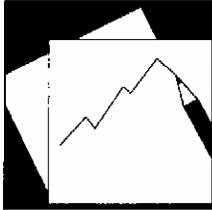


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The Relationship Between Macroeconomic Statistics Guidelines and Accounting Standards

Lucie Laliberté

IMF Working Paper

Statistics Department

**The Relationship Between Macroeconomic Statistics Guidelines
and Accounting Standards**

Prepared by Lucie Laliberté¹

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Abstract

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

This paper aims to promote harmonization between macroeconomic statistics guidelines and accounting standards. It first highlights recent development that act as drivers to the harmonization of the two systems. It then compares the two systems and reviews approaches aimed at further harmonization. This is followed by a description of the specificity of each system in terms of the emphasis each puts on various aspects of data quality. The paper concludes that through differences between the two systems will remain, they are more likely to be documented, via statistical metadata, than in the past; in the public sector, there is a promising potential for data reconciliation in the form of bridging items; and convergence is likely to be achieved in selected areas.

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Author(s) E-Mail Address: llaliberte@imf.org

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I. INTRODUCTION

This paper aims to promote harmonization between macroeconomic statistics guidelines² and financial accounting standards. The paper views harmonization in the following broad terms: identifying and describing differences; enhancing convergence to narrow differences; and, when convergence cannot be achieved, providing the rationale and developing bridges to reconcile differences between the two data-setting systems.

In its own specific area, statistical and accounting data-setting systems each provide a framework to identify, record, classify, and summarize economic activities of entities. These two data-setting systems differ in their scope, preparation, and use. Statistical guidelines, as embodied in national accounts for macroeconomic datasets, pertain to the economic behavior of all economic units in the economy, while accounting statements refer to the behavior of individual units in the corporate and government sectors. In the statistical data-setting system, third-party statisticians report the national accounts, whereas each unit reports on its own operations in financial statements.³

It should come as no surprise that the two systems have common users since each system provides a distinct perspective on the same underlying economic realities: national accounts give a macro reading of the economic activities of entities that accounting statements purport to measure at the micro level. To a certain extent, the two datasets are also complementary: data from accounting statements serve as major data sources in the production of national accounts, and aggregates of national accounts provide background information on the economic events measured by accounting statements. (Of course, the relationship in the first case is in the nature of accounting identities, whereas the relationship in the second case is more behavioral in nature.)

Efforts to relate the statistical and accounting systems have so far largely focused on explaining adjustments that statisticians need to make to the accounting data that they use as a major source to produce macroeconomic datasets.⁴ The need for such adjustments stems

² The term *statistical guidelines* is preferred to *statistical standards*. Guidelines embody the accounting rules and procedures that provide guidance for a broad range of macroeconomic datasets (national accounts, balance of payments, etc.) and of statistical manuals (ranging from those dealing exclusively with concepts, definitions, and classification, to compilation guides, or a combination of the two). The term guidelines throughout the text also helps to maintain the distinction from public and business accounting, which is referred to as accounting standards.

³ Reporting is generally by qualified accountants who are subject to a code of ethics. The financial statements of public corporations are audited by a third party.

⁴ United Nations, *Handbook of National Accounting: Links Between Business Accounting and National Accounting*, Series F, No. 76, Statistics Division, New York, 2000. In certain countries where accounting standards are more aligned with statistics guidelines, adjustments can be made at a low level of homogeneous groupings, referred to as intermediate systems of account. For instance, in France, corporate accounting is formally linked to statistics guidelines through a charter of accounts.

from accounting conventions and valuations differing from those required for statistical outputs. Adjustments are generally made at an aggregate level.

The present paper endeavors to explore ways to harmonize statistical guidelines, as embodied in the *System of National Accounts 1993 (1993 SNA)*,⁵ and accounting standards. Greater harmonization should help in reducing the need for adjustments, inclusive of alleviating reporting burden, and in providing details to meet both statistical and accounting requirements when preparing accounting data. Furthermore, since national accounts are rooted in economic foundations, the narrowing of the “micro-macro link” should enhance the understanding of how economic agents themselves view their activities.

The time seems ripe for such harmonization for at least four interrelated reasons:

- First, the statistical guidelines and the accounting standards are undergoing major changes, with those in statistics led by the ongoing fifth revision of the System of National Accounts (SNA) to be finalized in 2008. From a diversity of accounting standards among countries, the increasingly global capital market has prompted the development in recent years of international accounting standards.⁶
- Second, recent research in finance, accounting, and macroeconomic statistics has helped, among other things, to enhance the understanding of the valuation of assets.
- Third, accountants are increasingly adopting practices that are fundamental in statistics, such as fair value, performance reporting that distinguishes transactions from other economic events, and inflation accounting.
- Fourth, with the globalization of economies, the financial crises of the 1990s, followed by the recent years’ corporate scandals, took on an international dimension. This prompted policymakers to develop analytical, monitoring, and assessment tools that all call for more extensive and detailed information,⁷ including statistical information.

⁵ Commission of the European Communities, IMF, OECD, United Nations, and World Bank, *System of National Accounts 1993 (1993 SNA)*, Brussels, 1993. The *1993 SNA* represents the body of thought on statistics guidelines with which the macroeconomic datasets developed since 1993 have been harmonized. Also see Carson S. Carol and Lucie Laliberté, “Manuals on Macroeconomic Statistics: A Stocktaking to Guide Future Work,” IMF Working Paper 01/183, International Monetary Fund, Washington, D.C., November 2001.

⁶ With the International Financial Reporting Standards (IFRS) set up by the International Accounting Standards Board, and the International Public Sector Accounting Standards (IPSAS) set up by the Public Sector Committee of the International Federation of Accountants (PSC-IFAC).

⁷ The IMF and World Bank have endorsed internationally recognized standards and codes in 12 areas (e.g., data, fiscal, transparency, monetary and financial policy transparency) as important for their work. See <http://www.imf.org/external/standards/index.htm>

In response to the above developments, statisticians and accountants created the Task Force on Harmonization of Public Sector Accounting (TFHPSA)⁸—the first formal initiative at the international level that attempts to harmonize statistical guidelines and accounting standards. The Task Force operates on the basis of two working groups (WGs)⁹—the WG I, focusing on narrowing differences between statistical guidelines and accounting standards, and the WG II, providing inputs for public sector activities to the 1993 SNA review.

In addition to the TFHPSA, other research groups provide inputs into the group in charge of reviewing the 1993 SNA, the Intersecretariat Working Group on National Accounts (ISWGNA)¹⁰ that is assisted by the Advisory Expert Group. The research groups include the Canberra II group on nonfinancial assets, the IMF Balance of Payments Committee on the rest of the world account, and electronic and other discussion forums.

Drawing from the TFHPSA's activities, Section II of this paper broadly describes existing practices in each of the macroeconomic statistics and accounting systems, and identifies where harmonization efforts between these two systems are underway and/or in need of further promotion. Section III compares data quality features of the two systems. By shedding light on the context in which each system operates, the section on quality helps to better grasp the principles that drive each system and, thus, the scope of the harmonization efforts. Section IV concludes with a summary and a look forward.

II. SELECTED AREAS FOR HARMONIZATION

The areas for potential harmonization are explored in this paper under the following three broad topics:

- **entities** covered by statistical guidelines and accounting statements, i.e., the entity for which statements are prepared (“who” conducts the economic activities);
- **assets**¹¹ in the balance sheet of entities (the “outcome” of economic activities); and
- **flows** reported on these assets (“what” economic activities give rise to/affect assets).

For each topic (see Table 1), the paper first sketches characteristic aspects in each system, depicting how statistics and accounting numbers convey information in their respective

⁸ See <http://www.imf.org/external/np/sta/tfhpsa/index.htm>

⁹ The Task Force is chaired by the IMF, represented by the author of this paper; the WG I is chaired by the IFAC Public Sector Committee (PCS), initially represented by Ian Mackintosh, previous PSC chairman (current chairman is Philippe Adhémar), and WG II is chaired by the OECD, represented by Jean-Pierre Dupuis.

¹⁰ See <http://www.imf.org/external/np/sta/umgmd/index.htm> and <http://unstats.un.org/unsd/nationalaccount/snarev1.htm>

¹¹ Throughout the paper, financial assets also encompass liabilities. It should be noted that liabilities are exclusively financial in statistics, that is, they are due to/owned by another unit or other units.

contexts. Then, the paper explores how these aspects could be made to converge or reconcile. Where applicable, it refers to the work of research groups involved in the review of the 1993 SNA.

