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The IMF's Government Finance Statistics Yearbook – Maps of Government for 74 Countries

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ABSTRACT

A useful but little known feature of the IMF's *Government Finance Statistics Yearbook* (*GFSY*) is the information on the structure of governments. Institutional tables, included in the *GFSY*, provide detail on the central, state, and local levels of governments, social security, and extrabudgetary units. We refer to the main levels of government as GL1, GL2, and GL3 in ascending order of institutional coverage. We present maps of the various levels of government for 74 countries to illustrate the usefulness of this database and make it more accessible to users. The maps provide information about how centralized or decentralized government finances and employment are and their size relative to the overall economy. Government map data facilitate the monitoring of fiscal policy and fiscal rules.

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I. THE RELEVANCE OF GOVERNMENT MAPS

Government maps developed in this paper reflect the institutional coverage of any given government. Institutional coverage refers to the institutions or agencies that comprise a government sector. Based on standard macroeconomic statistical definitions of the government sector shown in Figure 1 below, fiscal data are conceptually divided in terms of the sectors and subsectors (groups of institutions) most relevant for economic analysis. In the macroeconomic statistical methodology the institutional approach to presenting fiscal data is well established. However, policy analysis often neglects to specify the level of government in question and most global databases are not explicit about the level of institutional coverage. As illustrated in this paper, specifying the level of governments is necessary for comparability of fiscal data over time and across countries.

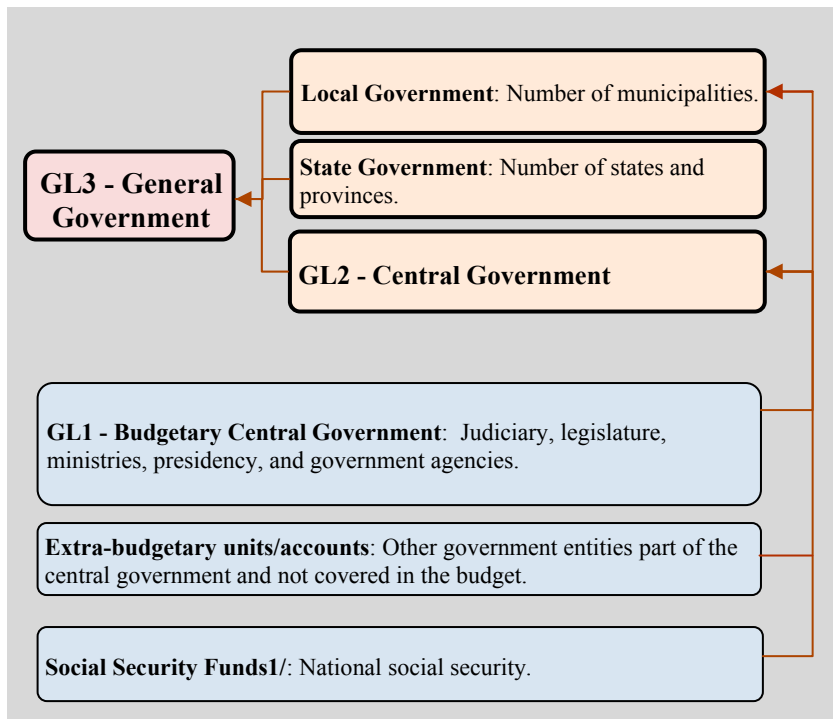
The organization of data by the institutional coverage of government is a unique feature of the IMF's *Government Finance Statistics Yearbook (GSFY)* but this aspect of the database is not widely known by its users. We illustrate the usefulness of these data by creating maps on the institutional structures of government for 74 countries in a more accessible visual format and discuss the applications of this information for policy and data timeliness.

The institutional coverage of fiscal data matters because governments are generally composed of many different units, and fiscal data pertain to specific (but often not specified) subsets of these. For example, a "fiscal deficit" may refer to a broad definition of government which includes state and local levels or, alternatively, to narrower concepts such as the budgetary central government. Important subsectors such as social security funds may or may not be included. Furthermore, moving from one level of government to the next cannot be achieved by simply adding the various levels. Aggregation requires the consolidation of intra-government activities to avoid double counting. As illustrated in this paper, the meaningfulness of the data in a global context is seriously impaired when the coverage is not made explicit.

