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Richard M. Bird



Georgia State
University

Andrew Young
School of Policy Studies



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International Studies Program
Andrew Young School of Policy Studies
Georgia State University
Atlanta, Georgia 30303
United States of America

Phone: (404) 651-1144
Fax: (404) 651-3996
Email: ispaysps@gsu.edu
Internet: <http://isp-aysps.gsu.edu>

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Fiscal Flows, Fiscal Balance, and Fiscal Sustainability

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1. Introduction

The search for “fiscal indicators” to provide a short-hand (and preferably quantitative) picture of the size, direction, and nature of intergovernmental finance – and, ideally, some guidance for policy designed to improve outcomes – appears to be never-ending. “Fiscal balance” and “fiscal sustainability” are, for example, terms commonly heard in discussions of intergovernmental fiscal relations. These concepts sound like good things, and often policies are suggested that are intended to achieve them. “Fiscal flows” are perhaps less prominent in policy discussions, but this notion too is often very much in the minds of some of those engaged in such discussions. Indeed, in practice much of the discussion of both fiscal balance and fiscal sustainability often reduces to assertions about the present and projected future course of fiscal flows. The aim of this paper is to provide an overview of the uses and limits of these three approaches to measuring and interpreting the problems and progress of fiscal decentralization.

The paper is divided into five sections, including this brief introduction. In Section 2 I argue that measuring “fiscal flows” is conceptually difficult, inherently subject to considerable political bias, and in any case of surprisingly little use or relevance in determining good policy. In Section 3, I go on to argue that the notion of “fiscal balance” also is seldom clearly defined, that it seems often to be confused with other, and quite separable, policy objectives, and that it too is in the end of surprisingly little analytical or policy relevance. In contrast, I note in Section 4 that “fiscal sustainability” can have a clear analytical meaning and that, defined properly, this concept can provide a useful, if limited, guideline or framework for policy. Unfortunately, even good fiscal sustainability analysis does not take us very far along the road of analyzing and understanding intergovernmental fiscal relations. In the brief concluding Section 5 I therefore suggest that, while much can and should be done to improve the quantitative picture we have of intergovernmental fiscal relations,² as a rule much more careful institutional and empirical analysis seems more needed than such broad indicators, however carefully calculated, if we are to advance further down the road of discovering and understanding what is really going on out there.

¹ Rotman School of Management, University of Toronto. I am grateful to Francois Vaillancourt for helpful comments on an earlier version of this paper.

² For an illustration of the complexities of doing so even in developed federal countries, see Bird and Tarasov (2002).

Although some points in this paper are illustrated by reference to particular countries, no attempt is made here either to provide a full analysis of all the measures mentioned in this paper for any one country or to provide comparable measures within or across countries. My aim is less to tell analysts or policy-makers what should be done to measure, say, fiscal balance better than to argue that it is inherently futile to look to such simple quantitative indicators to reveal the directions of needed policies. Instead, what is generally needed are much more specific institutional analyses focused on real policy goals and real policy problems.

2. Fiscal Flows

“Regional fiscal flows” are usually intended to measure the redistribution of income among regions that results from tax and expenditure policies. In these terms, a region experiences a favorable fiscal flow if its income (really, the income of its residents) is raised more by the impact of government spending than it is reduced by the taxes borne in the region. Probably the most extensive “official” discussion in English of intergovernmental finance in Russia (Lavrov and Makushkin, 2001), for example, is concerned almost entirely with the analysis of interregional fiscal flows. The data presented in this study are clearly interesting and the study as a whole is an important contribution to knowledge. Much the same can be said of a detailed study of flows at the sub-regional level in the Leningrad region (Bahl et al., 1999). Similar studies have, of course, been carried out in other countries from time to time.³

Fiscal flow data are not easy to obtain, and indeed often require substantial effort to construct.⁴ It is thus perhaps understandable that, once the hard work of estimating such flows has been accomplished, it seems tempting to base policy conclusions on them. The temptation to do so should be resisted, however, for such numbers – though generally well used descriptively in the studies cited – can, unless care is taken, be highly misleading as a guide to policy. Why this is so is explained in the balance of this section.⁵

Geographic Incidence Analysis

There are essentially two levels of problems with fiscal flow analysis, conceptual and practical. For example, although the task of measuring the size of regional fiscal flows might seem to be simple and straightforward, there are generally both serious conceptual problems in the exercise and critical gaps in the data base. As a rule, for instance, such analysis assumes, often implicitly, that taxes collected within a territory

³ For a few examples, see for Germany (Zimmerman, 1980), the United States (ACIR, 1980), Colombia (Bird, 1984), and Canada (Leslie and Simeon, 1977).

⁴ In many countries, even developed countries, such information is often impossible to obtain below the level of intermediate (regional) governments: in the 1970s, for example, I worked for a “Tri-Level Commission on Public Finance” that labored in vain for over a year to do an acceptable fiscal flow analysis at the local level in Canada.

⁵ Portions of this section draw on an earlier discussion of some of these issues in Bird (1984, Appendix II).

are “paid” by the residents of that territory. This assumption is clearly often wrong. For example:

- Port cities do not “pay” – in the only economically meaningful sense of reduced private incomes for their residents – customs duties that are collected on shipments in transit to inland destinations.
- Those who live near a distillery that ships most of its product outside the jurisdiction do not “pay” the taxes remitted to the government by the distillery.
- And the citizens of the region in which a company’s headquarters is located do not “pay” all the taxes paid by that company.

Tax incidence analysis is no doubt an arcane and arguable art, but its intricacies and inherent problems cannot be simply neglected, as is too often the case in flow analysis. Moreover, the data needed to trace the real interregional effects of product (and perhaps factor) taxes are seldom, if ever, available, largely because there are seldom good data on cross-border flows of either products or factors within national boundaries..