Table 1: Selected Aspects of Relationships Between Statistics and Accounting

Topics	Aspects
Entity	Statistics: sectors made up of institutional units Accounting: reporting entity made up of controlling unit and its controlled units
Assets*	Statistics: defined as subject to ownership rights, and source of economic benefits Accounting: defined as resources controlled, and source of economic benefits/service potential
<i>Balance sheet</i>	
Financial equity assets: related entities	Statistics: subsidiaries at 50 percent and more ownership; associates at 10 to 50 percent. Income: <i>dividends declared</i> for subsidiaries, associates, and other Accounting: subsidiaries at 50 percent and more ownership; associates at 20 to 50 percent. Income: <i>fully consolidated</i> for subsidiaries; <i>equity basis</i> for associates; and <i>dividends declared</i> other
Debt assets	Statistics: market value except for loans. Income on effective interest rate Accounting: different values. Income on effective and/or yield to maturity basis
Nonfinancial assets	Statistics and Accounting: mixture of expensing/capitalizing intangible and transaction costs; clarification required in specific areas (e.g., special purpose vehicles)
<i>Contingent assets*</i>	Statistics and Accounting: clarification required for externalities, provisions, social security and assurance, and guarantees
Flows	
Recording of accounts	Statistics: transactions and other changes clearly delineated Accounting: transactions and other events mixed
Reporting statements	Statistics: accounts on transactions (current, capital, financial accounts), and on other changes Accounting: income/performance statement, changes in net assets, shareholders' equity, and cash flows

*encompass liabilities

A. Entities Covered in Statistical and Accounting Statements

The definition of the entity/unit of reporting is crucial because it is the entity's economic activities, as recognized/accounted for by each system, that are reported in the statistical/accounting statements.

Statistical guidelines

The reporting unit of the statistical guidelines is the sector. Each sector comprises an institutional unit or a group of institutional units. An institutional unit is a resident

(economic) entity that is capable, in its own right, of owning assets, incurring liabilities, and engaging in economic activities and in transactions with other entities, and that has or could compile a complete set of accounts (1993 SNA, par. 4.2). Residency is defined according to the economy, that is, the territory over which a national government has jurisdiction and provides for the laws under which the economic activities are carried out.

The delineation of resident sectors (i.e., groupings of institutional units) is based on their principal functions, behaviors, and objectives. The national accounts report on five mutually exclusive sectors: general government, nonfinancial corporations, financial corporations, nonprofit institutions serving households (NPISHs), and households. For instance, government comprises institutional units, which in addition to fulfilling their political responsibilities and their role of economic regulation, “assume responsibility for the provision of goods and services to the community as a whole or the individual households on a nonmarket basis; transfer payments to redistribute income and wealth; and they finance their activities, directly or indirectly, mainly by means of taxes and other compulsory transfers from units in other sectors.”¹² The economic activities between the resident sectors and nonresidents are grouped in the national accounts under the rest of the world account, which plays a role similar to that of an institutional unit (1993 SNA, par. 2.164).

In statistics, depending on the needs to be served, sectors are combined and/or subsectors created. Examples of groupings include combining the nonfinancial corporations and financial corporations; the resulting grouping can be broken down between “private corporations” and “public corporations”, with public corporations defined as corporations controlled by the government. The “public sector”, which covers the government and the public corporations, is made up of government units, nonprofit institutions controlled and financed by governments, and public corporations, such as the central bank. The “private sector” regroups the remaining resident units (private corporations, NPISHs and households). Conversely, subsectoring ranges from several institutional levels (e.g., central, state, and/or local governments) to the individual institutional unit (e.g., the central bank).

For each sector/grouping/subsector, the economic activities of the components institutional units are aggregated, and not consolidated, as a matter of principle. However, the government sector as a whole can be consolidated in the national accounts to show the net relations between the government and the rest of the economy. —Consolidation is used for certain macroeconomic datasets that are harmonized to the 1993 SNA, such as *Government Finance Statistics Manual 2001*, and *Monetary and Financial Statistics Manual*.

¹² International Monetary Fund, *Government Finance Statistics Manual 2001 (GFSM 2001)*, Washington, D.C., 2001, par. 2.20, p. 9.

Accounting standards¹³

In accounting, the reporting economic unit consists of an individual entity or a group of entities comprising a controlling unit and its controlled units. The notion of control is key to determining the reporting unit and, hence, whose economic activities are recorded. For instance, the government unit covers the "whole of government," that is, the fully consolidated economic activities of the government and its controlled units (at levels such as central government, state government, territory government, or local government). Controlled units include government business enterprises (GBEs).¹⁴ The economic activities of the controlling unit are fully consolidated with those of controlled units in accounting reporting.

The financial statements of the controlling entity and its controlled entities are combined on a line-by-line basis by adding together like items of assets, liabilities, net assets/equity, revenue and expenses. Balances and transactions between entities within the economic entity and resulting unrealized gains are eliminated in full. Unrealized losses resulting from transactions within the economic entity should also be eliminated unless cost cannot be recovered (IPSAS, p. 206).

Relationship between statistical and accounting entities

Unlike the accounting standards, the statistical guidelines do not use control as a criterion for defining institutional units. For instance, though controlled by government, public corporations are institutional units in their own right; and so are quasi-corporations that are unincorporated enterprises that function as if they were corporations.¹⁵ Instead, the statistical guidelines delineate institutional units on the basis of being (resident) centers of legal responsibility, that is, having legal independent holdings of assets and liabilities. The statistical guidelines give preference to units legally holding assets/liabilities over other units, "because it provides a better way to organize the collection and presentation of statistics even if its usefulness is limited in some cases" (1993 SNA, par. 2.19).

¹³ As represented by International Federation of Accountants, *2003 Handbook of International Public Sector Accounting Pronouncements* (IPSAS), New York, 2003. Referred to throughout the text as IPSAS (themselves related to the IFRS, see footnote 7).

¹⁴ A GBE is defined in IPSAS as an entity that (1) has the power to contract in its own name; (2) has been assigned the financial and operational authority to carry on a business; (3) sells goods and services, in the normal course of its business, to other entities at a profit or full cost recovery; (4) is not reliant on continuing government funding to be a going concern (other than purchases of outputs at arm's length); and (5) is controlled by a public sector entity (IPSAS, pg. 688). This definition of GBE ("as at a profit") is not necessarily equivalent to that of public corporations ("economically significant prices") in statistical guidelines.

¹⁵ This is to be distinguished from ancillary corporations that are wholly-owned subsidiaries, whose activities are strictly to provide services to the parent corporations, or other ancillary corporations. In the statistical guidelines, ancillary corporations are treated as part of the institutional unit to whom they provide services (1993 SNA, par. 4.40).

At the same time, the statistical guidelines recognize that units controlled by other units may not be centers of decision-making for all aspects of economic life. In fact, the statistical guidelines use the same terms as the accounting standards to characterize these relationships, defining subsidiaries as entities controlled by another corporation (generally evidenced by 50 percent or more equity ownership) and associates as influenced by another corporation (generally between 10 percent to 50 percent share ownership).

However, with the exception of ancillary corporations each individual corporation should be treated as a separate individual unit, whether or not it forms part of a group. Although the management of a subsidiary corporation may be subject to the control of another corporation, it remains responsible and accountable for the conduct of its own production activities (*1993 SNA*, par. 4.38).

With the statistical “public sector” defined as comprising the government and public corporations, there should be equivalence with the accounting “whole of government.” This is not always the case, and harmonization could be enhanced in at least two ways.

First, the two systems could cover the same units making up the public sector by relying on a common definition of control to define “public corporations” and “GBEs.” In this endeavor, the use of the term “benefits” in IPSAS in defining control could be reviewed against that of the *1993 SNA* where benefits are referred to in a narrower sense (e.g., to define assets):

Whether an entity controls another entity for financial reporting purposes is a matter of judgment based on the definition of control in this Standard and the particular circumstances of each case. Definition includes powers (to govern the financial and operating policies of another entity) and benefits (from the activities of another entity) (IPSAS 6, pp. 200–205).

