

## FAIR VALUE ACCOUNTING AND THE SNA

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### *Abstract*

This paper discusses some issues relating to fair value accounting as it is or might be applied in the national accounts. Although the SNA accounting rules are fair value in the sense that they are based on economic principles, the principles underlying recent trends in fair value business accounting have progressed beyond those adopted by SNA93. For stock evaluation, focusing on the valuation of loan assets, I find that the book value evaluation espoused in both SNA93 and the IMF Manual may potentially deviate substantially from the fair value of loan assets. For flow evaluation, illustrated using an example which compares alternative methods of recording the interest accrual on zero-coupon bonds, I point out that the creditor approach based on fair value accounting seems to be better than the debtor approach conventionally used in the SNA, and that its adoption could change the concept of income used in the SNA.

*Key words:* fair value, SNA, financial accounts, debtor approach, creditor approach

*JEL Classification:* C82, F41

### *I. Introduction*

In economic theory, consistency between macroeconomics and microeconomics has been a major topic of interest to economists, and a lot of macroeconomic models with firm foundations in microeconomic theory has been developed over the last decade. On the other hand, macro-micro relationships in statistics or accounting do not seem to have attracted economists' attention in the same way; probably because, unlike many economic theories, macro statistics are not produced without micro-based source data.

Needless to say, however, macro data are not just aggregates of micro data. In the process of producing macro statistics or accounts, some theory or underlying philosophy is needed in order to carry out aggregation, classification, valuation, etc. In particular, multiple steps, during which both micro and macro data are compiled, are required to complete the SNA. Furthermore, micro data themselves are not necessarily unique. The data that appear on balance sheets and income statements may have been calculated in accordance with the tenets of some particular concept of business accounting.

One of the more controversial issues in business accounting in recent years has been the

concept of fair value accounting. The International Accounting Standard Committee (IASC) has been engaged in the international promotion of fair value accounting. The Joint Working Group (JWG) established jointly with the accounting standards-setting bodies of major countries has proposed that all financial instruments should be measured at fair value in its exposure draft titled “Financial Instruments and Similar Items” (2000). These recent movements in business accounting have raised not only numerical issues concerning the macro statistics produced by aggregating individual balance sheets or income statements, but also conceptual issues regarding the very framework of the SNA.

In this paper, referring to differences between these micro and macro accounting systems, I discuss, from the standpoint of the national accounts, the conceptual issues that are raised by notions of fair value accounting. First, I present an overview of the purpose of the two accounting systems in section 2; then I focus on the issue of fair value accounting, and what this involves, in section 3. In sections 4 and 5, I consider the specific topics of “stocks” and “flows” respectively: the valuation of loan assets and the method of recording interest accrued.

## II. *Differences between Business Accounting and National Accounting*

While fair value accounting has had a revolutionary influence on business accounting, this principle itself is not a surprising one for national accountants. This is because one of the fundamental accounting principles on which the SNA is based is that “assets and liabilities are valued at current prices at the time to which the balance sheet relates, not at their original prices.” (2.69)<sup>1</sup>

Underlying all other differences between the SNA and business accounting is an essential difference of purpose. “The SNA is a multi-purpose system, designed for economic analysis, decision-taking, and policy-making.” (1.29) This implies that the function of the SNA is not as clearly defined as that of business accounting.<sup>2</sup> In contrast, although there are some arguments about the purpose of business accounting, there seems to be a consensus that, treating a firm as a going concern, business accounting is supposed both to provide its stakeholders with information and to function as a measurement system for contracts between them.

In the following section, to clarify the differences between the two systems, I consider three focal points of the national accounts: economic principles, international comparison, and consistency among different economic entities.

### 1. Economic principles

SNA93 often refers to “economic principle” as a fundamental accounting principle. This means that data compiled for the analysis of economic activities should be sensible in the context of economic theory. Thus, for valuation, it defines the rule that “when business accounting practices conflict with economic principles, priority is given to the later.” (1.59). In

<sup>1</sup> This and subsequent quotations are from “Systems of National accounts”, hereafter SNA93.

