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What Lies Beneath: The Statistical Definition of Public Sector Debt

An Overview of the Coverage of Public Sector Debt for 61 Countries

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EXECUTIVE SUMMARY

While key macroeconomic indicators such as Gross Domestic Product (GDP) or Consumer Price Index (CPI) are based on internationally accepted methodologies, indicators related to the debt of the public sector often do not follow international standards and can have several different definitions. As this paper shows, the absence of the standard nomenclature can lead to major misunderstandings in the fiscal policy debate. The authors present examples that show that debt-to-GDP ratios for a country at any given time can range from 40 to over 100 percent depending on the definition used. Debt statistics, for example, may include or exclude state and local governments and may cover all debt instruments or just a subset. The authors suggest that gross debt of the general government ("gross debt") should be globally adopted as the headline indicator supplemented by other measures of government debt for risk-based assessments of the fiscal position. Broader measures, including net debt and detailed information on contingent liabilities and derivatives, could be considered. The standard nomenclature of government and of debt instruments helps users understand the concepts in line with the *Public Sector Debt Statistics Guide*. Use of more standard definitions of government debt would improve data comparability, would benefit IMF surveillance, programs, and debt sustainability analysis, and would help country authorities specify and monitor fiscal rules. Data disaggregated by government subsector and debt instrument for 61 countries from the IMF's *Government Finance Statistics Yearbook* (*GFSY*) database are presented to illustrate the importance and viability of adopting this approach.

I. INTRODUCTION[1]

Most key macroeconomic indicators such as GDP, the consumer price index (CPI), data on monetary aggregates or balance of payments follow internationally accepted definitions. In contrast, countries often do not follow international guidelines for public debt data. As this paper shows, failure to apply global standards can lead to important misunderstandings because of the potentially large magnitudes involved. International guidelines on the compilation of public sector debt are well established and are summarized in the recently published *Public Sector Debt Statistics Guide* (*Debt Guide)*.[2] The *Debt Guide* also describes applications of these guidelines for the analysis of debt sustainability, fiscal risk, and vulnerability.

The authors seek in this paper to provide a more intuitive application of the various concepts and definitions found in the *Debt Guide*, and propose that global standard definitions of "gross debt" referring to the "general government" be adopted as a headline measure. As with other headline indicators, a variety of narrower and wider indicators remain valuable and useful for different purposes. The notion of gross debt will be familiar to macroeconomic statisticians, but, as a practical matter, the adoption of global standard statistical definitions of debt will require some development efforts in terms of source data availability and training for compilers of debt statistics. A particular challenge is complete coverage of all relevant institutions and financial instruments. Detailed information on contingent liabilities and derivatives should also be considered. Coordination across agencies that work with debt related data is also critical, as with other complex datasets such as GDP.

Many users are not aware of the extent to which differences in concepts and methods matter. Box 1 below highlights the four key dimensions of public sector debt. Countries publish data, for example, either including or excluding state and local governments, pension funds, and public corporations. Also, while much of the policy debate centers on government liabilities, some countries have begun to publish and focus policy analysis on net debt (financial assets minus liabilities). Debt data frequently only include two (of the six) debt instruments available: debt securities and loans. Debt instruments such as other accounts payable or insurance technical reserves are often not taken into account. In many cases the method of valuation is not explicitly mentioned even though market versus nominal valuation can be significantly different. Consolidation, which refers to the process of netting

[1]The authors would like to thank Miguel Alves, Segismundo Fassler, Robert Heath, Alfredo Leone, and Jaebin Ahn, Myrvin Anthony, Adrienne Cheasty, James Daniel, Udaibir Das, Dominique Desruelle, Rafael Espinoza, Giovanni Favara, Enrique Flores-Curiel, Atish Ghosh, Iacovos Ioannou, Tim Irwin, George Kabwe, Stephanie Medina-Cas, Guilherme Pedras, Manuel Rosales, Alejandro Simone, and Min Zhu, and participants of the Brown Bag series of the IMF's Statistics Department, and Sean Culhane for editorial support.

[2]The *Public Sector Debt Statistics: Guide for Compilers and Users, available at* http://www.tffs.org/PSDStoc.htm is harmonized with the *System of National Accounts 2008*, the sixth edition of the *Balance of Payments and International Investment Position Manual*, and the *Government Finance Statistics Manual 2001 (GFSM 2001).*

out intra-governmental obligations, is another important factor rarely specified in published data. And finally, debt data may be compiled using cash data and excluding non-cash items such as arrears or using accrual (or partial accrual) methods to reflect important non-cash obligations.

Box 1. Key Dimensions to Measure Government Gross Debt

Institutional Coverage of Government
Instrument Coverage of Debt
Valuation of Debt Instruments (market and nominal)
Consolidation of Intra-Government Holdings

Source: Public Sector Debt Statistics Guide.

This paper focuses first on institutional and instrument coverage and develops a nomenclature to help users navigate through the various concepts in Sections II and III. Section IV presents data for 61 countries by sector of government and type of instrument, and discusses some of the difficulties countries are experiencing in producing comprehensive and timely data on government debt that would follow international standards. Section V discusses valuation and consolidation, both important dimensions in measuring debt. Section VI explains the proposed headline indicator of "gross debt of the general government," and Section VII concludes.

II. Defining Debt Along the Institutional and Instrument Coverage

A headline measure is gross debt of the general government. The *Debt Guide* defines total gross debt as "all liabilities that are debt instruments." Debt instruments are "…financial claims that require payment(s) of interest and/or principal by the debtor to the creditor at a date, or dates in the future." Two elements of this definition account for the magnitude of the debt: the subsectors of the public sector covered—institutional coverage—and debt instruments coverage.