Second, within the public sector (statistics) and whole of government (accounting), a common delineation of *market* and *nonmarket* activities could help the two systems distinguish “government” entities from the “other public” entities along the same lines. This could be made possible in accounting that recognizes the need for reporting of a grouping that may differ from the controlled grouping:

In the public sector many controlling entities that are either wholly owned or virtually wholly owned represent key sectors or activities of a government, and the purpose of this standard is not to exempt such entities from preparing consolidated financial statements. In this situation the information needs of certain users may not be served by the consolidated financial statements at a whole of government level alone. In many jurisdictions governments have recognized this and have legislated the financial reporting requirements of such entities (IPSAS, p. 198)

One of the five teams of Working Group II of the TFHPSA is working on the above two areas of harmonization. With a view to make data available at the level of the government unit, and the GBEs (controlled units), the IFAC–PSC undertook to “encourage or allow note

disclosure of financial information about the general government sector as defined in the *Government Financial Statistics Manual 2001 (GFSM 2001)*.”¹⁶

B. Balance Sheet Statement

The two systems share many features related to assets. They both report on entities that have property rights on economic assets, recording the economic activities that each system deems as affecting the entities’ levels of assets and wealth. The measurement is done in monetary units. These assets have been either purchased/transferred by the entity, generated through economic operations, or created by other events, and they are all financed, directly or indirectly, by the creditors or stockholders/net asset owners. Both systems present the amounts of assets (resources owned), liabilities (external claims on these assets), and stockholders’ equity¹⁷ (owners’ capital contributions and other internally generated sources of capital) in a balance sheet statement.

In both systems also, the major classes of assets are similar: claims on other units in the form of financial assets and nonfinancial assets, with the latter comprising tangible (fixed assets, inventory, valuables) and intangible (such as computer software, patents, and trademarks) assets. Financial assets comprise equity, debt, and other financial assets, all delineated along similar lines in both systems. In both systems, assets can be grouped under equity and/or claims on other entities. The equity owner is entitled to the rewards and risks that arise from equity financial assets and nonfinancial assets. This is to be contrasted with the holder of claims who has a right to receive either cash or another financial asset from the other entity as sets in the claim arrangements (e.g., a contractual right in the case of debt asset). Finally, the two systems differ somewhat on the delineation they make between existing and contingent assets. Furthermore, both systems exclude contingent assets from their respective recording and reporting statements.

While using the same nomenclature for assets, the two systems however define assets slightly differently. In statistics, assets are subject to *ownership rights*, and are a source of *economic benefits*. An asset is “economic” in the sense that its owner can enforce ownership rights and expect economic benefits from it.¹⁸ The IPSAS define assets as *resources controlled by an entity* as a result of past events and from which *future economic benefits or service potential* are expected to flow to the entity (IPSAS, p. 29).

¹⁶ March 2004 meeting.

¹⁷ The national accounts classify shareholders’ equity as liabilities; the statistical definition of “net worth” is the difference between the value of all assets and all liabilities, and hence is different from that in accounting standards. Eurostat, *European System of Accounts (ESA95)*, Luxembourg, 1996, 7.05 defines own funds as the sum of net worth and equity issued.

¹⁸ For the update of balance of payments guidelines, it is proposed to explain “ownership” as meaning “economic benefits” in terms of access to rights and benefits rather than legal rights. For an examination of the current definition of assets in the *1993 SNA* and consideration of amendments, see John S. Pitzer, “The Definition of an Economic Asset in the System of National Accounts 1993, Rev. 1,” paper presented at meeting of Canberra II Group, Washington, D.C., March 17-19, 2004.

The two systems could come closer in defining assets. **First**, while all assets are *owned* (as stated in statistical guidelines) by the institutional unit, it is not all assets that are *controlled* (as stated in accounting standards). Specifically, as covered in the next subsection, claims on other entities (debt and other financial assets) would not generally involve control, nor does equity investment in other entities with a limited threshold of percentage ownership.

Second, the difference between *economic benefits* (in statistical guidelines) and *economic benefits/service potential* (in accounting standards) appears to stem from accounting standards defining nonfinancial assets as “used to deliver goods and services” and, as such, “embodying service potential” by creating an opportunity to generate an inflow of cash or other assets. This is to be distinguished from financial assets that give a present right to receive cash or other financial assets and that embody “future economic benefits” through them generating cash or other financial assets.

The next subsections (a) review the treatment of financial equity assets; (b) briefly refer to debt assets; (c) discuss nonfinancial assets; and (d) review contingent assets, which both systems exclude in their reporting statements.

Financial equity assets

Statistical guidelines

The statistical guidelines record all financial equity investment at market or market-equivalent values in the balance sheet; the income from such investment is recorded on a dividends-declared basis, except for foreign direct investment. Direct investment comprises investment in foreign subsidiaries (owned at more than 50 percent), associates (from more than 10 percent to 50 percent), and branches. The income from direct investment equity is recorded on an equity basis.¹⁹

Accounting standards

Accounting standards state that the types of financial equity assets (subsidiaries and joint ventures, associates, other) determine the valuation used as well as the treatment of income (fully consolidated, equity, and declared dividends)²⁰ depending on whether the investment confers control, influence, or no influence.

¹⁹ “The retention of some or all of the earnings of a foreign direct investment enterprise within that enterprise can be regarded as a deliberate investment decision by the foreign owners. Accordingly, the retained earnings are rerouted in the System by showing them as first remitted to the foreign owners as property income and then reinvested in the equity of the direct investment enterprises” (1993 SNA, par. 3.27). “Rerouting” transactions differs from “imputation” where values are imputed for internal transactions (e.g., own consumption or capital formation), though the goods and services themselves are not imputed (1993 SNA, par. 1.73).

²⁰ IPSAS 7 Accounting for Investments in Associates (IAS 27); IPSAS 6 Consolidated Financial Statement and Accounting for Controlled entities; IPSAS 15 Financial Instruments: Disclosure and Presentation (IAS 32 and 39).

Subsidiaries, and joint ventures

Controlling another entity entails “the power to govern the financial and operating policies of another entity so as to benefit from its activities” (IPSAS, p. 122).²¹ As noted earlier, the units controlled (subsidiaries) are an integral part of the reporting entity, with their income fully consolidated with that of the controlling unit(s), or the portion owned by the various entities in joint ventures.

Investment in associates

An associate is an “entity in which the investor has significant influence and which is neither a controlled nor a joint venture of the investor” (IPSAS, p. 218). The ownership interest in associates “confers to the investor the risks and rewards incidental to an ownership interest in the formal equity structure of the investee, that is share capital or an equivalent form of unitized capital, such as units in a property trust.” While they are less than controlled, associates have their operating and strategic activities significantly influenced by the investor entity. If the investor’s ownership interest is in the form of shares, and it holds, directly or indirectly through controlled entities, 20 percent or more of the voting power of the investee, it is presumed that the investor has a significant influence unless it can be clearly demonstrated not to be the case.

The income from associates is recorded on an equity basis, that is, the investor’s share of the results of operations of the investee (IPSAS, p. 31).

Other financial equity investment

As for the remaining equity investment, where the investor holds less than 20 percent, the investor is presumed not to have a significant influence. Accountants record the investment at cost and record the revenue only to the extent that the investor receives “distribution from accumulated net surpluses of the investee arising subsequent to the date of acquisition” (IPSAS, p. 219). “Entitlements due or received in excess of such surpluses are considered a recovery of investment and are recognized as a reduction of the cost of the investment” (IPSAS, p. 221).

Relationship between statistical and accounting financial equity assets

Except for direct investment, the income in statistical guidelines does not distinguish whether units are related or not. This is to be contrasted with the accounting treatment of income that varies depending on the degree of influence conferred by the investment in another entity.

Based on at least three reasons, this paper suggests that the equity income across sectors in statistical guidelines could be modified to come closer to that of accounting: income to be

²¹ The IPSAS definition of control as it relates to benefits was questioned at the TFHPSA meeting of September 2004.

accrued on an equity basis for equity investment that entails control/influence in another sector/subsector, and on an “as declared basis” for the remaining equity investment.

First, recording the income on an equity basis for units that are related would help toward recognizing families of units. The rationale is that related institutional units that are classified in different sectors have an economic behavior that differs from that of unrelated entities operating in different sectors. This is especially important where there is a public sector relationship:

The recognition of revenue on the basis of distributions received may not be an adequate measure of the revenue earned by an investor on an investment in an associate because the distributions received may bear little relationship to the performance of the associate. In particular, where the associate has not-for-profit objectives, investment performance will be determined by factors such as the cost of outputs and overall service delivery. As the investor has significant influence over the associate, the investor has a measure of responsibility for the associate’s performance and, as a result, the return on its investment. The investor accounts for this stewardship by extending the scope of its consolidated financial statement to include its share of net surplus or deficits of such an associate and provides an analysis of earning and investment from which more useful ratios can be calculated. As a result, the application of the equity method provides more informative reporting of the net asset/equity and net surplus/deficit of the investor (IPSAS, p. 224).

Second, it would create more consistency of treatment between domestic and foreign direct investment. In a public sector setting, statisticians would record as “earned” the investment that confers government control, that is investment in public corporations. This recording is currently applied for resident sectors’ investment in related entities (more than 10 percent ownership) in the rest of the world, referred to as direct investment.

