

# FULL ACCRUAL ACCOUNTING FOR INVESTMENT INCOME UNDER NEW INTERNATIONAL STATISTICAL STANDARDS

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## **History**

- 1 Since the mid 1980s, the Balance of Payments Division of the International Monetary Fund (IMF) has been proposing full accrual of interest income on securities at prevailing markets rates as the only method of generating consistent, integrated economic accounts of analytic usefulness.
- 2 In Australia, an Economic Accounts Division review group, set up to review developing proposals for new international statistical standards and to provide coordinated ABS comments, considered this issue on several occasions. In November 1990, ABS comments were provided to the IMF supporting the adoption of full accrual accounting for income. ABS comments on a later draft of the Fifth Edition of the IMF's Balance of Payments Manual (BPM5), incorporating comments from National Accounts Branch and the then Public and Private Finance Branch, were supplied to the IMF in January 1992 and reaffirmed ABS support for full accrual accounting of interest income "... applying prevailing interest rates to current market values in order to calculate interest income." ABS argued that adopting the market price principle for all other transactions, particularly for capital stocks and flows, but not for income, made no sense and could not be reconciled.

## **What the standards now say**

### BPM5

- 3 The IMF's BPM5 enunciates the general principles that require:
  - the application of market prices to all transactions (BPM5 para 91); and
  - the imputation of income transactions to occur on a continuous basis (BPM5 para. 121).
- 4 A logical conclusion from the application of the general principles is that current market interest rates must be applied to all securities (where market rates do apply) on a continuous basis to calculate the market price income that is accruing on a continuous basis. This is what the IMF has done in 1995 in publishing its *Balance of Payments*

*Compilation Guide* (Guide). Paragraph 620 of the *Guide* reduces the general principles to calculations advice as follows:

"For securities (portfolio investment), accrued interest for a particular period should be calculated by applying the prevailing interest rate to the average market value of the security. The result may differ from coupon interest payments made during the period."

- 5 BPM5 also recommends specifically that, in regard to zero coupon and other deep discounted bonds:

"If these securities are traded—prior to their maturity—in the secondary market, prevailing rates that reflect the difference between the new owners cost and the value at maturity should be used for the subsequent recording of interest on these securities."

This reference is quite specific in relation to the treatment of these securities once traded, and reflects a departure from an equally explicit and different treatment offered in BPM4 for these securities. This recommendation has been interpreted as one dealing with an exhortation to make the market price adjustment at least when these instruments are traded. BPM5 notes elsewhere (para. 121) the analytic importance of getting accrual income adjusted from historical rates under these circumstances. BPM5 makes no other explicit reference on how to record interest income.

The Guide's recommendation, in line with BPM5's general principles for income recognition, is consistent with an interpretation that the specific BPM5 recommendation (on zeros and deep discount bonds) is an exhortation for at least a minimum implementation of the general recommendations, limited by likely data availability. Otherwise, the reader would be left wondering why a specific recommendation applies to deep discounts but not to equally high (but perhaps less common) premiums?

#### 1993 SNA

- 7 1993 SNA incorporates the same general principles of current market pricing of transactions and continuous income imputation. It makes no explicit statement about how to account for interest income in the context of changing market rates of interest. It does provide explicit recommendations, consistent with BPM5, on the time of recording interest income (accruing interest coupons and discounts over time), including the continuous accrual of income, but does not comment on the level of interest income to be recognised. Interestingly, it does not repeat the BPM5 recommendation to apply prevailing market rates to deep discount and zero coupon bonds when traded.

### Comparison of the standards

- 8 Since both standards adopt market pricing of transactions, both apply continuous imputation of interest transactions, and no difference is acknowledged between the standards in this area. It can be reasonably assumed that prevailing market interest rates are meant to be used under both standards. The difference in the stated treatment of traded zeros and deep discount bonds recedes as one of emphasis of the important rather than a difference in principle.

### **Implications of alternatives to prevailing market interest rates**

- 9 A paper published by the IMF<sup>1</sup> works through the principle of recognising interest income on securities by applying prevailing interest rates to the average market priced stock of securities. The paper makes the point that it is only the application of this principle that can generate sensible results.
- 10 However, it has been argued elsewhere that the “no interest rate change” methodology used in examples in 1993 SNA ought to be applied as a principle of income recognition regardless of whether rates change or not, and regardless of any recommendation in SNA 93 that this be done. This view rests on historical interest rates as being somehow relevant to the future accrual of income.
- 11 A realistic example of the application of the full accrual principle, and of alternatives to it, can highlight this conclusion and the problems that emerge in the application of historical rates. Consider a five-year Australian government bond issued to non-resident X, with a face value of A\$100m, carrying a 15 percent (A\$15m) annual coupon payable on the 31st of December each year. The bond matures on December 31st, 2000. Current interest rates at the end of 1995 are 8 percent, and on January 1st, 1996 the market price of this bond at issue is A\$127.948m. If interest rates do not change from now on, and the coupon payment stream is adjusted (using the “no interest rate change” methodology of the 1993 SNA) for the premium at issue, then the following entries are required in the international investment position (IIP) statement for Australia (and in the reconciliation of stocks and flows in the national accounts).

