

Loan Valuation Issues

May 31, 2004

Introduction

At the request of the Task Force on the Coordination of Methodological Issues, a working group was organized to consider the issue of loan valuation. The terms of reference included an examination of the consistency of the international statistics manuals—both in the underlying principles and the use of terminology—in the treatment of loans. A further objective was to develop an STA position on how nonperforming loans should be treated in the macroeconomic accounts, as a contribution to the Nonperforming Loan (NPL) Electronic Discussion Group. (EDG)¹ This report addresses those issues, but does not analyze the full effects of the changes in international accounting standards currently under discussion, as these are still evolving, and statistical standards are developed from broad economic principles, rather than the detail of accounting practices.

Section 1. Terminology.

Comparison of the Statistics Manuals.

The statistics manuals generally establish that they follow the principles of market valuation, but then there is often some ambiguity² about whether nominal valuation is preferred,³ or whether it is just the best data that can be obtained on a consistent basis.

The standard **loan valuation principle** used in the manuals is that loans should be recorded at the total amount outstanding, or the amount required to pay off the loan in full.⁴

This principle is followed by the *Monetary and Financial Statistics Manual*⁵ (MFSM), *Balance of Payments Manual*⁶ (BPM5), *External Debt Statistics: Guide for Compilers and*

¹ <http://www.imf.org/external/np/sta/npl/eng/discuss/index.htm>

² Recent discussions with the ECB have suggested that they consider that the BPM5 recommends fair valuation for loans.

³ BPM5, para 471 says this is “...an acceptable proxy for market value.”

⁴ Excluding early repayment penalties if any.

⁵ Paras 205-206. *Draft MFS Compilation Guide* Para 121.

⁶ Para. 471.

*Users*⁷ (the *ED Guide*), *System of National Accounts 1993*⁸ (1993 *SNA*), *Government Financial Statistics Manual 2001*⁹ (*GFSM 2001*), and the *European System of National and Regional Accounts*¹⁰ (*ESA 95*). On balance, the most common phrase used to describe the above principle is *nominal value*, but there is some variation in the use of this term. In summary:

Manual	Term Used
The <i>ED Guide</i>	Nominal value
<i>GFSM 2001</i>	Nominal value
<i>MFSM</i>	Book value
<i>1993 SNA</i>	Principal outstanding
<i>BPM5</i>	Nominal value
<i>ESA 95</i>	Principal (amount)

The differences between the manuals arise more from variations in the use of terminology rather than variations in underlying principles. Whenever terms such as *nominal*, *accrued interest*, *principal*, and the like are used, clarification is required as there are differences in their usage across the manuals.

The *ED Guide* uses the term *nominal value* and defines this¹¹ as “...the amount that at any moment in time the debtor owes the creditor ... (it) reflects the value of the (loan) at creation, and any subsequent economic flows, such as transactions (for example, repayments of principal), valuation changes¹² ... and other changes.” This approach is backward-looking referring to the history of the loan. It also uses a forward-looking approach.¹³ “...nominal value ... can be calculated by discounting future interest and principal payments at the existing contractual interest rate(s)...” Both approaches are conceptually identical.¹⁴

⁷ Para. 2.35

⁸ Para. 14.51

⁹ Para. 7.111

¹⁰ Para. 7.51

¹¹ Appendix III, page 262.

¹² The definition covers the general case of debt instruments. For non-marketed loans, valuation changes would arise only in the case of exchange rate changes affecting foreign currency loans.