Third, the suggested income treatment would help to delineate financial assets along similar lines in both systems. The *direct investment* interests (statistical guidelines) could be more clearly paralleled to those in *subsidiaries, associates, and joint ventures entities* (accounting standards). Also, the statistical *portfolio investment* (that presumes that the investor has no significant influence) could be more closely aligned with the accounting *investment in financial instruments* (other than in subsidiaries, associates, and joint ventures entities). A major step in that direction would be for the statistical guidelines to define portfolio investment as less than 20 percent threshold equity ownership, instead of the 10 percent currently used.²²

Debt assets

The two systems treat debt assets as follows. The statistical guidelines value all debt assets, except for loans, at market or market-equivalent values, whereas the accounting standards

²² This proposal was rejected at the October 2004 meeting of the Balance of Payments Committee.

use both carrying value and fair value.²³ The uniformity of valuation in statistics leads to symmetry of amounts between the debtor and creditor units; this is not always the case in accounting since valuations can vary between the debtor and the creditor. In both systems, the income from debt investment is accrued using the debtor approach, that is, the effective interest rate²⁴ at the inception of the debt (debtor approach); in cases, however, where the debt instrument is acquired in the secondary market, accounting uses the effective yield to maturity (the acquirer approach).

Nonfinancial assets

Nonfinancial assets, the subject of study of the Canberra II group, comprise tangible and intangible assets. The group is focusing largely on intangible assets, owing in great part to the significant increase of these assets in recent years, mostly in the information and service industries.

Harmonization of statistical guidelines with accounting standards²⁵ would help to clarify the extent to which differences are warranted at various stages of recording: initial recognition and measurement at acquisition/creation of assets, measurement subsequent to initial recognition, inclusive of depreciation and amortization, as well as allowance, impairment, retirement, and disposal of assets. Harmonization on nonfinancial assets is especially important since long-lived assets play a key role in decision making both for the firm and in a macroeconomic setting. For these two levels, using definitions that differ on what constitutes nonfinancial assets may lead to different analytical results and, hence, decision making.

The two systems may differ in their capitalization²⁶ of costs that generate future benefits. For instance, in accounting, certain assets are not capitalized owing to a lack of reliable measurement. These include internally generated R&D, advertising, patents, copyrights, brands, and trademarks that are generally expensed (although the development and legal fees incurred can be capitalized). On the other hand, intangible assets purchased from other entities would be capitalized. The statistical guidelines are more likely to look at the economic impact of assets than at the way they are financed. For instance, outlays such as R&D, which are currently expensed in statistics, may have an impact on the production function similar to

²³The terms “fair value” and “market or market-equivalent” are used interchangeably throughout the paper. Market values (determined from price quotations in active markets) can be distinguished from fair values (estimations that approximate market values when active market price quotations are unavailable) as is done in the IMF’s *Compilation Guide for Monetary and Financial Statistics*, Washington, D.C., forthcoming 2005.

²⁴ For variable interest and index-linked securities, the indexed proceeds are treated as interest income (1993 SNA, par. 11.78).

²⁵ The Canberra II group undertook at its March 17, 2004 meeting to establish formal links with IFAC/PSC and IASB and to keep these two organizations informed on the group’s proposals.

²⁶ At the time resources are acquired, capitalizing entails carrying their cost as assets in the balance sheet (i.e., expensing it over a number of reporting periods) whereas expensing would entail recognizing such cost as expenses in the income statement for that period.

purchased equipment, which is generally capitalized. This topic is under study by the Canberra II group along with other subjects, such as the capitalization/expensing of transaction costs.²⁷

A noteworthy example where statistical guidelines are converging to accounting standards is that of durable goods used by military. The current statistical guidelines treat as fixed asset those that can potentially be used for civilian purposes (airfields, docks or other facilities used as bases), but not those that are considered destructive (rockets, missiles, their warheads, missile silos, submarines, etc.). It is now proposed to include expenditure on military weapon systems as gross fixed capital in statistics, as a way, among other things, to harmonize with public sector accounting.

A further area of interest is the extent to which the owner retains the equity risks of benefits that it leases to/shares with other units. In the case of goods leased to another unit, the treatment is generally straightforward once the lease is determined as an operating or financial lease. However, when units share economic activities with other units (partnerships), issues of concern include 1) the extent to which the units share the significant risks and rewards of ownership, principally in the case of unsatisfactory performance (rewards associated with the asset against the associated risk undertaken by the various units), 2) what units retain continuing managerial involvement, and 3) the probability and degree to which the economic benefits or services potential will flow to the units involved. This is highly important where the government and the private sector are jointly involved, such as in building and operating private schemes.²⁸

Another important aspect concerns the degree of certainty that the economic benefits will flow to the unit—one aspect that helps distinguish actual (recognized) assets from contingent assets, as next described.

Contingent assets

While both systems exclude contingent assets, how they delineate such assets from actual assets may vary.

Statistical guidelines

In the *1993 SNA*, “the principal characteristic of contingencies is that one or more conditions must be fulfilled before a financial transaction takes place” (*1993 SNA* par. 11.24).

²⁷ Defined as “incremental costs that are directly attributable to the acquisition or disposal of a financial asset or liability” in IAS 39.66. These may be inclusive of auxiliary borrowing costs, attributable to the acquisition, construction, or production of various assets and liabilities (either nonfinancial or financial), such as fees and commissions paid to agents, advisors, brokers, and dealers; levies by regulatory agencies and securities exchanges; and transfer taxes and duties.

²⁸ This subject is being covered by a team of WG I of the TFHPSA, the Canberra II group, and the IMF BOP Committee (concerning nonresident activities).

First, contingent assets or liabilities are treated as financial assets and liabilities only if the claim or liability is unconditional to both parties and/or the arrangement has an observable value because it is tradable. Secondly, sums set aside in business accounting to provide for transactors' future liabilities, either certain or contingent, or for transactors' future expenditures generally are not recognized in the System. (The only "provision" recognized in the System is accumulated consumption of fixed capital.) Only actual current liabilities to another party or parties are explicitly included. When the anticipated liability becomes actual—for example, a tax lien—it is included (*1993 SNA*, par. 13.22).

Externalities, entitlements related to social benefits, and loan guarantees are examples of contingencies in the statistical guidelines.

Externalities refer to certain economic actions carried out by institutional units that cause change in the conditions or circumstances of other units without their consent.

It is necessary to consider, however, whether values should be assigned to such externalities. Economic accounts have to measure economic functions such as production or consumption in the context of a particular legal and socio-economic system within which relative prices and costs are determined. Some countries, at least at certain points in their history, may choose to frame their laws so that some producers are permitted to reduce their private costs by polluting with impunity. This may be done deliberately to promote rapid industrialization, for example. The wisdom of such a policy may be highly questionable but it does not follow that this is appropriate for economic accounts to try to correct for presumed institutional failures of this kind by attributing costs to producers that society does not choose to recognize (*1993 SNA*, par. 3.52).

In this context, units do not view externalities as agreements but rather as unsolicited services or disservices. Since there are no agreements among units, statistics do not record the externalities as existing liabilities. Furthermore, because externalities are essentially nonmarket phenomena, no mechanism exists to ensure that the positive or negative values attached to externalities by the various parties involved would be mutually consistent.

If such values were to be replaced by actual payments the economic behavior of the units involved would change, perhaps considerably. For example, the whole purpose to trying to internalize some externalities by imposing taxes on pollution is to bring about a change in production methods to reduce pollution. A complete accounting for externalities also would be extremely complex as it is not sufficient merely to introduce costs into the accounts of producers. It also would be necessary to introduce various other adjustments of questionable economic significance (*1993 SNA*, par. 3.53).

*Social benefits*²⁹ form another category of contingent liabilities. These benefits are generally uncertain or not quantifiable, or both. Moreover, the amount of benefits that an individual unit may eventually receive is not proportional to the amount of the previous payments and may be very much greater or smaller than the latter. Thus, payments, such as a social insurance contribution or a nonlife insurance premium, may entitle the unit that is making the payment to some contingent future benefits. Also, a household paying taxes may be able to consume certain collective services provided by government units, but these payments are regarded as transfers rather than exchanges (*1993 SNA*, par. 3.20).

An electronic discussion group (EDG) is examining pensions, which can be treated as existing or contingent liabilities, depending on the schemes from which they arise. A first subject is employers' pension schemes, which are likely to be treated as liabilities, and the related contributions/benefits as financial transactions. Another subject is social security or social assistance. The EDG recommends continuing the *1993 SNA* recording, which consists of simultaneously recording these contributions/benefits as transfers (i.e., revenue/expense of scheme, "above the line") while recording an adjustment entry as a nonfinancial transaction (*1993 SNA*, par. 9.14-9.16).³⁰

In the same way, "*guarantees* of payments by third parties are contingencies since payment is only required if the principal debtor defaults" (*1993 SNA*, par. 11.25). Guarantee refers to the contractual right of the lender to receive cash from the guarantor and a corresponding obligation of the guarantor to pay the lender if the borrower defaults. The contractual right and obligation exist because of a past transaction or event (assumption of the guarantee). This is even though the lender's ability to exercise its right and the requirement for the guarantor to perform under its obligation are both contingent on a future act of default by the borrower.