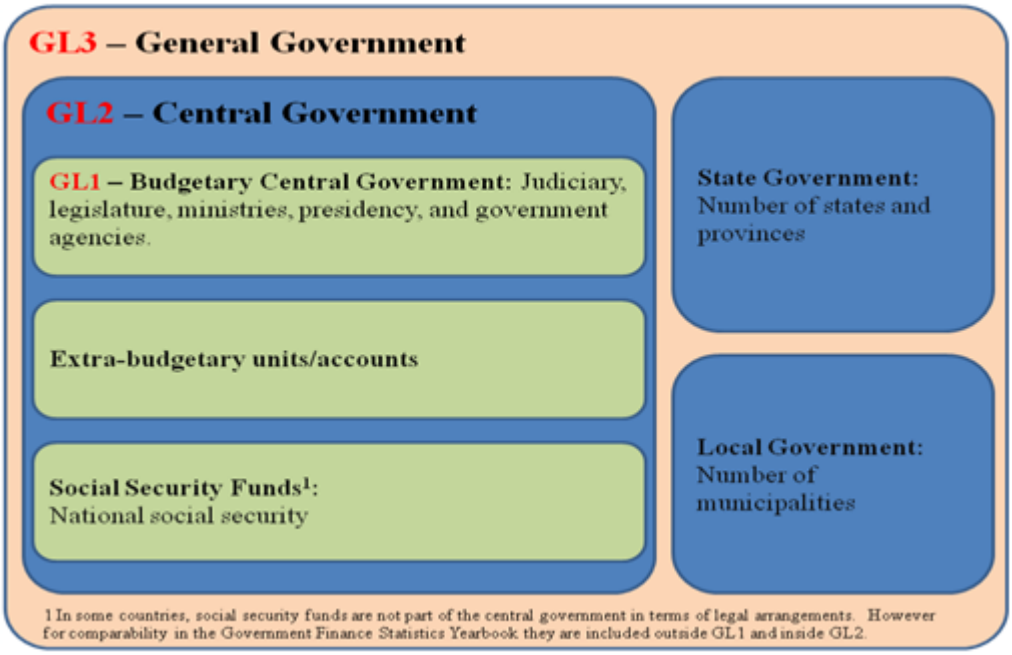
A. Institutional Coverage (General Government)

Institutional coverage refers to the institutions or agencies that comprise a government sector. Based on standard macroeconomic definitions of the government sector, Figure 1 illustrates how fiscal data are conceptually divided in terms of the sectors and subsectors (groups of institutions). Government levels are denoted[3] as: ***GL1*** (budgetary central government); ***GL2*** (central government—***GL1*** plus extra-budgetary units and social security

[3]The full definition of each government subsector can be found in the *Government Finance Statistics Manual 2001* (http://www.imf.org/external/pubs/ft/gfs/manual/index.htm). For a recent empirical analysis of fiscal decentralization see Dziobek, et al., 2011, *Measuring Fiscal Decentralization* IMF WP/11/126.

funds; and ***GL3*** (***GL2*** plus state and local governments). For macroeconomic analysis, ***GL3*** ("general government") is the level relevant to calculate government consumption in the GDP.[4] Potentially wider definitions of the public sector include public corporations, such as GL4 and GL5 shown in Figure 1 in the Appendix to this note. These wider measures are discussed in the *Debt Guide*, but only a limited number of countries currently compile such data.

Figure 1. Institutional Levels of General Government



Source: IMF *Government Finance Statistics Manual 2001*.

B. Instrument Coverage

Public debt can be thought of as a subset of liabilities in terms of a balance sheet. Liabilities are obligations that provide economic benefits to the units holding the corresponding financial claims. The criterion to define a liability as debt is that future payments of interest and/or principal are due by the debtor to the creditor. Six different instruments comprise gross debt. Their definitions from the *Debt Guide* are:

- Debt securities are negotiable financial instruments serving as evidence of debt and normally include a schedule for interest and principal payments. Some common forms of debt securities are bills, commercial paper, and bonds.

[4]In the macroeconomic identity GDP = C + I + G + XN where "C" represents household final consumption, "I" is investment (gross capital formation), "G" final consumption of the general government (GL3), and "XN" refers to exports minus imports (net exports). "I" includes both public and private sectors.

- Loans are financial instruments created when a creditor lends funds directly to a debtor and receives a nonnegotiable document as evidence of the asset.

- Other accounts payable. These represent trade credits and advances and miscellaneous other items due to be paid or received.

- Special Drawing Rights (SDRs) are international reserve assets created by the International Monetary Fund (IMF) and allocated to its members to supplement existing reserve assets. The definition of gross debt includes SDRs. However in many countries SDRs are held by central banks and are not included in the debt of the general government.

- Currency and deposits. Currency consists of notes and coins that are of fixed nominal values and are issued or authorized by the central bank or government. Although all government subsectors hold currency, generally only the central bank issues it. Deposits are all claims, represented by evidence of deposit, on the deposit-taking corporations (including the central bank) and, in some cases, general government and other institutional units.

- Insurance, pension, and standardized guarantee schemes (IPSGS) comprise non-life insurance technical reserves, life insurance and annuities entitlements, pension entitlements, claims of pension funds on pension manager; and provisions for calls under standardized guarantee schemes. These reserves, entitlements, and provisions represent liabilities of a public sector unit as the insurer, pension fund, or issuer of standardized guarantees, and a corresponding asset of the policy holder or beneficiaries.

