

# THE PRINCIPLES AND PRACTICE OF FEDERALISM: LESSONS FOR THE EU?

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February, 2006

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\* This paper was prepared for the Economic Council of Sweden conference on What Should the EU Do?, October 24, 2005, Stockholm. Very helpful comments were provided by the discussant, Birgitta Swedenborg, and conference participants, as well as by Marcel Gérard and a referee.

## ABSTRACT

Economic policy issues arising in decentralized federations are reviewed. Their resolution is influenced by three key features of federations that distinguish them from economic unions: the presence of a strong central government, the existence of equalizing transfers to the states, and the implications of citizenship for economic and social rights expected by residents wherever they reside in the federation. The effects of fiscal decentralization on efficiency and equity in the federal economy are outlined. This informs the assignment of responsibilities to the states and the forms of fiscal harmonization that might accompany it. Lessons for public policy in economic unions are discussed.

**KEYWORDS:** fiscal federalism, tax policy

**JEL Classification:** H7 F02

# 1 INTRODUCTION

The purpose of this paper is to consider what broad lessons can be learned by the European Union (EU) from the principles and practice of fiscal federalism. Approaches to fiscal decision-making in federations are notable for their diversity, although there are some key features that are common. There is broad similarity about the kinds of functions that are exercised by sub-national jurisdictions—or state governments as we shall call them<sup>1</sup>—though they exercise them with varying degrees of discretion. Federal governments influence state policies by a variety of instruments, most notably by financial incentives. This federal oversight is a consequence of the fact that many of the services delivered by state governments impinge on national efficiency and equity objectives.

The most apparent source of diversity is the extent to which state governments are responsible for raising their own revenues, and this is perhaps the most relevant indicator of the degree of decentralization. The allocation of taxation responsibilities range from highly decentralized—as in the case of Canada, Switzerland, and to a lesser extent the USA—to highly centralized—Germany and Australia. The mix of taxes used by state-level governments and the extent to which they are harmonized varies from federation to federation. In some cases, a wide range of both broad- and narrow-based taxes are used, while in others, states are restricted to using fewer, sometimes quite narrow, tax bases. Given that member nations in the EU have access to all forms of taxation, our focus will be on the more decentralized federations.

The EU shares some important features with decentralized federations. The economies of member nations are highly integrated because of the free flow of goods and services, capital, and, to some extent, labor across national borders. Member nations obviously assume responsibility for delivering important public services. And, national governments have discretion over a wide range of tax types, subject to tax harmonization measures that may be in effect. An implication is that, as in federations, the actions of

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<sup>1</sup> As a matter of convention, we refer to the second tier of governments in federations as *states* (rather than, say, cantons, länder or provinces), and the first tier as the *federal government* (rather than the national or the commonwealth government). Local governments will only be mentioned where necessary, although typically many of their functions can be aggregated with those of states. Members of an economic union will be called *nations*, and any higher-level jurisdiction will be called the *union government*.

individual national governments will have spillover effects that can affect the well-being of other member nations. Much of the policy discussion in federations is dominated by the need to deal with these spillovers and interdependencies, both in their efficiency and equity dimensions. To that extent, some issues of policy coordination are common to federations and economic unions.

At the same time, there are three common features of federations that are of prime importance for fiscal decision-making, but that do not apply to the same extent in the EU. The first is the existence of a strong federal government with real taxing powers, and with some financial and perhaps regulatory or legal leverage over the states. This implies that it is much easier to achieve policy harmonization with regard to spending, taxing and regulatory policy. Moreover, the federal government can take actions to mitigate adverse effects that might arise from state policies. Indeed, one can view the fiscal arrangements between the federal and state governments in federations as being largely focused on allowing the states to exploit the advantages of decentralized decision-making while at the same time ensuring that national objectives are addressed.

A second distinguishing feature of almost all federations is the existence of a system of redistributive—or equalizing—federal-state transfers.<sup>2</sup> This is especially relevant given the fact that state governments are typically responsible for delivering some key public services, such as education, health and social services. Indeed, a high proportion of their budgets are devoted to these areas. Redistributive federal-state transfers equalize to some extent the capacity of the state governments to provide comparable levels of public services at comparable tax rates, thereby removing one source of inefficiency and inequity that would otherwise result from decentralized fiscal responsibility. As well, the existence of an effective equalization system mutes the tendency for states to engage in distortionary fiscal competition.

Third, citizens in a federation enjoy national citizenship and all the economic and social rights that might entail. In the EU, while the mobility of labor might be relatively free, union-wide citizenship does not carry with it the same level of rights as in a federation. Thus, in a federation there is an expectation of equal treatment of citizens in

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<sup>2</sup> The exception to this is the USA. However, conditional grants there often have design features that implicitly equalize the fiscal capacities of state governments.

all states that is sometimes explicitly written into the constitution (Canada, Germany). Significant differences in levels of public service and social protection across states are usually not tolerated, unlike within the EU. Moreover, steps are often taken by the federal government to ensure that the levels of social protection provided by the states—and, to repeat, key instruments of social protection are the responsibility of state governments—are nationally acceptable. As with equalization, federal remedies will reduce the extent to which adverse interstate competition will occur. In economic unions, explicit use of inter-nation agreements or codified central regulation must be relied on. Not only are they more difficult to negotiate and enforce in the absence of a dominant central government, but by their very nature they will be less able to address inequalities among jurisdictions.

Despite these major differences between federations and the EU, it is instructive to consider how economic policy issues are resolved in a federation as a benchmark case for the EU. To put matters in context, we begin by recounting in more detail the salient features of federations, starting first with the nature of fiscal decentralization. We then turn to the inefficiencies and inequities that can arise because of decentralized fiscal responsibilities, and the kinds of remedies that are used to counter them. Next, the nature of tax systems in federations is considered since these are of direct relevance to the EU. This includes the way in which revenue-raising responsibilities can be decentralized, and the institutional features of tax systems that are used in federations to undo any adverse effects of decentralized decision-making. Finally, we turn to the lessons that might be learned for the EU from the experience in federations.

Two overriding issues should be stressed at the outset, because both have an enormous bearing on one's assessment of federal models of government. The first is that much of what governments do, and much of what fuels debates in federations, involves redistribution. A very high proportion of federal and state budgets are devoted to programs that have redistributive equity as their rationale. This obviously includes transfers delivered to the poor, the disabled, the elderly, the families of children, the unemployed, and so on. It also includes important public services such as education, health care and social services, which form an especially large share of the budgets of state governments. The implication is that the redistribution dimension is bound to be important in discussions of fiscal federalism. This might be contrasted with classical

views of federalism associated with the names of Musgrave, Oates, Breton and Tiebout who stressed federalism as a device for addressing the fact that public goods could be either national or regional in scope (or somewhere in between). To them, decentralization was a means of ensuring efficient provision of local public goods in accordance with local preferences, and redistribution was a concern of the national government.<sup>3</sup> Unfortunately, this view of federalism does not accord with the facts. The provision of public goods represents a small proportion of what state governments do, and redistribution judgments are inextricably involved in their fiscal decisions.

The second overriding issue is the role of political economy considerations in fiscal federalism. Arguments for decentralization are typically based on assessments of what functions state governments can undertake more effectively than national governments, and the arguments are often normative in nature. However, the outcome of such debates ultimately depends on one's view of how benevolent governments really are. A broad generalization is that decentralization is more preferred by those who a) put less weight on equity relative to efficiency and b) think of government as more self-serving, inefficient and self-aggrandizing. In what follows, we take a somewhat agnostic view of this debate, although many of the arguments we present are normative in nature.

## 2 THE CASE FOR DECENTRALIZATION

To put matters in perspective, it is useful to review the arguments for decentralization in a federation. This serves to contrast current views with the classical view that continues to influence much of the academic literature. It also allows us to contrast decentralization arguments in a fiscal federalism setting to those for an economic union. The latter involves a 'bottom-up' approach where the default option is complete decentralization and a case must be made for centralizing functions to the center using notions like subsidiarity. In fiscal federalism, the approach is typically 'top-down'. The unitary centralized state is the conceptual benchmark, and the case for decentralizing responsibilities starts from there.

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<sup>3</sup> We use the distinction between public goods and public services as defined by Bewley (1981). Public goods are those simultaneously consumed by all members of a community, as in the Samuelson sense. Public services are private goods publicly provided, and constitute much of public spending.

The classical view of decentralization is epitomized in Musgrave (1959) and Oates (1972), and includes the following main features. The assignment of functions parallels Musgrave's famous trichotomy of the Efficiency, Redistribution and Stabilization branches of government policy. Only the first branch is shared by the two levels of government. Thus, the main function of state governments is to provide local public goods, while the federal government provides national public goods and undertakes redistribution and stabilization functions. Residents of different states have different preferences for state public goods, induced perhaps by a migration mechanism à la Tiebout (1956) whereby people vote with their feet. Decentralization facilitates the matching of state public goods with state preferences, whereas centralized provision tends to uniformity. This is the celebrated Oates Decentralization Theorem. Since redistribution is a national function, state tax systems should follow the benefit principle, a point of view that has recently been forcefully argued by McLure (2001). This may be conditioned somewhat by state-level altruism, but in that case altruistic transfers to the poor can be viewed as simply another state public good (Pauly 1973).

In this world, inefficiencies from decentralization occur as a result of interstate spillovers, such as those that arise because state boundaries do not coincide with the reach of benefits of state public goods (Breton, 1965). Migration can also be inefficient; and in fact migration equilibria can be unstable and may not even exist (Bewley 1981, Stiglitz 1977). The role of federal-state grants is essentially to correct for these various spillovers and inefficiencies, and for that purpose matching grants are deemed to be appropriate (Dahlby, 1996).

This classical view of federal economies bears little resemblance to actual federations. State government expenditures are not mainly on public goods. Benefit taxation is not the norm. There is relatively little evidence of significant heterogeneity of preferences across states. And, the flow of migration is relatively limited compared with state population levels. The alternative view of decentralization focuses not on its role in addressing heterogeneous local preferences, although that can be an element. Instead, it focuses on the fact that the provision of public services and targeted transfers is more efficient at the state level than at the federal level. Moreover, an important element is that

state policies have an unavoidable equity dimension. It is neither possible nor desirable to assign redistribution to the federal government.

To be more precise, decentralization of the provision of local public goods, public services and targeted transfers is based largely on the fact that efficiency is enhanced, a form of subsidiarity. There are several reasons for this. Some are based on informational advantages. States may have better information about local needs for public services and costs of provision. They may be better able to target programs to those for whom they are intended. Administrative costs may be reduced by eliminating a layer of bureaucracy and alleviating agency costs. The fiscal competition that accompanies decentralized provision of public services enhances efficiency and reduces rent-seeking through fiscal discipline. Related to this, the performance of a state government can be evaluated more effectively if neighboring states are also providing similar public services, analogous to yardstick competition. It is also argued that decentralization induces better fiscal and political accountability for public service provision, since decisions are made closer to those benefiting. Finally, the existence of several independent service providers can enhance the chances of innovation and experimentation in public service provision.

These arguments apply especially where there are no scale advantages from central provision (e.g. national public goods), no advantages from centralized information gathering (e.g. general revenue collection), or where there are no national social insurance considerations. Moreover, there are significant harmonization advantages from a relatively centralized tax system. This, along with the fact that federal-state transfers fulfill an indispensable function, implies that the case for decentralizing expenditures is greater than for decentralizing revenue-raising: there should be a vertical fiscal gap.

A striking feature of this viewpoint—in contrast to the classical one—is that some of the most important spending programs whose objective is redistributive equity in its various dimensions are decentralized to the states. Examples include important public services like education, health care and social services, as well as transfers that are targeted to particular groups rather than being delivered through the income tax system. Indeed, even in unitary-type nations (Scandinavian countries, Japan), many of these kinds of services are provided locally. To the extent that these programs are also important for national equity, the federal government has an interest in how they are delivered, and

may want to use the federal-state transfer system to make that interest felt. In other words, *equity considerations are important in choosing the extent of decentralization as well as designing the system of intergovernmental transfers needed to accommodate that decentralization*. Indeed, one can view the function of the transfer system as largely to enable the federation to reap the benefits of decentralization while avoiding its costs.<sup>4</sup>

Our discussion proceeds largely in the context of this second viewpoint about decentralization, although it is tempered by the possibility of differences in preferences emphasized in the classical view.