Accounting standards

The accounting standards recognize some of the assets that are "contingent" in statistics as "provisions"³¹ under liabilities. Provisions in this accounting context do not refer to entries, such as depreciation,³² impairment³³ of assets, and doubtful debts

²⁹ For the proposed treatment in accounting, refer to IFAC Public Sector Committee, "Accounting for Social Policies of Governments," Draft Invitation to Comment, New York, July 2003.

³⁰ Since liabilities arise exclusively from financial transactions in the current statistical guidelines, treating such obligations as liabilities would entail, under the current rules, recording the flow of contributions/social benefits as financial transactions (and not as the current treatment of revenue/expense).

³¹ IPSAS 19 Provisions, Contingent Liabilities, and Contingent Assets (IPSAS, pp. 593-649).

³² The only provision currently recognized in statistics (see quotation in para. 54).

³³ IFAC Public Sector Committee, "Impairment of Assets," Exposure Draft 23, New York, September 2003.

(IPSAS, p. 603) that are essentially adjustments to existing assets. Furthermore, accounting standards consider provisions as distinct from other liabilities, such as bank borrowing, because of the inherent uncertainty about the timing or amount of future expenditure required to settle them. At the same time, the standards do not view provisions as contingent, because their existence does not need to be confirmed by the occurrence or nonoccurrence of one or more uncertain future events not wholly within the control of the entity.

More specifically, the accounting standards recognize provisions so long as three conditions are met:

- An entity has a present obligation³⁴ arising from a past event, the obligating event. The obligation can be legal, enforceable by law, or constructive. The obligation is constructive to the extent that the obligating event creates valid expectations in other parties that the entity will discharge the obligation,³⁵ because it always involves a commitment to another party, it follows that a decision does not give rise to a constructive obligation unless it has been communicated before the reporting date to those affected in a way to raise a valid expectation (IPSAS, p. 609). The obligations, legal and constructive, arising from past events have to exist independently of an entity's future actions (that is, the future conduct of activities) to be recognized as provisions.
- It is probable that an outflow will be required. There must be not only a present obligation but also the probability that an outflow is more likely to occur than not. Where it is not probable that a present obligation exists, a contingent liability should be disclosed (IPSAS, p. 610).
- A reliable estimate can be made of the amount. The use of estimates is acceptable, notably for provisions, which by their nature are more uncertain than most other assets or liabilities (IPSAS, p. 606).

This is to be contrasted with a contingent liability that refers to a possible and/or present obligation that arises from past events. However, the liability is not recognized because (1) it is not probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation, and (2) the amount of the obligation cannot be measured with sufficient reliability (IPSAS, p. 604).

³⁴ Where it is more likely than not that a present obligation exists, a provision is recognized (if the recognition criteria apply); where it is more likely that no present obligation exists, a contingent liability is recognized.

³⁵ While the other party may not always be identified, a provision always involves an obligation to another party (IPSAS, p. 607).

Relationship between statistical and accounting contingent assets

Both systems report on existing liabilities and exclude contingencies. They both view existing liabilities as present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events. Nonetheless, their interpretations of “present obligation” and “result of past transactions or events” may vary.

For example, where an entity provides guarantees in exchange for a fee, both systems recognize revenue.³⁶ However, accounting standards recognize financial guarantees that meet certain criteria as actual “provision” liabilities. The statistical guidelines currently view the latter as contingent liabilities, since “provisioning,” among other things, would distort the debtor/creditor symmetry of treatment. One team of WG I of the TFHPSA as well as the Balance of Payments Committee are researching the topic of guarantees.

Though excluded in both systems, the fact remains that contingent rights and obligations shape the economic reality and often constitute an important element for projecting the future (e.g., vulnerability analysis). Significant problem areas include environmental remediation liabilities (e.g., restoration of strip mines after mining is completed; removal of toxic waste caused by production; decontamination of the site when a nuclear power plant is decommissioned), litigation, expropriation, self-insurance, and guarantees.

For the purpose of the SNA, the treatment of contingencies is clear. However, by conferring certain rights or obligations that may affect future decisions, contingent arrangements obviously produce an economic impact on the parties involved. Where contingent positions are important for policy and analysis, it is recommended that supplementary information be collected and presented as supplementary data (1993 SNA, par. 11.26).

While accounting has been traditionally reporting contingencies as notes to the financial statements, this has not been the case in statistical guidelines.³⁷ The latter are now however increasingly meeting the needs of supplementary data in the form, among other things, of a greater use of memorandum items³⁸ and of satellite accounts:

³⁶ IPSAS 9 Revenues from Exchange Transactions (IPSAS pp. 253-279) and IFAC Public Sector Committee’s “Revenue from NonExchange Transactions,” Invitation to Comment, New York, January 2004. “Any payments of fees related to the establishment of contingent arrangements are treated as payments for services” (1993 SNA, par. 11.26).

³⁷ The 1993 SNA provides for few memorandum items (consumer durables and direct foreign investment, par. 13.84); supplementary information (as for contingencies, par. 11.26); and satellite accounts (to expand the analytical capacity of national accounting, par. 21.4). In the review of the IMF’s *Balance of Payments Manual*, fifth edition, Washington, D.C., 1993, memorandum items will be considered part of the standard components, whereas supplementary information will be treated as options that may be considered.

³⁸ The IMF’s *External Debt Statistics: Guidelines for Compilers and Users*, Washington, D.C., 2003, and *International Reserves and Foreign Currency Liquidity: Guidelines for a Data Template*, Washington, D.C., 2001, have moved in that direction.

The manuals on satellite accounts may use concepts and definitions that differ from existing accounts; add detail or other information about a particular aspect of the economy to that in existing accounts; and rearrange information differently, using classification that differs from the primary guidelines.³⁹

C. Flow Statements

Assets are a bundle of economic benefits whose creation, transformation, exchange, transfer, and extinction are reported as *flows* in both systems. As such, assets are the outcome of flows, and, at the same time, flows explain changes of assets in balance sheets between two periods.

In terms of flows, differences between the two systems may arise on two counts. **First**, to the extent that the economic activities recognized by each system differ, so would the flows that purport to capture such activities. **Second**, unlike the accounting standards, the statistical guidelines clearly distinguish between transactions and other flows in the reporting statements.

Statistical guidelines

All assets in the statistical guidelines result from transactions, except for nonproduced-nonfinancial assets and valuables⁴⁰ that are created as a result of other flows, primarily other changes in volume.

Transactions

Transactions (see Table 2) involve interactions between institutional units by mutual agreement (items 1 and 2) or actions within an institutional unit (item 3) that are treated like transactions often because the unit is operating in two different capacities (*1993 SNA*, par. 3.12).

Most of the interactions between institutional units are monetary transactions where institutional units make a payment (receive a payment) or incur a liability (receive an asset) stated in units of currency. Monetary transactions (item 1) can be in the form of exchange (something for something) or transfer (something for nothing). Two-party transactions also include certain activities not expressed in monetary terms (item 2). Nevertheless, the system limits nonmonetary recording to very specific cases: barter, remuneration in kind, payments in kind other than compensation in kind, and transfers in kind (*1993 SNA*, par. 3.36), such as education provided free by government. The rationale for limiting recording nonmonetary

³⁹ Carol Carson and Lucie Laliberté, 2001.

⁴⁰ It is suggested here that since valuables are actual assets that result from previous production, their “appearance” as an asset could be viewed as a revaluation phenomenon rather than an other change in volume as is currently the case.

Table 2. Types of Transactions

Description	Units involved	Valuation	Examples
1. Observable in value terms	2	Monetary transactions	Purchase of goods or services
2. Observable but not immediately valued	2	A value in monetary terms is attributed	Barter of goods, education services provided free by government
3. Physically observable	1	A value in monetary terms is attributed	Own account, such as consumption of fixed capital

transactions is that “if values are assigned to production outside the market, values have also to be assigned to the income generated by the production as to the consumption of the output. It is clear that the economic significance of these flows is very different from that of monetary flow...the inclusion of large nonmonetary flows ...can obscure what is happening on markets and reduce the analytical usefulness of the data” (1993 SNA, par. 1.21).

