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Fiscal Indicators

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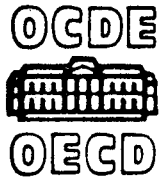
No. 80 FISCAL INDICATORS

by

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This paper is one of three in this Working Paper Series, along with those by Chouraqui et al. and Blanchard, in which the assessment of fiscal policy is reconsidered. It reviews the question of what type of budget indicators the OECD should compile. Instead of the cyclically-adjusted budget, it argues for compiling several indicators to indicate fiscal performance on several dimensions. One measure based entirely on identities can describe the debt-stabilisation gap, one can describe discretionary fiscal policy change, and one can describe the fiscal impact of the budget. Several sources of confusion can be cleared up with this multi-indicator approach: at the same time there will be the costs of explaining what indicator should be used for what purpose.

L'étude qui suit fait partie intégrante de trois contributions sur les méthodes d'évaluation des politiques budgétaires, publiées dans cette série des Documents de Travail de l'OCDE; les deux autres contributions, de Chouraqui et al. et de Blanchard, sont diffusées séparément. Cette étude examine la question de savoir quels types d'indicateurs budgétaires l'OCDE devrait utiliser. A la place du concept de solde budgétaire corrigé des influences conjoncturelles, il préconise l'utilisation de plusieurs indicateurs susceptibles de mesurer différents aspects de la politique budgétaire. Un indicateur, entièrement bâti sur des identités, peut servir à calculer l'écart existant entre le solde budgétaire effectif et le solde requis pour assurer la stabilisation de la dette publique ; un autre indicateur peut mesurer les changements de nature discretionnaire des politiques budgétaires ; un autre enfin peut permettre d'évaluer l'impact économique du budget. Plusieurs sources de confusion peuvent être éliminées avec une telle approche basée sur l'emploi de divers indicateurs. Reste toutefois la difficulté d'expliquer à quel objectif doit être affecté chaque indicateur.

FISCAL INDICATORS

by

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* This paper was prepared as part of a consultancy for the Monetary and Fiscal Policy Division of the OECD Economics and Statistics Department.

The government's spending and taxing policies typically reflect a mix of objectives -- control of aggregate demand, stabilization of the public debt, microeconomic efficiency. Each of these objectives is affected differently by fiscal policy, and it is impossible to assess the impact of fiscal policy without compiling a set of indicators, each useful for a particular objective. Moreover, any one indicator will not generally give a complete description of the impact of fiscal policy on the designated objective. This discussion will highlight on the one hand the need for different indicators for different purposes and, on the other hand, the theoretical considerations that limit any one-variable assessment of fiscal policy with respect to any of the goals.

Objectives of Fiscal Policy

Controlling aggregate demand. The most traditional concern of fiscal policy involves the control of aggregate demand. In the short run this concern involves the extent to which fiscal changes are leading to over- or under-stimulation of the economy. In the medium run the concern shifts to the impact of fiscal changes on the national saving rate of the economy. Three decades ago most of the focus was on the short run issue, but today the medium run issue has become important as well.

Whether in the short or medium run, the task of measuring the impact of fiscal policy is made much more difficult by the fact that there is now, and has been for most of the past three decades, substantial controversy about how the macroeconomy works. The previous Keynesian consensus has broken down into a series of disputes involving the behavior of consumers in response to fiscal changes, the behavior of financial and

goods prices, and the importance of the international sector. Some of the leading theories, and what they imply about the role of fiscal policy on aggregate demand in the short run and national saving in the medium run are:

o The Ricardian equivalence theory of Barro (1974). Under this view, far-sighted consumers see that any fiscal change entails future tax changes and alter their own consumption to offset the fiscal change. Hence in this theory there is no short run impact of fiscal policy on aggregate demand, interest rates, or prices; and no medium run impact on national saving. It also follows, of course, that since fiscal policy does not matter for anything important, it is also not very important to provide an indicator of what fiscal policy is doing.

o The monetarism theory of Friedman (1962). In this view interest rates rise to crowd out the fiscal impulse and keep aggregate demand unchanged. But the crowding out is usually thought to be disproportionately borne by investment, which means that fiscal expansions will typically lower national saving in the medium run. In this view then there would be no point in compiling a short run demand indicator but there would be a point in compiling a medium run national saving indicator.