Similarly, on the expenditure side, it needs to be demonstrated, and not simply asserted, that expenditures that take place in a particular geographic area actually “benefit” the residents of that area. For example:

- Are all the benefits (measured by the cost of the project) of an interstate highway received by those who live beside the road?
- Do the benefits of expenditures on public sector activities accrue to those who receive incomes as a result (e.g. teachers) or to those who receive the services provided (e.g. students)?
- Are the “benefits” received by the factors of production employed by government only short-run, and those received by the presumed ultimate beneficiaries long-run?
- What is the time-frame of the analysis?
- Are benefits equal to costs?⁶
- How does one allocate the benefits of “public” goods?

Such questions do not have easy or obvious answers in general, and they are even harder to answer in a regional context. A region is in effect a small open economy that has extensive economic linkages with other regions. The central government may, for example, spend (directly, or through transfers) extensively in a certain region, but the effects of that expenditure may be felt throughout the economy as a result of the network of interregional trade and factor flows. There are seldom any reliable data on such flows. Even worse, there may be spillovers from region to region of both expenditures (the factor incomes paid out, for example) and benefits (the services provided). Such spillovers are diffuse, complex, and difficult to measure even in principle, let alone in practice.

⁶ Even if resources are optimally allocated – unlikely in reality - such equality prevails only at the margin, not in total terms.

Such problems do not mean that it is not possible to measure geographic incidence in principle or practice. But they do imply that to do so meaningfully requires more detailed data than usually exists as well as strong assumptions about issues that are inherently highly uncertain. One can certainly assign taxes and expenditures on a regional (even local) basis, if one is willing to make such assumptions.⁷ But there are no universal rules that determine the appropriate assumptions for a particular country and time. The results of such analyses, even the most careful ones, are thus always suspect to some extent. More importantly, precisely because of its inherent subjectivity, flow analysis is all too subject to manipulation for political purposes.

To add to the problems, many flow studies – for example, Lavrov and Makushkin (2001) – cover only part of the flow of intergovernmental revenues and expenditures, owing to data limitations. While understandable, this approach implicitly assumes that “non-included” flows have equal per capita effects everywhere, an assumption that is almost certain to be wrong. Ideally, one should also take into account the possibly offsetting regional effects of such “invisible” transfers as those through price controls and subsidies, tax expenditures and controlled credit allocations (Bird and Chen, 1998), and a variety of “non-fiscal” public policies such as regulation. To do so, however, is so difficult a task even in the most “data-rich” countries, that it appears no one has ever managed to do it. The picture that even the best fiscal flow analysis paints of reality is thus inevitably partial and hence inherently flawed to an unknowable extent.

Interpreting Regional Flows

Even in the improbable case that the methodology of a flow study is beyond question, what do the results mean? Usually, as in the “fiscal balance” studies discussed in the next section, such studies are interpreted as showing that one region is paying too much or too little or receiving too much or too little. The usual policy recommendation drawn from such analysis is that this “imbalance” should be corrected, usually by allowing the “generating” regions to keep more of what “they” produce in terms in revenue. Attractive as such a conclusion may be to those regions, it is not logical. The aggregation of people into territorial units has little to do with the factors determining the allocation of most flows.

Suppose, for example, that each region were joined to one of its neighbors, that absolutely nothing else changed, and that fiscal flows were then re-estimated. The results would of course be quite different, generally with less measured “inequality” in the regional balance of revenues and expenditures, even though the reality has not changed. To illustrate, take this thought experiment to its limits and unify all territories into one. All regional differences have now of course been eliminated since there are no regions. But nothing has changed in reality, since, by assumption, all spending and taxing is continuing in exactly the same way as before. Box 1 reinforces the point.

⁷ For a recent interesting study of the U.S. that illustrates both what can be done and what assumptions are needed to do it, see Sehili and Martinez-Vazquez (2002).

BOX 1. “Balance-Sheet Federalism” in Canada⁸

In Canadian political debate, it is common to add up all the taxes paid by a region on one side and the transfers and services received on the other side and to draw conclusions from such calculations about who wins and who loses.⁹ As argued in the text, however, all such calculations are inherently theoretical and rely heavily on (possibly prejudiced) judgment. They often ignore, for example, upper level government debt, deficits, and surpluses and also any economic flows of income back to the “paying” jurisdiction. Moreover, even if one believes all the numbers, they do not indicate whether any given person in any jurisdiction is better or worse off.

Since no one has any objective measure of such fiscal “balance sheets,” the reality is that such numbers are mainly used by governments (and their opponents) simply for the purpose of scoring political points. In Canada, the result is that it appears that people in every province, except Ontario – the biggest and richest province – think they pay more into federalism than they get out. On the contrary, if one takes a leap of faith and argues that such numbers have meaning, it seems more likely to be the case that Ontario is the biggest net loser in the system, with everyone else (except Alberta) being a net winner.

But reality is quite different than either of these pictures. Since on the whole everyone in the same economic situation pays the same taxes to the federal government and receives the same services regardless of where they live, and the federal fiscal system on the whole appears to be mildly redistributive interpersonally, the biggest winners are likely to be poor people, of whom, by definition, there are relatively more in poor provinces and the biggest losers rich people, of whom, again by definition, there are more in rich provinces. How provinces per se appear to fare reflects mainly how this works out in territorial terms given the level and distribution of income in a province relative to the national average. It has little or no independent meaning or policy relevance. Focusing on regional fiscal flows thus hides rather than reveals the most important distributive outcome of Canadian fiscal federalism.

Despite its many methodological problems, fiscal flow analysis may nonetheless sometimes provide a useful framework within which to assemble data from diverse and scattered sources (which is essentially what Bahl et al. (1999) and Lavrov and Makushkin (2001) do for Russia). From a policy perspective, however, the analysis of fiscal flows appears to be essentially a dead end. It is hard to see what can learn from even the best fiscal flow analysis other than that the geographic incidence of taxes and expenditures – assuming one thinks (improbably) that such incidence is known with sufficient certainty - - is unlikely to be neatly balanced within particular jurisdictional boundaries. Of course,

⁸ This example draws in part on a presentation by Michael Mendelson of the Caledon Institute.