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<sup>1</sup> Peter Harper, *Recording Interest Income in the Balance of Payments*, International Monetary Fund, Statistics Department, 1995.

(In A\$ million)

Opening Stocks	Transactions: Increase in liabilities	Transactions : Decrease in liabilities	Price change	Other volume change	Closing stocks	Reconciliation	Income accrued
(1)	(2) = drawing + income	(3)	(4)	(5)	(6)	(7) = 1 + 2 - 3 + 4 + 5 - 6	(8)
<b><u>1996</u></b>							
Nil	127.948 + 10.236	15.000	Nil	Nil	123.181	Nil	10.236
<b><u>1997</u></b>							
123.184	9.856	15.000	Nil	Nil	118.040	Nil	9.856
<b><u>1998</u></b>							
118.040	9.443	15.000	Nil	Nil	112.483	Nil	9.443
<b><u>1999</u></b>							
112.483	8.998	15.000	Nil	Nil	106.481	Nil	8.998
<b><u>2000</u></b>							
106.481	8.519	115.000	Nil	Nil	Nil	Nil	8.519

12 In this simple example, the market price of the outstanding stock values is calculated as the discounted present, value of all expected future cash flows under the contract (using 8 percent as the discount rate). Increases in liabilities to non-residents arise from issuing the bond, and from accumulating accrued interest through each year. Decreased in liabilities arise from cash coupon payments and bond redemption. Income is accrued at 8 percent on the opening stock of debt.

13 Suppose now that non-resident X also buys, in the secondary market and from a resident, for the same price and on the same day (1/1/96) a ten-year Commonwealth government bond issued at a face value of \$100m five years ago, carrying a 15 percent (\$15m) annual coupon payable on the 31st of December each year. The bond matures on 31 December 2000. Current interest rates in 1995 are still 8 percent, and on January 1,

1996 the market price for X's purchase of this bond is A\$127.94m. Once again, if interest rates do not change from now on, and the prevailing market rate principle is applied, then the IIP entries are identical to those in the above table. In other words, there is no rational difference from the investor's perspective (or anybody else's) between a ten-year bond with five years to go, and a newly issued five-year bond if the cash flows paid under the bonds are the same. It makes little sense to say that identical payment streams on identically valued assets in some way represent quite different income streams.

- 14 If historical rates, i.e., coupon rates, were to be used to measure income accruing on the ten-year bond, then the IIP would look as follows.

(In A\$ million)

Opening Stocks	Transactions: Increase in liabilities	Transactions : Decrease in liabilities	Price change	Other volume change	Closing stocks	Reconciliation	Income accrued
(1)	(2) = drawing + income	(3)	(4)	(5)	(6)	(7) = 1 + 2 - 3 + 4 + 5 - 6	(8)
<b><u>1996</u></b>							
Nil	127.948 + 15.000	15.000	Nil	Nil	123.184	- 4.764	15.000
<b><u>1997</u></b>							
123.184	15.000	15.000	Nil	Nil	118.040	-5.144	15.000
<b><u>1998</u></b>							
118.040	15.000	15.000	Nil	Nil	112.483	-5.557	15.000
<b><u>1999</u></b>							
112.483	15.000	15.000	Nil	Nil	106.481	-6.002	15.000
<b><u>2000</u></b>							
106.481	115.000	115.000	Nil	Nil	Nil	-6.481	15.000

- 15 Quite clearly, the market price of the bond does not change because of a changed statistical treatment of income. Also quite clearly, if the accrued income is to be measured as the historical coupon rate, then the continuous accrual principle of the 1993 SNA and

BPM5 standards must have \$15m accruing to the level of investment through the year until the last day of the year when it is paid. There is no price change—in the absence of exchange rate effects, interest rates, the only determinate of market price change in bonds other than accrued income, have not changed over this period. And there is no *other volume* change—the bond is not affected by any of the abnormal effects such as write-off, reclassification, etc. defined by the SNA93 system. In other words, within the SNA93/BPM5 framework, there is no capability for accounting for income in this way—it can only be recorded if net reconciliation errors are accepted as shown in the above table.