A comprehensive view of debt includes the composition of instruments and the different characteristics of each, for example, currency, SDRs, and other accounts payable each have different implications for liquidity and payments of principal and interest. However, most macroeconomic analysis is focused on two of these debt instruments: securities and loans. Data on government debt securities for the more advanced economies are readily available because they are traded on national or international markets and data on loans are available because international organizations (major creditors) have maintained databases on government loans. Data on the other instruments are also available. For example data on SDRs are published by the IMF and the *Government Finance Statistics Yearbook (GFSY)* includes information that allows us to quantify the relative magnitude of these various debt instruments.

C. Net Debt

Net debt is important to any comprehensive analysis of a country's debt, debt sustainability, and fiscal risks. Net debt is calculated as gross debt minus the financial assets corresponding to debt instruments. This measure requires detailed information about a government's financial assets; the dimensions laid out in Box 1 apply equally to financial assets and liabilities. In those countries where a public sector unit manages its debt liabilities and stock of financial assets in an integrated manner for risk-management purposes, this information is

readily available. Currently, however, only a few countries publish data on their net debt positions. Guidance on presenting this data can be found in Chapter 5 of the *Debt Guide*.

D. Other Sources of Fiscal Risk: Financial Derivatives and Contingent Liabilities

A comprehensive view of fiscal risk should include information on financial derivatives and contingent liabilities. These are potential sources of financial risk that should be monitored although interpretation should take into account that derivatives may be part of a hedging strategy that offsets risks of changes in other financial instruments. A contingent liability depends on a possible future event such as a one-off loan guarantee being called. While not yet actual liabilities, contingent liabilities are a potential source of fiscal risk. Both the *GFSM* and *Debt Guide* state that they should be recorded as memorandum items.

Contingent liabilities are shown as memorandum items because, by definition, they are not actual liabilities and, therefore, not considered debt. The IMF's *GFSY* includes financial derivatives in its questionnaire, but only 14 countries report data, and they amount to less than one percent of the size of gross debt in most instances. With the growing complexity of debt management, more systematic data are desirable and the *Debt Guide* provides further guidance on this complex subject, including on the presentation of such information.

III. NOMENCLATURE FOR DEBT

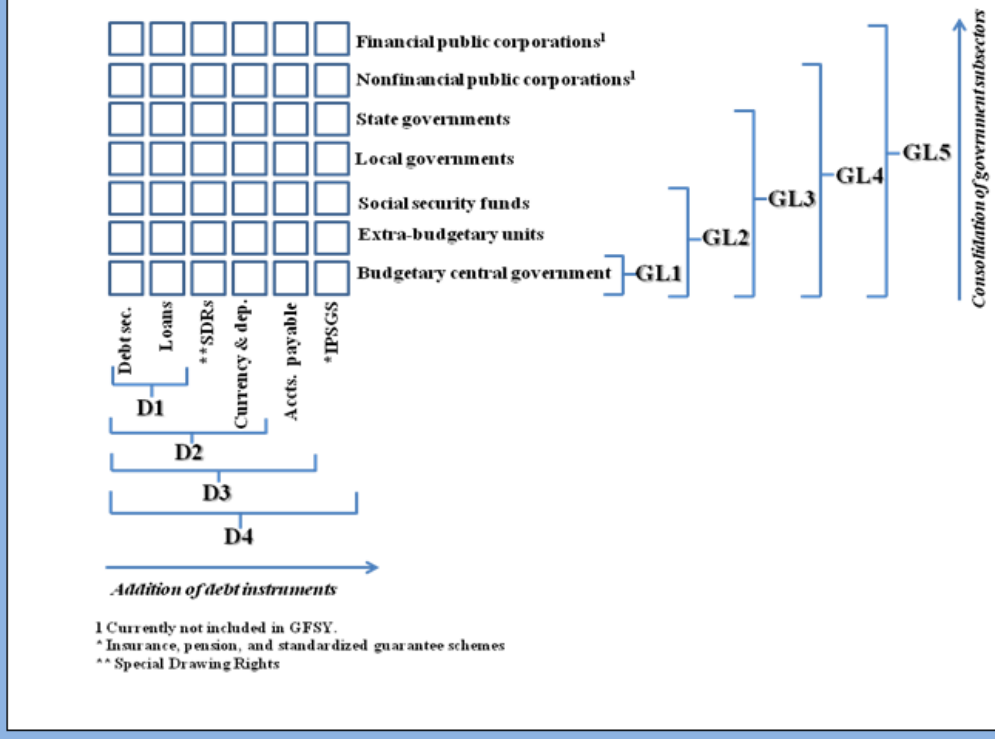
The debt of the public sector can be represented by a grid where the horizontal axis represents the *addition* of debt instruments and the vertical axis represents the *consolidation* of government's subsectors. Figure 2 presents a schematic representation of this grid. The debt instruments are ordered from left to right broadly mirroring the extent of marketability and ***D1*** in particular was chosen because it is a useful and relatively simple sub-indicator of debt with data usually readily available at least for the central government (***GL2***). Given the authors' view that a global standard should include all debt instruments, the grouping of the debt instruments is open to further debate.[5]

Securities are the most marketable debt instruments and the primary instruments used by countries with access to a developed financial market. Loans are by definition less marketable debt instruments. For countries with underdeveloped or constrained financial markets, loans tend to be a major share of the debt instrument portfolio. Loans are close substitutes for debt securities and for that reason both are grouped together as ***D1***. Debt securities and loans are frequently the *only* two debt instruments reported in public sector debt. ***D2*** includes ***D1*** plus SDRs and currency and deposits. In Europe, the Maastricht definition of debt used by the European Union Excessive Deficit Procedure refers to ***D2***