⁹ Two recent examples may be offered: A prominent Alberta academic argued that Albertans are the major net contributors to Canadian federalism and that most other provinces – and by extension the people in them – were “on the take” (Flanagan, 2001). Around the same time, Quebec’s premier made a similar argument, that Quebec and its people were on the losing side of the federal fiscal equation – a view that was strongly rebutted by the federal Minister of Intergovernmental Affairs (Dion, 2001). For earlier go-rounds in this fight, see Leslie and Simeon (1977).

it is not obvious why anyone would expect or want it to be so balanced, which leads us to the next section.

3. Fiscal Balance

Some degree of fiscal imbalance seems inherent in countries with more than one level of government.¹⁰ As a rule, central governments tend to collect most taxes while state and local governments are often responsible for more expenditures than can be financed from sources of revenue directly under their control. The resulting difference between expenditures and own-source revenues at different levels of government is called vertical fiscal imbalance (VFI). At the same time, within each subnational level of government there are invariably some jurisdictions that are richer than others. The resulting difference in the resources available to governments at the same level is called horizontal fiscal imbalance (HFI). Each of these concepts carries with it a fair amount of philosophical baggage. Each is also difficult to measure in an unambiguous way.

Vertical Fiscal Imbalance

If “imbalance” is the problem, then “balance” would seem to be the solution. It is thus not surprising that the concept of vertical fiscal imbalance (VFI) – the “fiscal gap” as it has been called (Boadway and Hobson, 1993) – is often discussed as though in an ideal governmental structure the “own-source” revenues of each level of government should be sufficient to finance the expenditure for which it is responsible without recourse to intergovernmental fiscal transfers.¹¹ Vertical fiscal balance, thus understood, seems to require that each level of government should have separate and independent revenue sources sufficient to finance the expenditures assigned to that level -- no more and no less. In other words, given the assignment of expenditures, revenues should, it is often argued, be assigned so that there is no “imbalance” between revenues and expenditures at any level of government. If this is not done, a fiscal crisis may ensue: see Box 2.

¹⁰ Much of the discussion in this section is based on Bird and Tarasov (2002).

¹¹ This perspective is implicit in Wheare’s (1963, p.93) classic statement that “both general and regional governments must each have under its independent control financial resources sufficient to perform its exclusive functions.” It is explicit in Hunter (1977), the seminal work on vertical fiscal imbalance.

Box 2. How to Create a Fiscal Crisis¹²

A “fiscal crisis” for any local government may be said to occur when its potential to raise revenues is insufficient to cover the expenditures that it is legally mandated to carry out. If maximum tax revenues are less than required expenditure (less transfers and other revenues), someone who is legally entitled to a claim on the local government loses, and “crisis” ensues. To see if a subnational government faces a crisis, then, all one has to do is (1) calculate the maximum tax revenues (T^*) that it can collect with its designated revenue structure, (2) calculate the cost of the expenditures (E) that it is legally required to carry out, (3) estimate the transfers to be received from other levels of government (TR), and, finally, (4) calculate how much the jurisdiction can expect to get from such other revenues as fees (OR). If T^* is less than $E + TR + OR$, there is a crisis.

Or is there? Obviously, the credence one puts in this calculation depends upon two things. One is the reliability of the estimates – what is “maximum” tax revenue, for example? The other is the critical assumption that no changes are feasible in required expenditures: for example, it is not possible to pay city workers less, to reduce pension obligations, to negotiate better prices for materials the city buys, or to reduce service levels. Only if one assumes that all the terms in the equation are both properly estimated and, more importantly, that the underlying assumption about the rigidity of the revenue and expenditure possibilities is correct, can one take such an equation as an indicator of crisis.

In a world in which in many countries the most rapidly expanding expenditure sectors – education and health, for example – have often been assigned to regional (state, provincial) governments, the implication of such analysis is generally taken to be that more revenues should be assigned to subnational governments. In Canada, for example, this interpretation of fiscal balance has been used frequently by the province of Quebec as an argument for more revenue authority.¹³ Among the advantages of such “tax separation” – in which every level of government, as it were, “stands on its own bottom” – are that local autonomy and accountability are strengthened and that the fiscal system is more transparent, with citizens being less confused by overlapping fiscal jurisdictions as to what they are paying for, and to whom.¹⁴

On the other hand, there is no reason why governments that are so minded could not, if they wished, overcome taxpayer confusion and the inadequate attribution of political responsibility without recourse to strict revenue separation. Nor is there any guarantee that even strict separation would lead to such benefits. If governments really want citizens to understand what is going on, they can achieve this end without separate taxes. If they do not, separate taxes alone will do little to help matters. Moreover, even

¹² This note was suggested by reading Inman (1995).

¹³ Compare, for example, the Tremblay report of 1954 (Kwavnick, 1973, p.215) with the Seguin Commission of 2001 (Commission, 2001, p.4).

¹⁴ Another advantage of tax separation might be to make it more difficult for governments to, as it were, form a “cartel” against citizens, thus reducing their ability to exploit them unduly (Brennan and Buchanan, 1980).

the strongest adherents of tax separation at the regional level sometimes seem strangely reluctant to apply similar reasoning to the local level of government, where it is surely equally applicable or inapplicable on logical (if not necessarily on constitutional) grounds. Finally, and perhaps most importantly, so long as governments at the same jurisdictional level have different levels of fiscal resources relative to their expenditure responsibility, even the most far-reaching attempt to resolve VFI by devolving revenue resources cannot succeed.