- 16 Quite apart from the statistical quirk that has to be engineered to accommodate historic interest rate accounting, there is the analytic meaningless involved in doing so. The market place sees the new five-year issue and the five-year residual on the ten-year bond as identical—they perform identically, and can even be offset as equivalents in a variety of regulatory arrangements. For a statistical treatment to generate income flows up to 75 percent higher on one of the instruments, and a rising yield (flat income on a railing stock) when the other instrument displays constant yield, is a meaningless statistical error.

### **Departing from the standards**

- 17 If historic interest rates rather than prevailing rates are to be adopted by the ABS, contrary to the international statistical standards, ABS will need to quickly develop a methodology which deals with the inconsistency between the stock/flow reconciliation structure proposed in the standards for consistent accounting at market prices. An ABS accrual adjustment will need to be introduced.
- 18 In commercial accounting, such an adjustment is adopted by many practitioners when financial stock is not traded, and particularly so by liability issuers. The adjustment is generated first when rates move, and the accounting takes the entire unrealized gain/loss straight to profit and loss. Then, when interest rates don't move again but as time elapses, the gain/loss is unwound as an unrealized gain or loss through the P & L over the passage of time. This practice is not consistent with the 1993 SNA/BPM5 framework, nor consistent with economic theory. Very clearly in our example, if prices don't change, the continuous "fall" in value of the bond over time that is accounted for as P & L every time a coupon is paid is the offset to an overstatement of income accruing. But for commercial accounting practice, the separation of income and other changes going to P & L is largely irrelevant.
- 19 Even among practitioners that do adopt a P & L entry to account for the reconciliation error, risk analysis, debt management and other economic analysis undertaken by that organization (particularly if it is a large financial institution) will require meaningful full accrual accounting as well. However, in an organization such as NSW Treasury Corporation, perhaps only two people need the analytic perspective on their portfolio. However, for the macro-economic accounts, the analytic perspective is the only one that makes sense.

### **Practical Implications**

- 20 *Collecting* data on a full accrual basis at prevailing rates may not be easy because data providers often formally account with continuous P& L adjustment for the asymmetry generated by historic rate accounting for income. Providers in the Survey of International Investment have been mixed in their responses on this issue. However, *compiling* data on a full accrual basis is easy—the collection of the stock data at market prices makes income estimation simple.
- 21 *Collecting* data on the partial accrual basis (accruing historic rates over time) as proposed elsewhere is impossible. Asset holders will definitely accrue at least the prevailing rate applying when they acquired the asset (much like the minimum effort proposed by BPM5 for traded zeros and deep discounts) and they won't be able to report the historic antecedents of the instrument to facilitate historic rate income estimation. Some providers will be using full accrual at prevailing rates and will also be unable to report historic rates. *Compiling* data on the partial accrual basis is also impossible unless full line of stock reporting is adopted for all assets and liabilities. A database of historic issue prices for all domestic and international debt securities could then be used to generate the partial accrual estimates income and the partially offsetting reconciliation errors that method entails. However, moving to this basis of collection would be a huge undertaking for the ABS and ahead of the ability/preparedness of our data providers to comply.

### **Significance**

- 22 The implications of the basis of income accrual are large. A significant volume of long-term debt still outstanding was issued when Australian interest rates were 15 percent and higher, and until that debt is repaid the income estimated on it may be recorded at historic rates (i.e., 15 percent of the issue price) or at something very much less under full accrual. Whenever interest rates move significantly, the basis of income recognition will be a significant issue.

### **Conclusion**

- 23 While not totally explicit in their recommendations for the recognition and measurement of interest income, the reconciliation structure for stocks and flows provided in the new international standards, and their embracing of both market prices and continuous income accrual principles leave no consistent choice other than for full accrual of interest income at prevailing interest rates. Any other accounting framework generates reconciliation errors.
- 24 A due for payment basis of recording (as currently applies) has some limited meaning and could be applied with reconciliation errors, and would be reasonably easy to implement for instruments that are issued at par, and traded at par. It cannot be reliably

applied when traded prices are at other than par because providers cannot report the historic discount.

- 25 Partial accrual on an historic rate basis is not consistent with international standards, cannot be consistently applied within the standard reconciliation format, has no economic meaning, cannot be readily approximated and cannot be collected without huge cost to ABS and providers.

**Recommendation**

- 26 It is recommended that the ABS maintain its long-standing support for full accrual of interest income at prevailing market rates, and adopt it in statistical practice as part of SNA93/BPM5 implementation.