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PRINCIPLES OF FISCAL FEDERALISM: A SURVEY OF RECENT THEORETICAL AND EMPIRICAL RESEARCH

1991

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Working Paper No. 21

This publication was made possible through support provided by the U.S. Agency for International Development, under Cooperative Agreement No. DHR-0015-A-00-0031-00.

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IRIS Summary

Paper: Wallace E. Oates, "Principles of Fiscal Federalism: A Survey of Recent Theoretical and Empirical Research"

This paper was prepared for an OECD meeting with representatives of several Eastern European countries and public finance specialists from the OECD nations. The objective of the conference was to see what insights could be gleaned from OECD country experience with fiscal decentralization that would assist with the dramatic restructuring of the public sectors in the so-called "transitional" countries in Eastern Europe.

This paper provides an overview of fiscal federalism with the audience of this conference in mind. It examines the basic issues of the assignment of fiscal functions to different levels of government, the use of tax instruments by level of government, the role of intergovernmental grants-in-aid, and regulatory federalism. In addition, the paper discusses some recent work on the role of fiscal decentralization as a mechanism to constrain the growth of the public sector.

Finally, there is a brief section that raises the general matter of the role of fiscal decentralization in economic growth. There is a striking contrast between the relatively high degrees of fiscal decentralization in most western industrialized countries and the more centralized public sectors of the developing nations. This raises the interesting and important question of whether there may be some causal relation here as well as a statistical association. Can fiscal decentralization make a contribution to economic growth? We don't really know much about the answer to this question, but it surely merits investigation.

January 1991

Principles of Fiscal Federalism: A Survey of Recent Theoretical and Empirical Research

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I. Introduction

The extent of fiscal decentralization has important implications for the functioning of the public sector: it influences the menu of services offered, the ways in which these services are provided, and the means for their finance. Moreover, it is not static in character: vertical fiscal structure has undergone (and is undergoing) a fascinating process of evolution. And this evolution is not by any means a simple unidirectional pattern of change. Late in in the nineteenth century, Alexis de Tocqueville predicted that government was on a path toward continuing centralization--as he put it "...in the democratic ages which are opening upon us..centralization will be the natural government." A bit later we find echoes of de Tocqueville in "Bryce's Law"--the contention that "federalism is simply a transitory step on the way to governmental unity" [McWhinney (1965, p. 105)].

The tendencies over the first half of the twentieth century provided some support for this view, as in many of the industrialized countries the fiscal role of the central government expanded dramatically. But the more recent evoluton of the public sector has shown these pronouncements to be premature. In most nations, the trend in the second half of the twentieth century has been, if anything, in the other direction with a growing role in many countries for state, provincial, and/or local governments. More interestingly, new levels of government have emerged to address the growing demands on the public sector. Metropolitan government has come into being in the United Kingdom, Canada, the United States and elsewhere in an effort to coordinate fiscal decision-making between central cities and their associated suburban communities. The formation of new levels of government is not limited to lower tiers. We are witnessing in Europe the emergence of a new top layer of government for the European Community. It is by no means clear what the ultimate scope of European "central government" will be--but it is certainly a striking contrast to watch its evolution alongside the continuing movements for "devolution" of the public sector in Spain, Great Britain, and other member countries.

The growing complexity of the vertical structure of the public sector casts serious doubt on any simplistic forecasts of tendencies toward greater centralization or decentralization of government. The course of fiscal federalism seems instead to be in the direction of a more specialized set of fiscal institutions to which fiscal responsibilities and instruments are assigned in ways to make the public sector more responsive to the variety of demands placed upon it.

The purpose of this paper is to provide an overview and some reflections on the economics of fiscal federalism. Over the past three decades, there has emerged a large body of research addressing a whole range of important issues in multi-level public finance. I begin in sections II and III with a consideration, respectively, of the allocation of fiscal functions and of tax instruments (the so-called "tax-assignment problem") among the different levels of government. Section IV explores intergovernmental grants, a key policy instrument in intergovernmental finance--yet one whose properties we still do not fully understand. In sections V and VI, I turn to two more recent issues in the literature: regulatory federalism and the effect of vertical structure on the overall size of the public sector. In section VII, I raise a further issue that has received little treatment in the literature, but is, I believe, of potential significance to the evolution of economic systems: the role of fiscal decentralization in economic growth. Although there has been little systematic analysis devoted to this issue, I will suggest that there is both some reason and some evidence to suggest that decentralized decision-making can contribute to a more efficient pattern of public investment and, thereby, enhance efforts to promote growth.