o The open economy theory of Mundell (1963) and Fleming (1962). In this view expansionary fiscal policy stimulates foreign capital inflows, appreciates the domestic currency value and reduces net exports to keep aggregate demand unchanged. But since net exports are one component of national saving, fiscal expansions again lower national saving in the medium run. Again there is no point in compiling a short run demand indicator but there is a point in compiling a medium run national saving indicator.

o The price flexiblity theory of Lucas (1972) and Sargent and Wallace (1975). Now fiscal expansions raise prices and lower the real quantity of money to keep real output constant. Like the monetarism crowding out mentioned above, investment is thought to bear the brunt of the crowding out, which means that fiscal expansions will typically

lower national saving in the medium run. Again there is no point to the short run indicator but there is a point to the medium run national saving indicator.

Hence all four of the theories give a very slight role to the impact of fiscal policy on aggregate demand, even in the short run. But the last three theories still predict that fiscal policy will still be a powerful determinant of a country's national saving rate. So indicators of the impact of fiscal policy on aggregate demand will generally be of great policy interest to all but confirmed believers in Ricardian equivalence.

Debt stabilization. If fiscal policy affects a nation's saving rate, the size of the nation's public debt also becomes a key variable. This debt level will rise steadily relative to national output when the interest rate is greater than the output growth rate or when the non-interest portion of the debt is rising relative to output, through conditions spelled out more carefully below. For this reason, another objective of fiscal policy is to control public debt levels and the long run interest burden.

Microeconomic efficiency. A final objective, operating independently of the impact of fiscal policy on aggregate demand, is its impact on aggregate supply. Fiscal policy involves higher or lower levels of tax rates that distort the pattern of economic activity and affect the total amount of output that could be supplied at each price. One could ask a related question on the spending side: are inferior projects chosen that generate direct inefficiencies, or does the structure of transfer payments lead to further excess burdens?

Design Considerations

There is also a serious problem in measuring the actual content of fiscal policy. As Lucas (1976) first pointed out, this problem involves the macroeconomic role of anticipations -- is fiscal policy best represented by spending and tax policies of the day, or by households anticipations of future policy? And if future policy is viewed as

decisive, just how is that best measured? Policy can be changed any time, and it is often hard to see just how households are supposed to know what future policy is even if they are intrinsically far-sighted.

There could be any number of ways in which this issue arises. A government may state that henceforth it will follow a particular policy rule, even though that rule may not yet effect any particular measured fiscal variable. A new administration with what are believed to be different views on policy tradeoffs may take over, again without any early impact on particular budget variables. Or, the long run financing of a country's trust funds may be uncertain, leading to a perception that there will have to be a policy change even though such change has not yet been formally proposed and may even be explicitly disavowed.

Everybody agrees that such problems can be important, though the importance attributed varies over place and time. But even when there is agreement that the problems are important, it is rarely clear what can be done about them. A first question involves what assumption to make about future policy for a government, often before the government itself has made its decision. Then there is the question of what private households might assume about government policy, whether that assumption would affect its behavior, and how. For the present perhaps the best that can be done is to recognize this anticipations problem as a difficulty that could potentially affect any and all indicators of the impact of fiscal policy on any and all objectives, and to try to highlight the importance of policy forecasts on the indicators of fiscal policy.

Fiscal Indicators

The first question to be faced in the compilation of fiscal indicators is how many to compute. Since there are a variety of questions one could ask about fiscal policy, one might think that the number of indicators matches the number of objectives. On the

other hand, a proliferation of indicators, even if each clearly matches an objective, can sow confusion. For this reason, there could be some point to conserving on the sheer number of fiscal indicators, even at the cost of some refinement in the calculation of the indicator.