### 3 CONSTITUTIONAL CONTEXT

Constitutions embody a nation's culture, history, and political and civil institutions, and as such are very much specific to the country. Nonetheless, there are several general elements that might be thought of as representative, although the specifics will differ from nation to nation. In this section, we outline those that are particularly relevant for understanding the fiscal functioning of federations.

Constitutions mainly serve to proscribe government policies, allowing legislation to stand only if it satisfies certain criteria. That is, constitutions say what governments may do rather than what they must do. Nevertheless, one often finds stated a set of overriding principles that include rights that citizens should enjoy and obligations on governments to fulfill some of them. These rights will include the basic ones concerning freedoms of expression and religion, equality before the law, non-discrimination, the right to vote, and possibly property rights. They may also include economic and social rights, such as the right to adequate food, water, shelter and clothing, basic education and health care, all of which require positive action by governments. More generally, governments may be charged with pursuing equality of opportunity and outcomes, regional development, and the provision of basic public services throughout the nation.

These latter represent obligations that governments are expected to fulfill, and the responsibility may be shared by federal and state governments. Indeed, they are almost inevitably shared responsibilities since, as mentioned, some of the most important policy instruments for achieving these obligations are in the legislative domain of the states. The

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<sup>4</sup> This theme is addressed more fully in Boadway (2001).

issue then becomes: how does the federal government exercise its obligations in these circumstances? The resolution of this is a defining feature of federations.

It should be noted that these basic obligations imposed on governments may or may not be justiciable in the strong sense. That is, courts may not have the power to oblige state and federal legislatures to provide whatever services are deemed to be required to discharge the obligations. Even so, judicial interventions will have some force. The courts may be able to pass judgment on whether the obligations are being met, leaving it up to legislatures to act. Even in the absence of court direction, the obligations will presumably carry some political and moral force.

The above overriding principles involve issues of equity or redistribution. They might be referred to as rights of social citizenship. The constitutions of federal nations may also include some general principles concerning efficiency in the federal economy. These would support the economic integration or common market aspects of the federation, and can include both negative and positive elements. Negative integration refers to rules imposed on governments to preclude them from engaging in practices that restrict the free flow of products and factors of production by imposing artificial barriers to trade, discriminating against residents or firms in other states, or giving preferential treatment in procurement and hiring policies. Positive integration measures are less common, and require states to harmonize some of their policies to foster economic integration as well as providing the analog of most-favored-nation treatment with respect to their economic policies. As with international trade agreements, a key consideration is dispute settlement. Whether a state has violated the principles of internal integration is typically not clear-cut. Measures that are enacted for health or safety reasons or to promote state language or culture may impose justifiable restrictions on cross-border activity. Since the issue of dispute settlement is of more general concern, we defer discussion of it to below.

Next, the constitution will set out the division of powers, that is, the areas in which each level of government is competent to legislate. These will typically be listed in terms of functions (education, roads) rather than objectives (efficiency, equity, stabilization).

The assignment of functions to the two levels of government can take various forms.<sup>5</sup> Some functions may be assigned exclusively to one level of government or the other. Some may be shared by both levels of government, in which case one side may be paramount. For example, if the federal government is paramount, its legislation overrides that of the states. In some cases, co-occupancy of a legislative function can occur with neither side being paramount. A good example of that would be certain types of taxes that can be used simultaneously by both levels of government. Functions that are assigned to one level may be delegated to the other, adding some flexibility to the constitution. And, since it will not be possible to foresee all policy functions at the time the constitution is written, residual (undefined) powers will be assigned to one of the levels of government.

The assignment of functions can involve purely fiscal functions, like spending or taxation. Other types of economic policies can also be assigned or proscribed by the constitution. The regulation of goods, services, labor and capital markets can be assigned to either level, not necessarily all the same one. If regulation is assigned to the states, their jurisdiction would extend only to state boundaries. There may be constitutional rules regarding the ability to accumulate public debt and regarding public accountability. An important consideration in some nations is the ownership of natural resource wealth, which may be vested in either level of government. Finally, there may be general catch-all statements about matters of purely state and local interest being in the states' legislative domain, and the federal government being able to legislate on matters of national interest.

For many functions, there is little controversy about their assignment. Thus, the federal government naturally assumes responsibility for defense, foreign affairs and monetary policy, whereas states are responsible for state transportation, state waterways, and state policing. In other cases, matters are not clear-cut. Some functions assigned to the states may have repercussions on the national interest. This will be the case for education, health and social welfare, which are typically delivered at the state level. These may be regarded as policy instruments that are crucial for achieving broad objectives of redistributive equity for which the federal government has some

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<sup>5</sup> Constitutions will also deal with local government functions. The federation will usually be hierarchical, in which case local government functions may be either stipulated in state constitutions or defined by state

responsibility. As well, state policies can have spillover effects on other states as a result of their taxation, spending and regulatory policies. This means that it will be inevitable that the federal government will want to have some influence over the manner in which states design their programs.

This desire or need for federal oversight applies to all federations and is the source of considerable debate and tension. There are various ways in which oversight or influence may be exercised over state decision-making where national interests are deemed to be at stake. Some forms of oversight are negative in the sense that state legislation can be overturned. Others are positive with states being induced into taking certain actions. In the former category, the federal government may have the power to disallow state legislation, although this is fairly drastic action in a truly decentralized federation with autonomous state governments. Alternatively, the judicial system may be available if state legislation is deemed to violate some aspect of the constitution, including those involving basic rights and obligations. On a more positive note, the federal government may have the power to mandate state action in certain areas. Again, this can be a fairly severe remedy, especially if the mandates are unfunded.

Perhaps the most effective and pervasive option available to the federal government for influencing state policy is the use of conditional grants, referred to as the spending power.<sup>6</sup> This is a flexible instrument that can be used to impose broad conditions on state programs that are of national interest, even where the programs are in exclusive state jurisdiction. The conditions can involve efficiency or equity considerations. This approach can be relatively non-intrusive of state autonomy. It has the advantage that it avoids stipulating specific conditions that a contractual approach would require, and has a built-in dispute settlement mechanism since the transfers are at the discretion of the federal government. The problem, of course, is that because the program relies in federal initiative, there is a potential for it being used in a way that interferes more than necessary with state autonomy. As is usually the case in federalism, there is a fine balance to be achieved in obtaining the benefits of decentralized decision-making while at the same time ensuring that national objectives are achieved.

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legislation.

<sup>6</sup> For a survey of the widespread use of the spending power in federations, see Watts (1999).

Other approaches to achieving this balance are possible. In some cases, there may be federal-state agreements negotiated either bilaterally or multilaterally where joint interests are at stake. The use of these in their multilateral form has been somewhat limited, partly because of the need for unanimity in coming to a binding agreement, and partly because such agreements cannot handle issues involving interstate redistribution, which are typical. Moreover, such agreements must spell out the terms explicitly, and that may not be easy to do when broad national objectives are being pursued. It may also be difficult to devise binding dispute settlement mechanisms.

Another approach, and one that can be underestimated, is moral suasion. Federal and state governments are in constant contact about policies, and the federal side has ample opportunity to make its views known. If the federal government is in a dominant financial position and the states rely partly on federal grants to support their programs, it is not hard to imagine that federal moral suasion—or even jaw-boning—will have an influence in the broad give and take of federal-state interaction.

Finally, there is always the option of constitutional change if it is deemed that existing provisions have become a deterrent to sound policy. This is a somewhat more ponderous step since it typically involves considerable consensus among governments. But, it has been used to good effect in some federations.

#### 4 FEATURES OF FEDERATIONS

The economies of federations are in a sense unfettered economic unions. All products (goods and services, both final and intermediate) and factors of production (labor, capital, entrepreneurs and firms) can flow freely across state borders without border controls. Common citizenship applies to all persons regardless of state of residence, and that endows them with certain common rights and entitlements. These include mobility and employment rights, as well as some expectation of reasonably comparable levels of public services and levels of taxation regardless of where they reside and work. But, no two federations are identical: there are exceptions to free mobility (Switzerland), and there are exceptions to the expectation of equal fiscal treatment (USA). However, these are exceptions to the rule. Most federations tend to accomplish some common fundamental goals, but in a wide variety of ways.

In most federations, state governments, and the local governments within their borders, are responsible for delivering not only local public goods and services (roads, sewage, water, garbage, recreation) but also public services of national importance (education, health and social services) and some important targeted transfers (welfare). The amount of state discretion varies. In some federations (Belgium, Canada), state governments have a high degree of autonomy in their spheres of responsibility, subject only to fairly general financial incentives from the federal government. In other cases (Australia, USA, Spain), the states are subject to somewhat more influence from the federal government through varying combinations of conditional grants, mandates and the disallowance of state legislation. In yet other cases (Germany), the states are largely administrative creatures of the federal government, and are responsible for implementing public programs legislated by the latter. However, even in federations where expenditure programs are highly decentralized, commonality in levels and types of public services is often achieved by means such as expenditure harmonization, conditional bloc grant financing and equalization programs.

On the revenue side, things are much more diverse. The extent to which states finance their expenditures out of their own sources varies considerably, although a sizeable vertical fiscal gap exists in almost all federations. In Canada and the USA, state governments have substantial revenue-raising autonomy and raise significant proportions of their own revenues. At the other extreme, Australian states and German *länder* rely heavily on transfers from, or revenue-sharing with, the federal government, and have little independent revenue-raising responsibilities of their own, at least with respect to major revenue sources. In federations where states do have revenue-raising responsibilities, the form of taxes varies considerably. In Canada and the USA, state-level governments have access to virtually all revenue sources alongside the federal government, including broad-based income, payroll and sales taxes. In Canada, they also have exclusive access to taxes on natural resources. On the other hand, discretionary tax sources in Australia and Germany tend to include mainly narrow-based taxes. The option of piggybacking onto major federal income taxes also exists in Canada and the USA.

In virtually all federations, the federal government has real—and usually dominant—authority. It provides national public goods and the major social insurance

schemes, and incurs expenditures that are roughly comparable to those of state and local governments in the aggregate. As mentioned, taxes are much more centralized than expenditures. Even where states have access to broad-based taxes, the federal government tends to have the dominant share. This has important implications for tax policy and tax harmonization within the federation.

Given the range of important public services provided by the states, there is federal-state overlap in interests and responsibilities. Both levels of government have an ultimate interest in providing public services to their citizens, in efficiency in the internal common market, and in the diverse objectives of redistribution, including equality of incomes, equality of opportunities and social insurance. These tasks cannot be assigned exclusively to one level. The federal government has an overriding interest in national efficiency and equity, given that its constituency is the nation as a whole. However, many of the policy instruments that affect these objectives are in the hands of the states. Indeed, a key aspect of fiscal federalism is the way in which the institutional arrangements, particularly the federal-state fiscal arrangements, are designed so as to facilitate the benefits of decentralized decision-making while at the same time ensuring that national equity and efficiency objectives are not compromised. Exactly how national efficiency and equity might be compromised by decentralization is outlined below. For now, we outline some common features of fiscal arrangements in federations, classifying them by three types—federal-state transfers, tax harmonization arrangements, and negotiated agreements.

### Federal-State Transfers

Federal-state transfers are necessary to close the vertical fiscal gap between state expenditure responsibilities and state own-source revenues, a gap which ensures that the federal government plays a dominant role in tax policy. In addition, these transfers fulfill two substantive functions.

First, they serve an equalizing role by transferring funds selectively to states so that they all have the financial capacity to provide reasonably common levels of public services. Equalization transfers are typically unconditional, and can be based on indicators of revenue-raising capacity in cases where states have significant revenue-raising authority (Canada); they can be based on expenditure needs when state revenue-

raising is minimal (South Africa); or they can include elements of both (Australia, Germany). Likewise, the total transfer can be based on a given proportion of federal revenues from given sources (Australia, Germany); it can be based on average per capita revenues raised by states across the federation (Canada); or it can be based on the estimated level of state expenditure needs (South Africa).

Second, transfers can be used as instruments for influencing the spending amounts and patterns of state governments. Matching grants can be used as an incentive for states to implement certain programs or to encourage spending on existing programs. Or, transfers can be bloc grants that have conditions attached to their use. Bloc grants need not be matching, but states may be subject to penalties if their spending programs do not meet the conditions set by the federal government. The use of conditional grants by the federal government—the spending power—is common, but can be controversial (Watts 1999). On the one hand, they can be ideal instruments for ensuring that state expenditure programs take account of national objectives. On the other, there is the possibility that the federal government will use them too intrusively, thereby impeding the benefits of fiscal decentralization. Such tensions are at the core of decision-making in a federation. Perhaps the best way to guard against them is for there to be full consultation between the federal and state governments prior to their implementation, and otherwise to rely on the ultimate check of the political process. All in all, the federal spending power, despite its potential for abuse, is likely to be the least intrusive of instruments that can be used to ensure that the benefits of decentralization are achieved without compromising the achievement of national objectives. For the spending power to be effective, the federal government must have some degree of fiscal dominance.