The actions within a unit (item 3) include own account productive activities, such as consumption of fixed capital, entries in and withdrawal from inventories, and intermediate consumption. These are referred to as “internal transactions,” because they show how units allocate goods or services for their own consumption or capital formation; the outputs of these productive activities are not disposed of in monetary transactions with other units (1993 SNA, par. 1.73).

Other changes

Other changes are the economic events that are not transactions and that affect the value of economic assets. The 1993 SNA distinguishes between two types of “other changes”: “revaluations” and “other changes in volume.” This distinction reflects the price/volume distinction in the national accounts, according to which value is the product of price and volume.

Revaluations are caused by holding gains and losses, which are either “neutral” (if caused by general changes in prices, that is, inflation) or “real.” Real gains and losses result if the value of an asset changes more than the general price in the economy.

Other changes in volume can be caused, among other things, by “unexpected losses” (e.g., destruction caused by political events, such as war, and catastrophes, such as earthquakes) and “economic appearance” (e.g., discoveries or depletion of subsoil resources). They would also include “certain actions undertaken unilaterally by one institutional unit (that) have consequences on other institutional units without the latter’s consent. The System records such actions only to a limited extent, essentially when governments or other institutional units take possession of the assets of other institutional units, including nonresident units,

without full compensation. In real life, unilateral economic actions bearing consequences on other economic units (externalities) are much broader. However, such externalities are not recorded in the System” (1993 SNA, par. 2.26). Other changes in volume may also record changes in classification of institutional units and assets and in the structure of institutional units (1993 SNA, par. 12.8).

Reporting in the statistical guidelines

The 1993 SNA clearly delineates the “transactions” accounts (current, capital, and financial accounts) from the “other changes” accounts, and the “balance sheet” (described in the previous section).

The current account comprises production, distribution and use of income. The production account shows output as resources and intermediate consumption as uses; the balancing item is value added (1993 SNA, par. 2.109). The income account is made up of the distribution and use of income. Distribution is decomposed into three main steps: primary distribution, secondary distribution, and redistribution in kind. The first refers to the distribution of value added to factors of labor and capital and to government (through taxes, less subsidies, on production and imports). The second covers redistribution of income through, essentially, transfers in cash. The last one relates to further redistribution through transfers in kind.⁴¹ The use of income applies to those sectors that have final consumption (or final consumption expenditure), that is, government, nonmarket nonprofit institutions serving households (NPISHs), and households.

The capital account records transactions linked to acquisitions/disposals of nonfinancial assets and capital transfers. The financial account records transactions in financial instruments.

Other changes, which comprise holding gains/losses and other changes in volume, represent economic events, although they are often misleadingly viewed as residual accounts.

The fact that the two accounts [revaluation accounts and other changes in volume] in question are not widely implemented for the time being should not lead to underestimating their importance and significance. Without a good and common understanding of the meaning of the 1993 SNA, discussions on many new issues may prove exceedingly confused and fruitless.⁴²

In a nutshell, in the 1993 SNA, changes in the level of assets can originate from transactions and from other changes, each recorded in distinct reporting statements.

⁴¹ The latter transfers are not significant in the case of corporations (1993 SNA, par. 2.112) but are important for governments and NIPISHs.

⁴² André Vanoli, “Interest and Inflation Accounting,” *Review of Income and Wealth*, Series 45, No. 3 (September), 1999, p. 295.

Accounting standards

The accounting standards also record transactions and other events (similar to other flows in statistical guidelines) but report them indistinguishably in the income statement and/or the net asset/shareholders' equity (the balance sheet was covered in the previous section). Some of the events that are not recognized in the accounting statements may be reported in the notes to the financial statements. The notes have no exact equivalent in the statistical guidelines—the closest equivalent is memorandum items and metadata.

Recording

In the past, with few exceptions, accounting only recognized value changes at the time transactions occurred with other units. This is changing.

- First, public sector accounting is increasingly adopting the accrual concept, a practice that has been more prevalent in business accounting.
- Second, the historical cost-based approach, prevalent in the balance sheet till very recently, meant awaiting the disposal of assets or the fulfillment of certain impairment criteria before the changes in asset values could be recorded in the income statement. There is now an increasing tendency to measure assets at fair value.
- Third, the increasing use of fair valuation led to questioning the constraints of the income statement. It also brought more attention to the risks embedded in the benefits expected to flow from assets, notably on financial assets. The protection from risks, which had been traditionally limited to the property (damage) and casualty, is now increasingly extended to financial instruments in the form of hedging (transferring to another party one or more of the financial risks). Among risks, those related to debt assets (e.g., creditors' risks) are usually smaller and may be more quantifiable than the risk of equity (generally larger and more volatile, being residual). The equity risk applies to both nonfinancial assets and to financial equity assets. In the latter case, the equity risk conveys the entitlement to the distribution of benefits, although the portfolio equity owner does not have the discretion on the distribution of such benefits (as discussed above in the section on financial equity assets).

The accounting standards classify transactions and other flows under revenues and expenses. Revenues refer to “the gross inflows in economic benefits or services potential during the reporting period when those inflows result in an increase in net asset/equity, other than increases relating from contributions from owners” (IPSAS, p. 33). For instance, public sector entities may derive revenues from exchange and nonexchange transactions. An exchange transaction is one in which the entity receives assets or services, or has liability extinguished, and directly gives approximately equal value (primarily in the form of goods, services, or use of assets) to the other party in exchange. Examples of nonexchange transactions include revenue from taxes, grants, and donations.

Transactions and events recognized as expenses are decreases in “economic benefits or service potential in the form of outflows or consumption of assets or incurrence of liabilities that result in decreases in net asset/equity, other than those relating to distributions to owners” (IPSAS, p. 31).

Reporting statements in accounting

In accounting, the financial statements on flows consist of the income statement (also referred to as financial performance), the statement of changes in net asset/equity, and the cash flow statement. Notes or schedules may also supplement the financial statements.

The revenues and expenses reported in the income statement arise from transactions with other units, as well as from certain events. The income statement includes revenue/expense activities, such as ordinary operating, investing, and financing activities (part of an entity’s service delivery or trading activities, inclusive of activities incidental to, or arising from these activities); as well as extraordinary activities (“events or transactions that are not expected to recur frequently or regularly and are outside the control or influence of the entity”) (IPSAS, p. 31).

The remaining events that give rise to revenues/expenses are reported as part of the net assets/equity (e.g., revaluation surplus on physical assets, and gains/losses from the translation of financial statements of a foreign entity). Other events, not recognized as revenues and expenses, can however be explained in the notes to financial statements.

Relationship between statistical and accounting flows

Recording

While both the current account (statistics) and income statement (accounting) report transactions with other units,⁴³ the current account specifically excludes “other flows.” This is to be contrasted with accounting where the income statement includes a number of “other events”, as do the changes in net asset/equity.

Further, the statistical “other flows” are based on concepts whereas the accounting “other events” are more driven by practical considerations. In accounting, the recording of events that affect the value of assets and liabilities has been traditionally hampered by the income statement accounting rules, where changes in valuation could not be reported unless realized. (For instance, capital gain is recognized only upon sale, that is, when a transaction with another unit occurs.) As such, the balance sheet reflected only selected changes in assets and liabilities, such as the lowest of market or historical cost value (the exchange price at its acquisition date augmented by the payable/receivable arising from accruing the income).

⁴³ Except for capital consumption (depreciation), the statistical “internal transactions” are not viewed as transactions in accounting since they are not disposed of in monetary transactions with other units.

Valuing assets at historical cost (still in use in accounting) means that similar assets have different valuations within the balance sheet and across firms, depending on the timing of the transaction/event that gave rise to them. This is to be contrasted with statistical guidelines where the use of market or market-equivalent values for all assets (with the exclusion of loans)⁴⁴ means that all assets are comparable across types of assets and sectors.⁴⁵

Using the discount rate model to value assets, the terms are as follows:

$$\text{Asset value} = \sum_{t=1}^N \frac{\text{Future cash flows}_t}{(1+r)^t}$$

where t is the period in which cash flows are expected,
 N is the number of periods over which cash flows are expected, and
 r is the discount rate (the internal rate of return, IRR).

The discount flow equation captures the parameters used to value assets as the present value of future benefits (cash flows for financial assets), discounted by a rate that reflects the risks attached to the expected benefits. The future benefits of an asset constitute the numerator of the equation, and the discount rate that embeds adjustments is shown in the denominator.^{46 47} The discount rate would generally capture the real rate of interest plus risks that may affect the expected benefits. In other words, the numerator captures the benefits that are expected, and the denominator measures the risks—that is, of the probability of occurrence of the benefits.