The next question involves complexity. Those indicators that are compiled by official agencies should be as simple, as easy to compute, and as model-independent as possible. Measures that involve great complexity are inherently unsaleable: these measures must be available to any and all, and that is hardly possible if one has to know how to use elaborate computer software to compute the indicator. Measures that depend on particular models have similar drawbacks -- country delegates can always claim that the particular model is not relevant for their country, and all models are simplifications of reality that suffer from a long list of academic-type criticisms. The only hope is to get very simple indicators that make minimal reliance on models or views of the world, and that are easy to compute. If a non-controversial accounting identity can be used to construct an indicator, so much the better.

A third issue involves forecasting. In principle it is desirable to have measures of fiscal policy that take account of known future changes -- both the aggregate demand impact of fiscal policy and the sustainability of debt depend in an important way on the future path of fiscal policy. But how certain is this future path and with what confidence can future changes be known? For this purpose it might be possible to propose one set of fiscal indicators that can be computed without any forecasts or adjustment for the future expected course of fiscal policy, and another set that involves forecasts.

Finally, whether fiscal indicators adjust for many complications or a few, they can never reflect all the complications of modern day developed economies. Nor can they be complete descriptions of the impact of fiscal policy even on one stated objective. Accordingly, any indicator should not be used alone, but in conjunction with other,

more direct readings on the fiscal policy objectives. For example, any indicator of the impact of fiscal policy on aggregate demand should be used along with direct information on the changes and level of a country's aggregate demand. Indicators can provide useful information, but not all the information one would want about the impact of fiscal policy on the stated objective.

The CAB

For a number of years now the OECD has tried to measure the impact of discretionary fiscal changes on aggregate demand by recording changes in the cyclically adjusted budget surplus or deficit relative to national output (CAB). This measure is in change form to focus on explicit policy changes and to abstract from all the other factors that determine the level of a country's aggregate demand. It includes a cyclical correction to allow non-cyclical, or discretionary, fiscal changes to be distinguished from the impact of the automatic fiscal stabilizers.

To put it mildly, there has been a lot of criticism of this measure. While some criticism is warranted, much seems unwarranted. One unwaranted criticism is that the measure does not tell all one would want to know about the impact of fiscal policy on all other objectives. True, it does not, cannot, and should not. For these other objectives, one needs other indicators.

Another unwarranted criticism is that the measure does not tell all one would want to know even about the impact of fiscal policy on aggregate demand. True again. It ignores the fact that different components of the budget may affect demand differently, or that there may be price effects operating on some components of the budget. Perhaps the only feasible way to get a complete picture is to use this measure in conjunction with direct information on the level and growth of aggregate demand.

A third unwarranted criticism is that there is felt to be an optimal value for the CAB. There cannot be. There is not even an optimal value for aggregate demand for a country at any point in time -- that depends on some judgment of risks of inflation, costs of unemployment, and other factors. Since there is no one optimal target level of aggregate demand, and since fiscal policy is only one of the factors that influences aggregate demand, there obviously cannot be a target level for the aggregate demand impact of fiscal policy, or indeed anything that tries to measure this impact.

But some of the criticisms of the CAB are warranted. Perhaps the most telling is that since it means to cover various fiscal objectives, it is never entirely clear how to use the CAB. This criticism implies that instead of having the CAB do it all, it makes sense to drop the CAB and have different indicators matching different fiscal objectives.

The criticism that most intrigues academic economists involves the expectations issue discussed above. Even for short run aggregate demand movements, what may matter more than the present flow of taxes and spending is what these flows are expected to be. In principle, one should adjust for problems of this sort. In practice, as stated above, that becomes extraordinarily difficult to do. It requires assumptions about future government policy, about household expectations of this policy, and about the determinants of household behavior given expectations, all of which are very hard to come by (Campbell and Mankiw (forthcoming), Poterba (1988)). And to do anything at all, one has to violate previous strictures about making measures or indicators simple and model-independent.

A third criticism involves the cyclical correction. The point of the correction is to eliminate the influence of the automatic fiscal stabilizers from the indicator, keeping it focused on discretionary changes in fiscal policy. If, for example, output suddenly were to drop in a country with no initial change in expenditures or taxes, one would not want to attribute the drop in output to a fiscal change, and one would certainly not want to

call the rising deficit expansionary. Having said this, it is not at all clear how to correct for cycles. Drops in output or slow growth could represent cyclical movements or secular trends, to a degree that will not be known at the time. There is also a choice about whether the normal level of output should be measured at peak, trough, or at mid-expansion point. The sensible course here seems to correct for the cycle, but in a way that does not involve taking a position on whether shocks are permanent or transitory and whether output will or will not revert to some normal level.