A brief comment is in order at the outset on the meaning of the term "federalism" as employed here. "Fiscal federalism" refers to a public sector with two or more levels of decision-making. Such a definition is far more inclusive than a narrow political definition that would encompass only systems with formal federal constitutions. From an economic perspective, virtually any public sector is federal in character in that fiscal decisions are made, de facto, at different levels. The issue is really one of the degree of centralization. At the same time, I don't want to be misunderstood on this matter. This general point emphatically does not mean that the presence of a federal constitution is of no economic moment: constitutional structure surely matters for the way in which the public sector functions. The point more simply is that <u>fiscal</u> federalism addresses a particular aspect of the public sector: its vertical structure. It explores those issues that arise in the fiscal relationships among public decision-makers at different levels of government.

Fiscal decentralization, to the extent that it is meaningful in economic terms, implies some real scope for fiscal choice at subcentral levels. It requires that subcentral officials make decisions on the provision of public services that reflect the particular circumstances--the preferences and the costs--in their jurisdictions. In short, real fiscal decentralization is something much more than a local representative of a central authority carrying out central dictates. As I shall stress in the section on intergovernmental grants, decentralized fiscal autonomy, if it is to be exercised in effective and welfare-enhancing ways, requires that subcentral officials have some responsibility for the financing of their budgets. Local jurisdictions must have their own taxation prerogatives if they are to function properly. In sum, real fiscal decentralization requires that subcentral governments make their own decisions on the provision of services and bear some significant part of the costs through their own systems of taxation.

II. The Division of Fiscal Functions Among Levels of Government

As de Tocqueville observed over a century ago, "The federal system was created with the intention of combining the different advantages which result from the magnitude and the littleness of nations." From a fiscal perspective, we can understand de Tocqueville's basic point as suggesting that the presence of several levels of government offers an opportunity to centralize decision-making on those economic matters where national policies are needed and to allow "local" fiscal choice where it is most advantageous.

In his monumental treatise, The Theory of Public Finance (1959), Richard Musgrave sketched out his proposal for the assignment of functions. Drawing on his tripartite division of the public sector, Musgrave concluded his brief treatment of fiscal federalism (pp. 179-183) with the statement that "The heart of fiscal federalism thus lies in the proposition that the policies of the Allocation Branch should be permitted to differ between states, depending on the preferences of their citizens. The objectives of the Distribution and Stabilization Branches, however, require primary responsibility at the central level" (pp. 181-2).

Musgrave's rough guidelines for the assignment of fiscal functions, although the subject of numerous qualifications in the subsequent literature, retain, it seems to me, much of their validity. Macroeconomic management for stabilization purposes--although the subject of much fundamental controversy--must (to the extent it is pursued at all) be largely centralized. The management of the supply of money and credit is nearly everywhere the responsibility of a central monetary authority. On the budgetary side, there is limited scope for decentralized management of demand because of the openness of small local economies. The stimulative effects of local tax cuts, for example, would tend to flow out of the local economy as the bulk of any new spending is directed to goods produced elsewhere.

Edward Gramlich (1987) contends that decentralized government has some role in countercyclical policy. In particular, macro-economic "shocks" (such as the rapid increase in energy prices) often have a very different impact on various regions in a country. Decentralized governments can address the particular conditions of their "local" economies; the central government will find such geographical discrimination difficult with its broader instruments for the management of aggregate demand. In addition, decentralized agencies can make some contribution to an effective countercyclical policy through the use of "rainy day" (or stabilization) funds. State and local governments can accumulate revenues during good times and then draw on these funds during recessions so as to stabilize spending and tax rates over the course of the business cycle. But the scope for decentralized stabilization policy seems limited so that the primary responsibility for this function must rest with the central government.