[5]The accounting literature proposes degrees of "certainty" of the liability as another way to analyze the various debt instruments which seems to be broadly in line with the order adopted here. See for example Table 3 in the Appendix, extracted from Government Guarantees and Fiscal Risk (IMF, 2005). This table is an adaptation from the private sector framework provided in Exhibit 9.1 of Stickney and Weil (2000).

measured at face value. ***D3*** includes ***D2*** and other accounts payable.[6] Other accounts payable ('unpaid bills') is a nonmarketable debt instrument that can be of significant magnitude especially in times of financial distress. This instrument is often excluded in the analysis of public sector debt.[7] ***D4*** covers all debt instruments. The suggestion to differentiate between ***D3*** and ***D4*** is partially motivated by the fact that many countries do not publish data on the Insurance, Pensions, and Standardized Guarantee schemes. Wider measures of actual and potential liabilities to take into account non-debt liabilities, such as financial derivatives, social security entitlements, and other contingent liabilities, are recognized in tables in the *Debt Guide* and could potentially be considered as part of broader aggregates of fiscal risk, although complex issues of valuation would arise.

Figure 2. Codifying Debt Based on Level of Government and Debt Instruments



[6]Under the European System of Accounts (ESA95) Transmission Programme, EU member states are also required to disseminate data on the various instruments at market value.

[7]Often, the data for loans and debt securities come from debt management offices while data for other accounts payable may be supplied by an accounting unit at the ministry of finance or a statistical agency. To further complicate matters in the compilation of debt statistics, the ministry of finance may compile debt owed to *domestic* residents while the central bank may compile debt owed to *foreign* residents. Debt management offices typically focus on marketable debt instruments. Accurate data, therefore, require considerable coordination across agencies. In practice, the lack of adequate coordination constitutes a major obstacle in developing a global debt database. This is some of the background to a point made by Reinhart and Rogoff (2011) that time series for debt instruments continue to be the "most elusive" of the economic time series.

This simple nomenclature is useful in several respects such as understanding apparent discrepancies in the debt statistics of different reports, increasing awareness of potential fiscal risks hidden in debt instruments or debt structures and highlighting fiscal decentralization and its analytical implications. A few examples can further illustrate this.

The height of the grid represents the different subsectors of the government. Figure 3 shows how this grid would look for ***GL1/D1*** and ***GL3/D1***. ***GL1/D1*** refers to debt securities and loans of the *budgetary central government*, which is the coverage often published by developing economies. ***GL3/D1*** represents debt securities and loans of the *consolidated general government* (budgetary central government, extrabudgetary units, social security funds, and state and local governments).

GL3/D1 is a statistic frequently reported by countries with well developed statistical systems. Based on the data available in the *Government Finance Statistics Yearbook (*GFSY) database, ***GL3/D4*** could be calculated using the appropriate institutional and instrument coverage; ***GL3/D4*** represents *all* debt instruments of the consolidated general government.

Figure 3. Commonly Disseminated Government Debt Aggregates *GL1/D1* and *GL3/D1*

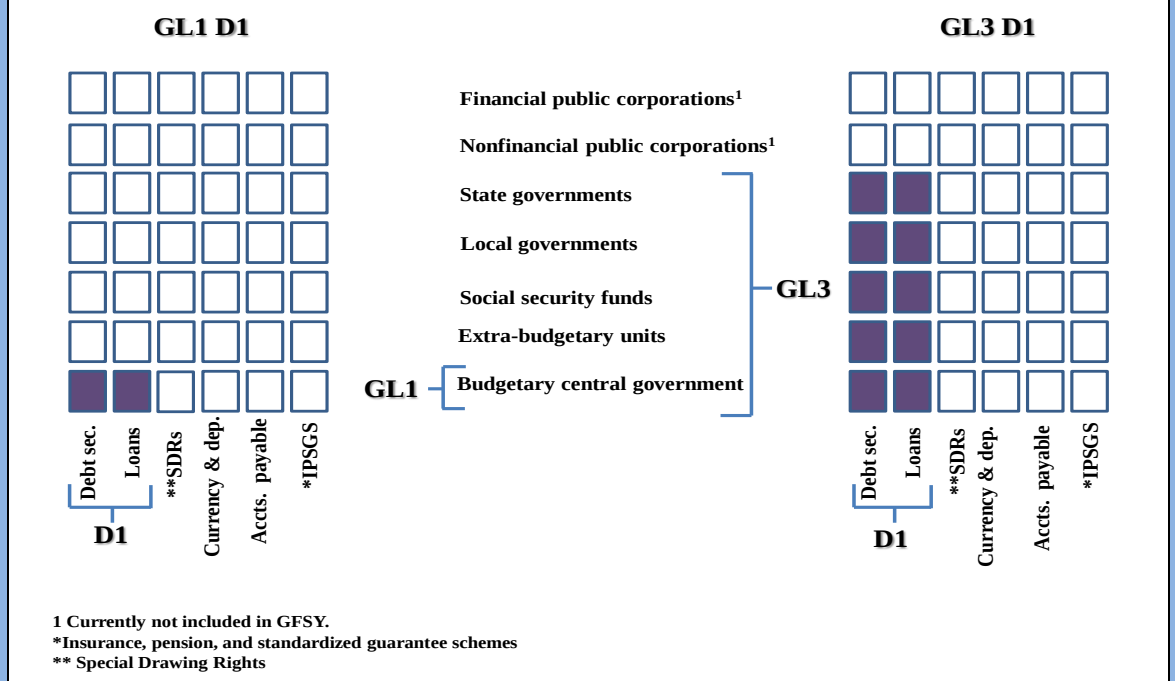
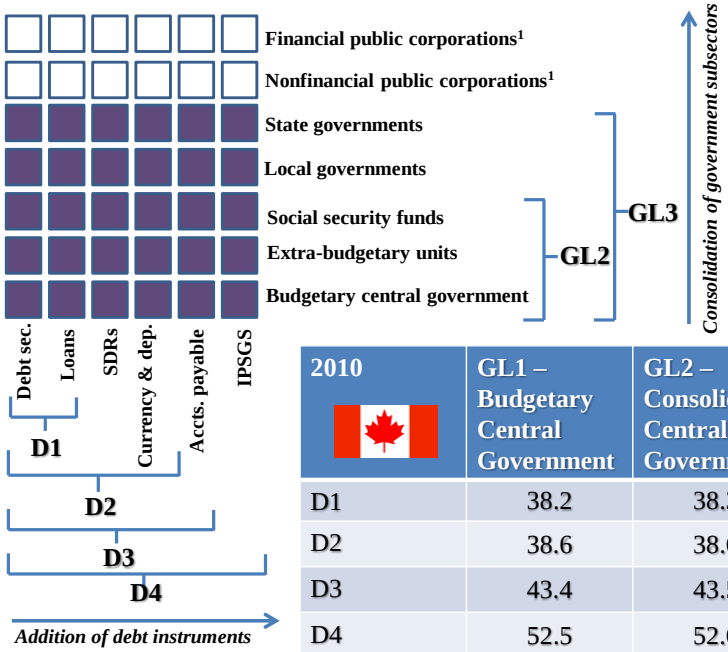