These two functions of federal-state transfers—equalization and conditionality—need not be addressed by separate transfer systems. Equalization grants can have some general conditions attached to them. As well, the allocation formula for conditional grants can have some equalization element in them: indeed, even if they are equal per capita transfers to all states financed out of federal general revenues, they will be equalizing. But the point is that both are useful components of transfer systems. Jointly they also bring some national harmony in fiscal systems, and help to reduce the incentives that might otherwise exist for states to use their tax systems in highly non-cooperative ways.

## Tax Harmonization

Tax harmonization arrangements of some sort exist in virtually all federations, but their form and extent vary considerably. Where states have little revenue-raising authority, tax harmonization is effectively achieved by a common central tax system. This is the case whether or not revenue-sharing applies. Where states have significant own revenue-raising authority, using major tax bases such as income, sales or payroll taxation, explicit harmonization is relevant.

In the case of income taxes, harmonization can apply to the base alone or to the base and rate structure together. Full harmonization can be achieved by some variant of a state surtax applied either to the federal base or to federal tax liabilities. In either case, the states can choose their own surtax rate to facilitate fiscal responsibility, while the federal government chooses both the base and the rate structure. States may be allowed to implement certain state-specific tax credits, surtaxes and exemptions as well, although this affects the rate of progressivity and may implicitly distort interstate transactions. Alternatively, harmonization may apply to the base only, with the states free to choose their own rate structures (including exemptions and credits) to apply to the federal tax base. Canada has recently moved from the former to the latter system, so now the provinces are allowed to apply their own rate structures and, with limits, their own system of credits, while retaining the use of a federal base (which includes a common set of deductions). Participation in federal-state tax harmonization arrangements may be voluntary (as in Canada and the USA). Indeed, states may unilaterally choose to harmonize their tax bases with that of the federal government to reduced compliance and collection costs for their taxpayers.

There are two important institutional features of income tax harmonization. The first is that the harmonization system may be accompanied by a single tax administration that collects taxes on behalf of both the federal government and the participating states. This is the carrot that is often used to induce state participation in tax harmonization arrangements. It has a number of obvious administrative advantages in terms of compliance and collection, as well as automatic information sharing. The cost to the state is that it gives up some discretion over the base and possibly the rate structure (though not rate levels). If the share of state tax room relative to that of the federal government is

high, states may prefer to choose their own tax policies, and may be willing to pay the price of collecting taxes on their own. Indeed, the Canadian case illustrates this well. As the provinces obtained more and more income tax revenue-raising authority, the tax harmonization arrangements became looser and looser. This is obviously of relevance for economic unions, where a strong federal presence in major tax fields does not exist.

The second feature is the need for a common allocation formula for assigning tax bases to states in cases where incomes are earned in more than one state over the tax year. In the case of personal income taxes, where state of residency is typically the rule, this arises mainly because of relocation of taxpayers during the tax year. An attempt might be made to share the tax according to the proportion of the year spent in each state. Alternatively, if this is viewed as too difficult to enforce, one can assign the entire base to the state of residence on some arbitrarily chosen date. With corporate income taxes, matters are not as simple since corporations can simultaneously carry on business in more than one state at the same time. Formulas to allocate the tax base among states typically use some combination of factors, chosen from such items as shares of sales, shares of payroll, and shares of capital stock. There is no exact way of assigning tax bases to states, so factors are chosen that are both reasonable indicators of income-earning activity and that are difficult to manipulate by transfer pricing and profit shifting through financial transactions, or by changing the number of taxpaying units within a given firm if the system does not require consolidated tax accounting among all a firm's entities.

Harmonization of state sales taxes is less common (Canada being the only example among OECD countries), although it is virtually mandatory in the case where states use value-added taxes (VATs). As discussed later, some harmonization is needed to ensure proper accounting for input crediting on cross-border transactions in the absence of border controls. With single-stage sales taxes, which are typically levied on a destination basis, the usefulness of harmonization would be mainly to deal with cross-border purchases, including those that are consummated electronically. Potentially, sales taxes could be also used as strategic policy instruments to favor state activities and to affect state redistribution, and a case could be made for base harmonization to deal with that. Similarly, although payroll taxation might be used as an instrument of state industrial policy, the need for harmonization is not as pressing as with the income tax. For example,

allocation of payrolls among states does not pose the same problems as allocation of business income or sales.

## Negotiated and Other Arrangements

Fiscal arrangements between the federal government and the states also include a plethora of other forms of agreements and institutional arrangements. These may not involve actual financial transactions, but they will affect the kinds of policies that states enact. Federal and state governments are in continuous contact and consult over a wide variety of policy issues. Some of these lead to explicit agreements. They may involve overlapping policy areas, such as environmental policy, infrastructure, regulatory policies on labor and other markets, and social policies. Or they may be more general. For example, in Canada there is an Agreement on Internal Trade that is meant to be analogous to international free trade agreements. There are two main difficulties with negotiated agreements. First, since they require unanimous consent, they are very difficult to negotiate, especially if they are to include binding dispute settlement mechanisms. Second, by their nature they will be mutually beneficial to all states, so will typically not include any redistributive component, which limits their applicability.

A much more common form of non-financial federal-state arrangement is for the federal government to adopt a strong leadership role. This is not only because federal-state agreements are difficult to negotiate, but also because the federal government bears special responsibility for matters of national interest. Institutions vary from federation to federation, and we have outlined the options already above. At one extreme, the federal government legislates major policies that the states must implement (as in Germany, albeit with *länder* input through the *Bundesrat*). The federal government may also be able to mandate state programs in certain areas, sometimes even without providing full funding (USA). The federal government may have the power to disallow state legislation that is deemed not to be in the national interest, or it may rely on the courts to do so. As mentioned, a less intrusive policy instrument is the use of the federal spending power to provide a financial incentive to the states to design their spending programs in ways that respect national interests. These policy instruments are not used in a vacuum, however. The continual consultation that exists between the two levels of government suggests that

many conflicts are resolved by negotiation, or by moral suasion, rather than by more heavy-handed federal intervention.

Intergovernmental agreements may be negotiated among a subset of governments. The federal government may make bilateral agreements with individual states in cases where spillover effects are limited. Or, the agreement may be between the federal government and a subset of states. This would be the case when states are free to join or opt out of federal-state programs, as in the case of tax harmonization agreements. States may even be allowed to opt out of bloc grant programs, although there may need to be some compensatory transfer payment in lieu. (In Canada, the province of Quebec opted out of some federal-provincial programs in recognition of its distinctiveness in the federation. Similarly, special asymmetric arrangements apply in Spain with respect to the Basque Country and Catalonia.) In principle, it would also be possible for states to negotiate agreements among themselves. In practice, major interstate agreements are not common, except to deal with cross-border disputes.

## 5 EFFICIENCY EFFECTS OF FEDERAL DECENTRALIZATION

There is a large and growing literature on the efficiency effects of decentralized decision-making in a federation.<sup>7</sup> The effect of state economic policies on efficiency arises because of the existence of cross-border flows of products and factors of production, because of the mobility of households among states, and because of interaction effects between policies at different levels of government. It is useful to distinguish three general sources of inefficiency: those arising from horizontal fiscal interaction, those arising from vertical fiscal interaction, and those arising from differences in fiscal capacity created by decentralization.

### Horizontal Fiscal Externalities

State government policies, which are presumably chosen taking state interests into account, can have spillover or externality effects on other states in the federation. These can be positive or negative, and can result from direct effects of fiscal policies on residents of other states and indirectly via effects on other states' budgets. Thus, positive

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<sup>7</sup> Examples include Dahlby (1996), Wilson (1999), Boadway (2001, 2004a), Wildasin and Wilson (2004).

fiscal externalities occur if spending policies in one state provide direct benefits to residents in other states (highways, environmental control, education, etc.). This is analogous to conventional inter-agent externalities, where here states underestimate the social value of expenditures to the extent that spillover benefits occur. The ideal remedy is for the federal government to impose a Pigovian-type subsidy on spillover-inducing state spending, but this ideal is very difficult to achieve. For one thing, the size of spillovers is hard to estimate. For another, the extent of inefficiency depends upon the way in which state governments choose their fiscal policies, and that may not conform to the rational optimizing way that individuals agents presumably use. In practice, means other than matching grants are often used to deal with spillovers, such as negotiation and bloc grants with conditions attached.

Positive fiscal externalities also result indirectly from the fact that tax bases are mobile, so that an increase in one state's tax rate, given tax rates elsewhere, will cause a loss of tax base to other states. This is distinct from the loss in tax base that might occur simply because of some elasticity in supply of the tax base concerned. Recognition by state governments of this potential loss of tax base gives rise to tax competition. Each state has an incentive to reduce its tax rate to avoid loss of base, or to attract base from others. Since all states behave in the same way, the consequence is an equilibrium outcome in which tax rates are lower in all states than they otherwise would be. Moreover, the relative size of tax rates can differ among states resulting in an inefficient allocation of resources across the federation.

The concept of the marginal cost of public funds (MCPF) can be used to explain the consequences. The MCPF refers to the cost to the economy of the last euro of revenue raised, where the cost includes not just the value of resources that can be purchased by the marginal euro, but also the deadweight loss arising from the fact that the tax is distortionary and causes a contraction in the tax base. The MCPF can realistically be considerably greater than unity (Browning 1976, Dahlby 1994). With mobile tax bases, state governments overestimate the true MCPF since the reduction in base from an increase in tax includes not only that due to the elasticity of the base but also that due to the loss of base to neighboring states. The latter is not a loss to the economy since other states' tax bases and revenues rise. Since the MCPF is perceived to be higher than its

social value, tax rates will be set lower than otherwise. The effect is more pronounced for small jurisdictions, since their perceived elasticity of tax base due to mobility will be higher. Thus, tax competition should result in small states exploiting large ones by setting lower tax rates (Kanbur and Keen 1993).

Competition for mobile tax bases can also involve other instruments. States may offer subsidies to attract firms and capital, including on labor to encourage employment (Boadway et al 2002). They may provide business services and infrastructure. The resulting expenditure competition is analogous to tax competition in its efficiency consequences. However, it leads to expenditures (and taxes) that are too high, and also skews public expenditures away from public goods and services and toward business services (Keen and Marchand 1997).

The extent to which fiscal competition occurs depends on the mobility of tax bases. Capital and firms are relatively more mobile than workers, so tax competition is perceived to be more of a problem with capital income taxes, wealth taxes, and taxes on firms and entrepreneurs. This is true both of general taxes as well as specific tax relief or subsidies that are directed at particular firms or industries. Perhaps most important, taxpayers may be able to relocate their tax bases even without changing their real pattern of production. Thus, as mentioned, corporations operating in several states can arrange to reduce their profits in a state by charging high transfer prices on inputs from elsewhere or by obtaining their debt finance in high-tax jurisdictions and taking advantage of interest deductibility provisions.

Since labor is less mobile than capital and firms, payroll taxes and general consumption taxes (which are effectively taxes on labor income) are less prone to tax competition than taxes that apply to capital income. The same might be true of taxes on real property and natural resources to the extent that they do not apply to capital used with the immobile resource. Tax competition from excise taxes occurs because of cross-border shopping: households have an incentive to purchase taxed goods in low-tax states. If the tax is levied on a destination basis, which is typically the case, taxpayers are legally liable for the tax in their state of residence in which case tax competition would not apply. However, in the absence of borders, this is hard to enforce.