<sup>2</sup> In SNA93, the specific uses of the SNA are described as “monitoring the behavior of the economy,” “macroeconomic analysis,” “economic policy-making and decision making,” and “international comparisons”; however, these are still broad.

the following paragraph, it prescribes:

“Business accounts commonly (but not invariably) record costs on an historic basis, partly to ensure that they are completely objective... In the System, however, the concept of opportunity cost as defined in economics is employed... The best practical approximation to opportunity cost accounting is current cost accounting, whereby assets and goods used in production are valued at their actual or estimated current market prices at the time the production takes place (1.60)”.<sup>3</sup>

Although it would not be fair to describe the opportunity cost as wholly meaningless information within a business accounting framework, because the interest of business accountants is focused on a company as a going concern the historical cost method may be deemed more objective and better suited to the needs of stakeholders. This is also the case with the “lower of the cost or market” method in business accounting, where an acquisition cost and its market value are compared and the lower value is recorded.

A key feature of business accounting is its role in protecting stakeholders’ interests. This has led, at least so far, to the formation of another accounting principle: that of “conservatism” which aims to protect creditors by disclosing as far as is possible any information that may be considered detrimental to a company. In such respects there are clear differences in underlying purpose that distinguish national accounting, based on economic principle, from business accounting.

## 2. International Comparability

While business accounting functions as a system for protecting stakeholders’ interests, national accounting may be seen to be functioning as a system to protect international interests. The SNA data are not only used by economists, analysts, and policy makers, but also specifically “used by international organizations to determine eligibility for loans aid or other funds or to determine the terms or conditions on which such loans are made” (1.38). Thus, international compatibility is a critical requirement for any system of national accounts.

It should be noted that, in order to address the possibility that data may be used for international comparisons, some imputation techniques used in the national accounts may on occasion contravene economic principle. For example, in macroeconomic analysis using GDP, imputed services from owner-occupied dwellings are carefully recorded even though they do not involve actual transactions. One of the reasons for including imputed services from owner-occupied dwellings in GDP is to maintain consistency in international comparisons. In general, home-owning trends are country-specific. Thus, if imputed services from owner-occupied dwellings were excluded from GDP, these differences in home-ownership patterns between countries would have an undue influence on the level of GDP.

## 3. Consistency among entities

The SNA is composed of data aggregated from different economic institutions, while

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<sup>3</sup> In the following paragraph, SNA93 pointed out the problems that attend the use of historic costs at times of inflation. “Profits at historic costs are liable to give very misleading signals as to the profitability of the production processes to which they relate by systematically undervaluing inputs compared with outputs.” (1.61)

business accounting typically deals with the records of one company or of consolidated companies. Double-entry bookkeeping is also a fundamental principle in national accounting, but in the case of national accounting, it is called “quadruple-entry bookkeeping” because changes in assets and liabilities simultaneously cause changes in those of counterparties. This “quadruple-entry bookkeeping” provides us with macro information about economic structures such as transaction types among economic entities and the relationships between assets and liabilities.

From such a standpoint, transactions must be recorded at the same time using the same information among economic entities. In other words, unlike business accounting, to preserve balance-sheet consistency, the valuation method used for a given financial asset or liability must be the same among all economic entities even if there are some differences in their business accounting practices.

For example, under the Japanese business accounting rules governing the valuation of financial instruments which were introduced in 2000, the means of measuring the value of securities is determined based on the objectives of those owning the securities.<sup>4</sup> Under the new framework, securities are classified into four categories: trading securities and others are evaluated at market prices, while securities held to maturity are evaluated at historical costs and shareholders’ equities at costs subject to depreciation. This type of framework seems quite reasonable for the purpose of keeping stakeholders informed about the current condition of a company viewed as a going concern. However, this method of bookkeeping is not appropriate for the SNA because transactions involving securities must be recorded in such a way that total assets and liabilities are balanced as a whole. Unlike business accounting, the method used for recording a specified transaction must be consistent, regardless of the objectives of creditors or debtors. Thus, as long as market prices exist, these values are adopted.

Similarly, hedge accounting is not adopted in national accounting. This is because even if an economic entity engages in financial derivative transactions for hedging purposes, counterparties are not necessarily engaging in the same transactions for the same purpose.

### III. *Fair Value Accounting*

The differences between national accounting and business accounting reflect their underlying differences of purpose. They have never been essentially the same. However, recent movement towards fair value measurement in business accounting raises issues that should be considered from a macroeconomic perspective. Two points in particular need to be addressed.

First of all, business accounting principles regarding stock valuation seem to have progressed beyond those used in drawing up the national accounts. As financial markets have developed and the securitization of assets and liabilities has spread, objective accounting information has become measurable and all market participants have come to require such information. Under these circumstances, fair value recording has become widespread in business accounting in practice, and the JWG under the IASC has taken a position advocating that all financial assets and liabilities should be valued based on their fair values instead of

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<sup>4</sup> See JICPA’s Accounting Committee Report No.14 “Practical Guidelines for Accounting for Financial Instruments.”

according to conventional historical costs. In the sense that in the SNA balance sheets stocks are evaluated on a mark-to-market basis, it may be said that the two accounting concepts are converging. However, even SNA93 is still far from representing the wholesale adoption of a system based on market values.

