for the 1998-1999 and subsequent income years.

Further, assume that the forward rate on 30 June 1999 out to 30 April 2001, the delivery date of the forward contract, is 0.5919. Therefore, the market rate for the delivery of USD$1 million on 30 April 2001 is NZD$1,689,475. Given the contract rate of 0.5997 for the delivery of USD$1 million, there is an expected NZD net amount of NZD$22,059. Using this determination, the expected NZD net amount should be spread on a straight line basis over the term of the forward contract.

The transitional adjustment in the 1998-1999 income year – 30 June 1999

Using a straight line method to spread the expected NZD net amount of NZD$22,059, the gross income in relation to the forward contract for the year ending 1998 and 1999 should have been NZD$1,226 and NZD$7,353, respectively.

Therefore the transitional adjustment is:

$$a – b – c + d$$

where

a the sum of all amounts that would have been income from the time the corporate become a party to the forward contract until the end of the income year
= 1226 + 7353 = 8579

b the sum of all amounts that would have been expenditure from the time the corporate become a party to the forward contract until the end of the income year
= 0

c the sum of all income in respect of the forward contract since it was acquired until the end of the previous income year
= 32982

d the sum of all expenditure in respect of the forward contract since it was acquired until the end of the previous income year
=0

The net amount of –NZD$24,403 is gross expenditure in the 1998-1999 income year.

At the final balance date – 30 June 2001

In the 30 June 2001 income year, the base price adjustment given in section EH 4 of the Act is calculated by applying the formula:

$$a – (b + c)$$

where -

a = Consideration paid or payable to the holder
= 1,000,000/0.557
= NZD $1,795,332

b = Acquisition price
= consideration provided by the holder
= NZD $1,667,416

c = Income already derived – Expenditure already incurred
= 32,982 + 7353 – 24,403
= NZD $15,932

Therefore, the base price adjustment = $1,795,332 – ($1,667,416 + $15,932) = $111,984 and since this is positive, the amount of NZD $111,984 is gross income of the New Zealand corporate for the 30 June 2001 income year.

Example C: Seller of base currency (NZD); contract rate is not equal to the market rate

A New Zealand corporate borrower enters into a long term forward foreign exchange contract to buy 1 million US dollars (USD) against delivery of New Zealand dollars (NZD) in two years time. The contract was entered into on 30 April 1999 and the corporate borrower has a balance date of 30 June. The contract rate is 0.5997 USD to 1 NZD, so settlement will require delivery of NZD $1,667,416. For the purpose of this example assume that the corporate borrower paid NZD $10,000 to enter into this forward contract. (This could be the same forward contract as in the previous example where the forward contract was sold on 30 April 1999.) The corporate chooses NZD as the base currency for this contract.

At the time the contract was entered into – 30 April 1999

The forward rate in this case is 0.5919 USD to 1 NZD, which is different from the contract rate of 0.5997 USD to 1 NZD. The expected settlement on the commitment to purchase USD 1 million at 30 April 1991 is, therefore, NZD $1,689,475. The payment made in acquiring the forward contract was NZD $10,000. Thus, the expected base currency payments in this example consist of:

- the base currency value of the payment or receipt made in consideration of entering into the forward contract = NZD $10,000;
- the base currency value of the non-base currency payment to be made under the contract valued at the forward rate = NZD $1,689,475; and
- the base currency value of the non-base currency payment to be made under the contract valued at the contract rate = NZD $1,667,416.

So, the expected NZD net amount from the forward contract is NZD $12,059 (i.e. the difference between the commitments under the forward contract measured at the

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contract rate (NZD $1,667,416) and the commitments under the forward contract measured at the forward rate (NZD $1,689,475) less the payment made to acquire the forward contract).

The payments in relation to the forward contract are summarised in the table below. The expected NZD net amount is spread using the yield to maturity method recommended in *Determination G3* and allocated to the income year on a daily basis consistent with *Determination G1A*.

	Expected Cash (NZD)	Contract Cash (NZD)	Expected Cash (NZD)	Expected Income
30-Apr-99	0	0	-10000	
30-Apr-00	0	0	0	4852
30-Apr-01	1689475	1667416	22059	7207
Total			12059	12059
YTM			49%	

At the first balance date – 30 June 1999

Expected component = (61/365 x $4852) = $811
Unexpected component = 0

The amount of $811 is gross income at the first balance date.