Likewise, there exist real constraints on decentralized redistributive policies. A local government, for example, which undertakes an aggressive policy to redistribute income from the wealthy to poorer households runs the uncomfortable risk of attracting low-income individuals and of chasing away the well-to-do. There is some evidence for the United States suggesting that such mobility of the poor exists to some extent and that it has discouraged the adoption of decentralized measures to assist the poor [See Brown and Oates (1987)]. In addition, Ladd and Doolittle (1982) suggest that support of low-income households is, to some extent, a national "public good." This is not an easy proposition to establish empirically. But even in its absence, the potential mobility of the poor creates a standard sort of externality that is likely to result in the underprovision of assistance to low-income families under a wholly decentralized system [Brown and Oates (1987)].

However, this point should not be exaggerated. There is certainly some capacity for decentralized support of the poor. Pauly (1973) has argued persuasively that there is typically much greater concern in a community for the locally indigent than for the poor elsewhere. This leads to an efficiency argument for localized poor relief. Moreover, there is surely some scope for modest redistributive programs within <u>large</u> regions between which mobility is relatively limited.

What emerges from all this, it seems to me, is a case for some sharing of the Distribution Function. David King argues (1984, p. 36) that there should be "...a basic national redistribution policy, and that subcentral authorities should be allowed to alter the degree of distribution in their areas within specified limits." At any rate, there does seem to be an important (if not exclusive) role for the central government in the Distribution Branch.

Musgrave is surely correct that "the heart of fiscal federalism" is to be found in the Allocation Branch. It is in the tailoring of outputs of local public goods to the particular tastes and circumstances of different jurisdictions that the real gains from decentralization are to be realized. This takes its sharpest form in the Tiebout model of local finance where individuals "shop" among jurisdictions offering alternative levels of outputs of local public goods. As Tiebout (1956) and the subsequent literature show, for the "perfect" case such shopping behavior leads to an outcome that realizes the potential gains from decentralization to the full extent--the local public sector does fully as well as the private sector in allowing each individual to select the most efficient level of consumption of each good. As Tiebout put it:

> Just as the consumer may be visualized as walking to a private market to buy his goods, the prices of which are set, we place him in the position of walking to a community where the prices (taxes) of community services are set. Both trips take the consumer to market...Spatial mobility provides the local-public-goods counterpart to the private market's shopping trip (p. 422).

So long as the taxes individuals must pay reflect accurately the marginal cost of extending the local services to the new resident, the outcome will be Pareto-efficient, just as it is in the private sector.

The mobility of consumers, while certainly enhancing the scope for allocative gains from decentralized choice, is by no means necessary for the case for the decentralized provision of local (or regional) public goods.[1] Even in the complete absence of mobility, there will still, in general, exist welfare gains from varying local outputs with local tastes and costs. The tailoring of outputs to local circumstances will, in general, produce higher levels of well-being than a centralized decision to provide some uniform level of output across all jurisdictions. And such gains do not depend upon any mobility across jurisdictional boundaries.

This basic point has been explored in a more formal way in terms of the Decentralization Theorem [See Oates (1972, p. 35)]. With the use of a simple diagram, we can, in fact, both make the point and get some sense of the factors that determine the magnitude of the potential gains in welfare from fiscal decentralization. Let us suppose, for purposes of illustration, that we have two "local" jurisdictions with differing demands for a public service. In terms of Figure 1, suppose that a representative resident of jurisdiction 1 has a demand of D_1 for the local public service while the representative person in jurisdiction 2 has the demand indicated by curve D_2. Assuming that the public service can be provided at a constant cost per head of P, the desired consumption of people in jurisdiction 1 is Q_1 and that in jurisdiction 2 is Q_2.

The spirit of the centralized solution to the provision of the public service is a standardized level of the service to everyone. In Figure 1, suppose that this uniform output is a compromise between the higher and lower demands at, say, Q_c. The welfare loss to each person in jurisdiction 1 is then simply the shaded triangle ABC, which represents the excess of costs to each person over his valuation of the "excessive" units of consumption. Similarly, there is a welfare loss to each person in jurisdiction 2 equal to the shaded triangle CDE (in this case, the excess of marginal valuation over cost for the "lost" units of the service).