While SNA93 determines that “financial assets and liabilities should be valued at current prices whenever they are regularly traded on organized financial markets, and they should be also be assigned the same value in the balance sheets whether they appear as assets or liabilities” (13.64), it also takes the position that “finance receivables (claims) not traded in organized financial markets should be valued based on amounts payable by debtors to creditors for the extinguishment of the claims (13.64).” From this latter position, SNA93 has determined that deposits and loans should be recorded using book values instead of fair values.

The JWG’s proposal is certainly adventurous and has aroused opposition from business accountants in many countries. Nobody denies the difficulty of assessing the market values of products without explicit trading markets. However, if the conventional accounting framework overlooks the changing situation observed in the actual economy, something new should be done to rectify this oversight. From the perspective of economic principle, this national accounting framework requires reconsideration, even if assets and liabilities are not traded in “well” organized financial markets. In the next section, focusing on loan assets, I will discuss this issue.

Secondly, when business accounts reflect changes in market values of assets and liabilities directly in their income statements, the flows measured by business and national accounts diverge significantly from one another. In national accounting, changes in prices or values are recorded in the reconciliation accounts and, unlike income or expenditure, are not regarded as transaction flows. If changes in asset values were distinguished from periodic income or losses in business accounts, then this method would become essentially the same as that used in the national accounting approach. Were gains on securities to be recognized separately from realized gains and recorded as “other comprehensive income,” these amounts could be considered to correspond to those recorded in the SNA revaluation accounts. However, recent discussions on corporate accounting have proceeded further, and the JWG’s exposure drafts and the recently released papers laying down the IASC’s proposed position (the so-called “G4+1” Draft)<sup>5</sup> advocate a methodology in which all changes in values are recognized as either income or loss in the corporate financial results for the respective period.

It is true, at least to a certain extent, that this type of fair value accounting reflects reality. I will come back to this issue of holding gains or losses and their relation to income, when I discuss the recording of interest accrued on zero coupon bonds in section 6.

## VI. *Valuation of Loan Assets*

### 1. Valuation of loans in 93SNA and the Manual by IMF

One of the most controversial issues is the valuation of loan claims. A basic principle of

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<sup>5</sup> The paper was written by the working group of standard setters that comprises the accounting standard boards of Australia, Canada, New Zealand, the United Kingdom and the United States (G4+1).

SNA93 is to recognize loan claims as “financial claims that are not traded in financial markets,” and to value such claims based on book values. However, now that financial markets have developed to the extent that more and more loan claims are securitized and traded in markets, this rule set out in SNA93 no longer seems necessarily appropriate. Moreover, obtaining the fair values of loan claims will be of help in making prudent policy judgments in an economic sense.

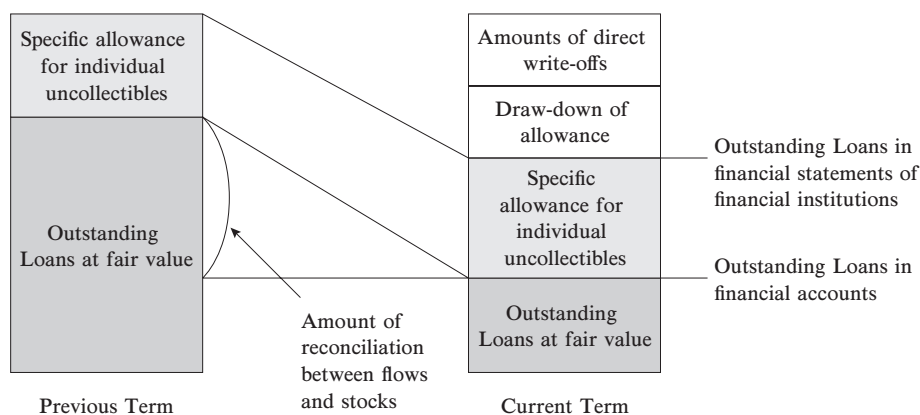
The Monetary and Financial Statistics Manual published by the IMF in 2000 (hereafter the Manual) recommends that “the entire loan portfolio be valued at book value in presenting the loan value” (206) in line with SNA93 and conventional accounting practice. In addition, the Manual by the IMF also recommends that “data on expected loan losses be shown as memorandum items accompanying the sectoral balance sheets.” (207)