Figure 4 presents the debt instruments reported by Canada's public sector as an example of the relevance of these dimensions of debt. The broadest available institutional coverage is ***GL3*** with full instrument coverage. Data on these debt instruments are also presented for ***GL1*** (budgetary central government) and ***GL2*** (consolidated central government). ***GL1/D1*** represents the equivalent of about 38 percent of GDP. The debt figure for the broadest instrument and institutional coverage, ***GL3/D4***, is about 104 percent of GDP. This figure includes the insurance, pension, and standardized guarantee schemes. Clearly, institutional and instrument coverage matters greatly, especially for more complex, decentralized economies.

Is there a "right" number? Is Canada's debt-to-GDP ratio closer to 40 percent or 104 percent? Both numbers are correct but have different analytical implications. ***GL1/D1*** represents the claims in debt securities and loans against the budgetary central government. ***GL3/D1*** adds the debt securities and loans of the Canadian provinces, providing a fuller debt picture.

Focusing on comprehensive measures of government debt, including lower levels of government, is relevant, especially for countries with decentralized government structures. For example, a country's fiscal decentralization and federal structure could be a source of risk if there is an explicit or implicit understanding that the central government would guarantee the debts of lower levels of government.

Figure 4. Canada: Government Debt by Instruments and Level of Government



2010	GL1 – Budgetary Central Government	GL2 – Consolidated Central Government	GL3 – Consolidated General Government
D1	38.2	38.3	66.8
D2	38.6	38.6	67.2
D3	43.4	43.5	90.6
D4	52.5	52.6	104.2

1 Currently not included in *GFSY*.

Source: *Government Finance Statistics Yearbook (GFSY) 2011, International Financial Statistics (IFS) June 2011*

Figure 5 below shows this information for Canada, Colombia, Italy, and Russian Federation in a more visual format where various color coded containers represent the instrument coverage on the x-axis and institutional coverage along the z-axis. The selected country examples show how the GLs and Ds can influence the outcome and why a globally agreed standard definition is important.

For example, the data for Colombia show that D1 (securities and loans) for the various levels of government are virtually the same with differences most likely reflecting the effects of consolidation (discussed below in Section V). However, other debt instruments significantly add to government debt. The data for Italy are an example where the values for narrow or broader definitions of government are relatively close although state and local governments appear to add between 7 and 10 percentage points to the overall gross debt. The extreme other case is Russia, where D1 explains almost the entire debt. Again, state and local governments add a significant share but the overall level of debt is very low.

IV. Magnitude of Debt Instruments by Government Subsector

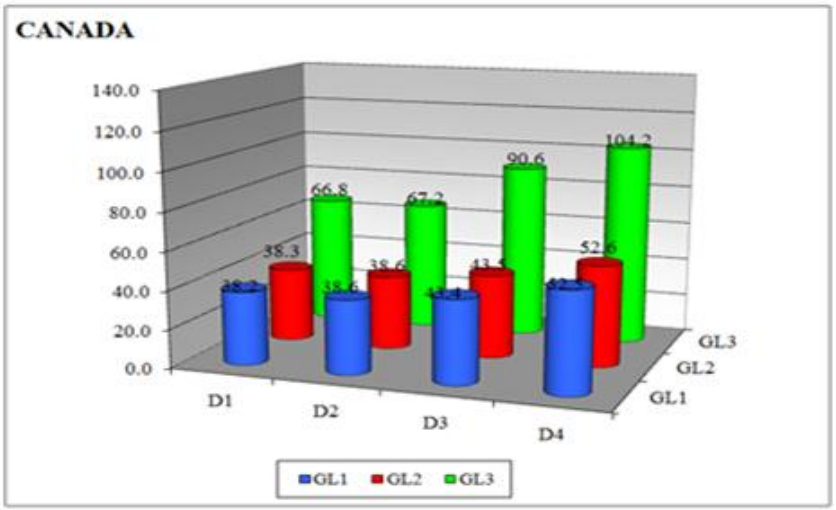
This section provides some additional empirical data to show the relevance of the concepts laid out above. Data presented here are based on the *IMF's GFSY* database and *International Financial Statistics (IFS)*. Both databases are available online by subscription. Some features, are not yet fully included in the electronic version of the *GFSY* particularly the institutional tables, which provide country-by-country descriptions of the levels of government referred to in this paper. The institutional tables are available in the hard copy of *GFSY* and a project is currently underway to link these metadata with the database.