Two points regarding Figure 1 are worthy of note. First, the extent of the welfare loss from centralized provision is critically dependent on the difference in the demands between residents of the two jurisdictions; if, for example, Q_1 and Q_2 were quite close, then Q_c could provide a close approximation to the most desired outputs for all individuals with little

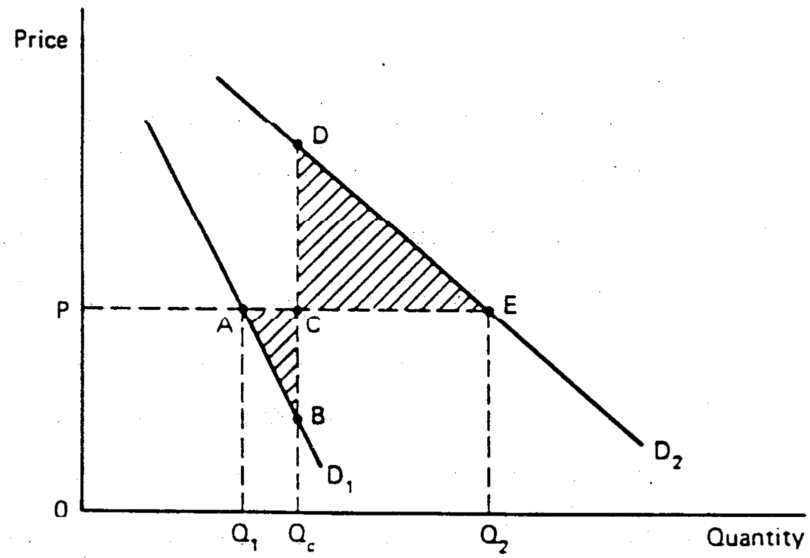

Figure 1 Welfare Losses from Centralization

resulting loss in consumer surplus. Second, note that the magnitude of the loss in consumer surplus varies inversely with the price elasticity of demand. The steeper the demand curves in Figure 1, the larger will be the area of the shaded triangles and hence the greater the welfare loss from centralization. This result reflects the relatively rapid change in the marginal valuation of units of the service with the steep curves. Bradford and Oates (1974) have attempted to use this framework to estimate the welfare losses from the imposition of a standardized level of expenditure per pupil in school districts in an area in New Jersey. Their low estimates of the price elasticity of demand for school expenditure combined with substantial variation in demand across jurisdictions lead to quite high estimates of the welfare loss from a uniform spending constraint. Most of the existing econometric estimates of price elasticites for local public goods indicate highly price-inelastic demands, suggesting that "centrally" imposed outputs of such services may involve considerable losses in consumer surplus.

III. The Tax-Assignment Problem

In addition to assigning the responsibility for different expenditure functions to the appropriate levels of government, there is the matter of revenue instruments. The issue here is the vertical structure of the revenue system. Are certain tax instruments, for example, better suited for use by the central government and others more appropriate at the local government level? Or, alternatively, is this simply a matter of administrative convenience?

A cursory examination of vertical revenue structure across countries reveals wide diversity. Nearly all major forms of taxation are employed at central, state or province, and local levels somewhere in the world. This does not imply, however, that the tax-assignment problem is a vacuous issue. An improper vertical alignment of tax instruments may come at considerable cost to society, both in efficiency and equity terms.

For a systematic treatment of this issue, we can turn (once again) to Musgrave (1983). In a short paper that provides a useful point of departure for the analysis of this problem, Musgrave has put forth a set of general guidelines for the assignment of revenue instruments to different levels of government. His "principles" for tax assignment include:

(1) Highly progressive taxes, especially for redistributional purposes, should be centralized. For the reasons discussed in the preceding section, such taxes are to be avoided at decentralized levels of government because of the perverse incentives that they create for migration among jurisdictions. A personal income tax with a strongly progressive rate structure should thus be reserved for the central government.

(2) In general, lower level governments should eschew taxes (at least nonbenefit taxes) on highly mobile tax bases.[2] Such taxes can distort the locational pattern of economic activity.

Decentralized governments are better advised to employ taxes on relatively immobile tax bases (like land).

(3) The central government should exercise primary taxing authority over those tax bases that are distributed across jurisdictions in a highly unequal fashion. Taxes on deposits of natural resources, in particular, should be centralized both to avoid geographical inequities and to prevent allocative distortions that would result from the "local" taxation of such resources.

(4) While user taxes and fees have much to commend them at all levels of government as benefit taxes, they are an especially appealing revenue instrument at the most decentralized levels of government. They create, in principle, no potentially distorting incentives for movements among jurisdictions. In the context of the Tiebout model of local finance, for example, such taxes promote efficient decisions by mobile consumers.

