

A Government's Net Worth

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A new tool in surveillance, the public sector balance sheet, can help diagnose vulnerabilities that are not immediately visible in the budget

WITH the economic crises of the 1990s, economists were reminded that they could no longer rely solely on a country's so-called flow variables (among them revenues, expenditures, imports, exports, and borrowing) as a guide to economic vulnerabilities. Financial health turns out to be more complicated than the relationship between income and outgo—the flow analysis of macroeconomics that has been the workhorse of fiscal policy since John Maynard Keynes provided a structure to analyze its impact on growth, inflation, and employment. Studying the accumulated stocks of assets and liabilities of a country (public, private, and external), and mismatches among them, can be a supplemental guide to uncover distress.

What holds for the country holds for the public sector as well. Many vulnerabilities do not show up in the budget, but become apparent when a public sector balance sheet reflecting all assets and liabilities is constructed. Analyzing the government's net worth and what causes it

to change can lead to understanding the need for better policies. For example:

- Ecuador's oil production contributes large revenues to the budget, but is gradually depleting the state-owned oil reserves (assets). Its revenue flows may look healthy even as its balance sheet (a stock concept) suggests that net worth is declining.
- When the present value of future social security claims is recognized as a liability in the balance sheet, the fiscal position in Germany and Switzerland, among other advanced countries, suddenly looks more challenging.

Shocks to stock variables can ruin countries. In many recent financial crises—Korea, Thailand, Indonesia, Argentina, Uruguay, and Ecuador—the root cause was not a simple flow imbalance (for example, a public or private sector deficit), but rather a sudden loss of investor confidence that affected prices of financial assets or an exchange rate crisis that led to a collapse in net worth as debt denominated in foreign currency increased while there were losses on assets. Private or public

entities do not succumb easily to pressures from a budget deficit, even when it continues for a few years, because flow imbalances, such as deficits, can be relatively quickly corrected once the political will to do so materializes. But correcting a stock imbalance can require efforts that stretch a decade.

In recent years, the IMF has increasingly incorporated analysis of stock variables in its monitoring of countries' economies and the global economy—what is known as the balance sheet approach in surveillance (Allen and others, 2002 and 2007; Rosenberg and others, 2005). This methodology uses linkages within and between the balance

Oil workers upgrade a production facility in Ecuador.



sheets of the private and public sectors and the external position of the economy to reveal stress affecting different sectors, and how valuation changes or other shocks can cause an abrupt unwinding of these imbalances. It often includes a partial balance sheet for the public sector, focusing on financial assets and liabilities (excluding nonfinancial or intertemporal information). This goes beyond the more narrowly defined public debt but is incomplete because it leaves out much vital information. An approach that focuses on the net worth of the public sector by itself is gradually finding its way into surveillance.

Indeed, the IMF Statistics Department and the Fiscal Affairs Department presented a blueprint for linking public sector flow accounts (budget reporting) and stock accounts (balance sheet reporting) in the *Government Finance Statistics Manual* (IMF, 2001). It reflects government activities in a statement of the operations of government covering transactions in revenues, expense, the net acquisition of nonfinancial assets, and financing; a gross cash flow statement; and a balance sheet that explains changes in the stock positions in assets and liabilities at the beginning and the end of the accounting period by transactions in revenues and expense that affect net worth and other economic flows, including valuation and volume changes (IMF, 2005; Da Costa and Juan-Ramon, 2006). Countries are implementing these guidelines but because data requirements are demanding, progress has been gradual. Meanwhile, the staff has been exploring available balance sheet material to see if it can shed light on risks and broader sustainability issues in fiscal analysis.

Totting up assets and liabilities

The basic concept of a public sector balance sheet is clear: add up all financial and nonfinancial assets accumulated over the years on one side, and all debt and other liabilities on the other—the difference is the public sector net worth (see Table 1). By recording both assets (nonfinancial and financial) and liabilities, the balance sheet enables analysts to assess the impact of fiscal policies on net worth and to evaluate trends in net worth over time as a basis for determining the sustainability of fiscal policies.

