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**THE ACCRUAL OF INTEREST ON DEBT SECURITIES**

The views expressed in this Paper are those of the authors and do not necessarily represent those of the Bank of England and the European Central Bank.

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## 1. Current standards

When new international statistical standards were published in 1993, one of the major changes to the recommended presentation of the System of National Accounts and the Balance of Payments was the adoption of accruals recording for income and expenditure. However, as countries began to implement these standards, questions were raised about their exact interpretation in respect of interest flows associated with tradable debt.

Paragraph 7.93 in the *1993 SNA* defines interest as "... the amount that the debtor becomes liable to pay to the creditor over a given period of time without reducing the amount of principal outstanding." This guidance is amplified by both the *SNA* and the *BPM* for the case of fixed coupon debt securities but the two texts are widely viewed as inconsistent and have given rise to differences of interpretation amongst compilers.

*SNA* paragraph 7.100 says of bonds and debentures, that the amounts of the fixed or variable money incomes or coupon payments due for payment within the accounting period are treated as interest payable and receivable. It goes on to explain that interest consisting of the difference between the face value and the issue price must be distributed over accounting periods. There is no prescribed method for this attribution.

Two main interpretations of this *SNA* guidance have been proposed. Under the first, interest on either a fixed or a zero coupon bond is determined by the contractual arrangements and market conditions at the time of issue. Under this interpretation, interest accrues at a constant rate throughout the life of the bond. For bonds issued at par, ie where the issue price is equal to the price at which the bond will be redeemed at maturity, the interest accrued over the life of the bond is equal to the coupon payments receivable/payable. For bonds issued at a discount, the accruing interest also includes the uplift in the value of the bond as it approaches its value at maturity. This interpretation is commonly referred to as the "debtor approach" because it views

the accrual from the perspective of the issuer of the debt. It may also be thought of as a historical cost measure, because interest always accrues at the yield prevailing when the bond was issued.

Under the second approach, interest always accrues at the current yield to maturity. Whenever market conditions change, the price of the bond changes – a holding gain or loss (para 12.111) – and a new market yield is established. Under this approach, the accrual of interest is equivalent to applying the market interest rate for such bonds to the prevailing market value. As a consequence, this approach draws a clear distinction between interest and the contractually agreed cash flows – there is no requirement for interest accruals over the life of the bond to equal the cash flows associated with payments of coupon and/or the uplift in value associated with any discount present when the bond was issued. This interpretation is commonly referred to as the “creditor approach” although its alternative title, “market approach”, may be more descriptive as the method is fully consistent with the market value principle for the valuation of assets and liabilities on the balance sheet.

Within the BPM, paragraphs 121 and 283 also specify that the difference between the issue price of zero coupon and other deep discounted bonds and the value at maturity should be treated as interest over the life of the bond. However, if these securities are traded - prior to their maturity - in the secondary market, prevailing rates that reflect the difference between the new owner's cost and the value at maturity should be used for the subsequent recording of interest on these securities.

This guidance has led to a third approach in the literature. The “acquisition approach” is similar in concept to the debtor approach but views the generation of interest from the perspective of the holder of a bond. Interest over the holding period of the bond is based on the (market) yield at the time the bond was acquired.<sup>1</sup> The acquisition approach to interest measurement is a standard technique for interest revenue recognition under historical cost and current mixed value commercial accounting standards, but is not normally referred to as a candidate for use within the SNA framework.

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<sup>1</sup> In this regard, the creditor and the acquisition approach deliver the same results at the moment the security is acquired. However, according to the acquisition approach, the applicable yield does no longer vary unless an additional transmission takes place.

The BPM is more commonly considered to favour the creditor approach. Explicit support for this view can be found in the IMF BoP Text Book (paragraphs 401 and following) and in the BPM Compilation Guide (paragraph 620).

## **2. Concerns/shortcomings of the current treatment**

Choosing between these alternatives has led to the emergence of strongly held positions. For the most part, these have focused on the conceptual consistency of the debtor and creditor approaches with the SNA framework, but important concerns also surround practical aspects of data compilation, and the analytical impact of any change in treatment on data users.

Documenting the competing arguments over the conceptual consistency of these approaches with the SNA framework goes beyond the scope of this short review. However, to understand why the choice matters, it is necessary to be aware of the principal claims made by supporters of the two competing approaches.