The revenue system also has important implications for fiscal decision-making. Taxes, for instance, which are largely exported to residents of other jurisdictions effectively reduce the tax-price to locals of public programs--and, in this way, may encourage excessive public expenditure on local services [Charles McLure (1967)]. Roger Gordon (1983) has explored this general set of issues in an optimal taxation framework and finds numerous channels through which local taxes generate externalities and the associated inefficiencies when local decision-makers seek to maximize the well-being of their own residents. In the vertical design of tax structure, it is thus important to be aware of the ways in which the use of particular taxes can create perverse signals for fiscal choices. User, or benefit, taxes again get excellent marks on efficiency grounds: they not only tend to provide the proper incentives for location decisions but also give the right cost signals to residents for the determination of levels of local services.

The discussion points to a general prescription for vertical tax structure. It suggests, in brief, that the central government is in the most advantageous position to employ progressive redistributive taxes (on personal income or, perhaps, expenditure), while highly decentralized levels of government should seek out relatively immobile tax bases (like local real estate) or should rely on user charges. Intermediate level governments like states or provinces obviously have more room to maneuver than small local governments; there is more scope here for the use of income and sales taxes--although potential mobility is still operative to some degree as a constraint on tax policy.

Although the vertical structure of revenue systems worldwide displays considerable variation, it appears to be far from random. There are some general patterns. And the normative perspective emerging from the preceding discussion possesses some explanatory power. We do, in fact, find that many countries rely heavily on progressive income taxation at the central level. Local governments, in contrast, often place a primary reliance on property taxation (where at least the land portion of the tax base is immobile). Local use of charges for certain public services is also quite common. A more systematic study of the extent of similarities in vertical tax structure and their correspondence to this normative framework would be very useful.

The next step for research on the tax-assignment problem brings us to the important, but more difficult, issue of the magnitude of the distortions from deviations from this prescription. It is a fairly straightforward matter to catalogue the potential forms that tax-induced distortions can take. But it is much harder to assess the approximate size of these distortions. It may well be the case that the distortions discussed in this section tend, in practice, to be rather minor--that the actual magnitude of the welfare losses is small.

There is little evidence on this important question. In one recent study, Timothy Goodspeed (1989) has explored the use of redistributive taxes at the local level. Making use of a general-equilibrium model of a metropolitan area, Goodspeed compares the efficiency and redistributive properties of local income taxation to those of a system of local head taxes. He finds that local governments in his model can employ progressive income taxes to accomplish some significant income redistribution with only quite modest efficiency losses. The Goodspeed study is purely a general-equilibrium exercise with no direct empirical content--but nevertheless it certainly suggests the possibility that we have exaggerated the extent of the constraint on the local use of ability-to-pay taxation. There is a real need for some careful empirical work to provide us with a better sense of the magnitudes that we are dealing with here.

In a somewhat similar vein, Peter Mieszkowski (1983) has examined the distortions from the decentralized taxation of natural resources. In particular, Mieszkowski and Toder (1983) estimate that the efficiency losses resulting from distorted location decisions under the decentralized taxation of energy resources in the United States amount to roughly 4 per cent of energy revenues. The estimates are hedged with a number of important qualifications, but again one comes away with the sense that the distortions may not be of great moment. There are, of course, some important equity arguments (as well as an efficiency argument) for the centralization of such tax bases.

In sum, we have some general prescriptions for the assignment of revenue instruments to different levels of government. But we badly need a better empirical sense of just what is at stake here.

IV. Intergovernmental Grants and Revenue-Sharing

In a system of governments, there is an extra degree of freedom in the budget constraint in the sense that budgetary balance (inclusive of any debt issues) is not required at each level--or unit--of government. Revenues at one level of government, for example, can fall short of spending, if the difference is made up by transfers from other levels of government. The use of such intergovernmental transfers--or grants--has become a prominent feature of modern fiscal federalism. In some countries, local governments, for example, obtain more than half of their revenues in the form of grants from higher level authorities.

There is now a large literature on intergovernmental grants that sets forth their economic rationale [See Break (1967), Oates (1972, ch. 3), King (1984, chs. 3-5)]. In brief, such grants can serve three major objectives:

1. The subsidization of specific programs where there are benefits accruing to those outside the jurisdiction. This calls for matching grants for the program to encourage an expansion of output to take into account the "external benefits."