International concepts and definitions on the subject of institutional coverage are well understood in context of the national accounts and most of the IMF's member countries have subscribed to these methodologies. The overarching one is the *System of National Accounts, 2008 (2008 SNA)* and its 1993 predecessor, which defines the concept of "general government" as most relevant for the calculation of the gross national product. The *Government Finance Statistics Manual 2001 (GFSM 2001)* describes in further detail how government activities are to be "mapped" according to the institutional structure of the various government agencies.

A generic structure of government is also laid out in the *GFSM 2001*. It is based on institutional units, closely linked to economic functions. Institutional units are defined as entities making economic decisions on their own behalf, capable of owning assets, incurring liabilities, and providing information on the institution's transactions and balance sheets.

Figure 1. Institutional Levels of General Government



1/ The IMF's *Government Finance Statistics Yearbook (GFSY)* database presents social security funds as a subsector of GL2 (central government) as shown above. However, social security funds could alternatively be included as a separate sector of general government. The social security funds are not necessarily part of the central government.

We use the terms government levels 1, 2, and 3 (GL1, GL2, and GL3) to refer to three main levels of government. GL1 refers to the narrow definition of government, the budgetary central government, GL2 refers to the central government — which is composed of GL1 plus extra-budgetary units and social security funds — and GL3 refers to GL2 plus state and local governments, a broad definition of government, referred to as the general government in the national accounts terminology.¹ The idea of numbering the levels of government was inspired by the concepts of M1, M2, and M3 in monetary statistics which was introduced to facilitate communication about concepts of broad money. Social security funds in some countries, including Canada, Japan and some European countries are not part of the central government in terms of the legal arrangements. However, from an economic perspective and to produce more comparable data in the *GFSY*, the social security funds are classified as part of the central government.

The maps of government presented in this paper have a number of policy applications. They can serve as reference points for fiscal targets or to define fiscal policy rules, including fiscal rules in a regional context. For example the European Excessive Debt and Deficit Procedure is based on the

¹ Extending the government levels to the entire public sector, G4 would refer to the public nonfinancial sector and G5 to the public sector including the central bank, any state banks and other state financial enterprises. However, the *GFSY* database is currently limited to the three levels.

general government (GL3). Applications also exist for IMF policy analysis and lending where a common nomenclature of the definition of government helps define policy targets and indicators. Data on the institutional maps can also be used as benchmarks for estimates. In many countries, the most current (monthly) data are available only for the narrowly defined budgetary sector while most countries produce more comprehensive data on the general government (GL3) only on an annual basis and with several months delay. A government map can be used to develop methods of estimating timely data for broader and analytically more meaningful levels of government when the relationship between these various concepts is well defined.

Section II describes the IMF's data pertaining to the structure of government and the fiscal indicators used to construct the maps. Section III shows three maps for each country, describing the institutions, the composition of key indicators, and the size of the various levels of government relative to the overall economy. Section III explains a key policy application of this research, the improvement of timeliness of general government (GL3) data and Section IV draws conclusions.

II. THE IMF'S DATA ON THE STRUCTURE OF GOVERNMENT

The IMF's Government Finance Statistics Yearbook database provides data on the various institutional levels of government, if such data are available. The layout of the data follows the *Government Finance Statistics Manual 2001 (GFSM 2001)*. In a nutshell, the *GFSM 2001* presents government accounts along the lines of a business accounting framework, with a balance sheet and income statement. Broadly speaking, changes of assets and liabilities and net worth from one year to the next are explained by the income statement (or valuation changes).²

The *GFSM 2001* presentation supports the management of a government's non-financial and financial assets, including sovereign wealth funds, and its financial liabilities. It also supports the analysis of a country's debt sustainability which requires data not just on debt but also on financial assets that could be liquidated to repay the debt.

The *GFSM 2001* specifies that data should be presented separately for each level of government, not only for the broadest level and that consolidation must be applied to avoid double counting. The *GFSM 2001* format is by and large compatible³ with the other macroeconomic statistical methodologies and with the International Public Sector Accounting Standards (IPSAS).

The IMF's *GFSY* database is based on official data reported by member countries to the IMF. It is validated according to the *GFSM 2001* and involves an ongoing dialogue with the authorities who provide these data. However, as with all databases, the quality of the data improves with frequent use and feedback from users. The authors are hoping to increase public awareness of the availability and accessibility of this useful database. A more active use of the *GFSY* database will serve both as an encouragement to countries to report their data to the IMF and enhance the quality of data through feedback from users including in academe, rating agencies, and other users.