¹³ Appendix III, page 262 and para. 2.32

¹⁴ In fact it is common banking practice to prorate accrued interest between payment periods rather than estimate on a compounding basis. Hence, in practice, there will be some variation between the two calculation

(continued)

This provides a useful yardstick against which to compare the other definitions. The *nominal value*¹⁵ includes all *interest accrued but not yet due for payment*, an item which causes some of the variation in the definitions used in the international statistics manuals. A second point of variation is in the use of the term *principal*. The *ED Guide* says:¹⁶ “...interest can, and usually does, accrue on the principal amount, increasing its value.” The essential point is that accrued interest becomes included in the term *principal*, and it is only by convention the subsequent periodic payments of accrued interest are called *interest payments*.¹⁷

The ***GFSM 2001*** also adopts the above *ED Guide* definition of *nominal value*¹⁸ and also the idea that *accrued but unpaid interest*¹⁹ should be included in the principal of the underlying asset.²⁰ It also follows the convention that reductions of interest incurred but not paid are “commonly referred to” as interest payments.

Both the *GFSM 2001* and the *ED Guide* recognize that interest accruing on loans may follow national practices and be classified under *accounts payable*. This, however, is an exception based on practicality, and the accrued interest should be included in the nominal value of the loan, if possible.

While these two manuals are very specific about the definition of the term *principal*, it used in a variety of ways in the other manuals, which can cause confusion. Thus, there is a recent trend to avoid using the term.

The ***MFSM*** defines the value of an outstanding loan²¹ as *the outstanding principal amount plus any accrued interest* and describes this as the *book value*. This is identical to the term

methods, and they will only be exactly equal on days on which payments fall due, when the accrued interest equals zero.

¹⁵ Nominal value can be understood to include interest and principal arrears in the underlying instrument if arrears are not classified as a separate instrument. In the *ED Guide* a new instrument is created when arrears arise. (para. 2.29)

¹⁶ Appendix III page 265.

¹⁷ Appendix III page 259 and para. 2.5

¹⁸ Para. 3.76, footnote.

¹⁹ This refers to all unpaid interest, whether in arrears or accrued but not due. (para. 3.49)

²⁰ Paras 6.40-41

²¹ Para. 205

²² Para. 238 points out that this will include any interest in arrears.

nominal value as used above, but incorporates a different definition of *principal*. The *Compilation Guide for Monetary and Financial Statistics*, which is currently under development, defines *book value* differently, dropping the use of *principal* in the definition and referring to the *nominal amounts of outstanding loans plus accrued interest*, where *accrued interest* specifically refers to interest earned but not yet due for payment. This use of terminology for *nominal value* is again at variance with the usage in the *ED Guide* and the *GFSM 2001*, but they are all using the same measure.

The **1993 SNA** contains a rather mixed definition. It says²³ that “...the (loan) values to be recorded in the balance sheets ... are the amounts of principal that the debtors are contractually required to pay the creditors when the loans mature.” This definition seems to be derived from the more general definition of a financial claim²⁴ and is true only as long as the term *principal* includes all interest owed on the loan and if loan repayments consist of interest only. Otherwise, the amount of principal is reduced with each payment, and with a fully amortized loan the residual is zero.

The **BPM5** uses identical wording to the *1993 SNA*, so it has the same weaknesses. It corrects this deficiency in the *Annotated Outline for the Revision of BPM5 (Annotated Outline)* wherein it says:²⁶ “...the current (loan) valuation principle is nominal value (including accrued interest)...” the latter parenthetical term clears up possible uncertainty about whether accrued interest is included.

The **ESA 95** defines²⁷ the loan values to be recorded as “...the amounts of principal that the debtors are contractually obliged to repay the creditors, even in cases where the loan was traded at a discount or a premium.” This definition is correct as long as the term *principal* follows the definition in the *ED Guide*.

In **summary**, each manual seems to be striving for the same idea, but expresses it using a variety of different terminology.

²³ Paras 13.72 and 14.51. The latter equates this to nominal value.