## 2. Valuation methods in practice

A point that is always discussed with regard to valuation based on fair values is the method used to obtain an actual fair value. If there is a complete market, the present values of future cash flows are reflected in market prices and objective values are obtainable there. However, even if many loan claims and debts are traded in the market nowadays, objective market prices or fair values of loan claims are not obtainable from market information. The Manual states that “data can be used to obtain the expected realizable value of loans, by deducting the expected loan losses (whether or not covered by loan loss allowances) from the book values of the loans.” (207)

In practice, fair value accounting of loan claims in the SNA is done in only a limited number of countries such as Japan and Germany. In Japanese financial accounts, the fair value of loan assets held on the balance sheets of private banks are obtained by deducting specific allowances from book values.<sup>6</sup> For example, as shown in Figure 1, even if there are no new

FIG. 1. EVALUATION OF LOAN ASSETS IN JAPANESE FINANCIAL ACCOUNTS



(Assume a case where there are no transactions during the current term)

<sup>6</sup> Because there is no specific allowance made in the balance sheets of public financial institutions, their loan assets are recorded at book value.

loan transactions, loans outstanding can be reduced by an increase in the special allowance as well as by direct write-offs or by drawing-down the allowance. Since specific allowances are calculated for individual claims by estimating the probability that the debt (or some part of the debt) will become uncollectible, based on the debtor's condition, this valuation is regarded as a reliable accounting method.

In this calculation, in order to balance assets and liabilities, debts held by the nonfinancial corporate sector are devalued at the same time. From an individual debtor's perspective this treatment may seem strange not only in a legal sense but also in an economic sense. We would expect debtors' economic activities to be affected by the burden of their debts unless the acquittal between debtors and creditors is concluded. In this respect, however, the present mark-to-market valuation of securities has the same problem. When corporate bonds are devalued in the market, although the redemption price is unchanged, the aggregate debt is recorded based on the devalued market price. The essence of valuation in the SNA is to capture reality on an aggregated basis, not on an individual basis.

### **3. Alternative methodology**

A more drastic way of estimating the fair value of loan claims in financial accounts is to deduct general allowances against the whole loan claims. In the Japanese case, general allowances for loan losses are supposed to be recorded based on a self-assessment of loan claims using the rate of actual past losses. Thus, deducting general allowances for loan losses means that losses from unspecified loans are taken into account.

There might be an argument that general allowances are not arrangements that give rise to unconditional requirements between economic entities. A rule of the SNA is that "these arrangements, which are often referred to as contingencies, are not actual current financial assets and should not be recorded in the SNA." (11.25) In addition, in recording general allowances, no counterparty is specified.

However, even events that occur with uncertainty for an individual company may be considered events that occur "with certainty" for a given percentage of companies at the macro level. As long as general allowances are reasonably computed, aggregate loan values before deducting general allowances are probably overvalued. This issue constitutes a fundamental difference between national accounting and business accounting, and accounting practice should recognize that what is uncertain at the micro level becomes certain at the macro level. SNA93 explains that "where contingent positions are important for policy and analysis, it is recommended that supplementary information be collected and presented as supplementary data in the SNA," (11.26). However, it should be recognized that, from a macro perspective, loan values after deducting general allowances provide a better reflection of actual conditions than "supplementary data".

### **4. Estimation of loan assets in Japan and US**

In this section, in order to attain a better grasp of how influential the choice of valuation method can be, I compare the book values of loan assets with my estimates of the fair values in Japan and the US.

For Japan, I present three sets of data: the official figures published by the Bank of Japan



(method 1);<sup>7</sup> figures obtained after deducting general allowances from the figures reported in method 1 (method 2); and figures obtained after deducting non-performing loans (NPLs) from the book value of loan assets, where NPLs are composed of overdue loans and loans to debtors in legal bankruptcy (method 3). Of course, it may not be the case that all NPLs are valueless, but calculation of method 3 nevertheless provides us with a useful insight into loan asset valuation. It should be noted that overdue loans used here include only those bad loans from which banks are no longer accruing any interest receivable. In performing the calculations, as allowances and NPLs are obtained from the data on “all banks” published by the Japanese Bankers’ Association, which is slightly different from the data on “domestically licensed banks” in the SNA, I adjust my figures using the ratio between the two totals obtained from the two different data sources.<sup>8</sup> Book values are not found in the financial accounts of the SNA, but they are easily calculated using data from the flow of funds accounts, which have started publishing some book values as reference data in addition to the balance sheet figures based on fair values.