² It constitutes an upgrade of its predecessor, the *GFSM 1986*, which did not specify the institutional coverage or the various levels of government in a structured and cross country comparable manner and which does not link the flows and stocks in a balance sheet approach format.

³ The *GFSM2001* is currently being updated to reflect recent developments and changes in particular the System of National Accounts (2008)

The IMF adopted the *GFSM 2001* format for its World Economic Outlook (WEO) database starting in 2010. In addition, starting in 2011, the IMF's country reports will phase in the use of the *GFSM 2001* format to presenting fiscal data.⁴ The initiative to upgrade the presentation of fiscal data was taken to enhance the cross-country comparability of fiscal data.

While the GFSY database is conceptually designed to include data on government balance sheets as well as flow data, the database is primarily populated with revenue and expenditure data but the number of countries reporting data on the financial balance sheet, currently 36, is expected to increase over time.

The *GFSY* includes a total of about 120 countries but not all have information on every level of government. We present government maps for the 74 countries that provide sufficient detail and information about the various levels of government. In this paper, maps are shown for just one year, in most instances for 2008. The maps will be updated periodically as resources permit. A companion paper presents similar information in a time-series format to shed light on the stability or changes over time.⁵

A. Selected Fiscal Indicators and their Main Components

The government maps focus on basic fiscal indicators: revenue, expenditure, the difference between the two (net lending/net borrowing), and two large subcategories, tax effort, and compensation of government employees. Table 1 below summarizes the components of the flow indicators. Where data are available on government debt for each subsector, debt data are also shown.

⁴ "Government Finance Statistics to Strengthen Fiscal Analysis," Decision No. 14565-(10/20) adopted by the IMF Executive Board

⁵ Dziobek et al., 2011, "Measuring Fiscal Decentralization-Exploring the IMF's Databases", *IMF Working Paper* WP/11/126.

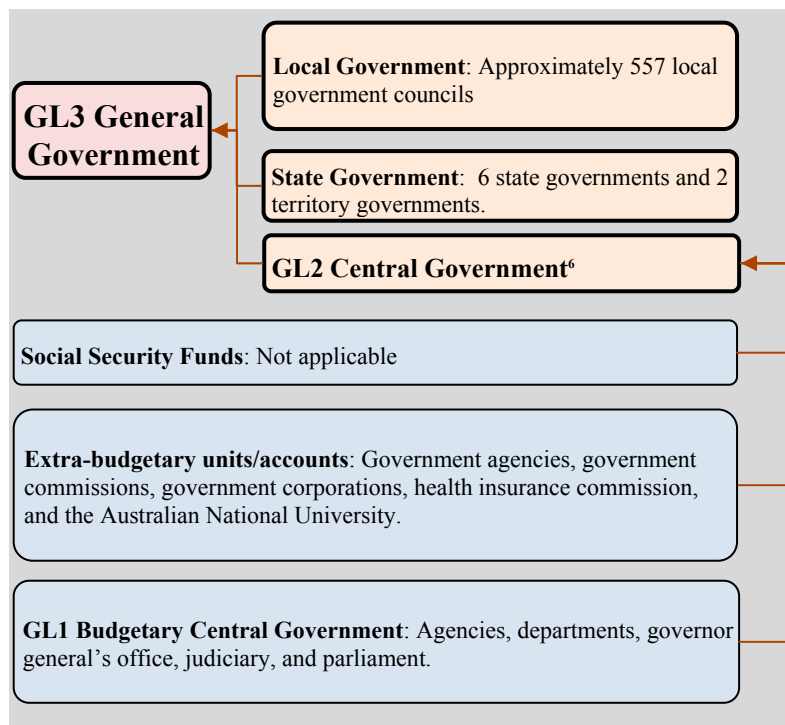
III. MAPS OF GOVERNMENTS

In this section, we show how the government maps are constructed, using the example of Australia. The appendix presents government maps for 73 additional countries. The maps have three dimensions, a description of the institutions, the composition of GL1, GL2, and GL3 in terms of key fiscal indicators, and their size relative to GDP.

A. Institutional Maps

The *Government Finance Statistics Yearbook (GFSY)* includes institutional tables on the structure of the general government for each country. Figure 2 is an example of how the institutional table information can be translated into a visual image using the example of Australia. For macroeconomic analysis, the most relevant institutional coverage is GL3 (the general government sector). However information on GL2 and GL1 and other subsectors is also relevant and it is useful for analysts to have a list of the various institutions and agencies even if data may not be complete.