To make this last point clearer, it is important to understand that the two concepts of fiscal balance mentioned above – VFI and HFI – cannot be cleanly separated. One way to view VFI, for example, is that it might be thought of as being eliminated – that is, vertical fiscal balance is achieved – when expenditures and revenues (excluding transfers) are balanced for the *richest* local government, measured in terms of its capacity to raise resources on its own (Bird 1993). Even if this goal is achieved, however, fiscal gaps or VFI will of course still remain for all poorer local governments. More commonly, however, such gaps are instead discussed in terms of HFI, that is, as a problem of achieving horizontal fiscal balance *within* the regional or local government sector rather than vertical balance *between* levels of government. Regardless of how it is defined, whether and to what extent HFI (VFI for poorer jurisdictions under another name) is considered a problem is, of course, a highly political issue in many countries, and especially in formally federal countries. HFI is discussed further later in this section. Box 3 illustrates some of the complexity of the notion of VFI in the Canadian setting.

Box 3. The Meaning of VFI in Canada

Consider how VFI might be eliminated, assuming that for some reason vertical balance is viewed as an appropriate or desirable policy goal. First, as just discussed, the assignment of expenditures can be taken as fixed and more revenue-raising powers devolved to subnational jurisdictions. Alternatively, revenue powers may be taken as fixed and some expenditure powers reassigned to the federal (or central) level. In Canada, for example, this is essentially how the gradually expanding social security system (unemployment insurance and old age pensions) was initially dealt with in the middle of the last century (Bryden, 1972), through constitutional amendments to “federalize” these expenditure functions.¹⁵

Norrie (2002) recently noted with respect to Canada, “the traditional interpretation of VFI does not apply to a federation in which both orders of government have equal access to the main revenue sources and both clearly exercise these powers to achieve economic and social objectives.” His point, of course, is simply that projections of “expected” provincial and federal budgets outcomes over some time period tell us nothing meaningful about “fiscal balance.” The distribution of both revenue sources and spending responsibilities in a “flexible federation” like Canada is therefore (and always has been) essentially a matter of political choice, not something carved in constitutional stone. Since fiscal outcomes are not inevitable, but chosen, the on-going and everlasting debate on VFI in Canada can largely be seen as nothing more than political posturing -- part of the process of setting the stage for yet another re-jigging of exactly who is responsible for what and who pays for it and how.¹⁶ Canada is what its politicians -- and, one hopes, its people -- decide, not what someone wrote on a piece of paper a century or more ago.

Canadian cities, however, are not provinces: their fiscal futures are indeed largely cast in stone that is beyond their ability to cut (Bird and Slack, 1993). The traditional concept of VFI thus seems applicable at the lower level of subnational government even in Canada, and it is not uncommon to see studies that argue that the fiscal “needs” of cities – driven largely by demographics – exceed their revenue “prospects” – essentially the yields of the real property tax (Vander Ploeg, 2001). But such conclusions too are generally overstated. There is no “iron law” of local expenditure that says expenditure must always increase *pari passu* with population, or with the growth of a particular client group. There is always the alternative of reducing the amount spent per client. Moreover, although there may be real limits to the ability of local governments to raise property taxes, there is nothing to prevent provincial governments from, in effect, taking back responsibility for expenditures that cannot readily be financed from this source.¹⁷

¹⁵ Subsequently, the later expansion of education, health, and social welfare expenditures in Canada was dealt with instead by increasing federal transfers to provinces, first in the form of broad conditional grants, and then in the form of essentially unconditional grants.

¹⁶ The recent review of tax sharing in Canada over the last 50 years in Vaillancourt and Bird (2002) broadly supports this interpretation.

¹⁷ Parenthetically, in Canada there cannot really be a “fiscal crisis” (Box 2) at the local level simply because local governments are strictly held to balanced budgets. But there can, of course, nonetheless be a “sustainability” crisis at the local level in the sense that the required balance is achieved only by reducing expenditures to below maintenance levels or by raising taxes so high that tax base is chased away. For further discussion, see Slack and Bird (2003).

While intergovernmental fiscal relations in most countries seem closer to those between Canada's provinces and its local governments than those between the provinces and the federal government,¹⁸ it remains true that vertical fiscal gaps may in principle be closed by reducing subnational expenditures or raising subnational revenues from existing sources, just as central governments may rectify any inverse imbalance or deficit (revenues exceeding expenditures) at the central level by increasing their expenditures or reducing their taxes. Central governments are seldom reluctant to expand their own expenditures or, less commonly, to lower their taxes. Often, central governments also argue that subnational governments can both spend more efficiently and increase their "fiscal effort." No doubt there is at least as much room for improvement in these respects at the subnational level in most countries as at the central level. Nonetheless, while each of these paths has been followed to some extent at some times in most federal countries, as a rule sufficient mismatch in the revenues and expenditures assigned to different levels of government remains so that some balancing role is invariably assigned to intergovernmental fiscal transfers.

Measuring VFI

Intergovernmental fiscal transfers, no matter what their stated purpose may be, are thus often intended to, and in any case have the result of, helping to close the fiscal gap. Indeed, one way in which VFI is sometimes measured is simply as the ratio of transfers to subnational expenditures. This measure has the considerable virtue of being easy to calculate. Moreover, if one ignores borrowing, it may sometimes provide a useful measure of the actual level of VFI prevailing in any country in any year in terms of fiscal flows. Nonetheless, such a measure tells us nothing about the extent to which the fundamental concerns about political accountability and economic efficiency that presumably underlie the concept of VFI are legitimate. The transfer/expenditure ratio measure does not get to the heart of the matter because it does not take into account the extent to which transfers, other subnational revenues, and indeed even subnational expenditures reflect central or subnational policy decisions.

Recognizing this problem, analysts have developed more refined measures of VFI. Hunter (1974, 1977), for instance, proposed three such "coefficients of vertical imbalance." Essentially, these measures took into account, to varying degrees, net borrowing by subnational governments, "shared taxes," and the degree to which federal transfers were "conditional." His intent in constructing these measures was to define more precisely the extent to which the basic allocation of revenues and expenditures was such that "governments at each level can command the financial resources necessary for them to carry out their expenditure responsibilities and to be held accountable for both spending and taxing decisions" (Mathews, 1980, p.10). In other words, what Hunter was attempting to do was to distinguish between revenue sources that were under federal control and those that were under state control. He did so by assuming in one measure that unconditional transfers did not reduce state autonomy, in another that they did, and in a third that not only such transfers (and borrowing) compromised state autonomy but so

¹⁸ For an extended discussion of these two very different "models" of fiscal federalism, see Bird and Chen (1998a).

also did shared taxes to some extent. Hunter's judgments as to how to assess such "autonomy" could of course be questioned, and soon were (e.g. by Thimmaiah, 1976). Nonetheless, despite its inherent subjectivity, variants of this approach are still used in the literature (e.g., Rezk, 1998, Bird and Tarasov, 2002).