Critics of the debtor approach argue that use of a historical cost yield to derive interest flows gives rise to inconsistencies with the market value recording of asset and liability positions under the SNA framework. Specifically, it is argued that after a change in market interest rates, the debtor approach is obliged to use the SNA revaluation account as a balancing account to absorb changes in value which are not price changes but which the debtor method does not acknowledge as a transaction. In addition, critics argue that an agent purchasing a bond in the secondary market would not recognise the flows recorded as interest under the debtor approach since the market return at the time of acquisition would normally be different (and maybe are not even known by the new purchaser).

Critics of the creditor approach commonly argue that it confuses holding gains/losses with income and ignores the contractual arrangements (fixed coupon payments) set at the time of issue. It is argued that the accruals principle is intended to change the time profile of flows but not their magnitude.

At the heart of these arguments lies a question about the interpretation of contractual coupon payments. Supporters of the debtor approach interpret these fixed payments as implying that accruing interest is also fixed – bonds are after all commonly referred to as fixed interest securities. By contrast, supporters of the creditor approach argue that interest accruals and coupon

payments are separate transactions, given that interest accrues continuously. Any coupon payment is therefore a repayment of principal.

The arguments for and against these two alternative treatments have also been linked to concerns about data collection. In principle, interest income can be determined following three different compilation methods<sup>2</sup>: direct collection from reporters; calculated by the compiler security-by-security (s-b-s); or estimated by the compiler using an aggregated approach, for example by applying benchmark yields to aggregate stocks by categories of securities.

- (i) Direct collection methods are typically based on aggregated data from business accounting statements. In these cases, the debtor approach is easier to implement for securities issued (ie liabilities) given that this is the criterion followed by most international standards for the issuer side. Nevertheless, the same business accounting standards follow rules that, applied to the holders of securities, deliver results in line with the acquisition approach (or, in some cases, to the creditor approach). This will give rise to reporting asymmetries between assets (credits) and liabilities (debits).
- (ii) For systems based on s-b-s information, neither recording convention should be regarded as superior from a practical viewpoint. In principle, price/interest rate information, at inception or from the secondary market, could be available. However, in practice, limitations may exist for either method: s-b-s systems are unlikely to hold full information on the prices at which securities were first issued so that estimates of interest under the debtor approach may be based solely on coupons for such securities; while a practical difficulty for the creditor approach could be the need to maintain a timely and frequent access to market yields on individual securities.
- (iii) Finally, for compilation methods based on aggregated stocks, estimates using the creditor approach seem easier to carry out. In principle the requirements for the creditor approach would be a sufficiently detailed split of stocks by residual maturity, currency, issuer sector, country of the issuer, etc. to which the observed benchmark market yields would be applied at any moment in time. Conversely, the applicability of the debtor approach to aggregated systems would be hardly feasible, due to the unlikely availability (or at least at any reasonable cost) of the two components necessary for these calculations, ie (i) benchmark yields based on nominal interest rates at inception (ie including both explicit coupon and premium/discount); and (ii) stocks valued at nominal prices, provided the general guideline for the compilation of stock statistics is the use of market values.

The importance of the decision on the choice of approach may in the end be judged by the materiality of its impact on resulting data series. Some empirical testing of the alternative

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<sup>2</sup> See more details in chapter 5 of the final report of the ECB Task Force on Portfolio Investment Income.

treatments was undertaken by the ECB Task Force on Portfolio Investment Income, leading to clear indications that the quantitative differences could be significant, in terms of potential policy implications, under certain market conditions – for example following a prolonged period of increasing or decreasing market rates.

Accordingly, establishing a conceptually coherent framework for interest measurement, and providing users with the best available estimates of this treatment, must be the ultimate objective of the current debate.

### **3. Points for discussion**

Following the UNSC's March 2003 ruling that the SNA 93 TEXT supports the "debtor" treatment, the Advisory Expert Group (AEG) of the ISWGNA, meeting in February 2004, ruled out further discussion of this topic within the SNA revision process. This places BOPTTEG in a difficult position. The BPM text does not support the debtor approach and many BoP compilers, particularly within Europe, have interpreted the BPM guidance as supporting the creditor treatment.

BOPTTEG must decide whether to recommend a change to the current BPM treatment to bring it into line with the AEG decision, or whether to defend the existing BPM treatment and to seek to reopen the debate among National Accounts compilers.

The authors of this paper favour the second of these alternatives. The creditor or market approach is considered to provide both an analytically coherent and a practical approach to interest measurement. By contrast, the authors consider the debtor approach to be incompatible with the market value framework of the SNA/BPM.

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