²⁴ Para. 10.4

²⁶ Para. 6.16

²⁷ Para. 7.51

There are a number of **other issues and errors**. The *1993 SNA*²⁸ and *BPM5*²⁹ use the term *face value*, in reference to bonds—but less commonly in reference to loans—as if it is synonymous with *nominal value*. These two terms are sometimes equal but not always. In the case of deep-discount and zero-coupon bonds, the *face value* includes interest costs that have not yet accrued, which is counter to the accrual principle, and would differ from the *nominal value* of such instruments. The *Annotated Outline* has corrected this error and no longer uses the term *face value*.

The term *accrued interest* is not defined consistently throughout the manuals. Those that use the term—including the *Draft Compilation Guide on Financial Soundness Indicators*³⁰ (*FSI Guide*)—include both interest arrears and interest accrued but not due, with the exception of the *MFSM* which includes only the latter component.

The term interest is not always defined in a manner consistent with the extended definition of *principal*. The *ED Guide* says³¹ that “For the use of *principal*, interest can, and usually does, accrue on the principal amount, resulting in an interest cost for the debtor...” This is true if interest accrues on a compounding basis, where interest accrues on previously accrued interest, but as noted in footnote 11, this does not always occur in practice. The *1993 SNA*³² says “...interest may be defined as ... the amount that the debtor becomes liable to pay the creditor over a given period of time without reducing the amount of principal outstanding...” This is inconsistent with the extended definition of *principal* that it implies earlier in the same paragraph, as if accrued interest was part of *principal* then the payment of it would reduce such *principal*.

Section 2. Valuation Principles.

Alternative Approaches to Loan Valuation

This section focuses on loan valuation in general, rather than just the treatment of nonperforming loans, and addresses the issues raised in the Bloem and Gorter paper³³ in the Appendix.

²⁸ Para. 13.89

²⁹ Para. 471

³⁰ Para. 3.7

³¹ Appendix III, Page 259

³² Para. 7.93

³³ IMF WP/01/209. The Treatment of Nonperforming Loans in Macroeconomic Statistics.

The **basic problem** is that the *1993 SNA* balance sheets record all loans at their full value irrespective of their quality, until the moment when bad loans are written-off, and continues to accrue interest on such loans even when the chance of receiving that interest is remote. This is driven by the need to maintain symmetry in the accounts of both the creditor and debtor, but does not reflect the true financial position of the transactors involved.

The **general approach taken to the proposed solution** is that the existing principles be maintained but that additional information on (1) interest accrued on nonperforming loans, and (2) realizable loan values be provided as memorandum items to the accounts. These items are to be treated as an integral and necessary part of the system rather than as optional data. In addition, two other options for expanded recognition of market prices are given.

The **provision of data in addition to the standard tables** has already been used in the *MFSM*, which adds an extensive list of memorandum items to Table 7.1, *Sectoral Balance Sheet for a Financial Corporations Subsector*.

Other manuals also make use of memorandum items. The *GFSM 2001* recommends a variety of memorandum items³⁴ and includes a comment to the effect that estimates of total debt and the most important categories of debt be presented in both nominal and current market values. In addition, Appendix 2.13. says that "...where there is market evidence of lower (loan) values, this should be in a memorandum."

The *1993 SNA* does not use memorandum items extensively, but it does say that loans traded at a discount should be valued at the "...secondary market quotations..."³⁵ and that "...creditors should provide supplementary data on nominal values..." *BPM5*³⁶ has a similar comment and makes a number of other references to memorandum items.

The *Annotated Outline* places more weight on memorandum items than previously, distinguishing³⁷ between: (a) standard components and memorandum items that are part of the standard components; and (b) supplementary items that are raised as options.

Thus, all manuals make use of memorandum items to some extent.