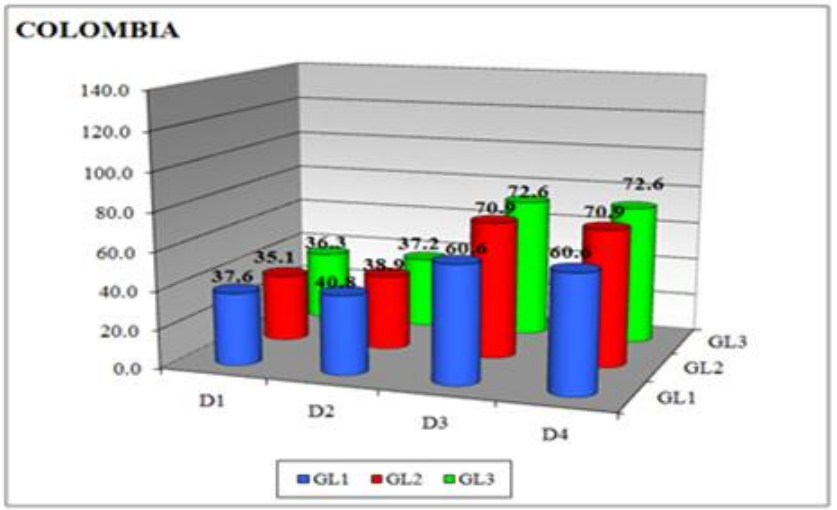
Table 1 below summarizes available data on the relative magnitudes of debt instruments. For a narrow definition of government (***GL1***), data on the debt instrument breakdowns are available for 55 countries while for the level of ***GL3*** there are 45 countries reporting such data to the IMF. Nevertheless, the sample is sufficiently meaningful to permit some broad conclusions. The table is based on data for 61 countries shown in Appendix Table 1.

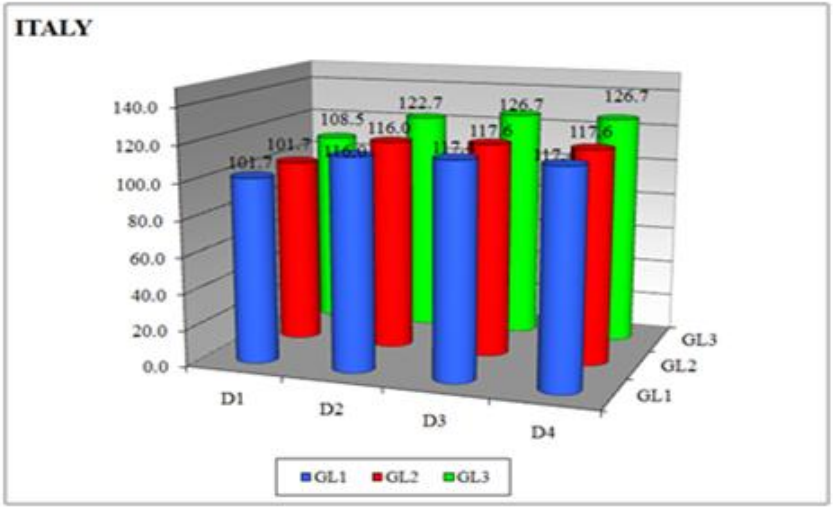
As expected, debt securities are, on average, the main debt instruments accounting for 57 to 72 percent of gross debt. Loans account for 15 to 30 percent of debt although advanced countries use mainly debt instruments. Thus ***D1*** is the largest portion of debt.

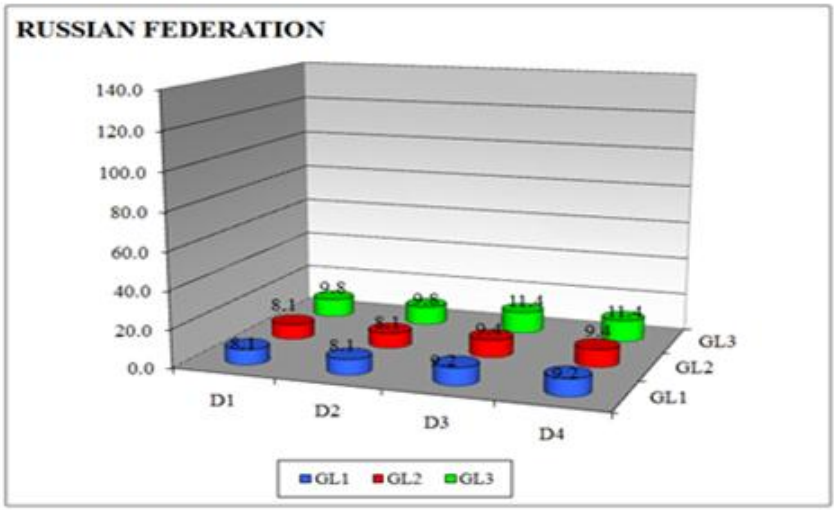
Other accounts payable are about 4–10 percent of debt instruments on average which is also a significant portion. This instrument (in broad terms, similar to unpaid bills) can be an important "quiet" way of managing government finances especially during times of financial distress when government may find it difficult to access markets to borrow. In some countries, this item has soared during times of financial stress making this debt instrument a potentially important lead indicator of distress.