Tax competition is usually regarded as a bad thing since it causes state governments to compete their tax rates down, thereby skewing their tax structures in favor of more mobile bases and causing them to provide a lower level of public goods than they otherwise would. And, the undersupply of public goods and services to households is exacerbated to the extent that expenditure competition occurs. However, in practice there are a number of caveats to that argument. First, if state governments are not benevolent enough—for example, if they tend to overtax and overspend because of Leviathan tendencies—tax competition can serve as a discipline on their profligacy. By forcing them to reduce tax rates, their ability to exploit taxpayers is reduced (Edwards and Keen 1996). Second, some tax bases are more mobile *ex ante* (before their location is set) than *ex post*. In this case, the familiar hold-up problem applies: once assets are in place, state governments treat them as fixed and levy a high tax rate on them. In these circumstances, tax competition can mitigate the problem (Kehoe 1989). Third, in some cases, the equalization system will reduce the incentive for tax competition. In Canada, for example, equalization is based on a state's per capita tax base relative to a national standard. Reductions in tax revenue due to a reduction in the tax base will be at least partly offset by an increase in equalization payments, so the incentive to reduce taxes to attract more of the base is cleansed (Smart 1998). Fourth, there will be offsetting incentive effects arising from our next two categories of interaction: tax exporting and vertical tax externalities.

Tax exporting is a negative tax externality that occurs when taxes imposed by one state are borne partly by residents in other states (Lockwood 2001). A destination-based excise tax on an imported commodity, by reducing demand for the commodity, may cause its price to fall thereby causing foreign suppliers to share the burden. Alternatively, an origin-based excise tax will be partly borne by non-residents to the extent that they are willing to pay a higher price for the product. Or, a tax at source on income generated domestically but accruing to non-residents might partly be borne by the non-resident.

The effect of tax exporting is the opposite of tax competition. State governments will perceive their MCPF to be lower than it is from a social point of view, and will have an incentive to overtax. This may serve to offset the adverse effects of tax competition, except that tax exporting may occur on different tax bases than tax competition. In fact,

while tax competition decreases with the size of the state, tax exporting increases. More generally, tax exporting might not be as great a problem as tax competition in a world with liberalized trading and investment arrangements. If a state economy were a small open one, tax exporting would not apply. The state could not export its tax bill through higher prices to non-residents, and it could not (in the long run) induce non-resident capital owners to pay a share of taxes.

### Vertical Fiscal Externalities

State policies affect not only the state's own budget, but also that of the federal government. This constitutes an externality inasmuch as residents of all states contribute to federal revenues, and is referred to as a vertical fiscal externality (Boadway and Keen 1996, Dahlby 1996). An increase in a state tax rate causes the base to shrink, and reduces the revenue that would otherwise be raised both by the state itself and also by the federal budget. There is little incentive for the state to take account of the latter. The consequence is that the MCPF is perceived to be lower than otherwise, and there is an incentive to overtax. The incentive would be greater the more elastic is the tax base and the higher the federal tax rate (Keen 1998).

The size of the vertical fiscal externality, like the size of the MCPF itself, can be quite large. However, its direction is not entirely clear, and depends on the definition of the tax base. Consider, for example, the payroll tax, although the same argument applies to income taxation. The payroll base is typically defined on a gross-of-tax basis: before-tax labor income. In this case, an increase in the tax rate, while reducing labor supply, might actually *increase* the before-tax wage bill. Thus, federal tax revenues will rise, and the MCPF will be perceived to be too low (Dahlby and Wilson 2003). In contrast, the base for sales and excise taxes are usually defined as net-of-tax consumption. An increase in tax rate will cause the base, and therefore federal revenues, to fall.

There is some empirical evidence that both horizontal and vertical tax externalities apply, though there is some uncertainty about their overall size. The evidence is typically based on empirical studies of the interrelationship between tax rates among states, and between states and the federal government (Besley and Rosen 1998, Hayashi and

Boadway 2000, Esteller-Moré and Solé-Ollé 2001, 2002, Devereux, Lockwood and Redoana 2004, Brülhart and Jametti 2005).

The appropriate response to fiscal externalities is not obvious. A judicious choice of tax types to decentralize to state governments might mitigate horizontal tax externalities, as might tax harmonization arrangements. But, given the advantages of attracting mobile tax bases like capital, firms and entrepreneurs, the danger is that cutting off standard routes for tax competition might simply induce states to use less efficient ways to attract firms, such as labor market policies or social policies (Boadway, Cuff and Marceau 2002). The federal government to take offsetting measures by, say, increasing its own taxes on mobile tax bases (although it may also be reluctant to do so because of international mobility). There might also be some form of internal trade agreement that precludes beggar-thy-neighbor policies by state governments. Here again, the existence of a federal government makes that task much easier than it would be in an economic union. With respect to vertical externalities, the federal government might offset them by a judicious choice of its own tax rates. When the vertical externality is negative, the use of tax deductibility provisions for state taxes might be useful (Dahlby, Mintz and Wilson 2000). But, it is hard to imagine policies that can overcome all the consequences of fiscal decentralization.

Inefficiency might also arise from the strategic interaction between federal and state governments. The traditional fiscal federalism literature took the federal government as the first-mover (Stackelberg leader) able to commit to its policies both with respect to state governments and private agents. In these circumstances, the federal government could induce a second-best allocation of resources by a judicious choice of policies, where the second best might reflect the unavoidability of distortionary fiscal policies or limits imposed on policy instruments. In the absence of commitment, inferior outcomes might occur, and this could influence the optimal assignment of fiscal responsibilities and the extent of decentralization.

Two kinds of problems can be identified. First, states might assume first-mover status if their decisions are longer run in nature and the federal government cannot commit. Thus, if states choose their levels of expenditures first, they may have an incentive to overspend and to run excessive deficits if they anticipate that the federal

government will bail them out with higher transfers. This so-called soft budget constraint problem has been much studied (e.g., Kornai et al 2003, Rodden et al 2003, Wildasin 2004). While general lessons are difficult to draw, it seems that the soft budget constraint is mitigated in federations where the degree of autonomy of state governments is high. Indeed, in decentralized federations, the federal government may be as likely to abuse a first-mover advantage as the states (Boadway and Tremblay 2006). This has been a concern in Canada where it is alleged that the federal government has imposed a vertical imbalance on the federation by precipitously restricting transfers to the provinces as a way to address its own fiscal deficits.

The second problem is that private agents might move before federal and state governments. Given the long-run nature of migration decisions, it is reasonable to suppose that migration might occur before governments choose their policies. As Mitsui and Sato (2001) have shown, *ex ante* migration choices can lead to inefficient agglomeration of households in anticipation of federal equalization transfer responses. To the extent that this occurs, the response is not at all obvious.

### Fiscal Inefficiency

A final source of inefficiency that has been stressed in the fiscal federalism literature is called fiscal inefficiency. It refers to inefficiency in the allocation of productive factors across states resulting from the fact that decentralization leaves them with different fiscal capacities.<sup>8</sup> These differences imply that the ability of state governments to provide net fiscal benefits (NFBs) for their residents differs, where the NFB a person receives is the difference between the monetary value of public goods and services obtained and taxes paid to a state. Typically, NFBs are negative for high-income persons and positive for lower-income persons. But for a taxpayer of a given income, they will be systematically higher in states with greater fiscal capacity. In that case, they will provide an incentive to relocate that is based on purely fiscal considerations rather than on productivity.

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<sup>8</sup> The concept originates with Buchanan (1952), and its full consequences were studied by Boadway and Flatters (1982). For recent discussions, see Mieszkowski and Musgrave (1999) and Boadway (2004a).

NFB differences can be traced to three sources. The first are tax bases that are taxed at source, such as natural resources or business income.<sup>9</sup> Tax revenues from these revenue sources are available for all residents. If two states differ in their per capita access to source-based tax revenues, they will be able to provide different amount of public services so will have correspondingly different NFBs. There will be an incentive for factors to migrate to states with high endowments of, say, natural resources. Recent evidence from Canada suggests that fiscally induced migration is significant (Day and Winer 2005), and its cost can be substantial (Wilson 2003).

Residence-based taxes, such as income and sales taxes, can also give rise to NFB differentials. This will be the case when, for example, they are used to finance expenditures yielding equal per capita benefits. In fact, if residence-based taxes are roughly proportional and are used to provide equal per capita benefits across states, households of all income groups will face differences in NFBs equal to the difference in per capita residence-based tax collections. It is important to recognize that this argument is contingent on state budgets being redistributive. If all state public services were financed on a benefit basis, there would be no NFB differences either across income groups or across states. Only if budgets are redistributive and so NFB differentials exist, will households have an incentive to migrate to states with high per capita incomes, since there, a given level of public services can be provided at lower tax rates.

Third, differences in expenditure needs will give rise to NFB differences. If the take-up rate of public services differs for different household demographic types, the cost of providing a given level of services will be higher for states whose populations consist of a higher proportion of heavy users. States with more school-age children will face higher education costs per capita, those with more elderly will face higher health costs, and so on. Again, this argument presumes that public services are not financed on a benefit tax basis. It is important to note that needs differences do not include differences in the cost of providing public services due to, say, climate, geography, wage levels, etc. It would not be efficient to compensate fully for such cost differences, although typically some compensation would be done on equity grounds as discussed below.

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<sup>9</sup> Source-based tax revenues may be at least partly shifted onto labor, in which case they are indirectly like proportional residence-based taxes. In this case, the arguments with respect to residence-based taxes apply.

Most federations have in place equalization systems whose purpose is in part to undo NFB differences. As mentioned, some systems provide equalization payments on the basis of the ability to raise revenues from both source-based and residence-based taxes (Canada), while others equalize on the basis of needs as well (Australia). In either case, equalization is bound to be inexact in the sense that NFB differentials are not completely eliminated. That is because state governments behave differently, providing different mixes of public services using different tax structures, while equalization is directed at differences in average levels of taxes and public services. The best that can be done is to give states the potential to provide comparable levels of public services at comparable tax rates, and that can be taken to be the objective of actual equalization systems. We return to this again in the next section.

## 6 EQUITY EFFECTS OF FEDERAL DECENTRALIZATION

Assessing the equity effects of decentralized decision-making is inherently difficult. For one thing, equity is a value-laden concept whose meaning can differ for different persons. For another, in a federal setting, there can be no clear demarcation of responsibility for achieving equity objectives. The extent to which federal versus state views of equity should rule is not self-evident. Indeed, assigning responsibility for equity is impossible since all fiscal instruments will have some redistributive impact. Things are made even more complicated by the fact that important public services in areas of health, education and welfare that are typically decentralized to the states are important for achieving redistributive equity. As well, observers may differ in their assessment of how benevolent governments actually are. Those who view governments as being essentially self-serving, or who think they are prone to undertaking too much redistribution, will typically favor more decentralized decision-making as a way of reining in what are seen as adverse redistributive tendencies. Those who take a more benevolent view of government and favor more redistribution will tend to see a larger role for the federal government in undoing what might be adverse effects of decentralization on equity.

Despite these conceptual problems, some progress can be made on the basis of relatively limited value judgments about the ideal amount of redistributive equity that governments should and can aim for. As with efficiency, there are three dimensions to the

equity effects of policy in a federation: horizontal effects, vertical effects and effects arising from different capacities to provide public services.

### Horizontal Effects

Redistributive policy addresses three main objectives. One is the pursuit of *ex post* equality of outcomes, which involves redistribution from the better-off to the less well-off. The tax-transfer system obviously plays an important role in this, although there is a large literature that emphasizes the usefulness of public services as redistribution devices alongside the tax-transfer system.<sup>10</sup> The second is *ex ante* redistribution, which involves providing households with more equal opportunities. Important public services like education and health care are policy instruments used for this purpose. The third is the avoidance of economic risk through social insurance. Here, transfer schemes like disability insurance, the pension system, unemployment insurance, and health insurance are relevant.

Redistributive policies necessarily imply that some types of households are net contributors to the public purse, while others are net beneficiaries. Horizontal effects arise because of the implicit competition that states might engage in to attract the former and repel the latter. Thus, to attract high-income persons and repel low-income ones, state governments might reduce the progressivity of their tax systems, make transfers less generous, and design public service programs so that they provide relatively more benefits to net contributors (for example, by relying on user fees, or by restricting the scope of coverage of public services). Even if migration is not very responsive to such policies, it might be argued that a form of yardstick competition will result in the competing down of decentralized redistributive policies. One state's policy reforms may legitimize similar reforms in other states.