³⁴ Para. 7.141-149

³⁵ Para. 14.51

³⁶ Para. 471

³⁷ Para. 1.22

Options for Loan Valuation

The working group offers four options for estimating the value of loans, and three of these involve the provision of additional data based on whatever national accounting standards may apply. Where such data are used, they should be supplemented with metadata outlining national practices. This is crucial given that the variation in practice is substantial. The revised International Accounting Standard 39,³⁸ which is being recommended for implementation in the European Union as of January 2005, allows for extended use of fair valuation³⁹ for both assets and liabilities, while retaining a range of other options.⁴⁰ It is not clear at this time how extensively fair valuation will be applied, but its possible use is assumed in the following discussion. The alternative to fair value as an estimate of the “market equivalent” value for loans is nominal value less expected losses. In practice, it is expected that most countries will use a mix of the two approaches.

Option 1) *Leave the SNA as it is.*

The working group rejects this option as it overstates the value of loans that can be recovered and hence gives a misleading portrayal of financial positions.

Option 2) *Primary valuation should be nominal value.*

*Continue to measure loans in the SNA at nominal values but use **memorandum items** to show other pertinent information, such as:*

- Interest arrears on NPLs^{41, 42}

³⁸ Financial Instruments: Recognition and Measurement.

³⁹ Fair value is defined as: *the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction.*

⁴⁰ IAS 39 provides loan valuation principles that vary according to particular circumstances. The IAS will not apply to all companies and all countries. Under the IAS, loan liabilities will generally be valued at nominal values. Valuation of loan assets will depend on whether the loan is available-for-sale or not. In the case of loan assets that are not for sale (paras. 63-64), the valuation principles take into account specific and general information about impairment. However, the effect of changes in interest rates will not be taken into account for fixed-interest loans. In the case of loan assets that are available for sale, they should be measured at fair value, taking into account both impairment and changes in interest rates (para. 46).

⁴¹ *MFSM* Table 7.1 page 86 includes this as a memorandum item, but leaves open the option of how such arrears are defined, in terms of the number of days overdue. This should follow national standards on NPL measurement. Under the Basel Capital Adequacy guidelines, 90 days overdue has become standard.

⁴² Useful for analysis of “adjusted” income. As a practical issue, it is noted that banks frequently do not record accrued interest on such loans on their balance sheets, and, to the extent that national accountants derive finance industry estimates from the accounts of financial institutions, total interest will be inadvertently measured net of interest on NPLs rather than gross.

- Realizable Loan Values

For member country reporting of monetary and financial statistics, the new forms that are currently being introduced⁴³ will include memorandum items for, among other things, interest arrears on NPLs and expected loan losses.⁴⁴ These data will be published as memorandum items. (See Table 7.1, *Sectoral Balance Sheet for a Financial Corporations Subsector, MFSM*, p 86). The term *realizable loan values* will be the country's best estimate according to its national accounting standards. It will be fair value, nominal values less expected loan losses, or some other estimate, depending on what is available.

Option 3) Primary valuation should be market equivalent value for creditors only, with no symmetry between debtor and creditor.

Measure loans as assets at market equivalent values (best estimates and might in practice be fair values or nominal values net of expected losses) and use memorandum items to show nominal values for loans⁴⁵ and interest arrears on NPLs. This is in line with the market value approach and recognizes that nominal values can be a poor substitute for market values. Nominal values would continue to be used for liabilities in the debtor accounts.

Option 4) Primary valuation should be market equivalent value, but retain symmetry between debtor and creditor.

Measure loans at market equivalent values (best estimates and might in practice be fair values or nominal values net of expected losses) for both assets and liabilities, and use memorandum items to show nominal values for loans and interest arrears on NPLs.

Conceptually, measuring debtor liabilities at market equivalent values is possible, because bank data are likely to be one of the main sources when compiling accounts for other sectors, but in practice there will be difficulties. For example, in the case of liabilities to nonresident creditors, the data needed to make adjustments to nominal values may be unavailable from the creditor and not known to the debtor.

What are the Implications of each Option?

Option 1. If no action is taken, then the data on the financial position of the institutional units in the economy will continue to be misleading.

⁴³ Bank data are collected on the 10R, 20R and 40R forms. Revised versions, which are still to be tested, will be introduced in a some countries as of early 2005.