Figure 5. Government Debt Instrument and Institutional Coverage: Four Examples (2010, in percent of GDP)









Source: ***Government Finance Statistics Yearbook 2011, IMF World Economic Outlook October 2011***

Table 1. Magnitude of Government Debt Instruments
(in percent of total debt by level of government for
55 or largest number of countries available)

Debt Instruments	Debt Securities	Loans	Other Accounts Payable	Currency and Deposits, SDRs	IPSGS*
Government subsector	**Budgetary central government (GL1)**				
Median	68.4	14.7	3.7	0.0	0.0
Mean	57.4	26.0	7.0	1.9	0.7
Standard deviation	33.3	28.1	11.8	4.7	3.6
Number of countries	55	55	34	55	55
Government subsector	**Central government (GL2)**				
Median	71.7	9.9	4.5	0.6	0.0
Mean	59.0	24.4	8.3	2.2	1.7
Standard deviation	30.9	28.0	12.6	3.6	6.6
Number of countries	48	50	46	37	50
Government subsector	**General government (GL3)**				
Median	68.0	22.5	8.4	0.8	0.0
Mean	57.0	29.0	11.2	2.5	1.9
Standard deviation	25.7	24.8	11.8	3.6	7.0
Number of countries	43	44	35	30	45

*** IPSGS: Insurance, Pension, and Standardized Guarantee Schemes**
Source: ***Government Finance Statistics Yearbook 2011.***

SDRs are included only for a few countries in this table because in over 150 of the 188 IMF–member countries, SDRs are allocated to the central bank (which is not part of ***GL3***). Similarly, currency and deposits is most significant for central banks and not part of the general governments. It could be argued that analytical work should include SDRs regardless of how they are allocated. In this paper, the authors take the view that SDRs should only be included as part of the government's debt when the SDRs are allocated to GL3. This view presumes that countries allocating SDRs to the central bank interpret SDRs as an instrument to be managed at arm's length from the government and, therefore, not included in the general government. Countries take political decisions about allocating SDRs either to an agency that is part of the general government or to the central bank. Gross debt should focus on G3 and either include or exclude SDRs depending on the structure of the government and the SDR allocation.

Table 1 shows that for ***GL1*** through ***GL3***, currency and deposits average less than 2.5 percent of the total debt, which illustrates the point that this instruments is mainly used by banks which are not included in the GL3 sector of government.

IPSGS is the instrument that presents the greatest measurement challenges. Actuarial parameters, assumptions on discount rates, and estimates of losses on guarantees are needed for the estimation of this debt instrument. These challenges frequently lead compilers to report IPSGS with a value of *zero* in the statistics, even though it would be more correct to say that this item is unmeasured. However, in many countries, liabilities of IPSGS are of significant magnitude with the evidence provided by countries that have developed statistics for this item. For example, for ***GL3***, IPSGS amounts to 18.9 percent of GDP in Australia, 13.6 percent in Canada, and 24.9 percent in Iceland. IPSGS may also be a source of fiscal risk frequently ignored due to its difficulty in measurement. Developing better data on this important debt instrument would be an important task for many countries and a significant enrichment of the database.

V. VALUATION AND CONSOLIDATION

An international standard definition of government debt should specify valuation methods because comparisons of debt data across countries may otherwise be misleading. To users, valuation often sounds like a somewhat esoteric issue. And indeed, in many cases, different valuation bases show small differences in levels and growth rates—as in 2008 to 2009 in Table 2 below. However, there are cases where valuation differences can be very large. To illustrate this point consider Table 2: did Greece's debt rise by approximately 10 percent between 2009 and 2010 or did it fall by 10 percent? The answer is that both are true. As shown below, the market value fell, while the face and nominal values rose. The market assessments of creditworthiness and the possibility of losses caused significant falls in the prices of debt securities during the year, driving down the market value of debt.

At the same time, the nominal and face values of these securities are not affected by such market fluctuations, and debt according to these measures increased because of additional borrowing. Changes in interest rates can also affect market values. For instance, a fall in interest rates will mean that the pre-existing debt still paying the higher yields will cause an increase in market value, but not nominal or face value. The difference between face and nominal value may also be significant when countries have a high proportion of zero-coupon or deep-discount securities. When securities are issued at a discount, the face value includes the interest that accrues over the whole life of the instrument. Accordingly, the face value will be greater than the nominal value due to the inclusion of interest that has not yet accrued.

Table 2. Greece: Valuation of Gross Debt of the General Government (G3/D2), Billions of Euros

	2008	2009	2010
Debt at market value	273	309	280
Debt at face value	276	314	344
Debt at nominal value	263	299	329

Source: ***Government Finance Statistics Yearbook 2011.***

Debt data are generally presented on a consolidated basis which means that debt instruments that are both owed and owned by the same subsector are eliminated. For example, loans to state governments by the central government would be recorded as state government debt, but not as debt of general government as a whole. However, in some cases, data are presented without consolidation which can overstate the level of debt relative to those presenting data on a consolidated basis. Unconsolidated data are higher than consolidated data, and if intra-governmental debt is significant, this can affect the interpretation. For example, in some cases, a central government may borrow and on-lend funds to other levels of government, or a high proportion of bonds could be held by a social security fund. The basic principles of consolidation are more fully explained in the *Government Finance Statistics Data, Companion Materials and Research*.[8]

VI. Adopting a Global Headline Indicator of "Gross Debt" (GL3/D4)

The authors propose that a global headline indicator of government debt be adopted. It should focus on the general government with full instrument coverage ***(GL3/D4***). More specifically, the global standard of gross debt should be shown on a consolidated basis, with both market and nominal value for debt securities. The adoption of a headline indicator is not to preclude other measures that give more detailed data on the composition of debt or wider measures.