But reality is not that straightforward. Many governments do not know what assets they have acquired over the years, what they owe, or who holds title (for instance with contingent or certain future liabilities). Moreover, the prices at which assets and liabilities need to be entered into the balance sheet (market or nominal book values) make an important difference.

Examples of how even a simple stand-alone balance sheet can suggest vulnerabilities in fiscal analysis include:

Exchange rates. Many private and public sectors carry some foreign currency-denominated or indexed debt on their balance sheet, which can accumulate to a point where even a small exchange rate change can become costly. This could affect the government finances in two ways. First, the exchange rate change can directly increase the cost of the public debt on the government's books. Second, it can force the government to absorb private sector debts if bankruptcies among households and businesses with debts in foreign currencies push lenders

Table 1

What a public sector balance sheet shows

It totals assets and liabilities to find a government's net worth.

Conceptual public sector balance sheet	
(percent of GDP)	
Assets	120
Financial assets	30
Cash	5
Deposits	25
Nonfinancial assets	90
Net capital stock	55
Public enterprises	35
Liabilities	120
Gross debt	70
Other liabilities ¹	35
Net worth	15

¹Could include contingent and/or implicit liabilities.

such as banks into insolvency. To prevent further damage, the public sector sometimes has no choice but to socialize part of the costs of the private defaulted debt through deposit insurance or bailouts. None of the risks from currency mismatches can be observed directly in flow accounts and, without a comprehensive balance sheet analysis, they tend to go undetected for too long. For example, vulnerability to exchange rate risks was important in Argentina and Uruguay leading up to the crises in the early 2000s.

Public enterprises. Voters generally know about the public debt but are less aware of their ownership in and the performance of state assets and enterprises. Take Uruguay in 2001. State enterprises were returning relatively little to the taxpayers and, as a group, their net worth was lagging, especially the state banks. At the same time, Uruguay was rapidly accumulating debt, much of it in foreign currency. Preliminary staff calculations suggested that the value of the enterprises was still enough until 2000 or so that they could have been sold and the proceeds used to extinguish or sharply reduce the debt, in turn reducing or ending the foreign currency mismatch on the public balance sheet (see Table 2). Uruguay had already engaged in a substantial discussion about whether to divest the enterprises but in the end opted against it, perhaps because the public did not fully realize that the enterprises were not generating a sufficient return. In contrast, Australia has shown that it helps to garner political support for better management or divestment if the authorities inform the public about their asset holdings and systematically disclose their return.

Resource depletion. For some countries, oil reserves are the most important asset on the public sector balance sheet, and they feel well-off if they can sell the oil for use in (current) spending. But from a balance sheet perspective, the country is using a nonrenewable resource and consuming its assets. The sovereign's net worth is declining. This goes undetected when no public sector balance sheet is produced (see Table 3). The IMF and Ecuador discussed resource depletion in 2003, and the IMF staff recommended placing oil receipts in the financing statement (instead of the budget) and focusing policies on developing the non-oil economy for a soft landing when the oil runs out. There are cases where countries have developed wealth management funds with the proceeds from oil

or other commodities—to smooth out over time the consumption of these important state assets—including Norway, Russia, and Chile (copper).

The environment. For years, it seemed that pollution could be absorbed by the environment without difficulty, but pollution pressure has grown so large that symptoms of distress are surfacing. One problem is that clean air and water, or diffuse concepts such as biodiversity, have no well-defined price and are difficult to value in economic modeling. But if a good is a public good with social benefits, it makes sense to try to value it on the public sector balance sheet, and for it to be managed with either appropriate regulation or revenue-generating licensing. Slowly, the value of “goods” such as CO₂ capture and biodiversity, as well as “bads” such as carbon emissions, is being priced in market systems to become tradable goods that yield cash flow.

Table 2

Accounting for public firms

A balance sheet would have enhanced awareness of the trade-off between low-yielding public firms and growing high-interest debt.