The strength of this argument depends on a number of considerations. As already mentioned, it depends on one's view of the benevolence of government. If one imagines that governments are driven by a desire to increase their size or by special interests, fiscal competition is a way of disciplining them (Edwards and Keen 1996). It also depends on which policy instruments are decentralized, and how much discretion lies at the state

level. States may be precluded from competing down the benefits of public services because of constraints or incentives imposed by the federal government. They may not have access to progressive taxes, such as income and wealth taxes. More important, full fiscal competition among states may not result in reduced redistribution. For one thing, if state objectives are aligned with those of the federal government, the extent of redistribution chosen by states and the federal government taken together need not result in too low a level of redistribution. Indeed, decentralizing redistribution to the state level may actually enhance its effectiveness, since state-specific redistribution may be closer to optimal than a uniform federal redistribution system. That is, given different demographic make-ups in different states, the optimal income tax will have different degrees of progressivity in each state.<sup>11</sup> Finally, migration responses and yardstick competition effects may simply be too small to impair redistributive policy.

## Vertical Effects

The seminal contribution on vertical fiscal externalities argued that their effect would be to reduce the costs of redistribution to the states and thereby encourage it (Johnson 1988). The argument was that the efficiency costs of redistribution consist of the output reduction, and therefore tax revenues forgone, as the tax rate is increased to pay for increased transfers to the poor. To the extent that the federal government, which shares the same tax base, bears part of the reduction in tax revenue, part of the cost of a state's increase in transfers is effectively borne by federal taxpayers in other states. Thus, states will have an incentive to over-redistribute, effectively countering any competitive effects in the other direction. In terms of the MCPF concept, states will under-estimate the true MCPF since they will not take account of the reduction in revenue accruing to the federal government as a result of an increase in their own tax rate.

This argument relies on the state tax base having some elasticity to it. It also relies on the vertical tax externality adversely affecting federal tax revenues, which as we have seen is not necessarily the case if the tax base is defined on a gross-of-tax basis. In any

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<sup>10</sup> Standard references include Boadway and Marchand (1995), Blomquist and Christiansen (1995), and Cremer and Gahvari (1997).

<sup>11</sup> The optimality of different degrees of redistribution in different states can be inferred from the analyses in Immonen et al (1998) and Boadway and Pestieau (2005). These papers show how it is optimal to apply different income tax systems to identifiable ('tagged') groups within the population.

case, the overall effect of decentralization on redistribution in a federation is an open question. Of course, this vertical tax effect applies only in a situation where there is a federal government with fiscal powers. In an economic union, only the horizontal measures will be at work, and there will be not likely be a central authority with the same power as a federal government to undo the effects of these externalities by its own policies of redistribution and grants to the states.

## Fiscal Inequity

The discussion of horizontal and vertical effects on redistribution was essentially a positive one, identifying effects decentralization may have on the extent of redistribution pursued by the states and leaving judgment to the observer. The notion of fiscal inequity involves a value judgment. However, the judgment is a relatively innocuous one in the sense that it is independent of one's views about the ideal extent of redistribution from the better-off to the less well-off members of society. The value judgment underlying fiscal equity is the analog of horizontal equity in a federation: otherwise identical persons ought to be treated comparably by the public sector no matter where they reside. In a federal context, this implies comparable treatment taking account of both levels of government (Buchanan 1950). One way to view this principle is as an implication of social citizenship, which entitles one to equal treatment with other like citizens. In this view, the national 'social welfare function' ought to treat persons identically no matter where they reside.<sup>12</sup>

Horizontal equity will be violated if there are systematic differences in NFBs across states, and these differences can arise for two reasons. For one, as discussed above, decentralization of fiscal responsibilities will leave different states with different capacities to raise per capita revenues using given tax rates, and with different needs for public services. For another, even if they had comparable fiscal capacities, different states

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<sup>12</sup> In fact, even if the national social welfare function treats all persons identically, it is still possible that social welfare maximization will violate horizontal equity. This will occur if households are immobile and state governments provide a public good. The economies of scale that arise from the latter will induce a violation of horizontal equity in an optimum (Boadway et al 2002), similar to the violation of horizontal equity that occurs in the literature on optimal cities (Mirrlees 1972). This is not an issue if states provide public services, which is the norm in the recent literature on fiscal federalism.

would choose different mixes of public services and taxes. This would imply that given types of persons are treated differently in different states.

Given that one of the purposes of decentralization is to allow states the autonomy to choose their own fiscal programs (subject to some desire to achieve at least minimal national standards), it is clearly not feasible or even desirable in a federal setting to achieve full horizontal equity. This would involve overriding the fiscal decisions of the states in order to make them uniform. Instead, a commonly advocated alternative is to strive for what is called fiscal equity. Fiscal equity applies if the first of the above two sources of horizontal equity is eliminated so that all states have the capacity to provide comparable public services and other programs using comparable tax systems, if they so choose. In other words, NFB differentials are eliminated on average by a system of inter-state equalization transfers. The concept of fiscal equity is thus a compromise between the conflicting principles of horizontal equity and the desire for autonomy of state government decision-making.

Some comments about this compromise, which reasonably well captures the approach of most federations, are useful. First, the ideal of fiscal equity, which involves full elimination of differences in fiscal capacity among states, presupposes full horizontal equity as an ideal only to be compromised by the desire to allow states the freedom to choose how to use their fiscal capacities. The ideal of fiscal equity involves a degree of social citizenship or solidarity nationwide that cannot be taken for granted. It may not be the case that a societal consensus exists for such a degree of sharing among states. That is, federations may tolerate some differences in fiscal capacity among states. For example, while Australia and Germany strive for full fiscal equity, Canada does not. Its equalization system makes compensating transfers to provinces with below-average fiscal capacities, but does not 'tax' those above the average. Presumably in an economic union, the degree of consensus for full fiscal equity would be even less.

Second, the concept of fiscal equity has to do with equalizing access to public services, not redistributing private incomes. That is the role of the interpersonal tax-transfer system rather than the intergovernmental one. It may well be that different states themselves adopt different consensus with respect to the optimal degree of

interpersonal redistribution within their borders, and that is perfectly consistent with the concept of fiscal equity among states.

Third, because the concept of fiscal equity is a compromise, the design of an optimal system of equalizing transfers is itself ambiguous. This will be especially true the more heterogeneous are state policies. There is a substantial literature on the design of equalization systems that addresses these issues, but discussion of them would take us too far afield.<sup>13</sup>

Finally, there is a direct parallel between the concepts of fiscal equity and fiscal efficiency. The same NFBs that give rise to fiscal inequity also induce fiscal inefficiency to the extent that households are mobile. There will be a purely fiscal incentive to migrate to states with higher than average fiscal capacities since those states will be able to provide given levels of public services and lower tax rates. It is therefore an interesting feature of fiscal inequity and fiscal inefficiency that the remedy for them is identical: the equalization of NFB differentials. This is one of those rare instances in economics when equity and efficiency prescriptions are aligned.<sup>14</sup>

## 7 TAX ASSIGNMENT AND HARMONIZATION

As we have stressed, state governments deliver important expenditure programs with varying degrees of autonomy. A natural question is to what extent revenue-raising should accompany spending responsibilities. The argument for state revenue-raising authority is often based on considerations of political accountability and autonomy. State governments are alleged to be more accountable to their electorates to the extent that own-source revenues finance their spending. Moreover, states will be more autonomous in their expenditure programs if they do not rely heavily on federal transfers.

These arguments are inherently difficult to evaluate. *A priori* it is not clear why accountability for actual expenditures is higher when funds are obtained from elsewhere. Moreover, as long as marginal funds must be raised by the state, accountability for the

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<sup>13</sup> For an overview, see Boadway (2004a).

<sup>14</sup> Redressing NFB differences by equalization transfers would seem to be relevant for federations but not for economic unions since only in the former case is there a federal government with the power to implement them. There is a literature that suggests that transfers to correct NFB differentials would be undertaken voluntarily by state governments (Myers 1990). This is however based on fairly simple models and its relevance for actual economic unions has yet to be demonstrated.

size of government is possible. At the same time, there may be legitimate arguments in favor of letting states exercise their preferences for tax policy, especially where the mix of bases differs from state to state and where different consensuses are reached about exemptions, incentives, progressivity and the like. In fact, in federations where state governments have discretion over tax policy (USA, Canada), there are significant differences across states. And, in federations where revenue-raising is highly centralized (Germany, Australia), there does seem to be much less autonomy in fiscal decision-making by state governments.

To achieve the benefits of revenue decentralization, states need to have access to at least one broad-based tax capable of raising sizeable amounts of revenue. Reliance on narrow tax bases, such as specific excise taxes, stamp duties and gaming revenues, is prone to skew the tax system in favor of these narrow taxes. The question is: what broad-based taxes are most suitable for decentralization, and what form should the decentralization take? There are really three candidates—income taxation, sales taxation and payroll taxation—each of which is used by state governments in at least some federations. And for each one, there are varying degrees of decentralization that can be adopted, ranging from full and autonomous access to a given base by states to piggybacking on the federal tax and collection machinery. Before considering the merits of each, it is worth recounting the general considerations that seem to be relevant.

The trade-off is between making available a substantial source of revenue to the states to satisfy the need for true fiscal autonomy, while avoiding some of the adverse consequences of decentralized decision-making outlined above. This suggests that bases that are relatively immobile would be preferred to those that contain highly mobile elements, given the possibility of interfering with the efficient allocation of production across states. The case for decentralization is less for bases that are used to achieve national objectives, such as redistribution goals that are deemed to be of national interest, and for bases that are more unevenly distributed among states. Bases that are harder to administer because they involve significant cross-border flows are less preferred for decentralization.

The strength of many of these arguments depends upon the ease with which adverse effects of decentralization can be offset by measures of harmonization, by an

accompanying set of interstate transfers, or by a common tax-collecting authority. Such offsetting measures are easier to implement to the extent that there is an influential federal government, especially one that also occupies those tax bases to which the states are given access. One of the lessons of fiscal federalism is how difficult it is to achieve fiscal harmonization in the absence of federal leadership or intervention. Where states are the sole occupants of tax bases, tax harmonization is rare. Even where tax bases are co-occupied, tax harmonization is facilitated when the federal government maintains a predominant share of the tax base. Given these factors, let us consider in turn the three main broad tax bases as candidates for decentralization to the states.<sup>15</sup>

## Income Taxation

Income taxes include both personal and corporate components, and different arguments apply to each. The personal income tax is often touted as the one most suitable for achieving redistributive objectives. Although there is some debate about the extent to which the income tax is actually very redistributive, the increasing tendency in some countries to deliver transfers by refundable income tax credits enhances this argument. Decentralizing the personal income tax to the states runs the risk of compromising national redistributive objectives, although here again there may be some argument for letting states exercise their residents' preferences for redistribution.

Perhaps a stronger argument against full decentralization of personal income tax authority is the potential for affecting the allocation of mobile factors of production. The income tax base will include a broad set of activities, from employed labor, which tends to be less mobile, to firms and entrepreneurs, which tend to be more mobile, to financial capital income, which tends to be highly mobile. If states have discretion to structure their income taxes to favor mobile activities (by using preferential rates, tax credits, exemptions, etc.), they will be prone to engage in tax competition. To the extent that tax competition has unfavorable consequences, this would be a disadvantage.

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<sup>15</sup> For a different view of tax assignment, see McLure (2001). He argues that the principle of benefit taxation should play the most important role in determining which taxes should be assigned to state and local governments, a view that is consistent with the more general principle of assigning redistributive functions to the federal government. In decentralized federations, this is not easy advice to follow given that so many redistributive programs on the expenditure side are delivered by state governments.

With respect to capital income, a further consideration applies. Financial capital is notoriously difficult to monitor, and states are likely to be at a disadvantage relative to the federal government. This argues against full state administration of income taxation. By the same token, unincorporated businesses may engage in significant cross-border transactions, both real and financial. This may enable them to shift profits from one state to another, increasing the monitoring problems of state tax administrations. Indeed, states may even choose to adopt conflicting rules with respect to the treatment of income of their residents generated outside their states, and with respect to non-resident income generated within their states, unless this is ruled out by constitutional proscription on discriminatory behavior or negotiated codes of conduct. Either double taxation or non-taxation of certain forms of income can then apply. Similar problems may arise with the treatment of tax-sheltered income, such as pension and housing assets. Most tax systems provide some relief for acquiring these types of assets. The portability of such relief across state borders would be difficult to ensure in a decentralized income tax system. Thus, the mobility of population, which can be a virtue of federations, is compromised.

Finally, personal income tax bases may be highly unevenly distributed across states. Decentralizing them gives rise to the problems of fiscal inefficiency and fiscal inequity mentioned earlier. To the extent that these differences in fiscal capacity remain uncorrected, this would be a significant disadvantage of decentralizing personal income tax authority to the states.