The defects of this approach are both conceptual and empirical. Conceptually, focusing on actual deficits and surpluses at different levels of government is obviously a very limited approach to the broad problem of VFI, however the data are manipulated. Hettich and Winer (1983), for instance, argued that ideally one needs a more logically consistent approach related to such fundamental concerns as the maximization of social welfare. Less ambitiously, an obvious refinement would be to focus not on actual but on "structural" budget balances -- that is, the balances inherent in current expenditure and tax policies at each level of government. A recent Canadian study by Matier, Wu, and Jackson (2001), for example, first projects expenditures and revenues at each level of government under various demographic and economic assumptions and then considers the extent to which the fiscal positions of each level are sustainable in the framework of an intertemporal budget constraint. Under this approach, VFI exists if one level has "room" to reduce taxes or increase (program) spending while satisfying its intertemporal constraint while another level would have to increase taxes or reduce spending to do so. Although more formal, the results of this approach seem very sensitive to both model specification and empirical assumptions and are hence are unlikely to be accepted by all.¹⁹

Of course, it is in any case seldom feasible to undertake such an ambitious dynamic analysis in developing or transitional countries. Even if one works only with actual past data, one must be aware of important differences in the real significance of numbers purporting to measure the same thing in different countries or even in the same country at different times. For example, "shared taxes" are an important source of subnational revenue in many countries. In some instances, however, such taxes may simply be central taxes, a share of which flows to subnational governments through a distribution formula (as with the German VAT, for example). Such "tax sharing" is in reality just an intergovernmental transfer in other guise. In other instances, so-called shared taxes may be truly subnational in the sense that the tax rates are set by subnational governments although the taxes are collected by the central government (as with most provincial PITs in Canada). Precisely how such data are recorded in statistical sources as well as the meaning of the measures provided thus need to be considered carefully in interpreting international comparisons. As OECD (1999) and Ebel and Yilmaz (2001) demonstrate, for example, measures of "fiscal decentralization" and the interpretation of those measures are highly sensitive to assumptions about whether and to what extent state and local taxes are actually "controlled" by those governments. All measures of VFI based on available internationally comparable fiscal data are thus invariably and inevitably questionable to some extent.

¹⁹ This approach, in contrast to that utilized by Quebec's Seguin Commission (Commission, 2001), yields the result that there is no VFI in Canada. It is perhaps not entirely coincidental that the authors are employed by the Federal Department of Finance.

HFI and VFI

I noted earlier that HFI might be interpreted as the VFI that is, so to speak, “left over” when the VFI problem of revenue-expenditure imbalance is solved for the richest subnational government. As a rule, however, HFI is discussed in very different terms than VFI, and indeed close consideration of HFI raises serious questions about the meaning of VFI as that term is usually discussed. Essentially, VFI is generally measured in terms of the *actual* “gap” between subnational expenditures and the subnational “own source” revenues available to finance those expenditures.

If horizontal fiscal balance is interpreted in the same gap-filling sense as vertical fiscal balance, however, what is implied is that sufficient transfers are needed to equalize revenues (including transfers) and the *actual* expenditures of each subnational government. Such “fiscal dentistry,” as this approach has been called by Rao and Chelliah (1991), clearly makes no sense. Equalizing the actual outlays of subnational governments in per capita terms (raising all to the level of the richest subnational government) in effect ignores differences in local preferences and hence one of the main rationales for decentralization in the first place. It also ignores local differences in needs, costs, and own revenue-raising capacity. Equalizing actual outlays would discourage both subnational revenue-raising effort and subnational expenditure restraint, since under this system those with the highest expenditures and the lowest taxes would get the largest transfers.

Such problems are of course well recognized. But what seems less often to be noted is that just as *any* transfer, no matter what its rationale may be, helps resolve the VFI problem, so *any* transfer -- even one intended purely to “close the gap” -- may have adverse incentive effects on subnational fiscal decisions. The appropriate incentive design of transfers, no matter what their stated rationale may be, is thus a critical element in intergovernmental fiscal relations in any country.

Equalization and Balance

Three different topics are often confused when HFI, or “equalization” as it is often labeled, is discussed. First, many writers, especially in the United States – perhaps not coincidentally, the only federal country that has no general equalization transfers -- often discuss the equity aspects of intergovernmental transfers as though the principal objective of such transfers is to reduce disparities in per capita incomes in different regions.²⁰ *Interregional* equity is not *interpersonal* equity, however, and it is important to keep the two concerns distinct. Sometimes transfers to poor regions may help poor people. Sometimes they may not. If the principal objective of policy is to alleviate poverty, intergovernmental transfers are unlikely to be either the most appropriate or the most

²⁰ For an example, see Oakland (1994). Further discussion of the distinction between interpersonal and interregional transfer objectives may be found in Rao and Das-Gupta (1995) and Bird and Rodriguez (1999).

efficient way to achieve this aim. Nonetheless, such transfers have their own rationales and should not be judged solely or primarily in terms of their effects on individuals at different income levels.