Uruguay—Preliminary public sector balance sheet						
(million dollars)						
	1995	1996	1997	1998	1999	2000
Assets	11,497	11,448	11,259	11,987	12,023	10,887
Central bank net worth	1	-29	-140	-13	-6	-123
Public enterprises	6,160	6,362	6,468	6,860	6,862	5,662
Capital, net	4,925	4,704	4,520	4,730	4,756	4,937
Other, net	411	411	411	410	411	411
Liabilities	11,497	11,448	11,259	11,987	12,023	10,887
Debt	5,199	5,441	5,779	6,368	6,621	7,232
Net worth	6,298	6,007	5,480	5,619	5,402	3,655

Source: IMF Country Report No. 01/185, October 2001.

Table 3

Accounting for oil use and the environment

It is hard to value ecological assets, but the IMF tried to do so in Ecuador, plus calculated the declining value of oil and gas reserves.

Ecuador—Public sector balance sheet					
(million dollars)					
	1970	1980	1990	2000	Prel. 2002
Assets	7,818	258,724	131,082	140,400	116,489
Deposits	54	494	359	1,228	1,282
Central bank net worth	35	327	237	1,343	1,037
Public enterprises	586	5,404	3,927	4,430	5,389
Capital stock, net	606	3,777	7,445	11,204	12,819
Oil and gas reserves	6,134	245,000	116,410	118,093	89,694
Biodiversity and carbon capture	403	3,722	2,704	4,102	6,268
Liabilities	7,818	258,724	131,082	140,400	116,489
Shortfall in insurance funds	395	3,645	2,648	4,017	6,138
Debt	563	5,132	8,554	13,227	13,730
Arrears	0	0	3,033	1,331	789
Net worth	6,860	249,947	116,847	121,825	95,832
With oil and gas at 2001 prices	139,303	133,486	114,280	96,374	94,139

Source: IMF Country Report No. 03/91, April 2003.

Take Ecuador, which has one of the world’s richest natural environments. In 2002–03, when IMF staff met with the authorities for the annual country consultation, they agreed to include environmental data in the public sector balance sheet (see Table 3). Although the Fund has no standard for environmental accounting, the staff consulted experts in Ecuador who had used formulas from the Kyoto Treaty to value biodiversity and the capacity of forests to act as carbon sinks to calculate a notional economic value for ecological wealth in their country. Environmental trade-offs at that time were particularly acute, because the country had issued permits for a new oil pipeline that opened the interior Amazon rain forest and carried the oil through ecologically sensitive areas. The idea of the exercise was not to provide a new cost-benefit analysis of the oil pipeline project but rather to encourage a discussion on trade-offs that need to be made when pitting economic growth against environmental sustainability.

Intertemporal accounting and fiscal sustainability. Fiscal sustainability is often analyzed in terms of how well debt can be managed. But debt is only one of the liabilities on the public sector balance sheet. It is difficult to see the so-called intertemporal liabilities—including the future unfunded social security claims that are now attracting attention as baby boomers near retirement.

In recent talks with Germany and Switzerland, the IMF staff has developed preliminary intertemporal public sector balance sheets that include the net present value of future unfunded liabilities (see Table 4). These liabilities reflect prospective fiscal deficits, essentially driven by aging costs in the social security system (such as pensions, health care, and long-term care) under current policies (a baseline scenario) over a rolling 50-year horizon. These liabilities are sometimes much larger than the existing debt, and including them in the balance sheet turns public sector net worth from positive to negative.

At present, international convention, including IMF methodology, does not consider unfunded pensions a government liability, but this interpretation is likely to change. Standard and Poor’s rating agency has warned that with unchanged policies, the Group of Seven industrial countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) could lose their investment credit rating over the next two decades based on the deleterious effects on the public finances of these emerging aging costs (Kraemer, Chambers, and Merino, 2005). It is no surprise, therefore, that Germany, Switzerland, and many other countries are engaging in adjustment and structural reforms to prepare their economies for the coming wave of retirements and other aging costs.