At the second balance date – 30 June 2000

Expected component = (61/365 x $7207) + (304/365 x $4852) = $1204 + $4041 = $5245

Unexpected component = 0

The amount of $5245 is gross income at the second balance date.

At the final balance date – 30 June 2001

In the 30 June 2001 income year, the base price adjustment given in section EH 4 of the Act is calculated by applying the formula:

$$a – (b + c)$$

where -

a = Consideration paid or payable to the holder
= 1,000,000/0.557
= NZD $1,795,332

b = Acquisition price
= consideration provided by the holder
= NZD $1,667,416 + NZD $10,000
= NZD $1,677,416

c = Income already derived – expenditure already incurred
= $811 + $5245
= NZD $6056

Therefore, the base price adjustment = $1,795,332 – ($1,677,416 + 6056) = $111,860 and since this is positive, the amount of NZD $111,860 is gross income of the New Zealand corporate for the 30 June 2001 income year.

Example D: purchaser of base currency (USD); contract rate is not equal to the market rate

Assuming that in the previous example, the corporate chooses USD as the base currency for the forward contract.

At the time the contract was entered into – 30 April 1999

Since the base currency is USD, the base currency payments expected at the commencement date is:

- the base currency value of the payment or receipt made in consideration of entering into the forward contract = NZD $10,000 x 0.6149 = USD $6,149;
- the base currency value of the non-base currency payment to be made under the contract valued at the forward rate = NZD $1,667,416 x 0.5919 = USD $986,944; and
- the base currency value of the non-base currency payment to be made under the contract valued at the contract rate = NZD $1,667,416 x 0.5997= USD $1,000,000.

The expected base currency payments (summarised in column four of the table below) are converted into NZD using the relevant forward rates. The expected NZD net amount of NZD $12,057 is then spread over the term of the forward contract using the yield to maturity method recommended in *Determination G3* and allocated to the income year on a daily basis consistent with *Determination G1A*.

	Expected Cash (USD)	Contract Cash (USD)	Expected Cash (USD)	Expected Cash (NZD)	Expected Income
30-Apr-99	0	0	-6149	-10000	
30-Apr-00	0	0	0	0	4852
30-Apr-01	986944	1000000	13056	22057	7206
Total			6907	12057	12057
YTM			46%	49%	

At the first balance date – 30 June 1999

Expected component = (61/365 x $4852) = $811
Unexpected component = 0

The amount of $811 is gross income at the first balance date.

At the second balance date – 30 June 2000

Expected component = (61/365 x $7206) + (304/365 x $4852) = $1204 + $4041 = $5245

Unexpected component = 0

The amount of $5245 is gross income at the second balance date.

At the final balance date – 30 June 2001

In the 30 June 2001 income year, the base price adjustment given in section EH 4 is calculated by applying the formula:

$$a – (b + c)$$

where -

a = Consideration paid or payable to the holder
= 1,000,000/0.557
= NZD $1,795,332

b = Acquisition price
= consideration provided by the holder
= NZD $1,667,416 + NZD $10,000
= NZD $1,677,416

c = Income already derived – expenditure already incurred
= $811 + $5245
= NZD $6056

Therefore, the base price adjustment = $1,795,332 – ($1,677,416 + 6056) = $111,860 and since this is positive, the amount of NZD $111,860 is gross income of the New Zealand corporate for the 30 June 2001 income year.

Example E: Forward contract to purchase commodity for USD at non-market rate with a corresponding forward contract in foreign exchange in market rate

For the purpose of this example assumes that the forward rates for USD/NZD are as summarised in the following table. These forward exchange rates are derived on the principle of covered interest parity (CIP). Fwd(0,t) represents the forward rates at 30 June 1998 out to period t while Fwd(1,t) and Fwd(2,t) represent the forward rates at 30 June 1999 and 30 June 2000, respectively, out to period t.