A fourth criticism involves endogenous macroeconomic variables not corrected for such as changes in real interest rates and inflation. Eisner and Pieper (1984) have made the point that these changes greatly distort the time series levels and changes of fiscal policy. They argue for eliminating the impact of inflation from budgets essentially by counting only real interest payments but leaving out the difference between nominal and real, which difference is not a true income gain to bondholders but just a compensation for inflation losses on the government debt.

A final problem in computing any overall surplus is that there is the implicit assumption that all components in the budget have the same impact on aggregate demand. Even in basic macroeconomic models that is not so. But even though budgetary impacts are clearly not the same, a model of the economy or of consumer behavior is required to know how they differ. And again one has to make arbitrary assumptions about time horizon.

In view of all these criticisms, there is obviously no perfect measure of the aggregate demand impact of fiscal policy. In some sense it is remarkable that the CAB has served so well for so long. But the OECD does need to respond to the various criticisms. If the CAB does not do the job, what does? I now take up this issue.

A New Set of Indicators

The suggestion made by Blanchard (1989) is to disentangle the indicators matching the various objectives of fiscal policy. He proposes measuring discretionary changes in fiscal policy by the value of the primary surplus that would have prevailed were unemployment (or the economy's utilization rate) at the same value as in the previous year, minus the primary surplus value in the previous year, with both as a ratio to GNP (or GDP) in the previous year. This measure only requires a cyclical adjustment to the extent that the unemployment rate has changed in the past year. There is no longer a need to take a position on the long run trend of the economy. There is also no need to worry about the determinants of interest payments, since these non-discretionary items are omitted entirely from the indicator.

He then tries to measure the impact of the budget on aggregate demand with and without forecasts. The measure is approximately the level of the inflation-adjusted actual surplus (or deficit) as a ratio to GNP. Compared to the index of discretionary policy change, there are four differences:

- o The surplus is in level form, not change form.
- o Real interest payments are now included, but still not the difference between real and nominal.
- o The measure is not cyclically adjusted, in effect retaining the impact of automatic stabilizers.
- o In some versions forecast taxes are used instead of actual taxes.

In each case the difference moves in the direction of actually measuring the impact of the budget on aggregate demand. The hard question is obviously the fourth -- exactly how does one represent forecast taxes?

Finally, he computes a debt stabilization indicator. There are two ways to identify these, both of which have been used by the OECD in the past. One is to assume that the flow ratio, the ratio of the primary deficit to output, is constant and solve for the

equilibrium stock ratio, the ratio of debt to output. The other is to reverse things and find the flow ratio that stabilizes the stock ratio.

There are three advantages of the latter approach:

o Stability -- there may not be a stable equilibrium solution for the stock ratio.

o Realism -- it is hard to believe countries would keep their flow ratio constant while the stock ratio explodes.

o Understandability -- since the steady state position may not be reached for many years, it is often hard to know what it means.

To develop the latter approach, let B refer to the outstanding stock of debt, dB to the deficit, G to exhaustive expenditures, H to transfers, T to taxes, and r to the real interest rate. The budget identity gives

(1) $dB = G + H - T + rB$

Now let lower case letters stand for each variable divided by total output and let y refer to the growth of total output. Differentiation gives

(2) $db = g + h - t + (r - y)b$

Blanchard sets $db = 0$ and solves for the debt-stabilizing tax rate, t^*. When the actual tax rate, t, is below the tax rate necessary to stabilize debt, the debt ratio will rise and vice versa. The gap between t^* and t is thus a measure of debt sustainability. The notion can be adopted to different time horizons simply by computing the $t^* - t$ gaps over various horizons. There is a slight diplomatic problem in that solving for t^* gives the superficial impression that countries should use taxes to resolve budget problems. OECD's response should be that what seems like a tax gap is in fact a primary deficit gap: either spending or taxes can be equally well adjusted to make the gap zero.