For the US, I present book values of loan assets published in the flow of funds accounts and two separate estimates of fair values. In calculating fair values, using data on “FDIC-insured commercial banks” published by the Federal Deposit Insurance Corporation (FDIC), I deduct from gross loans and leases either a) provisions for loan and lease losses reported in bank income statements (method 1), or b) allowances for losses on loans and leases reported in their balance sheets (method 2). “FDIC-insured commercial banks” are, of course, not the same as “US-Chartered Commercial Banks.” However, the important point is how the book value of loan assets is devalued; absolute magnitudes are only of subsidiary interest here. Thus to obtain comparable estimates, the figures for fair values are simply adjusted (as specified above for the Japanese case) by the ratio between the two totals obtained from the two different data sources.

The results are shown in Tables 1 and 2. In Japan, as bad loan problems have become more serious, the fair value of loan assets seems consequently to have diminished and has deviated from the book value. Taking into consideration that NPLs published by banks are said to be too small, methods 2 and 3 could still result in rather conservative estimates of the gap between book and fair values. In contrast, the deviation observed in the US is fairly reasonable. Needless to say, however, even in the US, rates of devaluation from book values for loan assets depend on the environment surrounding banks and the state of the economy at the time. The figures in the table reveal the degree to which loan assets were still damaged in the early 90s when US banks were suffering from bad loan problems.

## V. *Recording the Accrual of Interest*

In this section, as an example of the issues involved when recording transaction flows at

<sup>7</sup> In fact, the financial accounts of the SNA are published by the Cabinet Office of Japan. However, the latest data are obtainable from the BOJ’s flow of funds accounts, which are the source of the financial accounts of the SNA.

<sup>8</sup> While “total loans” of “all banks” include overseas loans, “total loans” in the SNA in Japan exclude them. Therefore, I deduce loans in the accounts of overseas branches from “total loans” of “all banks,” and then calculate the ratio between the two totals.



TABLE 1. LOAN ASSETS OF DOMESTICALLY LICENSED BANK IN JAPAN

							trillion yen, percent
End of Fiscal Year	Book Value	Estimated Fair Value					
		Method 1 (Official Data)		Method 2		Method 3	
		Devaluation rate		Devaluation rate		Devaluation rate	
91	534.7	533.3	−0.3	531.4	−0.6	—	—
92	536.8	534.4	−0.5	532.5	−0.8	522.9	−2.6
93	532.5	528.7	−0.7	526.8	−1.1	517.8	−2.8
94	531.3	525.8	−1.0	523.9	−1.4	517.3	−2.6
95	549.8	538.2	−2.1	536.2	−2.5	532.5	−3.2
96	551.7	541.2	−1.9	539.2	−2.3	534.1	−3.2
97	557.2	539.3	−3.2	537.2	−3.6	537.9	−3.5
98	543.8	525.3	−3.4	521.4	−4.1	516.2	−5.1
99	515.2	503.7	−2.2	499.8	−3.0	490.7	−4.7
2000	512.0	504.7	−1.4	500.5	−2.2	490.2	−4.2

Note: Method 2: Deducting general allowances from method 1

Method 3: Deducting NPLs from book values

TABLE 2. LOAN ASSETS OF US-CHARTERED COMMERCIAL BANK IN US

End of Fiscal Year	Book Value (Official Data)	Billions of dollars, percent			
		Method 1		Estimated Fair Value	
				Method 2	
		Devaluation rate		Devaluation rate	
91	1818.4	1790.9	-1.5	1770.9	-2.6
92	1836.6	1806.1	-1.7	1787.5	-2.7
93	1935.9	1911.2	-1.3	1884.2	-2.7
94	2107.4	2091.0	-0.8	2055.8	-2.4
95	2317.9	2306.7	-0.5	2271.0	-2.0
96	2453.9	2439.7	-0.6	2407.3	-1.9
97	2655.6	2637.9	-0.7	2606.8	-1.8
98	2902.4	2882.5	-0.7	2851.1	-1.8
99	3137.3	3117.7	-0.6	3084.5	-1.7
2000	3446.0	3419.6	-0.8	3388.2	-1.7

Note: Method 1: Deducting provisions for loan and lease losses in income statement from book values

Method 2: Deducting allowances for losses loans and leases in balance sheet from book values

fair value, I discuss how to treat the interest that accrues on zero coupon bonds. Among national accountants, there have already been arguments about how best to calculate these when market interest rates change. There are two approaches: the debtor approach and the creditor approach.