Table 3 identifies the factors that would affect the terms of the equation for valuing bonds at market value, and loans, at nominal value (statistics), and/or at carrying value accounting.

⁴⁴ And with the exclusion of “most components of liabilities in the form of shares and other equity that should be valued at book value” in the IMF’s *Monetary and Financial Statistics Manual*, Washington, D.C., 2000, par. 213.

⁴⁵ This also applies to the transformation that assets undergo within producing units. As such, transformation is recorded at market or market-equivalent values, and these internal transactions are reported in the flow statements.

⁴⁶ An alternative presentation would be to reduce the amount of the cash flows by the expected loss (such as expected default for loans) and to discount at the risk-free rate. “To avoid double counting, the discount rate does not reflect risks for which future cash flow estimates have been adjusted” (IAS 36, par. 53).

⁴⁷ For indexed securities, expected benefits are inclusive of the fluctuations in the value of benefits that have been agreed upon by contract. These fluctuations are part of the agreed value, even if the amount cannot be determined at the inception of the contract.

Table 3. Sources of Changes in Debt Assets⁴⁸

<i>Discount Flow Equation Terms</i>	Bonds at market (fair value)	Loans at nominal value (carrying value)
<i>Expected benefits (numerator)</i>	Transactions and other volume changes in case of default	Transactions
<i>Credit risk specific to the assets and to the asset issuer built into the “r” (denominator)</i>	As the risk evolves through the life of the bond	The risk as prevailing at the time of the inception of the loan
<i>Expected inflation built into the “r” (denominator)</i>	As the risk evolves through the life of the bond	The risk as prevailing at the time of the inception of the loan
<i>Risk-free real interest rate (denominator)</i>	As the risk evolves through the life of the bond	The risk as prevailing at the time of the inception of the loan

For bonds at market value, the IRR of the equation is the current market interest rate for the bond, referred to as the “yield to maturity.” The value of the bond will fluctuate as a result of changes in the numerator: transactions (such as coupons payable paid out) and other volume changes (such as coupons payable not paid out on the due date). In the same way, to the extent that any component of the IRR fluctuates (e.g., inflation, credit risk), so will the value of the bond. While the financial account records transactions on bonds, the “other changes” accounts in the statistical guidelines capture nonpayment of cash flows⁴⁹ (other volume changes) and changes in the probability of risks.

Unlike for market valuation where the terms of the equation evolve to reflect market conditions, the nominal valuation of loans entails setting the terms of the equation: the expected benefits are the “amount that a debtor must pay to the creditor to extinguish the claim” (1993 SNA, par. 13.64), that is, the proceeds of the loan, adjusted only to take into account interest payable; the discount rate is that used at the inception of the contract. As such, the nominal valuation effectively disregards the impact of changes in the credit risk, inflation expectation, and real interest rate that occur after the loan was contracted out. The

⁴⁸ Presented in Lucie Laliberté, “Income from Bonds: Treatment in the System of National Accounts 1993,” IMF Working Paper 02/221, International Monetary Fund, Washington, D.C., December 2002, p. 6.

⁴⁹ Except when there is forgiveness agreed upon by the parties, in which case the impairment is recorded as a transfer, a transaction item, in the capital account.

1993 SNA values loans as if they represent money;⁵⁰ it justifies this special treatment for loans on the basis of their nonnegotiability,⁵¹ creating a major inconsistency in valuation with other assets in the system, where tradability is not an issue. Problems associated with the 1993 SNA valuation of loans have been the subject of a paper⁵² for cases where the loans become nonperforming, that is, when the debtor fails to respect the contractual arrangements. The valuation of loans is the subject of a study of an electronic discussion group moderated by the IMF.⁵³

Reporting

In terms of reporting, a major difference⁵⁴ between the two systems results because the “current account” in statistics includes transactions and excludes other flows, whereas the “income statement” in accounting includes both transactions and other events.

The income statement reflects current accounting practices that are ad hoc and that lack a sound conceptual basis. This became especially obvious with the increased use of fair valuation for certain assets but not for others. Therefore, the IASB has been proposing the “performance reporting” project. Performance reporting would provide for a comprehensive income statement that would consist of two columns: one that would distinguish between income and expenses other than “remeasurements,” and the other that would be remeasurements. The reporting would include the change in equity (net asset) from transactions and other events and circumstances from nonowners’ sources. The comprehensive income concept would facilitate integrating valuation adjustments (e.g.,

⁵⁰ “The monetary value of some assets and liabilities—cash, deposits, loans, advances, credits, etc.—remains constant over time. As already noted, the ‘price’ of such assets is always unity while the quantity is given by the number of units of the currency in which they are denominated. The nominal holding gains on such assets are always zero. For this reason the difference between the values of the opening and closing stocks of such assets is entirely accounted for by the values of the transactions in the assets, this being one case in which it is possible to deduce the latter from the balance sheet figures” (1993 SNA, par. 12.107). The definition of money is similar to that in accounting standards: “Monetary assets are money held and assets to be received in fixed or determinable amounts of money” (IAS 22, par. 8).

⁵¹ “Negotiable”—a term used in the 1993 SNA—represents the likelihood that the asset will be sold quickly (referred to as marketability in financial terms). Marketability, along with some certainty in the expected price, and continuity of price unless due to substantial new information, are components of liquidity. Liquidity, in turn, is simply a characteristic of a “good” market for a given asset, as is information, transaction cost, and external efficiency or information efficiency.

⁵² Please refer to Adriaan Bloem and Cornelis Gorter, “The Treatment of Nonperforming Loans in Macroeconomic Statistics,” IMF Working Paper 01/209, International Monetary Fund, Washington, D.C., 2001.

⁵³ See <http://www.imf.org/external/np/sta/npl/eng/discuss/index.htm>

⁵⁴ As noted earlier, other differences stem from the current account, including internal transactions, whereas the transformation within the unit is not recognized in the income statement. These differences in reporting are not treated here, and the reader is referred to Appendix 3 of *GFSM 2001* for more information between the current account and the income statement.

foreign currency transactions) and other economic events (e.g., restructuring). It would provide more flexibility in delineating operations from the financing and the revaluation of the accounts. Finally, but importantly, such a presentation would mirror closely the concepts used in statistical guidelines.

In this regard, the PSC agreed⁵⁵ to activate a project to develop a comprehensive report of financial performance, which distinguishes between transactions and other economic flows as defined in *GFSM 2001*. It also agreed to consider adopting current values in IPSAS and to value inventories at current replacement cost when all other assets are valued at fair value.

III. RELATIONSHIP BETWEEN THE DATA QUALITY OF THE TWO SYSTEMS

Both statistical and financial statements strive to capture, through data, relevant aspects of the economic reality—the economy as a whole for statistics, and the individual entity for accounting. The differences in recording and reporting covered in the previous section partly reflect the emphasis that each system places on certain aspects of data quality.

The quality characteristics of statistics, as shown in the IMF’s Data Quality Assessment Framework (DQAF), cover governance of statistical systems, core statistical processes, and observable features of the statistical outputs. The DQAF identifies, in addition to the prerequisites of quality, five dimensions of quality: assurances of integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility for the statistical guidelines. The four principal quality characteristics of financial reporting are relevance, reliability, comparability, and understandability (IPSAS, p. 81).

Using the DQAF frame, Table 4 illustrates the quality aspects of both systems. While they have much in common, these aspects come into play in each system as trade-offs that differ reflecting each system’s specific objectives on how best to satisfy the decision-making needs of users. The following compares how some of these trade-offs apply in the two systems.

Relevance, timeliness, and reliability

An inherent trade-off exists between relevance and timeliness, since undue delay in making the data available may lead to their losing their relevance, that is, their capacity to assist users in the decision-making process. Timeliness is the amount of time between the reference period and dissemination date, with “punctuality” showing the amount of time between the preannounced release date and the effective dissemination date. Both systems recognize that if reporting is delayed, highly accurate data would be of little use to users who have to make decisions in the interim.

⁵⁵ Meeting of March 2004.