	Actual Spot	CIP: Fwd (0,t)	CIP: Fwd (1,t)	CIP: Fwd (2,t)	Expected US,I	Expected NZ,I
30-Jun-98	0.635	0.6350			0.04	0.06
30-Jun-99	0.6149	0.6230	0.6149		0.04	0.06
30-Jun-00	0.575	0.6113	0.6033	0.5750	0.04	0.06
30-Jun-01	0.557	0.5997	0.5919	0.5642	0.04	0.06

The spot and forward rates per barrel of crude oil (in USD) are summarised in the following table. For example, the market price for a barrel of crude oil was USD$19.2 per barrel on 30 June 1998 while the forward price out to 30 June 2001 was USD$21 per barrel.

	Actual Spot	Fwd (0,t)	Fwd (1,t)	Fwd (2,t)
30-Jun-98	19.2	19.2000		
30-Jun-99	19.6	20.2000	19.6000	
30-Jun-00	21.1	21.8000	22.1000	21.1000
30-Jun-01	22	21.0000	22.8000	22.1000

A New Zealand company enters into two forward contracts simultaneously on 30 June 1998. The first forward contract secures the supply of 10000 barrels of crude oil. This forward contract is to be cash settled on 30 June 2001, at USD $20 per barrel. The second forward contract was entered into for the purchase of USD $200,000 in exchange for the delivery of NZD at a contract rate of 0.5997. The second forward contract is to be settled on 30 June 2001. For the purpose of this example assume that the corporate chooses USD as the base currency for both contracts.

At the time the forward contracts were entered into – 30 June 1998

The forward contract for the supply of crude oil was entered into at a price below the market rate. (This may be because the supplier is expecting excess supplies that have not been factored into the market prices yet). The contract rate of $20 is lower than the forward rate of $21. As a result, gains are expected from the forward contract. The expected base currency payments include:

- the base currency value of the payment or receipt made in consideration of entering into the forward contract = 0;
- the base currency value of the non-base currency payment to be made under the contract valued at the forward rate = 10000 x $21 = USD $210,000; and
- the base currency value of the non-base currency payment to be made under the contract valued at the contract rate = 10000 x $20 = USD $200,000.

The expected base currency payments are converted at the forward rate of 0.5997 USD/NZD and the expected NZD net amount is spread under the accrual rules over the term of the forward contract. As the company did not pay anything to enter into the forward contract, the gains can not be spread using the yield to maturity method. Therefore, the straight-line method will be adopted to spread the expected gains.

The forward contract for the foreign exchange was entered into at the forward rate. As such, there is no expected gains or losses to be spread under the accrual rules (see Example A).

At the first and second balance date – 30 June 1999 and 30 June 2000

For the forward contract for crude oil:

Expected component = 1/3 ($10000/0.5997) = $5,558.
Unexpected component = 0

The amount of $5,558 is gross income at the first and second balance date.

At the final balance date – 30 June 2001

On the 30 June 2001 balance date, the forward contract for the supply of crude oil would have been cash settled at the contract price of USD $20 per barrel. The market price per barrel of crude oil on the delivery date is USD $22. The spot exchange rate on the delivery date is 0.557 USD/NZD.

The base price adjustment given in section EH 4 of the Act in relation to the forward contract for the supply of crude oil is calculated by applying the formula

$$a – (b + c)$$

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where -

a = Consideration paid or payable to the holder
= $220,000/0.557 = NZD$394,973

b = Acquisition price
= consideration provided by the holder
= $200,000/0.557 = NZD$359,066

c = Income already derived – expenditure already incurred
= $5558 + $5558
= NZD $11,116

Therefore, the base price adjustment = $394,973 – ($359,066 + $11,116) = $24,791 and since this is positive, the amount is gross income of the New Zealand company for the 30 June 2001 income year.

The forward contract for the foreign exchange is also settled on 30 June 2001. In the 30 June 2001 income year, the base price adjustment given in section EH 4 of the Act is calculated by applying the formula:

$$a – (b + c)$$

where -

a = Consideration paid or payable to the holder
= $200,000/0.557 = NZD$359,066

b = Acquisition price
= consideration provided by the holder
= $200,000/0.5997 = NZD$333,500

c = Income already derived – expenditure already incurred
= 0

Therefore, the base price adjustment = $359,066 – ($333,500 + $0) = $25,566 and since this is positive, the amount is gross income of the New Zealand company for the 30 June 2001 income year.