How to Measure the Fiscal Deficit

New thinking on alternative fiscal deficit measures
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A primary objective of fiscal policy is to balance the use of resources of the public and private sectors and, by so doing, to avoid inflation and balance of payments pressures. The correct measure of the public sector's net resource use—the fiscal deficit—is, therefore, an important prerequisite for macroeconomic management. But there is no such thing as a clear and perfect measure of the fiscal deficit. Rather, there exist a series of alternative measures—each with advantages and disadvantages. Each of the measures fulfills an important function, sometimes isolating very specific effects. For meaningful cross-country comparisons or useful general conclusions about fiscal policy, therefore, the differences in all of the alternatives have to be made explicit. This article explains the different measures, and attempts to give a sense of when each would most appropriately be used.

The fiscal deficit can be assessed using three gauges: (1) the type of deficit to be measured within a public sector coverage; (2) the coverage or size of the public sector and its composition; and (3) the relevant time horizon. The standard definition of the fiscal deficit is the so-called conventional deficit, which measures the difference between to-
tal government outlays and receipts, excluding changes in debt. When measured on a pure cash basis, the conventional deficit corresponds to the "public sector net borrowing requirement." It is, in general, more restrictive than the deficit measure implicit in laws requiring balanced budgets, which typically balance the budget by including the sale of government bonds as ordinary revenue (i.e., "above the line") that separates deficit-determining items from those that finance the deficit.

In practice, a completely cash deficit, based on government outlays for which cash has been disbursed during the 365-day period and actual cash revenues received, is used less often than a mixture of accrual and cash deficits. For example, interest payments are usually counted as outlays when they fall due, and revenues are measured at the time of collection. The "completely accrual deficit" attempts to capture the actual net resources to be used by the government during the fiscal year (i.e., the commitments of the public sector), regardless of whether or not the transactions have actually taken place. The treatment of fixed capital depreciation, a purely accrual item, is the most significant distinction between the cash and accrual deficits. The gap between the cash and accrual deficits also includes lags in cash payment that exceed a normal accounting period. These delays give rise to arrears, which may pose a problem in measuring the impact of the deficit on aggregate demand: arrears may have the same contractionary effect on the economy as an unmeasured tax on suppliers.

Special deficit measures

The deficit reported in statistical publications or the press is one of the versions of the conventional deficit discussed above. However, alternative indicators have been developed to measure the impact of government activity on specific aspects of the economy, as described below.

The "current" deficit is the conventional deficit less investment outlays and capital revenues (such as asset sales). This measure attempts to identify public saving. However, it has been criticized because the distinction between investment and current outlays is sometimes blurred.

The "domestic deficit" considers only those components of the conventional deficit that arise from transactions within the domestic economy and omits those affecting the balance of payments directly. This measure attempts to identify the direct expansionary impact of government on the local economy. For example, government expenditure on domestic goods that is financed by foreign grants, or revenue from oil exports (which does not cut other domestic absorption possibilities) gives rise to a domestic deficit and increases aggregate demand more than if these expenditures had been paid for by domestic taxes (without creating a domestic budgetary imbalance). The calculation of separate domestic and foreign deficits is particularly relevant to an assessment of the consequences of devaluation, which depends on the size of government imports and foreign debt service obligations.

While the budget deficit affects aggregate demand, the reverse is also true. Calculations of "full-employment and cyclically adjusted deficits" attempt to distinguish between changes in government revenue and expenditure associated with cyclical fluctuations in output and those changes that reflect discretionary policy decisions—the fiscal stance. These deficits broadly correspond to the conventional deficit recalculated using potential output rather than actual output (in the case of the full-employment deficit), or trend output (for the cyclically adjusted deficit). The usefulness of these indicators is limited, however, by difficulties in identifying potential and trend output, both of which are unobservable variables.

Interest payments on public debt are predetermined by the size of previous deficits. Their inclusion in the deficit indicator, therefore, does not permit the direct identification of the effect of current government policies on the economy. For this purpose, the "primary deficit" (i.e., excluding interest payments from the conventional deficit measure), has been widely used, particularly in debt-overhang countries. The measure cannot, however, fully identify the scope for government discretion, since entitlements (such as unemployment benefits) and the public sector wage bill may also be largely predetermined.

When inflation is high and nominal interest rates vary with inflation, a large share of interest payments represents amortization of public debt because it compensates bondholders for the erosion in the real value of their assets. The conventional deficit concept places amortization "below the line" on the argument that, unless the sustainable level of public debt has changed, it will be automatically rolled over and, hence, does not represent a new expenditure. In high-inflation countries, therefore, the implicit inflation-induced amortization is sometimes removed from the deficit calculation to avoid overestimating the true fiscal imbalance. The "operational deficit," which is the conventional deficit minus that part of the debt service that compensates debt holders for actual inflation, may be a closer approximation of the fiscal disequilibrium. One problem with this approach, however, is that the automatic rollover of the inflation component of interest payments cannot be guaranteed, because the sustainable level of public debt is not independent of a country's prospects and stabilization efforts.

Composition of the public sector

Government transactions relevant for measuring the impact of the fiscal deficit are sometimes carried out by nongovernmental agencies. Thus, the "general government deficit" (covering central, state, and local governments) must, in many cases, be expanded to encompass the operations of nonfinancial public enterprises (generating the "nonfinancial public sector deficit") and the quasi-fiscal operations of the public financial sector.