⁴⁴ Banks normally make provisions against loans that they consider to be substandard. Such provisions could be based on national bank supervision guidelines, so may not be the same as expected loan losses.

⁴⁵ It may also be useful also to include nominal values for bonds and securities.

Option 2. This proposes no changes to loan valuation in the main body of the *1993 SNA*, but provides additional information in the form of memorandum items. The objective of obtaining data on the realizable value of loans is to provide a best possible estimate of the true financial position as it is affected by loan valuation.

There are a **number of points** to note here. The definition of an NPL depends on national standards, but these definitions are tending towards the standards set by the Basel Committee on Banking Supervision. A general definition of such loans, summarized from paragraph 4.80 of the *FSI Guide* is:

A loan is **nonperforming** when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full.

While these criteria are used to classify a loan as nonperforming, this does not always mean that these overdue payments necessarily will lead to losses. If the loan is backed by adequate collateral, then losses will not occur. So interest accrued on nonperforming loans is a guide to the level of potentially “overstated” income of financial institutions, but not necessarily an exact measure.

There is a difference in **the treatment of loan write-offs and write-downs** under the different options. A loan **write-off**—the legal de-recognition of a loan—is treated as a volume change in the *1993 SNA*, recorded in the other changes in volume of assets account. (OCVA) A **write-down** of a loan is the unilateral recognition of reduced value by a creditor, but such actions are not recorded in the present SNA, except in the case where a loan is rescheduled at a reduced value by mutual agreement. In that case, a capital transfer is recorded from the creditor to the debtor matching the change in loan volume. Under option 2, a loan write-down would be shown as follows:

Example 1:

Loan Value	= 100
Expected loss	= 50

The main accounts record a loan with a nominal value of 100, and an expected loss of 50 is shown in the memorandum items. In the event that the expected loan loss increases to 100, this would exclusively be reflected as a change in the memorandum items. The loan still has a volume of 100 and retains its original value of 100. In the event that the creditor decides to write the loan off, the OCVA would show a change in volume of 100.

The problems caused by the **occasional trading of loans** still exist. If a functioning secondary market—as evidenced by market quotations—exists, then loans are to be reclassified as securities⁴⁶ and are to be valued at market prices. Otherwise, the effects of valuing loans at nominal value and transactions at market values are demonstrated by the following example:

Supposing a loan with a nominal value of 100, is sold for 10.

The seller will show an opening balance of 100, and a transaction—valued at the market price—of 10 which must be balanced by a downward revaluation of 90 to record a closing balance of zero for this item.

The purchaser will record a transaction of 10 plus a positive revaluation of 90 to show a closing balance—at nominal value—of 100.

Thus symmetry between the accounts of the creditor and the debtor is maintained.

Both the *BPM5*⁴⁷ and the *1993 SNA*⁴⁸ discuss the example of loans sold at a discount on a one-off basis and recommend that the creditor record the loan at transaction value,⁴⁹ and the debtor record the loan at nominal value. This creates the only example of an asymmetry in the accounts, which they recommend should be supplemented with additional data on nominal value for the creditor and market value for the debtor. Under this option, both the debtor and the creditor record the loan at nominal value, but the true financial position of the creditor will be reflected in the memorandum data.

Option 3.

With this option, the possibility of price changes for loans is recognized within the system, so the writing down of a loan is a price change. The writing-off of a loan is a volume change, but only at the holding value which would likely be zero.

Example 2:

Loan Value = 100

⁴⁶ *ED Guide* para. 3.29

⁴⁷ Para. 471

⁴⁸ Para. 14.51

⁴⁹ The transaction value is the market value at the time of the transaction; at later times it becomes increasingly out-of-date and could be better described as historic cost. (*BPM5* para. 471 is misleading in that it describes a transaction value maintained indefinitely as a “market price.” *1993 SNA* para. 14.51 has similar references.)