How realistic is this proposal both in terms of political support and statistical capacity? Many advanced economies including the 27 European Union member states already publish **GL3/D3** data. Some countries, such as Australia, Canada, and Iceland, disseminate GL3/D4 data, and *ESA* 2010 envisions dissemination of pension obligations as memorandum items in 2014, which would allow the calculation of **GL3/D4**. There is some debate about whether dissemination of *quarterly* data is achievable in the short run but annual data are published, including by many emerging market countries.

[8]International Monetary Fund, 2004, *Government Finance Statistics Data, Companion Materials, and Research* (http://www.imf.org/external/pubs/ft/gfs/manual/comp.htm).

Additional debt indicators should be considered as well and their production should be specified as is the case with other datasets. For example many countries publish more specialized indices of price changes for a defined set of commodities, for regions or urban areas along with the headline figure of the Consumer Price Index (CPI). One important role of the headline indicator is that it can be used for international comparisons while CPI sub indexes may serve defined other purposes, for example a regional index may be used as a reference point to determine differentiated salary increases by region.

Additional debt indicators would include government debt for each of the subsectors (e.g., central government debt, etc.), debt by instruments, data on financial assets, net debt, additional information on contingent liabilities, financial derivatives, and a range of indicators on maturities (e.g., debt with remaining maturity of one year or less), information on the residence of holders of certain debt instruments (e.g., foreign resident holders of securities), further information on currency (of denomination or settlement) composition of debt, etc. The list of possible additional indicators could be extended to the public sector and its subcomponents as well. Other aspects of the dissemination of data concern the frequency and timeliness.

The *Debt Guide* presents a set of tables to address the different types of government (sovereign) debt risk. Appendix Table 2 presents the list of tables and the breakdown that the *Debt Guide* proposes to better estimate different types of risk. The World Bank in cooperation with the IMF launched the first global database using official statistics, the Joint Public Sector Debt Statistics database (www.worldbank.org/qpsd). This new database follows the structure of the *Debt Guide*. However, it uses a building block approach and countries can provide partial as well as complete data. Achieving comprehensive coverage of countries will take some time. Other relevant sources of debt data, although more limited in terms of sub-indicators are, for example the IMF's *Government Finance Statistics Yearbook* and *International Financial Statistics*, and the OECD's government debt database (http://stats.oecd.org).

VII. CONCLUSIONS

The headline indicator for government debt should be defined as "gross debt of the general government" or ***GL3/D4*** in this paper's nomenclature. The authors suggest that countries should aspire to publish timely data on the broader concept of gross debt.

Data on the institutional level of the general government (***GL3***) would be consistent with a broad range of data uses and with the data requirements of other macroeconomic datasets, notably the national accounts. Including the full range of debt instruments is desirable particularly because some of these may expand in times of financial distress and could thus serve as valuable indicators of distress. Clarity of what the debt data cover would help build understanding of the data and their comparability across countries.

A global standard would facilitate communication on the main concepts in public sector debt statistics and it would bring greater precision to research on fiscal issues, and lead to improved cross-country comparison. This framework uses a nomenclature inspired by the approach in monetary data where M1 through M4 (monetary aggregates) reflect institutional and instrument coverage as well.

The methodological framework of government debt presented here is widely accepted among statisticians. The relevant definitions, concepts, classification, and guidance of compilation are summarized in *GFSM 2001* and the *Debt Guide.* These standards are fully consistent with the overarching statistical methodology of the *2008 SNA* and other international macroeconomic methodologies such as the Sixth Edition of *Balance of Payments and International Investment Position Manual* (*BPM6*) and broadly consistent with the European System of Accounts (ESA) manual and the more specialized manuals of deficit and debt that govern the Excessive Deficit Procedure.

However, the methodology is not always well defined in the policy debate. An international convention to view ***GL3/D4*** as the desirable headline indicator of government debt, consistent with the international standards, would go a long way to create more transparency and better comparability of international data.

Our contribution is to provide a presentational framework and nomenclature that highlights the importance of different instruments, institutional coverage, and valuation and consolidation as key indicators of debt. Indeed, we have noted that other, more narrowly defined concepts can meaningfully supplement the comprehensive measure of debt. These narrower measures may be important for a risk-based assessment of the fiscal position, but they are not substitutes for a global indicator.

Further extensions of this work are the development of the statistical reporting of broader measures, for example net debt of the general government and the presentation of information on derivatives, and contingent liabilities.

The new debt database launched by the IMF and World Bank in 2010 is structured along government levels, debt instruments, consolidation and valuation as discussed in this paper. However, some countries report data only on the ***GL2*** level and cover mostly D1. Developing data on the broader statistics will take some time, although Australia, Canada, and some other countries already publish or plan to publish ***GL3/D4*** data or publish components that would allow the calculation of ***GL3/D4***.

Debt statistics for various levels of government and instruments were shown for 61 countries and these data highlight some interesting patterns that merit further analysis such as the degree of fiscal autonomy of state and local government to issue debt, the degree of development of markets for government debt securities. The authors conclude that further research would be worthwhile on the advantages of a global standard of government debt for such topics as data comparability, IMF surveillance, programs, debt sustainability analysis, and the analysis of fiscal rules.

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