Secondly, much public discussion of intergovernmental transfers in all countries tends to focus on the relation between such transfers and the issue of “regional disparity.” While generally ill-defined, regional disparity is often interpreted in such a way that the supposed objective of transfers is to reduce such disparity, whether understood in terms of differences in per capita income between states or localities or in terms of differential regional growth rates, unemployment rates, or some other economic variable.²¹ Reducing such regional disparities may not always be a sensible policy objective, but countries are of course free to attempt to do so if they wish, and they may use intergovernmental transfers as a policy instrument in any such attempt.²² It is thus not uncommon to find that an important indicator of “need” in transfer formulas is some measure of the level of economic well-being in recipient regions, such as per capita regional income. Basing intergovernmental transfers solely on such concerns, however, may produce undesirable economic incentives. Moreover, as with the case of interpersonal equity as a policy objective, it is important to distinguish the aim of reducing regional disparity from the narrow concept of fiscal equalization between government income (or spending) that seems most directly relevant to transfer design.

Equalization transfers in this third sense may have two distinct rationales. The first is to provide the necessary underpinning for decentralization in general (and, as discussed below, for matching transfers), by equalizing to some level the fiscal capacity of territorial entities, thus putting all closer to the same footing with respect to incentives. A second rationale might be to provide sufficient resources to enable all local governments, even the smallest and poorest, to provide a basic package of local services.²³ From a purely economic point of view, the second of these objectives may appear to make little sense. Often, however, small rural areas are simply not able to provide any significant local services without such transfers.²⁴

In part to avoid the disincentive problem noted above, most countries with systems of formal equalization transfers avoid revenue-pooling and generally aim either to equalize the *capacity* of local governments to provide a certain level of public services or to equalize the actual *performance* of this level of service by local governments (Bird and Smart, 2002). The performance criterion, which adjusts the transfer received in accordance with the perceived *need* for the aided service (and which may also allow for

²¹ Bird (1966) discusses the many facets of “regional balance” as a policy objective.

²² Such transfers are compared to other policy instruments such as tax expenditures and direct expenditures in Bird (1982).

²³ The objective of providing similar public services regardless of location may conflict with the desirability of migration from less (privately) productive to more productive locations. Although this subject has been discussed extensively (if not very conclusively) in the literature, it is not further considered here.

²⁴ It should perhaps be emphasized that this lack of local resources need not necessarily imply a lack of local capacity to make and implement suitable expenditure decisions: see, e.g., Fiszbein (1997)..

cost differentials) is often more attractive to central governments because the level of service funded is then in effect determined centrally, and transfers can be made conditional on the provision of that level of service. Unfortunately, unless adequate adjustment is made for differential fiscal capacity, once again that government which tries least will receive the most.

In contrast, under *capacity* equalization, which is more applicable to federal settings in which subnational governments have constitutional expenditure and revenue responsibilities, the aim is to provide each local government with sufficient funds (own-source revenues plus transfers) to deliver a centrally-predetermined level of services.²⁵ Transfers are based on a measure of each jurisdiction's *potential* revenue-raising capacity (such as assessed values for property taxes or measured tax bases for other taxes) and not on *actual* revenues. Provided revenue capacity is measured accurately – seldom an easy task in practice – such transfers will create no disincentive for local governments to raise revenues because at the margin the local government still bears full fiscal responsibility for expenditure and taxing decisions – essentially because transfers are lump-sum (inframarginal) in nature.

Full equalization (as defined above in the sense of closing all gaps) will be achieved only if the standard revenue-raising capacity that the grant is intended to provide is set at the level of the richest local government. In most countries, budgetary constraints lead to lower standards, such as the average revenue-raising capacity of local governments. In such cases, localities with below-average capacities obviously remain disadvantaged.²⁶ As even this brief discussion suggests, HFI is clearly a much more complex concept than VFI. Correspondingly, it is even more difficult to measure satisfactorily.²⁷

To sum up this section, although fiscal balance analysis is not quite the analytical dead end that fiscal flow analysis generally is, it too is nonetheless for the most part a relatively unproductive diversion from the real policy questions facing analysts of intergovernmental fiscal relations. Perhaps, then, the real answer lies in fiscal sustainability analysis?

4. Fiscal Sustainability

²⁵ Differentials in the cost of providing services may or may not be taken into account.

²⁶ An exception is when the positive transfers required to bring those below the average up to the average are financed by negative transfers from those above the average (as in the *finanzausgleich* of Germany and the similar system in Denmark and the Baltic states). Such transparent “Robin Hood” policies are of course inevitably controversial. More generally, the effects of any grant system are obviously determined in part by how the grants are financed (Musgrave 1961), but this important question cannot be discussed further here.

²⁷ For an interesting recent discussion of many of the relevant issues in the U.S. context, see Chernick and Reschovsky (2000).

“Sustainability” like “balance” sounds good. At the very least, it seems obvious that “unsustainability” is not only undesirable but, well, unsustainable. Like “fiscal balance,” however, “fiscal sustainability” is a term of art, not science.²⁸ What it means depends largely upon the interests and objectives of those who use it. How it is measured depends also upon the information available. Sustainability may be assessed in terms of such structural factors as laws and institutions. Alternatively, and more plausibly, sustainability may be determined by attainment of particular performance criteria such as the reduction of deficits. Or both structural and performance factors may be considered. Some factors taken into account may be quantifiable, others may be descriptive, and still others may reflect subjective judgment.

An obvious interpretation of fiscal sustainability, for instance, is simply that a government should cover public expenditures out of its own revenues -- reducing, for example, its dependence on transfers, if it is a subnational government, on foreign assistance, if it is a national government, or on borrowing regardless of its level.²⁹ According to this simple definition, sustainability has three distinct quantifiable aspects: the level of taxes, the level of expenditures, and the difference between the two (the deficit), with the main relevant indicator of performance being the deficit. An example of this approach is the well-known Maastricht criteria for countries wishing to join the European Monetary Union -- a budget deficit not exceeding 3 percent of GDP and a public debt level not exceeding 60 percent of GDP. McKenzie (2001) provides a useful simulation exercise showing how this approach can be used to illuminate some aspects of subnational finance.³⁰

Even with this simple approach, however, in principle two distinct dimensions need to be considered: the *static* dimension -- the relation of levels -- and the *dynamic* dimension -- the relation of growth rates. Suppose, for example, that the elasticity of public expenditures is unity, so that a one percent increase in GDP leads to a one percent increase in expenditures. If the budget were initially in deficit, fiscal sustainability would then require an elasticity of revenues that is greater than unity. But if revenues depend largely upon a VAT, for example, the elasticity of which is unlikely to exceed unity over

²⁸ This section draws on an earlier, broader discussion of fiscal indicators in Bird and Banta (2000).