Expected loss = 50

The main accounts start by showing a nominal value of 100, which reduces to a nominal value of 50, by way of revaluation when the expected loss of 50 is recognized. In the event that the expected loss goes to 100, the price drops further to zero and for any subsequent writing-off of the loan, the OCVA shows a change in volume of zero. The loan still has a volume of 100, but with a price of zero.

The second implication of this option is that symmetry of assets and liabilities in the accounts is no longer preserved.

Option 4.

This option is the same as option three, but preserves the symmetry of assets and liabilities in the system. There would be practical difficulties obtaining the data necessary for its implementation.

Recommendation

The working group is divided on its preference for the above options, but on balance favors option 2: Retain the approach currently used in the *1993 SNA* and provide data on interest accrued on NPLs and the realizable value of loans, by way of memorandum items.

Further discussion on these issues will be sought through the NPL EDG.

Loan Valuation Working Group

27 May 2004

Appendix

This appendix specifically addresses the issues raised in the **Bloem and Gorter paper (IMF WP/01/209)** which is a centerpiece for discussion in the NPL EDG. For convenience, each issue is summarized, followed by the working group's proposed solution.

The Issues

1a) *What should be the definition of a nonperforming loan?*

Individual countries are adopting their own definitions, but there seems to be convergence towards common definitions similar to that outlined in the *FSI Guide*, paragraph 4.80 which can be summarized as:

A loan is **nonperforming** when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full.

In practice, national accounts should follow local accounting standards, but these standards should be outlined in metadata to assist international comparisons.

1b) *Should deposits and trade credit be treated the same way as loans when they become impaired?*

Deposits and trade credit lose their original characteristics when they become impaired. In effect, they become like loans, albeit involuntary ones, and should be treated in the same way as loans.⁵⁰

2) *Which option is most appropriate for presenting loan data in macroeconomic statistics?*

It is recommended that the present 1993 SNA conventions be continued and that data on nonperforming loans and the realizable value of loans be shown as memorandum items. Note that this recommendation goes beyond the original discussion which focused on nonperforming loans, and considers the broader issue of realizable values/expected losses. A loan can be nonperforming, but be backed with adequate collateral, so it would not be included as an expected loss.

⁵⁰ This approach is recommended in the *Draft MFSM Compilation Guide* paragraph 9.

3) *Should the manuals contain more criteria on recoverability and write-off?*

As mentioned in point 1, local accounting standards should be applied rather than being specified in the manuals.

4) *Should the international statistics manuals be changed to allow price fluctuations for loans in domestic currency? How should this be implemented? Are there better ways to improve the informative value of national accounts in tracking impaired loans?*

The option of measuring loans in market equivalent values is addressed in the paper, but it is not being recommended. The informative value of national accounts is being improved with memorandum items.

5) *Should loan write-offs be price changes rather than other changes in volume?*

As noted in section 2, page 9, of the paper, write-downs are akin to price changes but these are not recognized in the main accounts—although they are included in the memorandum items—because of the need to preserve symmetry between the recording of assets and liabilities. The final write-off of a loan is a legal issue which is a volume change under all options. However, under options 3 and 4 the value of this volume change would have already been reduced to zero through price changes as the loan was written-down.

6) *Should interest accrue on NPLs in the national accounts?*

It is recommended that interest continue to be accrued on NPLs, reflecting the fact that services have been provided irrespective of whether they are ultimately paid for. However, the amount accrued on such loans is to be shown in a memorandum. It is noted as a practical issue that national accountants may be measuring this incorrectly if they are basing their estimates on unadjusted bank data, as it is common practice for banks not to accrue such interest in their accounts.

7) *Should statistics manuals define an income concept allowing for expected or actual losses? Should normal losses be distinguished from catastrophic losses?*

No adjustment to the present income concept is recommended, for the reason mentioned in point 6 above, but additional data is included in the memorandum items to allow for additional analysis.