In practice, many of these adverse effects of decentralizing personal income taxation can be avoided. One potentially attractive way, yet to be exploited in federations, would be to borrow an innovation from various European countries, the dual income tax. The dual income tax effectively separates personal capital income taxation from labor income taxation by applying a separate schedule to each. While there are a number of advantages to dual income taxation in a unitary nation, the advantages are even greater in federations.<sup>16</sup> The problems of state administration of capital income taxes could be avoided by assigning the latter to the federal government, and restricting states to the labor income component. Not only would the advantages of dual income taxation be reaped, but also problems with decentralizing capital income taxation would be avoided.

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<sup>16</sup> The advantages of dual income taxation are outlined in Sørensen, (1998), and Boadway (2004b).

Failing adoption of a dual income tax system, decentralization of personal income taxation could be accompanied by appropriate harmonization measures, facilitated by a federal government. Revenue-raising authority can be made available to the states without compromising national efficiency and equity by restricting the extent of state authority over the base and possibly the rate structure, by instituting harmonization measures, by maintaining a single tax-collecting authority, and by accompanying revenue-raising with an accommodating set of fiscal transfers. Virtually full harmonization can be obtained by state piggybacking on the federal base and rate structure. States choose their own rates to be applied either directly to the base or as surtaxes on federal tax liabilities, with a single tax authority collecting both federal and state tax liabilities. Such a system ensures a uniform personal tax system, with the only divergence being different state tax rates, and even this divergence can be minimized by an effective system of equalization transfers. Although states would have discretionary revenue-raising authority, they would have little say in tax policy more generally (i.e. the choice of base and rate structure). Also, since they would not collect their own revenues, there may be concerns about the efficacy with which they receive taxes collected on their behalf by the central tax administration.

For these reasons, even in federations where surtax systems are available to the states, not all states may sign on, despite the cost savings of having their taxes collected for them. Moreover, given the option of states to opt out, there is pressure for the federal government to enable states to implement various state-specific measures, such as special exemptions, deductions and credits that can compromise the system. These pressures seem to be greater the smaller the tax revenue share of the federal government. The Canadian case is instructive here. As the share of federal income tax revenues has gradually declined, pressures from the provinces for more discretion have increased. Initially this took the form of an increasing number of special measures, but it has recently culminated in an agreement to allow provinces to move from a surtax system to setting their own rate structures. Provided they maintain the federally defined base, the federal government continues to act as tax collector for them. This system clearly sacrifices uniformity in rate structures while retaining the advantages of a single tax-collecting authority and a common base. As the Canadian case has shown, the first

provinces to opt for the new system also opted for a flatter rate structure, either reflecting less taste for redistribution or tax competition for higher income taxpayers. In the case where provinces have chosen not to participate in formal tax collection arrangements with the federal government, their bases have diverged from that of the federal government. At least some of the divergence reflects a desire to attract economic activity from elsewhere.

A minimal requirement for harmonization even in the absence of a formal harmonization scheme is that personal income be allocated across states according to a consistent set of rules. The problem arises mainly because of capital income that is earned by one state's residents in other states. Within federations, the most common rule applied is the residency rule. This requires agreeing on the state residency of every taxpayer, usually by some relatively arbitrary method. It also requires an effective system of information exchange to ensure that out-of-state capital income is reported to the state tax authority. Obviously, this too is most effective under a single tax-collecting authority.

Matters are not so simple with the corporate income tax. Corporate activity by its nature is both mobile and spans state borders. Moreover, corporate income tax revenues are much less important than those of the main broad-based taxes. This makes the case for decentralizing this component of income taxation far less compelling. There are many opportunities to use the corporate tax as a device strategically to attract businesses to one's state. Competing using the corporate tax rate may be the most innocuous of these. More distortionary methods include using the base or rate structure to favor particular types of business, or adopting allocation rules that encourage corporations to shift profits into one's jurisdiction.

These problems will actually be mitigated to the extent that capital is mobile. In the extreme case, where capital is perfectly mobile and states are price-takers in capital markets, taxes on capital are effectively shifted back onto less mobile factors, such as labor. In these circumstances, states acting on their own will be less inclined to use corporate taxation. On the other hand, since business investment tends to be less mobile once in place, governments have an incentive to treat it as a fixed factor and tax it. Tax rates end up being too high, resulting in a disincentive to invest in the state. Of course, this problem applies to federal corporate taxation as well.

A dual income tax system would attenuate these problems, for then there would be little argument for state corporate taxes. If personal capital income were taxed federally, it would be natural to restrict corporate taxation to that level as well, given the desire to integrate the two taxes and make the distinction between corporate and unincorporated businesses seamless. Despite that, decentralized federations do allow state corporate taxes, so harmonization remedies need to be adopted. Full tax harmonization in which states piggyback onto the federal base (and rate structure, if one exists) is ideal, assuming as well that there is a single tax-collection administration with a reasonable allocation formula. The allocation formula would divide up national corporate income among states to reflect roughly the level of income-earning activity that takes place in the state, while at the same time precluding unproductive forms of tax shifting, such as transfer pricing and the use of financial transactions.

Given the perceived advantages to the states of using the corporate tax system as a device for achieving state policy objectives, they may be reluctant to have access only to surtaxes. The advantages of having their taxes collected by the federal government may not compensate for the loss of tax discretion. This has been the experience in Canada, where a formal corporate tax harmonization scheme has been in place for some time, and where provinces have been allowed some discretion in setting their own surtaxes, exemptions and credits. In fact, the three largest provinces where three-quarters of corporate taxable income is generated do not participate. A similar situation applies in the USA. This leaves states plenty of leeway for engaging in distortionary tax competition for corporate income. This indicates that the problem really is one of tax assignment.

If states are allowed to have access to the corporate tax, it seems difficult to compel them to participate in formal harmonization arrangements, even if the federal government maintains a dominant share of tax revenues. And, harmonization arrangements seem to be difficult to negotiate among state governments. Similar arguments may also apply to related state-level taxes, such as capital taxes and resource taxes, both of which are widely used in Canada and neither of which is harmonized.

In any case, corporate tax harmonization may not be a panacea. The more harmonized are state business taxes, the less discretion will states have to use those taxes as instruments for attracting business. Unfortunately, this does not negate the urge to

compete for businesses. Rather, what it might do is induce them to use less direct, but possibly more distortionary, means of competing. Thus, they may use labor market policies, infrastructure, or concessionary access to local markets or procurement to attract firms. In other words, state-level corporate tax competition, within bounds, may be a good thing, especially if the federal government also has access to the corporate tax base and can undo some of the adverse effects of tax competition on the overall level of business taxation. Of course, one may still want measures to be in effect that take out of the states hands some of the more discriminatory and distortionary forms of tax competition (including the formation of tax havens).

One avenue that might be used to address the adverse effects of interstate competition is an interstate agreement akin to a free trade agreement that sets out rules for non-discriminatory and protective policies. Such an agreement has been negotiated in the Canadian federation, although its effectiveness has been undermined by the absence of a dispute settlement mechanism. An option might be for a central authority to act as enforcer, but that is often difficult to negotiate in a decentralized federal setting.

## Sales Taxation

The sales tax would seem to be a good candidate for state use. It is a broad-based tax whose base is relatively evenly distributed across states, and is a revenue-raising component of the tax mix, rather than one used for redistributive purposes. Moreover, the usual sales tax base—final consumer sales—is relatively immobile across borders. Mobility is achieved either by cross-border sales or by residential relocation, neither of which is likely to be sensitive to the kinds of rate differences observed across borders.<sup>17</sup> States may well choose to adopt different tax structures, including different sets of exempt goods, and different reduced-rate products. But, these mainly affect intrastate redistribution patterns rather than interstate resource allocation. Given this, when states adopt single-stage retail sales taxes, there is virtually no imperative for harmonization.

In practice matters are not so simple, because the most preferred sales tax system is a value-added tax (VAT). A VAT has three significant advantages over the single-stage

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<sup>17</sup> Of course, matters may change if and when electronic sales become prevalent so that cross-border sales are more the norm (McLure 1999).

options. First, the VAT is less prone to evasion than single-stage taxes since auditors have credit slips available for purchases at earlier stages, at least in principle. Second, VAT systems can treat domestically produced products on a par with those produced abroad. Under a destination base, all sales taxes that have been levied on the production of exports can be exempted, and imports can be fully taxed. Under a single-stage tax, it is difficult to purge exports of tax payments incurred on inputs at earlier stages of production. Third, and related, under a VAT, all taxes that have been paid on business inputs are fully credited, thereby putting all industries on an equal footing. Under a single-stage tax, it is difficult to avoid having businesses pay taxes on their inputs, some of which are also purchased by consumers for final use. This can represent a significant source of distortion. It is therefore not surprising that most countries have adopted a VAT form of taxation at the national level, despite the fact that it brings many more taxpaying firms into the system.

The problem is that avoiding these inefficiencies using a state VAT system is administratively challenging in a federation where there are no border controls. Firms operating in the national economy inevitably engage in transactions with producers and households in neighboring states. Under a strict destination VAT, sales to firms in other states would be zero-rated in the state of origin, but purchasing firms would be liable to pay tax on their purchases to their own state government.<sup>18</sup> These taxes would then be creditable on sales in the next stage of production. Alternatively, selling firms could be made liable to pay taxes in the relevant state. Thus, firms in one state selling to purchasers in another state would have to charge taxes at the rate applicable in the destination state, and pay the proceeds to the latter. Similarly, sales to final users in other states would either have to be taxed at the rate applicable in the destination state (and tax revenues paid there), or zero-rated with the purchaser being liable to pay the relevant tax in the state of destination. In the absence of border controls, this system is difficult to enforce. In principle, there is no reason why such a system cannot be operated by the usual self-reporting method applied to a national VAT. However, when different states have differing VAT systems, and also when the state VATs may exist alongside a federal

VAT, compliance becomes complicated for firms, and so do monitoring and collection costs to the state. Moreover, if the states operate their own VAT systems, there is an incentive for auditing to be biased in favor of state tax collections and against credits due to other states.

Some options to the strict destination system exist.<sup>19</sup> One option is to have the states adopt an origin basis whereby products are taxed according to where they are produced rather than where they are consumed. This system has the disadvantage that production patterns across states might be distorted. Another, more attractive, option is the so-called *deferred-payment method* (Bird and Gendron 2001). Cross-border sales to registered firms are zero-rated in the state of origin, and exempted by the purchasing firm in the destination state. The importing firm then collects tax in the destination state at the next stage of production, but claims no input tax credit since no tax was paid. This ensures that full taxation at the destination state's rate is paid on the value of the product. If the sale is to a household, the household becomes responsible for paying the tax in the state of residence, as is typically the case for cross-border shopping under single-stage state sales tax systems. This system has the administrative advantage that resident firms need only deal with the tax authority in their state of residence.

Nonetheless, although the deferred-payment method avoids the need to collect taxes on inter-firm sales across state borders, it might still be viewed as complicated from a compliance point of view since firms operating in more than one state are required to abide by different tax systems in different states. In fact, because of the chain of crediting on input taxes, the tax that is ultimately paid is determined by the rate applying on final sales in the state of residence. This suggests that matters could be simplified considerably for firms without compromising final tax liabilities by agreeing to a common tax rate on inter-firm purchases regardless of the state. This is effectively what is done in the VIVAT system proposed by Keen and Smith (2000) and reviewed in Genser (2003). The VIVAT would apply to all inter-firm sales within and across states, while each state would

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<sup>18</sup> Zero-rating sales to firms in other states rather than exempting such sales is important since the former preserves the ability of the selling firm to claim input tax credits on its purchases. This ensures that cross-border sales are fully purged of origin state taxes, as is required under the destination principle.

<sup>19</sup> The only relevant options are those that preserve state revenue-raising autonomy by allowing states to set their own tax rates. Creating a common VAT system and allowing the states to share in the tax revenues, as is the case in Germany and Australia, does not satisfy this since states have no revenue-raising authority.

reserve the right to set its own tax rate on final sales. Such a scheme would be workable in a setting where there is no central tax-collecting authority, although the presence of several state tax authorities each responsible for collecting taxes within their own state would make compliance, collection and auditing complicated and perhaps imperfect. For example, the possibility of zero-rating on sales to out-of-state firms offers a vehicle through which fraudulent sales to consumers can be made tax-free. If separate state tax-collecting authorities exist, the ability to monitor such transactions is impaired. As well, there is a need to allocate the revenues collected under the VIVAT.