While the transactions of public enterprises are to some extent motivated by profit, their prices—and sometimes sales—may often be determined by government policy, and may have a fiscal impact. In order to identify the government's influence, two issues concerning public enterprises must be explored: first, identifying enterprises that are to comprise the public sector and, second, measuring their fiscal implications. In classifying firms as public, ownership is not a sufficient criterion: their behavior (their response to market signals) and their impact on public finances (through a soft budget constraint) are both important. Once enterprises have been defined as "public," their fiscal impact derives, not from their sales and outlays—which may be considered comparable to the transactions of private firms—but only from whatever implicit taxes and subsidies are embodied in their prices and reflected in their profits and losses. As a proxy for isolation of the policy (tax or subsidy) element in public enterprise net profits, the operational balance of public enterprises may be added to the general government balance (along with investment by the public enterprise sector), because it is usually considered to derive principally from public policy decisions.

In many countries, important quasi-fiscal activities are carried out by financial entities in the public sector, including the central bank, as well as by other publicly owned

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financial intermediaries. These activities include managing explicit subsidies, maintaining multiple exchange rate regimes, debt service, transfers, preferential credit, bailing out ailing industries, and so on. All of these may act as a drain on public resources and should be included in a comprehensive measure of the public sector balance. In practice, however, it is difficult to separate monetary from quasi-fiscal activities.

The central bank's quasi-fiscal operations are automatically and correctly included in the fiscal balance when (1) the central bank makes a profit, which is all transferred to the government and, (2) all quasi-fiscal activities are reflected in the profit-and-loss account. Adjustments to the deficit must be made, however, when the central bank makes losses (because these are often not covered by transfers from the budget), and when quasi-fiscal activities affect only the composition of its assets (lending to meet the government's objectives, for example).

Other public financial institutions may also operate in the capital market under special conditions, such as under government guarantees, while benefiting from implicit monopoly over segments of the market. A large share of their assets may be preferential credits and, therefore, analogous to budgetary lending programs. Hence, it could be argued that, like government direct lending, all of the directed lending of public banks should be added to the deficit. In practice, however, such a procedure would overstate the deficit because much of the financing for these loans arises from other parts of the public sector. To prevent doublecounting, therefore, only the portion of public banks' lending that is directly financed by the domestic capital market or from abroad should be treated the same as government lending.

The time dimension

The measures discussed thus far are used to calculate the annual fiscal deficit. However, recent changes in the world economic environment have led economists to question the relevance of the annual deficit, including its use of an artificial annual cutoff point, and its reliability as an indicator of governments' ability to pay. The issue of long-run government solvency has been highlighted by the debt crisis, and privatization programs have focused attention on the consequences of financing current expenditures by the sale of assets. At the same time, large swings in exchange rates and domestic price levels have shown that a government's financial position can be affected by price and valuation changes.

Annual deficits are now seen to have three important shortcomings. First, conventional yearly deficit measures often include receipts from privatization and the sale of other assets (such as embassies or aircrafts) as revenues. Because these sales provide immediate cash, the annual deficit does not show that the government is actually worse off because of the replacement cost of these assets. Moreover, the reduced deficit overstates the sustainability of the government's policy stance. Second, the annual fiscal balance includes both revenues that will be offset by future expenditures, such as social security contributions, and expenditures in payment of obligations or entitlements contracted in previous fiscal years. Government guarantees also do not appear in the annual balance, although they may lead to future large lump sum outlays. Third, the conventional deficit does not reflect valuation changes in government assets and liabilities, although the government's ability to pay will certainly be affected by inflation, devaluation, changes in terms of trade or relative prices, and real capital gains or losses on government claims and debts.

Recent analyses of the deficit have centered on attempts to assess the biases in the information given to policymakers that are caused by the shortcomings listed above, and on the development of measures that take the public sector's budget constraint into account in describing governments' ability to pay. There is now an academic consensus, at least, that an accurate assessment of sustainability would require the replacement of the annual deficit with a measure of changes in government net worth (i.e., the change in the government balance sheet from year to year). Tentative government balance sheets have been compiled, and, in particular, several crucial advances are being made toward an improved intertemporal deficit measure. However, each attempt to go from a pure flow deficit to a stock-based deficit measure remains subject to analytical criticisms, besides being much more difficult to calculate.

First, attempts are being made to revalue government financial assets and liabilities by adjusting them for the inflation-induced erosion in their real value, and to reflect their market rather than face value. The relevance of the latter adjustment has, however, been questioned, since government debt is practically always redeemed at face value. Second, estimates of the value of government real assets, such as land and mineral rights, have been prepared, and attempts have been made to calculate the government's net investment via the application of economic depreciation schemes. The valuation of real assets is complicated because their prices would be very different from that at present, were all public assets put on the market. Third, the potential impact of contingent claims on government, such as the cost of social security programs, loan guarantees, and so on, can be estimated through an actuarial assessment of the expected present value of the programs; their present value would then represent a government asset (or liability). However, any such actuarial computation depends on the estimation of probabilities—which may be widely disputed. Moreover, actuarial insurance assessments are more difficult to make in the public sector than elsewhere because the government is less likely to charge insurance premiums and typically does not set up appropriate reserves to offset its accumulation of risks.

While these adjustments correct for some serious problems in the assessment of the impact of fiscal policy, it is clear that many measurement questions remain to be resolved before net worth concepts of the public sector deficit could become operational. The point has also been made by theorists that even if generally accepted solutions were arrived at for the issues listed above, measures of the government balance sheet would remain subject to indeterminacy because of the government's ability to levy taxes. Since the government may be able to tax away all private sector net worth, a deficit defined as the change in public sector net worth may never be satisfactorily measurable. Hence, annual deficit measures are not likely to be replaced, but only supplemented in cases where government solvency is seen as a particularly important policy problem.