Table 4. Aspects of Data Quality in IMF Data Quality Assessment Framework and IPSAS

DQAF July 2003 Dimensions and Elements	IPSAS Quality Characteristics
0. Prerequisites of quality	
0.1 Legal and institutional environment	
0.2 Resources	
0.3 Relevance	Relevance
0.4 Other quality management	
1. Assurances of integrity	Code of ethics
1.1 Professionalism	
1.2 Transparency	
1.3 Ethical standards	
2. Methodological soundness	Comparability (part) with other units
2.1 Concepts and definitions	
2.2 Scope	
2.3 Classification/sectorization	
2.4 Basis for recording	
3. Accuracy and reliability	Reliability
3.1 Source data	
3.2 Assessment of source data	
3.3 Statistical techniques	
3.4 Assessment and validation of intermediate data and statistical outputs	
3.5 Revision studies	
4. Serviceability	
4.1 Periodicity and timeliness	
4.2 Consistency	Comparability (part) in time and internally
4.3 Revision policy and practice	
5. Accessibility	Understandability
5.1 Data accessibility	
5.2 Metadata accessibility	
5.3 Assistance to users	

The IMF Data Dissemination initiatives⁵⁶ recommend that countries that seek capital in the international market produce, for example, national accounts and balance of payments data on a quarterly basis, with data disseminated within three months after the quarter-end. This compares with the IAS that calls for the presentation of financial statements on at least an annual basis (with a maximum lag of six months from the balance sheet date) (IPSAS, p. 52).

Since the full range of data sources, including the accounting data, are not necessarily all available to meet these periodicity/timeliness requirements, the statistical production implies relying on estimates for producing timely datasets. This explains the key role of revisions in

⁵⁶ See Dissemination Standards Bulletin Board at <http://dsbb.imf.org/Applications/web/dsbbhome/>.

the statistical production process; preliminary estimates are first produced and are superseded by revisions,⁵⁷ as additional information becomes available. Statisticians can enhance the reliability of preliminary estimates by conducting revision studies and incorporating the results in the preliminary estimates. Such revision practice helps alleviate the trade-off between timeliness and reliability while at the same time maintaining the relevance of timely data in statistics.

At the same time, relevance and reliability tend to be opposing qualities. For instance, market or market-equivalent values, used in statistics, may be highly relevant but accurate (reliable) only to a limited extent. This compares to historical cost (used in accounting) which, though highly reliable, may have little relevance.

Methodological soundness/Comparability across reporting units

The comparability of data across geographical areas in statistics and across reporting units in accounting largely reflects the use of common statistical methodology/accounting practices. Unlike the statistical guidelines, the accounting standards permit preparers, in certain cases, to recognize economic events in different ways (e.g., inventory and depreciation of fixed assets). While accounting traditionally focused on the records of individual entities, the requirement for comparability is now becoming a major aspect of data quality, which explains the narrowing in recent years of choices given in selecting among different accounting methods.

Consistency

Two levels of consistency are considered: across time and within datasets.

Across time

Statistical guidelines stress the consistency in time series much more than accounting standards do. Statisticians accommodate consistency by relying extensively on revisions to incorporate new data sources, changes in methodology, as well as correction of errors.

In accounting, revisions are not usual. Granted that the use of estimates is more limited in accounting, the accounting policies change and mistakes are made. The adjustments for the revision of estimates would be generally made to the opening balance of accumulated surpluses or deficits. As for changes to accounting policies, adjustments are made retrospectively “unless the amount of any resulting adjustment that relates to prior periods is not reasonably determinable (IPSAS, p. 136)” and “unless it is impractical to do so” (IPSAS, p. 137). Changes due to errors would normally be included in the determination of net

⁵⁷ Carol S. Carson, Sarmad Khawaja, and Thomas K. Morrison, “Revisions Policy for Official Statistics: A Matter of Governance,” paper presented at the 54th Session of the International Statistical Institute, Berlin, Germany, August 13-20, 2003. Also published as IMF Working paper04/87, International Monetary Fund, Washington, D. C., May 2004.

surplus/deficit for the current period. Also, to the extent they have sufficiently significant effect on one or more prior periods, the financial statements may have to be restated to apply to the period to which they apply “unless it is impractical to do so.” Since the question of practicality plays a major role in determining how to treat revisions, it is only on rare occasions that financial statements are amended, making it difficult to obtain consistent time series from the accounting data. Such practices help at the same time to understand the significant importance that is attached to reliability of measurement in accounting.

Within datasets (and with other statistical datasets)

Both systems ensure internal consistency through the double-entry bookkeeping principle, whereby a transaction gives rise to a pair of matching debit and credit entries within the accounts of each entity. The two systems differ, however, in applying the principle: in accounting, the recording requires a perfect match between the two entries, whereas in statistics the two entries are likely to be recorded from unrelated data sources, with the balancing used as a way to validate/supplement the data sources. In both systems, the use of the double-entry system results in fully integrating the reporting statements within each system: the “transactions,” “other changes,” and “balance sheet” in statistics; and the “income statement” and “balance sheet” in accounting.

Furthermore, unlike in accounting, which is limited to one unit, the consistency in national accounts extends to the counterpart unit involved in the transactions, providing for a quadruple-entry system. This leads to internal symmetry in statistics where the entries of sellers, for instance, match those of the buyers. Finally, because of their economy-wide perspective, the statistical guidelines have also given predominance to consistency with other datasets, as evidenced by the harmonization with the *1993 SNA* of the macroeconomic datasets developed since 1993.⁵⁸

IV. CONCLUDING COMMENTS

A. Rationale for Harmonization

This juncture, when both the macroeconomic statistics guidelines and accounting standards undergo development, provides a major opportunity to reap benefits from further harmonization of the two systems. For statistics, benefits are in the form of wider access to readily usable data sources, including the rich details available from accounting, with minimum impact on respondent burden. Though statistics emphasize aggregates, the availability of details is extremely important for the design of focused policies in a broad range of areas (e.g., trade, industrial, monetary, and financial). This need became especially evident during the financial crises of the 1990s when more information on financial assets and liabilities would have helped analysts to more accurately assess the liquidity and solvency conditions in countries.

⁵⁸ See Carson and Laliberté, 2001.

At the same time, the accounting standards could benefit from the methodological elements provided by the economic foundations and comprehensiveness of statistical guidelines, particularly in market valuation, performance reporting, and inflation accounting. Furthermore, extending the bridge with statistical guidelines would help encourage the internationalization of accounting standards. Statistical guidelines have achieved virtual universality of application, that is, they lead to data comparability across countries while taking into account countries' specific legal, commercial, and social systems that characterize each economy.

B. Areas of Potential Harmonization

Some of the areas explored in this paper for harmonization include the following:

- Delineation between public and private sectors and between government and public corporations/GBEs.
- In statistics, record income accrued on an equity basis for related units that operate in different sectors.
- In accounting, modify the definition of assets to show that benefits can be owned but not necessarily controlled, coming closer to that of statistics.
- Intangible assets, expensing versus capitalizing.
- Economic activities conducted jointly by units, such as special purpose entities (SPE), notably on government/private schemes.
- Employers' pension schemes.
- Contingent assets, notably externalities and loan guarantees across sectors/units.
- In accounting, use of fair valuation and performance reporting that separates transactions from other events, in particular holding gains/losses.

C. Outlook for Harmonization

The paper highlighted that a large part of the differences between the two systems stems from the data quality aspects that they each emphasize. For instance, in addition to informing users about the latest developments, macroeconomic datasets also inform them about structural trends—hence the importance of consistent time series. On the other hand, accounting standards focus on imminent developments—thus, the importance of reliable and timely information for quick and relatively short-term decision making. Some of the differences reflect each system's respective objectives, and it is understood that neither framework could adopt the other framework in its entirety without compromising its own effectiveness.

A system consists of practices and conventions that are logically related to one another, and one cannot change a rule or definition at only one point in the system.⁵⁹

At the same time, however, there are differences that reflect established practices more than sound conceptual differences. Understanding of the fundamentals that drive each system pave the way to question and challenge the rationale for the latter types of differences. As indicated in the introduction, harmonization entails not only identifying and describing differences; it also means enhancing convergence to narrow differences; and, when convergence cannot be achieved, building reconciliation items. Such efforts were successfully deployed in the work that led to the *1993 SNA*, and that paved the way for the development of a set of harmonized guidelines for macroeconomic statistics. In the European context, the *European System of Accounts 1995*, which is the European equivalent of the *1993 SNA*, is specifically used to measure government performance.

Based on the experience so far, the prospects for harmonization may be limited to the following three related outcomes. First, major differences will remain between the two systems; they are, however, likely to be more documented than in the past via statistical metadata. For instance, the statistical guidelines are likely to retain the 10 percent threshold for direct investment, and to apply a wider capitalization for intangibles (e.g., R&D, software) than the accounting standards. At the same time, the accounting standards are unlikely to apply fair valuation across all classes of assets, and to adopt full performance reporting. Second, for the public sector, there is a promising potential to achieve full reconciliation, that is to bridge the public accounts and the government finance statistics. Finally, convergence between the two systems is likely to be achieved for specific accounts, such as the capitalization of selected military assets, and liability recognition of employees' pensions.

⁵⁹ Utz-Peter Reich, *National Accounts and Economic Value: A Study in Concepts*, Palgrave, New York, 2001, p. 41.

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