The main benefit of harmonization would come from a single tax-collection authority encompassing all states, and where relevant the federal government. Although compliance with several different state VATs with possibly different rates and exemptions would be complex, at least the possibility of dealing with a single tax authority would simplify matters. There would also be enormous tax auditing advantages to the tax-collection authority itself. Nonetheless, as long as states can exercise full discretion over the rate structure, the system would be complicated.

Because of the perceived complexity of state VAT systems, when sales taxation is decentralized to the states in federation, it is usually single-stage sales taxes that are used. This is clearly unsatisfactory for the reasons mentioned above. There are some exceptions (some Canadian provinces, Brazil), but the general lessons from these experiences are mixed. The most promising approach that has been adopted is the Canadian case, although it is so far quite limited. There, a so-called dual VAT system operates between the federal government and the province of Quebec. Both governments choose their own tax rate, and have agreed to virtually a common base. The deferred-payment method applies to inter-provincial sales between firms. Most important, a single tax-collecting authority applies (in this case, the provincial authority). The system apparently works reasonably well. But, it is the only province that operates a discretionary VAT. The complexity of the system would multiply as more provinces are added.<sup>20</sup>

This suggests that a more restrictive form of tax harmonization might be preferable, perhaps one akin to income tax harmonization arrangements. For example, the federal

government might offer a single tax-collecting authority to states whose VAT systems mimic the base, exemptions and structural features of the federal system. This would give states the discretion to apply their own rates to the common base, thereby reducing tax complexity. As with income tax harmonization, the implementation of such a system may require not only the connivance of the federal government, but also federal dominance of the sales tax field.

## Payroll Taxation

Relative to sales and income taxation, payroll taxation is ideal for decentralizing to the states. Its base is broad, essentially equivalent to resident's consumption. It is relatively easy to collect by payroll deduction. Cross-border transactions are limited to commuting workers. Potentially, mobility of the base might be a deterrent since firms, which are mobile, create jobs. On the other hand, if the tax is broad-based, this problem can be overstated. It is likely that a broad-based payroll tax is largely borne by workers themselves, at least in the long run, and this is confirmed in empirical studies. It is not a tax that is used for redistributive purposes, although if the dual income tax were adopted, progressive wage taxation would be the norm. Moreover, given its relative simplicity and the fact that there is no ambiguity associated with allocating the tax base across states, it is not crucial to harmonize payroll taxation.

Payroll taxes are widely used as sources of revenue, including by state-level governments, but they are typically earmarked to finance social insurance programs. The reluctance to use payroll taxation for general revenues is puzzling to an economist (Kesselman 1997). It seems to be based on a notion that payroll taxes are 'taxes on jobs'. This is only true in the narrow sense of their immediate impact. To the extent that the tax applies generally to all payrolls, and that the elasticity of demand for labor is likely to be considerably greater than the elasticity of supply, the incidence of payroll taxation is likely to be largely borne by workers. In fact, there is no more reason to view the payroll tax as a tax on jobs than either a general consumption tax or an income tax. Despite this

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<sup>20</sup> It has also been suggested that for such a system to operate effectively and without sales to final consumers masquerading as inter-firm sales, some tax must be levied on all inter-state sales. The CVAT system discussed by McLure (2000) is one approach. It too presumes a single tax-collecting authority.

view, the use of the payroll tax as a general source of revenue by state governments is relatively limited, even in federations where states have full access to the tax.

## Other Taxes

While access to a broad source of tax revenue is important for achieving substantial fiscal autonomy at the state level, there are various narrower taxes that are suitable for sub-national use. A common one is the property tax, which is typically used at the sub-national level. This partly reflects the fact that the base—real property—is immobile. At the same time, a tax on property can be viewed to some extent as a benefit tax for local services enjoyed by property owners. Perhaps more important is the fact that from an administrative point of view, the collection of the property tax is almost necessarily decentralized. Unlike most other taxes, which are assessed on the basis of self-reporting, the property tax is administered by a system of property assessment that is done by local agencies. These can be most effectively controlled by lower-level political jurisdictions.

Somewhat more controversial are resource taxes. Natural resource endowments provide a potentially efficient source of tax revenues since part of the return from exploiting resource properties is a pure rent. The case for decentralizing them is mixed. On the one hand, resource properties are location-specific, and state governments may be more effective than the federal government at managing their development. However, resource properties are also often unequally allocated across the federation, so decentralizing access to resource revenues to the states can give rise to fiscal inefficiency and inequity. For example, in the Canadian case, the fact that resource taxation is in the hands of the provinces puts enormous pressure on the equalization system. State responsibility for resource taxation can also induce fiscal competition insofar as resource development requires large amounts of capital.

There is a myriad of other narrow taxes and sources of revenues, some of which are reasonable for state use, others of which states are induced into using because of limited access to broader tax bases. Specific excise taxes are often used by state governments. In some cases, such as taxes and licenses on petroleum products and motor vehicles, they are easy to tax from an administrative point of view. In others, such as tobacco and alcohol taxes and taxes on communications and other utilities, they provide an inelastic

source of revenue. Gambling revenues, which are also effectively a type of excise tax, also fall into this category. Some specific taxes, like those on hotel and restaurants, seem to be motivated partly by tax exporting considerations. States and their municipalities also tend to use various sorts of user fees to finance services that are private in nature.

There are certainly cogent arguments for including some of these narrow-based taxes in the tax mix. They can serve as devices for mitigating externalities, or for covering the social costs of certain types of consumption. However, there is a potential for excessive reliance on them if states have limited access to more suitable broad-based sources of revenue. Against that, because of cross-border shopping possibilities, tax competition may make them less reliable as discretionary sources of revenue. Moreover, if the intent is to make the states responsible for managing social costs through corrective taxation, their ability to do so may be compromised. The upshot is that, despite the prevalent use of narrow taxes by state governments in many federations, a case can be made that their role should be secondary to broad-based taxation.

## 8 LESSONS FOR THE EU?

Federations are all different. Their degrees of fiscal decentralization, especially on the revenue-raising side, differ widely. The amount of autonomy exercised by state governments varies from one federation to another. The extent to which the federal government exercises influence over the states, and the manner in which it does so, whether through the spending power or more direct means, also varies. And, the extent to which state tax and spending policies are harmonized, so that efficiency and equity in the internal economic union are achieved, also differs. Nonetheless, there are some key ingredients common to many federations, which are consistent with the normative principles of fiscal federalism that serve as the defining principles of federations.

We have argued that from an economic perspective, good federal systems of governance should enable the benefits of fiscal decentralization to be achieved without unduly compromising national objectives of efficiency and equity. This leads to the provision of important public services and targeted transfers being assigned to state (and local) governments, as well as significant but varying revenue-raising responsibilities. In the absence of any countervailing measures, this decentralization would lead to various

potential inefficiencies and inequities. Different states would have different fiscal capacities to provide public services, leading to fiscal inefficiency and fiscal inequity. There would be purely fiscal incentives for households and businesses to prefer to reside in high-fiscal-capacity states because of the superior NFBs that they can provide. And, for those who do not migrate, otherwise comparable citizens would be treated quite differently by government, so that national horizontal equity—a concept akin to full social citizenship—would be violated.

Perhaps as important, the manner in which states choose to exercise their spending, taxing and regulatory responsibilities may well violate norms of national equity and efficiency. Much of the most effective redistribution policy takes place on the spending side of the government budget, and some of the important policy instruments used for that purpose are the responsibilities of the states. To the extent that redistributive equity is an objective of the federal government, it will have an interest in the manner in which the states choose to exercise that responsibility. It will want to ensure that national norms and standards of redistributive equity are achieved in important programs in areas of health, education and welfare, all of which are legislated at the state level. Of course, state equity objectives may well be aligned with national ones. Nonetheless, fiscal competition in a decentralized setting may compromise achieving national social protection standards. As well, decentralized decision-making is likely to cause distortions in the efficiency of the internal economic union. States may actively choose their policies to attract favorable households and businesses to their states. More generally, decentralized choices of tax and spending structures will inevitably result in fiscal systems that are not harmonized, leading to unnecessary impediments to the free flow of products and factors of production among states.

In a federation, the antidote to these adverse consequences of decentralization is the federal government, and it achieves this mainly by the use of the spending power and by maintaining a dominant share of revenue-raising responsibilities. The spending power is used to make unconditional equalizing transfers to erase differences in state fiscal capacities, as well as to make conditional transfers, typically of a bloc form, to induce the states to design their programs in ways that do not violate national efficiency and equity norms. Dominance in important tax fields facilitates the harmonization of tax-transfer

systems, while retaining state responsibility for the size and disposition of their own budgets. It also reduces the size of fiscal disparities that would result if states were responsible for financing their spending responsibilities entirely from their own sources.

Together, the extensive decentralization of spending responsibilities, the need for federal-state transfers and the desire for federal dominance in revenue-raising lead to a significant vertical fiscal gap in most federations. This reinforces the authority of the federal government and enables it to use moral suasion as a further means of encouraging the states to act in a coordinated manner. To the extent that this is the case, more explicit direct mechanisms for inducing cooperative state behavior such as mandates, regulation, disallowance of state legislation and even negotiated agreements can be avoided. As such, detailed codification of national norms and standards are not necessary: general principles can be used instead.

The potential price that is paid for federal fiscal dominance is that it will be used in such an intrusive way that some of the benefits of fiscal decentralization are not realized. Some protection from this might be afforded by the constitution, which may limit the extent to which the federal government may intrude into state legislative areas of responsibility. But, constitutions are not very flexible instruments for this purpose. In practice, political accountability is the ultimate arbiter.

Not surprisingly, the extent to which federations are able to achieve the virtues of decentralization without compromising the efficiency and equity of the nation as a whole varies among federations, and therein may lie the relevant lessons for economic unions. In the more decentralized federations, efficiency in the internal common market remains an unfulfilled objective. Intergovernmental agreements have been ineffective in eliminating distorting behavior by state governments, and federal oversight has proven to be too blunt an instrument to overcome that. Thus, states discriminate in procurement policy, hiring policies, access to public services, regulations and taxation. Success with the harmonization of tax and spending programs has been mixed. Sales and excise taxes typically are not coordinated in decentralized federations (Canada, US). Greater success has been achieved in the harmonizing personal and corporate income tax taxes, but even here, agreements have proven to be quite fragile unless the federal government maintains a dominant share of the tax room. Moreover, even when harmonization occurs, empirical

evidence suggests that tax competition is a significant factor, especially where tax bases are highly mobile. Where taxes are completely decentralized (natural resources, property taxes), harmonization of any kind has been elusive.

Perhaps the most important function of the system of federal-state fiscal relations is the equalization of fiscal capacities, and even here the results are imperfect. In decentralized federations where significant disparities exist, equalization has at best been able to mitigate the disadvantage faced by the least well-off states. But disparities remain, and these have resulted in significant fiscally induced migration of households and businesses from state to state. Federal government transfers have also proven to be somewhat unpredictable and even volatile. Indeed, worries about soft budget constraints in decentralized federations have not materialized. Where state governments have unfettered discretion in revenue-raising, standard disciplines of capital markets have been sufficient to preclude soft budget constraints in the absence of controls on borrowing or spending (Vigneault 2006). Indeed, if anything, federal governments have imposed excessively hard budget constraints in the face of fiscal shocks. Thus, in the Canadian case, observers have argued that the federal government has effectively passed its deficits on to the provinces by reducing transfers in the face of fiscal downturns. In the case of the Canadian federation, there has been much soul-searching about whether there should be more institutional cooperation between the federal government and the states, that is, whether the federation can take a lesson from the European Union rather than the reverse.

An economic union shares some important features with federations. Markets for products and factors are highly integrated, so goods and services, capital and to a large extent labor are able to move across borders without controls or trade restrictions. Moreover, nations within an economic union have the discretion to enact fiscal policies for their residents, typically constrained only by economic forces and whatever agreements govern membership in the union. Thus, similar problems of fiscal externalities, fiscal inefficiency and fiscal inequity will arise.

However, there are also some major differences. Citizenship in an economic union applies at the national level, not at the level of the union. There is therefore not the same imperative to provide equal treatment to all members of the economic union no matter where they reside. Fiscal equity does not carry the same social weight, so differences in

the ability to provide public services at given tax rates are tolerated, as are differences in standards of redistributive equity. Indeed, union-wide equity may have relatively little weight as a policy (or constitutional) objective relative to efficiency. This in turn leads to fiscal inefficiency and possibly some enhanced incentives for nations to engage in aggressive fiscal competition. Perhaps more important, there is no fiscally strong and independent central government that can enact union-wide policies and exercise leverage over nations so that the effects of their policies on the inefficiency of the economic union are muted. Substantial policies that are applied at the level of the economic union must typically be agreed to by consensus among member nations, and this limits the extent to which equalizing transfers can be made.