²⁹ A variant, common in the literature on public debt (and used in McKenzie, 2001), is to compare the actual deficit with the “estimated sustainable deficit” that would maintain a constant debt-to-GDP ratio (for likely rates of growth, real interest, and inflation). A useful way to approach the question of how to move from theory to numbers in approaching the sustainability issue may be by considering three quite distinct papers on this subject produced by the IMF over the years: Horne (1991), Hemming and Petrie (2000), and Chalk (2002). It is impossible to review these papers emanating from the world’s leading institution charged with assessing the sustainability of national fiscal policies without concluding, first, that the results seem to be very dependent on theoretical assumptions that seem often to be arguable and, second, that we still have a long way to go before we can use simple quantitative measures with much confidence, even at the national level. A review of some recent literature on appraising the creditworthiness (=sustainability) of subnational governments (e.g. World Bank, 1996a, Fitch, 2001, and Moody, 1998) similarly suggests the continued importance of informed judgment over simple numerical measures.

³⁰ However, see also the comment in note 17 above on one possible limitation of this approach to sustainability at the local level, at least in some countries.

any prolonged period of time, then the only way to remove the initial deficit and achieve sustainability in the sense used here may be to reduce the size of the public sector relative to GDP.³¹

Focusing on such simple, quantifiable, budgetary measures can sometimes be an appealing and useful first approach to the sustainability issue. But it is unlikely to prove fully satisfactory as a guide to policy for several reasons. First, the numbers available may not be either the right ones, or the best ones.³² Second, they may not be comprehensive.³³ Third, they may not be comparable over time, or across jurisdictions, particularly internationally.³⁴ Finally, changes in budgetary outcomes may reflect not internal change and effort but largely fortuitous external events. Since different jurisdictions start in different initial positions, similar changes in outcome measures may mean very different things.

Indicators of a government's relative degree of fiscal sustainability thus need to extend beyond outcomes to take into account both initial conditions and processes and structures. To do so satisfactorily requires establishing meaningful links between structures and processes -- for example, the existence of a tax code, a functional organization of tax administration, or a single treasury ledger system -- and the relevant outcomes, in order to demonstrate that such outcomes are truly the result of the adoption of such policies and not simply reflections of exogenous influences. Such a task is far beyond the scope of our present knowledge. At best, we may believe, from experience or theory, that a particular institution may be conducive to better outcomes. As an example, international experience may suggest that countries that systematically review and codify their tax systems are, on average, likely to do better over time, or theory may suggest that subnational governments subject to a "hard budget constraint" are more likely to tax and spend sensibly (Bird, 2001).³⁵

Initial Conditions

The policy choices governments make and the effects of those choices depend in part upon initial conditions. A country (region, locality) that has few human or natural

³¹ For an analysis along these lines, see, for instance, Bird (1989).

³² Questions may, for example, be raised about the comprehensiveness of budgets and the appropriate measurement of deficits, particularly in transitional countries in which the proliferation of such devices as "mutual settlements," "tax offsets," and the like make it difficult to interpret the real fiscal situation of the public sector.

³³ On the importance of extra-budgetary funds in some transitional countries, for instance, see World Bank (1996a).

³⁴ The importance of "tax offsets" in transitional countries, for example, has varied considerably from country to country and within any one country may change sharply from year to year.

³⁵ For an interesting recent look at the sustainability issue in the broader environmental context, see Stavins, Wagner, and Wagner (2002), who separate the problem into two components -- the economic problem of dynamic efficiency and the political problem of intergenerational equity. One could conceive of a similar approach to the problem of public sector sustainability.

resources and no prior experience with an independent fiscal institutional structure, and that also faces internal or external armed conflict, is clearly very different from a rich country (region, locality) with a strong tradition of independence that faces no serious disturbances. A country with a huge external debt, a large fiscal deficit, and a raging inflation at the moment when the transition process begins is not readily comparable to a country that faces none of these problems. Ideally, such contextual or environmental factors -- ranging from the degree of public acceptance of the government's legitimacy to the extent of the development of the financial infrastructure -- should be taken into account in assessing the efforts made and the success achieved.³⁶

"Effort" and "success" are thus inherently relative concepts in the sense that both must be assessed in light of the scope and scale of the problems facing the country in question. For this reason, different indicators, at different levels of detail, may be appropriate for different jurisdictions depending upon such factors as how much the market economy is developed, the extent to which the jurisdiction is engaged in fiscal "reform" as opposed to what may be called fiscal "development" -- that is, the extent to which it has moved from changing the old to implementing the new -- and perhaps also the level of outside technical and financial assistance it has received.

To illustrate, differences in levels of income and wealth are obviously relevant in assessing fiscal performance. It takes more effort for a poor country than a rich country to raise an additional percentage point of GDP in taxes (Bird, 1976). Similarly, the well-known convergence hypothesis suggests that it may be easier for a country with below-average growth performance to increase its growth rate than for a country with above-average performance. Another illustration relates to investor perceptions. With respect to foreign investment, for instance, as in politics, perception often *is* reality. If a country is seen as risky, it pays the price in terms of receiving less investment than it otherwise would and paying more for what it gets. Different perceived degrees of riskiness may thus affect measured fiscal performance.

Assessing Performance

The nature of the problems a particular jurisdiction faces -- the initial conditions -- thus influence its performance. So, of course, may the institutional measures taken to deal with them: is there a sustained high-level commitment to change? Is there a coherent strategy for change? Without both a real desire to make changes and a well-developed plan for change, efforts at change are unlikely to prove either coherent or successful. The critical question to be considered here, however, is how the extent to which success has been achieved be assessed.