The debtor approach calculates the interest using the effective interest rate at the time the bond is issued. According to this view, despite revaluation of the bond price concomitant with movements in market rates, the flows of interest income are fixed until the bond's maturity. On the other hand, the creditor approach calculates the flow of interest income using the current effective interest rate that changes along with market interest rates. Thus, when market interest rates change, the values of these interest flows are recalculated.

SNA93 adopts the debtor approach in accordance with the SNA convention, so that interest income is calculated at a fixed rate regardless of changes in market interest rates.

TABLE 3. CALCULATION OF HOLDING GAINS AND INTEREST INCOME IN THE CASE OF FIVE YEAR BOND

Year	0	1	2	3	4	5
Market interest rate	4.46	4.46	3.51	3.51	3.51	—
Price of the Bond	80.00	83.65	90.00	93.22	96.55	100.00
Cash flow	-80	0	0	0	0	100
(Debtor Approach)						
Interest income		3.65	3.82	3.99	4.17	4.36
Holding gains		0	2.53	-0.77	-0.84	-0.92
(Creditor Approach)						
Interest income		3.65	3.82	3.22	3.33	3.45
Holding gains		0	2.53	0	0	0

However, this method of book-keeping does not seem well-suited to the reality of the securities market.

Table 3 provides an example: the case of a five-year zero-coupon bond with a face value of 100 yen and an issue-price of 80 yen. Suppose that, two years after the issuance of the bond, the market interest rate<sup>9</sup> drops from 4.46% to 3.51% and the price of the bond rises to 90 yen. Under the debtor approach, following the drop in the market interest rate, holding gains/losses are recorded every year. This is because the balance between the issue price and the redemption price is distributed over time until its maturity in the form of interest payments accruing every year. Thus, the SNA records that creditors purchasing this bond in the fifth year receive interest at an annual rate of 4.36% and suffer simultaneous holding losses at an annual rate of 0.92%.

In contrast, if we adopt the creditor approach, since the effective interest rates in the creditor approach are lowered to 3.51% in response to the change in the market rate, the same creditors mentioned above would be recorded as receiving interest at an annual rate of 3.45%. This seems to be a reasonable way of recording interest, if we are hoping to analyze economic behavior with economic sense.

In fact, the JWG's proposal in 2000 contends that financial instruments should be evaluated on a fair value basis and that therefore, for consistency, interest should also be evaluated on a fair value basis. Conceptually, this idea is the same as that espoused in the creditor approach.

However, the concept of "interest" in the creditor approach is drastically different from that of the debtor approach in the SNA. If we adopt the creditor approach, the change in market interest rates -the change in the price of bonds- brings about not only a change in holding gains/losses but also creates a change in income gains/losses. This is a challenge to national accounting because income gains/losses and capital gains/losses are distinguished from one another in the SNA framework. From a macroeconomic perspective, it must be noted that fair value accounting could change the concept of income used in the national accounts.

<sup>9</sup> Market interest rates are supposed to be equal to the effective interest rate, where the latter is calculated as a continuously compounded stream.

## VII. *Concluding Remarks*

This paper has discussed the application, both actual and hypothetical, of fair value accounting in the SNA, keeping always in mind the underlying purpose of this type of accounting. Although the accounting rule of the SNA is fair value in the sense that it is based on economic principles, the principles underlying recent trends in fair value business accounting have progressed beyond those espoused in SNA93. Although it may be argued that the proposals adopted in business accounting seem too radical, nevertheless it must be acknowledged that, at the very least, business accountants have tried not to lag too far behind changes in the actual economic environment.

With regard to stock evaluation, focusing on the valuation of loan assets, which SNA93 and the IMF Manual have determined should be recorded at book value, I have explained the method of fair value accounting used in the Japanese SNA and suggested an alternative. I have also estimated fair values of loan assets in the 90s in Japan and the US, the differences of which from book values were, at least in Japan, of an order that those responsible for macroeconomic analysis and economic policy-making should not ignore.

For flow evaluation, using as an example competing methods of recording interest accrual on zero-coupon bonds, I have demonstrated the advantages of the creditor approach over the debtor approach conventionally used in the SNA. However, we should note that, were the creditor approach to be adopted, this could change the concept of income used in the SNA.

Ten years have passed since SNA93 was published. Although there is no need for micro and macro accounting systems to be fully consistent *per se*, the recent interest in the use of fair values in business accounting seems to indicate a possible future direction for the SNA that deserves serious consideration.

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