The implication is that the key features of federations cannot be replicated in an economic union. Differences in fiscal capacity cannot be undone by a system of equalization. This, combined with free mobility of labor among member nations, implies that the potential exists for fiscally induced migration of households and businesses, and therefore fiscal inefficiency. Nor can union-wide standards of social protection be encouraged by conditional grants and facilitated by equalizing transfers. Thus, the common rights of social citizenship that are enjoyed by residents of all states in most federations cannot be achieved among citizens of all member nations in the EU. Federations rely heavily on the federal spending power to be able to attain both fiscal equity and fiscal efficiency, and to ensure comparable levels of social protection. There seems to be no such substitute in the EU.

Matters of common interest over which there might be more agreement are those that involve mutually beneficial gains, such as the harmonization of tax systems. Here, the lessons from federations are no more sanguine. Effective harmonization of state tax systems in federations has typically required a federal government that occupies a dominant share of tax bases. The single most important aspect of tax harmonization—a single tax-collecting authority—seems to be difficult to achieve without a dominant federal government. Where states themselves occupy the lion's share of tax room for particular sources, harmonization rarely occurs.

That is not to say that something cannot be learned from the form that harmonization takes in federations. On the contrary, income tax harmonization that

combines a common base and with state discretion over rate structures is a useful model for the EU. However, even then, the full benefits are unlikely to be achieved without also having a single tax-collection administration. Similarly, in those few instances in which VAT harmonization has been achieved in federations, the forms used are workable in the EU. But again, the need for a single tax-collecting authority is evident, as is the importance of the role of the federal government.

In short, in the absence of a central government with real fiscal clout, it is hard to imagine the EU replicating the most important defining features of a federation: comparable levels of social protection and a relatively efficient internal economic union, combined with high levels of discretion for member states.

## REFERENCES

- Besley, Timothy J. and Harvey S. Rosen (1998), 'Vertical Externalities in Tax Setting: Evidence from Gasoline and Cigarettes,' *Journal of Public Economics* **70**, 383-98.
- Bewley, Truman F. (1981), 'A Critique of Tiebout's Theory of Local Public Expenditure,' *Econometrica* **49**, 713-40.
- Bird, Richard M. and Pierre-Pascal Gendron (2001), 'VATs in Federal Countries: International Experience and Emerging Possibilities,' *Bulletin for International Fiscal Documentation* **55**, 293-309.
- Blomquist, Soren and Vidar Christiansen (1995), 'Public Provision of Private Goods as a Redistributive Device in an Optimum Income Tax Model,' *Scandinavian Journal of Economics* **97**, 547-67.
- Boadway, Robin (2001), 'Inter-Governmental Fiscal Relations: The Facilitator of Fiscal Decentralization,' *Constitutional Political Economy* **12**, 93-121.
- Boadway, Robin (2004a), 'The Theory and Practice of Equalization,' *CESifo Economic Studies* **50**, 211-54.
- Boadway, Robin (2004b), 'The Dual Income Tax System — An Overview,' *CESifo DICE REPORT, Journal for Institutional Comparisons* **2**, 3-8.
- Boadway, Robin W. and Frank R. Flatters (1982), 'Efficiency and Equalization Payments in a Central System of Government: A Synthesis and Extension of Recent Results,' *Canadian Journal of Economics* **15**, 613-33.
- Boadway, Robin and Michael Keen (1996), 'Efficiency and the Optimal Direction for Federal-State Transfers,' *International Tax and Public Finance* **3**, 137-55.
- Boadway, Robin and Maurice Marchand (1995), 'The Use of Public Expenditures for Redistributive Purposes,' *Oxford Economic Papers* **47**, 45-59.
- Boadway, Robin and Pierre Pestieau (2005), 'Tagging and Redistributive Taxation,' mimeo.
- Boadway, Robin and Jean-François Tremblay (2006), 'A Theory of Fiscal Imbalance,' *Finanzarchiv*, forthcoming.
- Boadway, Robin, Katherine Cuff, and Nicolas Marceau (2002), 'Inter-Jurisdictional Competition for Firms,' *International Economic Review* **43**, 761-82.

- Boadway, Robin, Katherine Cuff and Maurice Marchand (2002), 'Equalization and the Decentralization of Revenue-Raising in a Federation,' *Journal of Public Economic Theory* **5**, 201-28.
- Breton, Albert (1965), 'A Theory of Government Grants,' *Canadian Journal of Economics and Political Science* **31**, 175-87.
- Browning, Edgar K. (1976), 'The Marginal Cost of Public Funds,' *Journal of Political Economy* **84**, 283-98.
- Buchanan, James (1950), 'Federalism and Fiscal Equity,' *American Economic Review* **40**, 583-99.
- Buchanan, James (1952), 'Central Grants and Resource Allocation,' *Journal of Political Economy* **60**, 208-17.
- Brühlhart, Marius and Mario Jametti (2005), 'Vertical versus Horizontal Tax Externalities: An Empirical Test,' mimeo.
- Cremer, Helmuth and Firouz Gahvari (1997), 'In-Kind Transfers, Self-Selection and Optimal Tax Policy,' *European Economic Review* **41**, 97-114.
- Dahlby, Bev (1996), 'The Distortionary Effect of Rising Taxes', in W. R. Robson and W. Scarth (eds.) *Deficit Reduction: What Pain; What Gain?* (Toronto: C.D. Howe Institute), 43-72
- Dahlby, Bev (1996), 'Fiscal Externalities and the Design of Intergovernmental Grants,' *International Tax and Public Finance* **3**, 397-411.
- Dahlby, Bev and Leonard S. Wilson (2003), 'Vertical Fiscal Externalities in a Federation,' *Journal of Public Economics* **87**, 917-30.
- Dahlby, Bev, Jack Mintz, and Sam Wilson (2000), 'The Deductibility of Provincial Business Taxes in a Federation with Vertical Fiscal Externalities,' *Canadian Journal of Economics* **33**, 677-94.
- Day, Kathleen M. and Stanley L. Winer (2005), 'Policy-induced Internal Migration: An Empirical Investigation of the Canadian Case,' mimeo.
- Devereux, Michael P., Ben Lockwood and Michela Redoana (2004), 'Horizontal and Vertical Indirect Tax Competition: Theory and Evidence from the USA,' mimeo.
- Edwards, Jeremy S.S. and Michael J. Keen (1996), 'Tax Competition and Leviathan,' *European Economic Review* **40**, 113-34.

- Esteller-Moré, Alejandro and Albert Solé-Ollé (2001), 'Vertical Income Tax Externalities and Fiscal Interdependence: Evidence from the US,' *Regional Science and Urban Economics* **31**, 247-72.
- Esteller-Moré, Alejandro and Albert Solé-Ollé (2002), 'Tax Setting in a Federal System: The Case of Personal Income Taxation in Canada,' *International Tax and Public Finance* **9**, 235-57.
- Genser, Bernd (2003), 'Coordinating VATs Between EU Member States,' *International Tax and Public Finance* **10**, 735-52.
- Hayashi, Masayoshi and Robin Boadway (2000), 'An Empirical Analysis of Intergovernmental Tax Interaction: The Case of Business Income Taxes in Canada,' *Canadian Journal of Economics* **34**, 481-503.
- Immonen, Ritva, Ravi Kanbur, Michael Keen and Matti Tuomala (1998), 'Tagging and Taxing: The Optimal Use of Categorical and Income Information in Designing Tax/Transfer Schemes,' *Economica* **65**, 179-92.
- Johnson, William R. (1988), 'Income Redistribution in a Central System,' *American Economic Review* **78**, 570-73.
- Kanbur, Ravi and Michael Keen (1993), 'Jeux sans Frontières: Tax Competition and Tax Coordination when Countries Differ in Size,' *American Economic Review* **63**, 877-92.
- Keen, Michael J. (1998), 'Vertical Fiscal Externalities in the Theory of Fiscal Federalism,' *International Monetary Fund Staff Papers* **45**, 454-85.
- Keen, Michael, and Maurice Marchand (1997), 'Fiscal Competition and the Pattern of Public Spending,' *Journal of Public Economics* **66**, 33-53.
- Keen, Michael and Stephen Smith (2000), 'Viva VIVAT!,' *International Tax and Public Finance* **7**, 741-51.
- Kehoe, Patrick J. (1989), 'Policy Cooperation Among Benevolent Governments May be Undesirable,' *Review of Economic Studies* **56**, 289-96.
- Kesselman, Jonathan R. (1997), *General Payroll Taxes: Economics, Politics and Design* (Toronto: Canadian Tax Foundation).
- Kornai, Janos, Eric Maskin and Gerard Roland (2003), 'Understanding the Soft Budget Constraint,' *Journal of Economic Literature* **41**, 1095-136.

- Lockwood, Ben. (2001), 'Tax Competition and Tax Co-ordination under Destination and Origin Principles: A Synthesis,' *Journal of Public Economics* **81**, 279-319.
- McLure, Charles E., Jr. (1999), 'Electronic Commerce and the State Retail Sales Tax: A Challenge to American Federalism,' *International Tax and Public Finance* **6**, 193-224.
- McLure, Charles E., Jr. (2000), 'Implementing Subnational Value Added Taxes on Internal Trade: The Compensating VAT,' *International Tax and Public Finance* **7**, 723-40.
- McLure, Charles E., Jr. (2001), 'The Tax Assignment Problem: Ruminations on How Theory and Practice Depend on History,' *National Tax Journal* **LIV**, 339-63.
- Mieszkowski, Peter M. and Richard A. Musgrave (1999), 'Federalism, Grants, and Fiscal Equity,' *National Tax Journal* **52**, 239-60.
- Mirrlees, James A. (1972), 'The Optimum Town,' *Swedish Journal of Economics* **74**, 114-36.
- Mitsui, Kiyoshi and Motohiro Sato (2001), 'Ex Ante Free Mobility, Ex Post Immobility, and Time-Consistent Policy in a Federal System,' *Journal of Public Economics* **82**, 445-60.
- Myers, Gordon M. (1990), 'Optimality, Free Mobility and Regional Authority in a Federation,' *Journal of Public Economics* **43**, 107-21.
- Musgrave, Richard A. (1959), *The Theory of Public Finance* (New York: McGraw-Hill).
- Oates, Wallace E. (1972), *Fiscal Federalism* (New York: Harcourt Brace Jovanovich).
- Pauly, Mark V. (1973), 'Income Redistribution as a Local Public Good,' *Journal of Public Economics* **2**, 35-58.
- Rodden, Jonathan, Gunnar Eskeland, and Jennie Litvack, eds (2003), *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (Cambridge: MIT Press).
- Smart, Michael (1998), 'Taxation and Deadweight Loss in a System of Intergovernmental Transfers,' *Canadian Journal of Economics* **31**, 189-206.
- Sørensen, Peter B. (ed.) (1998), *Tax Policy in the Nordic Countries* (London: Macmillan).
- Stiglitz, Joseph E. (1977), 'The Theory of Local Public Goods,' in M.S. Feldstein and

- R.P. Inman (eds.), *The Economics of Public Services* (London: Macmillan).
- Tiebout, Charles M. (1956), 'A Pure Theory of Local Expenditures,' *Journal of Political Economy* **64**, 416-24.
- Vigneault, Marianne (2006), 'Grants and Soft Budget Constraints,' mimeo.
- Watts, Ronald (1999), *The Spending Power in Federal Systems: A Comparative Study* (Kingston, Canada: Institute of Intergovernmental Relations).
- Wildasin, David E. (2004), 'The Institutions of Federalism: Toward an Analytical Framework,' *National Tax Journal* **57**, 247-72.
- Wildasin, David E. and John D. Wilson (2004), 'Capital Tax Competition: Bane or Boon,' *Journal of Public Economics* **88**, 1065-91.
- Wilson, John D. (1999), 'Theories of Tax Competition,' *National Tax Journal* **52**, 269-304.
- Wilson, L. Sam (2003), 'Equalization, Efficiency and Migration—Watson Revisited,' *Canadian Public Policy* **29**, 385-95.