

**DETERMINATION** > FINANCIAL ARRANGEMENTS > GENERAL

# Requirements as to Precision

Issued: 13 May 1987

G2

This determination may be cited as "Determination G2: Requirements as to Precision"

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

This Determination sets out the level of precision acceptable in calculations made under other determinations made by the Commissioner pursuant to section [64E\(1\)](#) of the Income Tax Act 1976.

## 2 Reference

This Determination is made pursuant to section 64E(1) of the Income Tax Act 1976. It defines the precision acceptable in calculations made under other determinations made by the Commissioner pursuant to section 64E(1) of the Income Tax Act 1976.

## 3 Scope

Unless specifically excluded therein, this Determination applies to all other determinations made pursuant to paragraphs (a), (b), (c), (d), (e) and (f) of section 64E(1) of the Income Tax Act 1976.

## 4 Principle

The test for sufficient precision is whether an increase in precision will give a significantly different result in respect of income derived or expenditure incurred in any period to which an amount that is deemed to be income or expenditure is to be allocated.

## 5 Interpretation

In this determination, unless the context otherwise requires, expressions used have the same meanings as in section 64B to 64M of the Income Tax Act 1976.

## 6 Method

A calculation is sufficiently precise for the purposes of the application of any determination made under section 64E(1) of the Income Tax Act 1976 if the income derived or expenditure incurred from a financial arrangement in any period to which an amount that is deemed to

be income or expenditure is to be allocated would not be changed by more than \$5 by the use of greater precision in all intermediate calculations.

## 7 Example

(1) The calculation of the income on the yield to maturity basis for this example is discussed in paragraph 7 of "Determination G3: The Yield to Maturity Method".

A financial arrangement, with a face value of \$1,000,000 is purchased for \$1,012,500 on 12 March 1987. It bears interest at 7 percent per annum payable semi-annually and is repayable at par on 15 January 1988.

The coupon payments are made on 15 May and 15 November each year.

Using the yield to maturity method and 1 decimal place gives the accrued income schedule in Table 1 below.

Table 1: YIELD TO MATURITY 16.2%

CASHFLOWS:		ACCRUED INCOME
	\$	\$
12 March 1987	(1,012,500)	
15 May 1987	70,000	28,760.55
15 Nov 1987	70,000	78,672.10
15 May 1988	70,000	79,374.54
15 Nov 1988	1,070,000	80,133.88
	<u>267,500</u>	<u>266,941.07</u>

Using a yield to maturity of 16.23 percent, on which Table 2 is based, allows the more precise calculation of accrued income. The difference column in Table 2 displays the difference between the calculated accrued income in Table 1 and the calculated accrued income in Table 2.

Since some of the net accrued amounts differ by more than \$5 more precision is required in the intermediate calculations—

**Table 2: YIELD TO MATURITY 16.23%**

CASHFLOWS:	ACCRUED		
		INCOME	DIFFERENCE
	\$	\$	\$
12 March 1987	(1,012,500)		
15 May 1987	70,000	28,813.81	53.26
15 Nov 1987	70,000	78,822.12	150.02
15 May 1988	70,000	79,538.03	163.49
15 Nov 1988	<u>1,070,000</u>	<u>80,312.04</u>	178.16
	<u>267,500</u>	<u>267,486.00</u>	

If any one of the differences is greater than \$5 it is necessary to repeat the calculation. As this is the case the calculation must be repeated at greater precision.

**Table 3: YIELD TO MATURITY 16.231%**

CASHFLOWS:	ACCRUED		
		INCOME	DIFFERENCE
	\$	\$	\$
12 March 1987	(1,012,500)		
15 May 1987	70,000	28,815.58	(1.77)
15 Nov 1987	70,000	78,827.12	(5.00)
15 May 1988	70,000	79,543.48	(5.45)
15 Nov 1988	<u>1,070,000</u>	<u>80,317.98</u>	(5.94)
	<u>267,500</u>	<u>267,504.16</u>	

Table 4 demonstrates the results using a yield to maturity of 16.2308%. The differences are all less than \$5 compared with Table 3 and would be acceptable for income tax reporting purposes.

**Table 4: YIELD TO MATURITY 16.2308%**

CASHFLOWS:	ACCRUED		
		INCOME	DIFFERENCE
	\$	\$	\$
12 March 1987	(1,012,500)		
15 May 1987	70,000	28,815.23	0.35
15 Nov 1987	70,000	78,826.12	1.00
15 May 1988	70,000	79,542.39	1.09
15 Nov 1988	<u>1,070,000</u>	<u>80,316.79</u>	1.19
	<u>267,500</u>	<u>267,500.53</u>	

(2) The calculation of the amounts used in this example are derived from paragraph 7 of "Determination G1: Apportionment of Income and Expenditure on a Daily Basis".

On 29 January 1987 a company issues 180-day bill for an amount of \$3,000,000, at a discount of \$294,000. The company's balance date is 31 March and it elects under "Determination G1: Apportionment of Income And Expenditure on a Daily Basis" to use a 365 day year.

There are 61 days from 29 January to 31 March 1987.

As 31 March falls between the issue date and the redemption date it is necessary to apportion the \$294,000 expenditure incurred between 2 income years. To do so it is necessary to calculate 61/180 as a proportion.

Initial Calculation:  $61/180 = 0.3$

$$\text{Amount allocated to income year 1} = .3 \times 294,000 = 88,220$$

$$\text{Amount allocated to income year 2} = .7 \times 294,000 = 205,800$$

The company is required to do a second calculation using greater precision.

Second Calculation:  $61/180 = 0.34$

$$\text{Amount allocated to income year 1} = .34 \times 294,000 = 99,960$$

$$\text{Amount allocated to income year 2} = .66 \times 294,000 = 194,040$$

As the change in expense allocated to each year is greater than \$5 it is necessary to increase the precision so the company tries:

Third Calculation:  $61/180 = 0.339$

$$\text{Amount allocated to income year 1} = .339 \times 294,000 = 99,666$$

$$\text{Amount allocated to income year 2} = .661 \times 294,000 = 194,334$$

As the change in expense allocated to each income year is still greater than \$5 it is still necessary to increase precision:

Fourth Calculation:  $61/180 = 0.3389$

$$\text{Amount allocated to income year 1} = .3389 \times 294,000 = 99,636.60$$

$$\text{Amount allocated to income year 2} = .6611 \times 294,000 = 194,363.40$$

The comparison must be repeated again as the difference has not yet reduced to \$5 or less:

Fifth Calculation:  $61/180 = 0.33889$

$$\text{Amount allocated to income year 1} = .33889 \times 294,000 = 99,633.66$$

$$\text{Amount allocated to income year 2} = .66111 \times 294,000 = 194,366.34$$

Since the difference is less than \$5 it is acceptable to use the ratio .3389 to allocate expenditure to the income year ending on 31 March 1987.

## About this document

General determinations set out the Commissioner's view on how the financial arrangements rules apply to a specific type of financial arrangement. All general determinations are binding on the Commissioner and some are also binding on taxpayers.