Figure 2. Government Map: Australia's Levels of Government (2008)



Source: *Government Finance Statistics Yearbook (2009)*

Figure 2 shows that the Australian budgetary central government (GL1) consists of the central government agencies, departments, the governor general's office, the judiciary, and the parliament. The GL2 central government⁶ level further includes various agencies, commissions, and two

⁶ In Australia GL2 includes the Central Government and the Multi-jurisdictional sector. The Multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units currently falling into this category are the public universities.

national universities. There is no separate social security fund in Australia. There are six states and about 900 municipalities which are included in the broadest definition (GL3) of government.

B. Selected Fiscal Indicators Maps

As noted above, the presentation of government maps in terms of fiscal indicators focuses on revenue, expenditure, revenue minus expenditure, tax effort, compensation of employees, and, where available, public sector debt.

The indicators are calculated from the annual data of the *GFSY* database. For some countries, these data are related to a fiscal year (noted in the tables as “FY”) that does not correspond to the calendar year. For some countries, one or more of the general government subsectors do not exist. These subsectors are presented with the notation “n/a”. In other cases, some subsectors are subsumed in other subsectors (e.g., data for extrabudgetary units may be included in the budgetary central government).

GDP data are taken from the *International Financial Statistics (IFS)*, where GDP figures are presented on a calendar year basis. For countries with data presented on a fiscal year basis, GDP data are also calculated on a fiscal year basis (adjustments are applied on calendar year GDP data).

Table 2 presents the composition of government activity for Australia in terms of the selected fiscal indicators. It shows that the central government collects about 74 percent of revenue and state governments collect about 20 percent while local governments collect about 6 percent. The central government collects about 82 percent of tax revenue which suggests that state governments are focused on collecting other types of revenue. In terms of expenditure, the central government passes a significant portion of the resources on to the state government which spends almost twice the amount it collects in revenue. The state governments are also by far the largest employers of government employees, with about 64 percent of the payroll.

Table 2. Australia: Key Indicators of Government Finance by Levels of General Government (GL3), 2008

(In percent of general government)

	Revenue ¹	Expenditure ^{1/2}	Tax effort ³	Compensation of employees
General Government	100.0	100.0	100.0	100.0
Local Government	5.6	6.9	2.9	8.2
State Government	20.4	40.2	15.3	64.5
Central Government	74.0	52.9	81.8	27.4
Social Security Funds	n/a	n/a	n/a	n/a
Extrabudgetary Units	....	....	....	....
Budgetary Central Gov	....	....	....	....

1. Revenue/expenditure excludes grants received from/paid to other government units.

2. Expenditure consists of expense and net acquisition of nonfinancial assets.

3. Tax effort consists of revenue from taxes and social contributions.

4. Data are included in budgetary central government.

Source: *Government Finance Statistics Yearbook (2009)*

C. Government in Percent of GDP Map

For each of the countries covered in this study, a table (Table 3 below for Australia) provides information about revenue and expenditure of the various levels of government relative to the rest of the economy. For example in Australia, GL3 revenue amounts to the equivalent of about one third of the economy as a whole. Australia's government shows an overall surplus although state and local governments spend more than they raise, reflected as negative numbers. However, for the general government these deficits cancel out and the overall deficit (Net lending/borrowing) is positive 1.25 percent of GDP. The figures shown in italics are the contributing factors of GL3's Net Lending/Borrowing. It is also possible to calculate NLB for GL2 but this would include grants according to the *GFSM 2001* definition. For GL3, grants cancel out.

Table 3. Australia: Revenue, Expenditure, and Net Lending (+)/Borrowing(-) (NLB) FY 2007/08
(In percent of GDP¹)

	Revenue ^{/2} (a)	Expenditure ^{/2/3} (b)	NLB (a-b) and subsector components ^{/5}
General Government	35.16	33.91	1.25
Local Government	1.96	2.33	-0.37
State Government	7.18	13.63	-6.45
Central Government	26.02	17.94	8.08
Social Security Funds	n/a	n/a	n/a
Extrabudgetary Units	...	...	...
Budgetary Central Government	...	...	...