Moreover, intertemporal public sector balance sheets can provide valuable information that can point out the benefits of stronger economic policies. Structural reforms, for example, are notoriously difficult to approve and implement because in the short run the public does not see clearly the (flow) benefits. Instead, an intertemporal approach can allow voters to better understand the trade-off between doing something now or waiting. Running different scenarios through the balance sheet can show that doing nothing often leads to the need for more severe action later on, because the country is

Table 4

When costs rise in the future

After the present value of future welfare liabilities such as social security are taken into account, Germany's and Switzerland's positive net worth disappears.

Germany—Preliminary public sector balance sheet (percent of GDP)					Switzerland—Preliminary public sector balance sheet (percent of GDP)				
	2003	2004	2005	2006 ¹		2003	2004	2005	2006 ¹
Financial net worth	-46	-49	-51	-53	Financial net worth	-23	-24	-22	-21
Gross debt	-63	-65	-66	-68	Gross debt	-54	-53	-52	-48
Other	17	16	15	15	Other	31	29	30	27
Nonfinancial net worth	56	55	55	54	Nonfinancial net worth	72	71	73	70
Net capital stock	51	50	50	49	Net capital stock	56	55	55	53
Other	5	5	5	5	Other	16	16	18	17
Current net worth	10	6	4	1	Current net worth	49	47	51	49
NPV of implicit future liabilities	-191	-150	-114	-30	NPV of implicit future liabilities	-153	-152	-152	-103
Intertemporal net worth	-181	-145	-111	-28	Intertemporal net worth	-104	-105	-101	-54

Source: IMF Country Report No. 06/438.

¹Assumes that the fiscal balance will be zero in 2010; and that incremental aging costs are 4 percent of GDP by 2050.

Source: Forthcoming IMF Country Report 2007.

¹Assumes that incremental aging costs are 6.3 percent of GDP by 2050.

then confronted with a further-deteriorated public sector net worth. Conversely, if reforms are implemented that improve long-run growth and reduce aging costs, the intertemporal position of the state will strengthen, and the public can see that this bolsters the sustainability of the welfare state.

Indeed, in 2003–04, Germany initiated important reforms to reduce future aging costs. Then in 2006–07, the coalition government took further important measures (including a hike in the value-added tax) to strengthen the fiscal balance. Similarly, Switzerland has been strengthening its underlying fiscal accounts with the help of the debt brake fiscal rule, and has also made important progress with structural reforms that, in the view of the IMF, have improved potential output growth. The benefits from these policies are again visible in stronger intertemporal balance sheets in Germany and Switzerland.

Further steps

More work is needed to implement public sector balance sheets and learn how to integrate stock analysis with traditional macroeconomic flow analysis. The first step might be to complete as much as possible a first rendering of the public sector balance sheet in all countries at book value (the cost of acquisition less depreciation). The next step could be to value selected assets and liabilities at market prices, as appropriate; many governments already report their registered debt on a market-to-market basis. An even more sophisticated approach would be to prepare “stochastic balance sheets.” These recognize that standard balance sheets are snapshots of assets and liabilities at a point in time. The stochastic balance sheet deals with risk assessment, allowing policymakers and voters to recognize the probability at which the value of assets and liabilities will fluctuate over time as conditions change. They are gradually being applied to public sector balance sheets (Gapen and others, 2005; Barnhill and Kopits, 2003).

In principle, the complete stand-alone public sector balance sheet should be integrated into the sectoral balance sheet analysis of surveillance. This would bring out connections

between important public and private actors in the economy, and between different economies, to highlight policy spillovers. For example, issues surrounding global imbalances can be illuminated with public balance sheet analysis because some countries are reacting relatively early to aging, thereby boosting their domestic savings, whereas others have hardly started, tending to lower savings. When some countries bolster their net savings to anticipate aging, while others do not, global imbalances will emerge.

Publishing even preliminary balance sheets as part of the annual budget document would help bring them into the policy discussions. ■

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