Performance is a function both of exogenous conditions and institutional factors (including capacity). Unfortunately, many conceivable indicators measure *inputs*, not the policy *outputs* that are of ultimate concern. Some outputs (such as tax revenue) may easily be quantified. Other outputs may be more subjective: for example, what is the

³⁶ This point is developed with respect to tax administration in Bagchi, Bird, and Das Gupta (1995).

public's perception of the fairness of the tax system – and hence, perhaps, its long-term sustainability? On the whole, the fiscal indicators that may be assembled in practice in most countries almost inevitably constitute an extremely mixed bag.³⁷ It is difficult, and indeed may sometimes not really be possible, to aggregate or average such heterogeneous indicators meaningfully, even with respect to any one area. As a rule, what is usually done – for example, in most bond-rating analyses³⁸ – is little more than what may be called the pre-analytic step of collecting, as it were, a series of indicators which, taken together, help profile some relevant aspect of the area. To illustrate with respect to pension reform – a key component in the long-term fiscal sustainability issue in many countries -- such indicators may perhaps be clustered under four headings: the structure of the system, its viability, administrative issues, and other issues. The sustainability of pension systems may then be assessed either in terms of static short-run measures such as pension payments to GDP ratios or in light of longer-term measures such as the present value of future commitments. Box 4 provides another example with respect to taxation.³⁹

Box 4. Tax Indicators in New Zealand

As an example of the use and limits of quantitative measurement, consider what is perhaps the simplest case, the measurement of how well a jurisdiction does in collecting taxes. New Zealand recently made a notable attempt to assess its tax performance, estimating the optimal tax level and structure from the perspective both of maximizing economic growth and minimizing tax evasion (Caragata, 1998). The conclusion was that tax *levels* mattered much more with respect to the attainment of these objectives than did tax mix -- and that the prevailing level of taxation in New Zealand (37% of GDP in 1997) was much higher than the "optimal" level of at most 25%. This study underlines the importance of the sheer size of the tax share in appraising tax policy performance. Moreover, it suggests that success in *increasing* taxes -- even if such increases seem needed to cope with deficit problems -- may well be a two-edged sword, relieving short-run fiscal pressures at the cost of long-run damage both to real economic growth and to the growth of the "official" economy.

The change in tax revenues compared to the change over the same period in GDP (tax buoyancy) may be the most single meaningful measure of tax effort in the absence of reliable measures of tax potential. A more refined measure might also encompass some measure of revenue stability such as the coefficient of variation of the annual buoyancy measure.⁴⁰ Even these figures must sometimes be interpreted with care, however. For example, what does "high" buoyancy mean when growth is negative?

³⁷ For an interesting recent attempt in the Philippines, see Capuno (1998).

³⁸ See, for example, the sources cited in note 29 above.

³⁹ Both the pension and tax cases are developed in more detail in Bird and Banta (2000). On the latter, see also Das Gupta (2002).

⁴⁰ An additional measure that would be useful to assess the predictability and reliability of budgets would be to compare actual revenue outcomes to the amounts initially budgeted. Similar comparisons of the accuracy of budgeting could of course also be calculated for the expenditure side.

It is undoubtedly hard to raise taxes. Unfortunately, it seems to be at least as difficult in most developing and transitional countries to spend hard-won fiscal proceeds sensibly and well. It is thus at least as important to assess expenditure performance at the subnational level as it is to assess tax performance. In addition to comprehensiveness, perhaps the key factor in appraising budgetary policy in any country is what may be called "discipline." As recent empirical studies in a variety of countries have suggested, budgetary institutions may have important effects on fiscal outcomes (Alesina and Perotti, 1995). Important factors include the legitimacy, predictability, honesty, and effectiveness of the budgetary process and the related issues of the existence of a coherent strategy -- for example, the relation of the budget to the macroeconomic framework of policy (through a coherent medium-term expenditure plan) -- and the capacity of budgetary institutions in both the executive and the legislative branches of government to analyze and implement policy (Campos and Pradhan, 1996). As in the case of taxes, a well-grounded appraisal of fiscal sustainability thus has to extend well beyond simple numbers to a thorough understanding of the sustainability of the institutional framework underlying the numbers.

5. The Way Forward

To sum up the general argument in this paper, regardless of how carefully one assembles any set of fiscal indicators, at best the results constitute raw material for interpretative analysis. Fiscal indicators such as those discussed here may be compared to the information that consumer magazines assemble with respect to automobiles. Some of the indicators reported describe various mechanical and other features of the different vehicles. Others report the results of specified performance tests. Still others report the subjective judgments of selected experts with respect to the quality and general appeal of the car. What the editors deem to be the "Best Buy" in terms of a particularly weighted set of criteria may also be indicated. In the end, however, it is left up to the reader to draw his or her own conclusions from *all* the information presented.

Even the best indicators are not, and cannot be, a substitute for analysis. This point deserves emphasis. Numbers are powerful. Good numbers, properly used, may illuminate reality and may not only permit meaningful assessment of certain aspects of performance but also perhaps suggest new and promising lines of inquiry. Measurement and quantification have long been essential ingredients in the development and application of scientific thought. On the other hand, even good numbers may be misunderstood and misinterpreted, and bad numbers may all too easily pass for good among those who do not take the time to understand what the numbers can and do measure, and, equally importantly, what they cannot show. Of course the fact that the unwary may cut themselves with sharp tools is no reason not to sharpen one's analytical tools as best as possible. It is only through careful study and appreciation of what can be measured, and with what degree of reliability, that knowledge of the world and how it works can advance.

Despite the inherent limitations and risks, it therefore seems worth attempting to develop meaningful and comparable fiscal indicators, particularly with respect to sustainability. Even the best such indicators will never provide a certain or clear guideline telling any country what to do. But they may, if done well, be helpful in understanding how a country – or a subnational government – is doing relative to others in roughly similar circumstances. Providing a “base case” against which to assess performance is no mean achievement in this complex and on-going task of assessing how well particular governments are doing.

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