1. GDP = Australian dollars 1,187,213 million
2. Revenue/Expenditure excludes grants received from/paid to other government units
3. Expenditure consists of expense and net acquisition of nonfinancial assets
4. An ellipsis (...) means the absence of data, and a notation (n/a) means that the subsector does not exist
5. The NLB subsector components shown in italics are the contributions from each sector to the NLB of the General Government. The NLB subsector component is *not the Net Lending Borrowing for that sector because grants are excluded.*

Source: *Government Finance Statistics Yearbook (2009)*

Data on government maps may present some discrepancies when compared with the most recent fiscal data available. These discrepancies can arise from vintage issues when countries publish several vintages of their GDP and or fiscal data. They may also arise for other reasons. For example, EU-27 countries report GFS data to the European commission twice a year, in April and October. The October data form the basis of the annual data reproduced in the *Government Finance Statistics Yearbook*.

D. Some Preliminary Results

Table 4 shows data, respectively for advanced and emerging market economies (using the WEO country groupings). For advanced countries, GL2 data for revenue capture about 80 percent while expenditure data capture only about 70 percent of GL3. Expenditure levels are lower than revenue levels not because of the deficit but because part of the revenue is passed on to state and local levels of government or other institutions or agencies not included in GL2. For emerging and developing economies, the GL2 data represent a higher level of GL3 of 90 percent for revenue and 80 percent for expenditure reflecting more centralized government structures.

Table 4. Summary Statistics on Government Maps

Revenue and Expenditure of Central Government (GL2) in percent of General Government (GL3)
Averages by Country Groups, Fiscal Year 2008

	Revenue (Average)	Expenditure (Average)	Number of Countries
All	88	79	63
Advanced Economies	82	72	24
Developing and Emerging Economies	91	83	39
Sub-Saharan Africa	95	86	5
Asia Pacific	93	88	6
Europe	84	73	36
Middle East and Central Asia	94	87	9
Western Hemisphere	89	81	7

Source: *Government Finance Statistics Yearbook (2009)*

IV. APPLICATIONS AND FURTHER RESEARCH

The most basic application of this study is that fiscal policy analysis should specify the level of government. This would enhance the rigor of analysis and enhance the cross country comparability of data or at least help understand differences of data across countries.

Other applications of this work may relate to the timeliness and periodicity of fiscal data. The *GFSY* presents comprehensive annual data covering 12-month periods. These comprehensive data are typically published with a delay of about a year. For purposes of forward looking fiscal policy analysis and forecasts, users often note that monthly or quarterly data are more relevant than annual data. However, there is a trade-off between comprehensiveness and timeliness of data.

Comprehensive annual data such as the *GFSY* data can serve as a benchmark or as a basis for developing estimation models for high-frequency (monthly or quarterly) fiscal data.

The research can be extended to time series analysis, exploring patterns and changes over time. A research project is underway to analyze historical trends for cross sections of countries. Finally, this

research highlights data gaps which can be used to develop a strategy for enhancing the completeness of the database.

V. CONCLUSIONS

Maps of government are available for 74 countries that regularly provide data to the *GFSY*. In total, there are 120 countries in the database and some information on the structure of government is available for each of these, although not all provide sufficient or sufficiently timely data to produce meaningful government maps.

Clarity on the structure of government and the relative economic size of each level of government is a helpful tool for a variety of purposes. For example, cross country comparability calls for a clear specification of the level of government for which the data are shown. We introduced the terminology of GL1, GL2, and GL3 to represent the three main levels of government in ascending order of institutional coverage. The statistical definitions are those of the budgetary (GL1), central (GL2), and general government (GL3) respectively.

GL3 is the most relevant institutional coverage for the data for most countries because it captures government activities in a comprehensive way. By the same token, assembly of these data is often very time-consuming compromising the timeliness of the data and, hence, their usefulness for policy analysis. For many countries, more timely data are available for less comprehensive (GL1 or GL2) data. The government maps, which provide information on each level of government, can be used to develop estimation techniques including for estimates of GL3.

The maps of government also highlight that some countries are highly centralized, and GL2 and GL3 indicators are virtually identical while in others, lower levels of government have large roles to play. A more detailed study of decentralization is presented in a companion piece to this study.

Government maps are useful for a variety of purposes. Fiscal policy analysis should always specify the level of government referred to. Maps help define fiscal policy goals, including how these are assigned to various levels of government. They are useful in defining or monitoring fiscal rules. The work on government maps could be expanded to incorporate data on government assets and liabilities. These maps can also be used to enhance the timeliness of some of the data, particularly data on the state and local governments which tend to be available with relatively large delays. A time series analysis of how maps change over time is helpful in setting benchmarks for estimating missing data for individual countries and for country groups.

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