One should recognize, of course, that debt stabilization is a very limited objective indeed. Medium run fiscal policy is trying to control national saving. Controlling the debt ratio controls nothing more than the trend of interest payments relative to GNP: it does not return the level of debt, deficits, or interest payments to any sort of a target level.

Microeconomic efficiency indicator. The measures so far are based on macroeconomics and the impact of fiscal policy on aggregate demand. But government policies have significant microeconomic and aggregate supply impacts as well. In setting tax and transfer rates, budget changes influence microeconomic efficiency. The same is true to the extent that the public sector is more or less efficient than the private sector in delivering services. And non-budget changes also have microeconomic implications -- for example, the degree to which economic regulation either enhances or retards economic efficiency.

The problem with developing measures of microeconomic efficiency is the very scope of measures. How after all would one quantify the impact of regulations? It might seem feasible to measure the cost to the private sector of various regulations, but these private costs may vastly overstate the true social costs if there are some benefits to the regulation as well, and benefits of regulations are notoriously hard to measure.

Even if one takes the less ambitious position of simply focusing on budgetary items, the question of how to come up with a microeconomic efficiency indicator cannot easily be resolved. Should the excess burden of taxes be measured in the market for labor, capital, or commodity supply? For labor, for example, Lindbeck (1986) gets the direct burden of taxation on work incentives by adding marginal income tax rates, employee payroll tax rates, and transfer benefit reduction rates, allowing for any interactions between these various rates. Then the remainder is reduced by the value added tax rate and by some assumed shifting portion of the employer paid payroll tax

rate to get the full burden. One could go through similar gyrations for capital income taxation or commodity taxation.

The next question involves the impact of budget deficits on calculations such as this. One cannot simply measure excess burden from present day tax rates, since we have already seen how the tax share that stabilizes b, t*, can in general be different from the actual tax share. If it is different, one should scale present marginal tax rates on labor or capital upward by the share gap, (t* - t)/t, to measure the likely future tax rate effect of present day deficits and spending.

The result, deficit-adjusted marginal tax burdens on labor supply, might give a crude estimate of the microeconomic distortions caused by a country's present tax and spending policies. It should be remembered, however, that this measure is indeed very crude and only looks at one small corner of the mulitudinous ways in which policy can influence microeconomic efficiency. It can never describe non-tax incentives or disincentives to work, such as the fact that one might have to be in the labor force to qualify for decent health care or day care benefits. Nor is it easy to adjust for all the ins and outs of policies -- which taxes are deductible against what other taxes, and how this complicates computations of the overall marginal burden of taxation. Finally, this term is only part of the full distortion expression -- how sensitive labor supply is to taxes and relative prices matters as well, and there is no simple way to estimate this sensitivity and incorporate this sensitivity into the overall measure.

For all these reasons, the microeconomic task of developing an indicator of efficiency seems far more intractable than the macroeconomic task. There are too many things to look at, and no obvious way to combine their scores.

Conclusions

The main thread here involves the attempt to replace the CAB with a series of fiscal indicators, each of which measures different things. The most straightforward thing to measure is the debt stabilization gap, the amount spending or taxes has to be changed to stabilize a country's debt-GNP ratio. The measure is based entirely on identities, and the only uncertainty involves the length of the time horizon, which uncertainty can be easily resolved by computing the gap for different horizons.

The next most straightforward measure is the index of discretionary fiscal policy change. Compared to the CAB, this measure avoids many of the cyclical problems by the simple expedient of correcting only for changes in unemployment since the last year, and many of the problems of endogenous interest payments by the simple expedient of omitting interest payments.

The hardest measure to compute is the indicator of fiscal impact. To compute this index properly, one would have to know the impacts of different types of spending on aggregate demand, and the impact of different types of taxes on consumer demand. Even with Blanchard's drastic simplifying assumptions, one still must know what expected taxes will be and how to correct interest payments for inflation. But even if this latter measure never makes it, the other two indicators drastically simplify what has been a confusing argument on exactly what the CAB is trying to show. It is trying to show too much, and the easiest remedy is to go to a new set of indicators, each of which measures a different aspect of fiscal policy.

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