2. The partial substitution of more equitable and efficient central tax sources for decentralized revenues to produce a more just and economically efficient revenue system overall. This objective suggests that the central government act as a kind of revenue-collecting agent for subcentral units with the transfer of funds taking an unconditional (or revenue-sharing) form.

3. The equalizing of fiscal capacity across subcentral jurisdictions so that all areas are able to achieve the provision of basic public services with (roughly) the same tax effort.

The economic analysis of intergovernmental grants thus points to a system of transfers to lower level governments in which there are a set of open-end matching grants for particular programs with benefits reaching outside of the individual subcentral jurisdictions and a set of unconditional (lump-sum) grants which may be distributed by a formula that provides more revenues per capita to fiscally disadvantaged areas.

A cursory examination of existing grant systems suggests that such elements are frequently present. But a closer study (at least of the U.S.) reveals some striking anomalies. For example, certain major federal grant programs have had federal shares on the order of 90 percent--far in excess of any conceivable level of external benefits. And some matching grants are closed end: matching ceases at some level so that they provide no incentive at the margin for any expansion of output after some modest level of provision. Robert Inman (1989) concludes that economic principles cannot provide a very satisfactory explanation of the structure of existing U.S. grant programs; he finds that political considerations appear to be much more important in understanding the U.S. system of federal grants. Even for programs whose primary objective is fiscal equalization, Holcombe and Zardkoohi (1981) find that various political variables have far more explanatory power than the economic variables that represent the stated goals of the program. Some state aid programs may do better in this respect. John Yinger and Helen Ladd (1990), for example, find that state assistance to cities has been focused on the cities with the greatest need. While these findings are somewhat dismaying, they also suggest that careful analysis and reform of the intergovernmental grant system may yield large dividends in terms of a system that better serves the objectives of equity and an effective use of our scarce resources.

There exists a substantial body of empirical work that has attempted to measure the budgetary impact of intergovernmental grants. [See Gramlich (1977) for a useful survey of this work.] This work has turned up an intriguing finding: the results suggest that intergovernmental grants have had a highly stimulative effect on the spending of recipients. Even unconditional grants, which come with no apparent strings attached, seem to have induced sizeable increases in recipients' budgets. This is surprising, for, in principle, an unconditional grant to a group of people should be treated in much the same way as an increment to their private income [Bradford and Oates (1971)]. This phenomenon is known in the literature as the "flypaper effect," that is, "money sticks where it hits." Grants appear not to be passed along to the extent that we would expect in the form of reduced local taxes. It thus appears that an increased reliance on intergovernmental grants contributes to budgetary growth in the public sector overall. There are some important qualifications and controversy surrounding the debate over the interpretation (and existence!) of the flypaper effect so these results cannot quite be taken at face value. But it is an issue of fundamental importance, for (on one interpretation at least) it suggests that local government budgetary decisions do not reflect the preferences of the local electorate.

There may be a further puzzle in this. If grants are so stimulative, considerations of symmetry suggest that their removal should have a marked contractionary effect on public spending. Interestingly, this appears not to have been the case in the U.S. during the 1980s. In the face of fiscal retrenchment by the Reagan adminstration involving substantial cuts in both the number and size of federal grant programs, state and local governments appear to have picked up much of the slack; as Gramlich (1987) points out, they increased their own taxes and largely replaced the lost grant funds with revenues of their own. Does the flypaper effect work in only one direction?

As the discussion suggests, we have much to learn about the structure and impact of intergovernmental grants. Careful analysis and evaluation should be able to contribute much to the design of a grant system that improves the performance of the public sector.

Finally, I wish to comment on the issue of "balance" in a federal revenue system between locally raised taxes and intergovernmental transfers. While there is surely an important role for systems of intergovernmental grants, an excessive reliance on such systems can undermine the autonomy and vitality of decentralized decision-making. As mentioned earlier, it is crucial, if decentralized levels of government are to have real and effective fiscal discretion, that they raise a significant portion of their funds through their own taxes. This is important for two reasons. First, in a political setting, central funds nearly always come with some strings attached. If subcentral governments are heavily dependent on central revenue sources, it is inevitable that central intrusion into expenditure decisons will be widespread. Decisions concerning the menu and levels of local programs will become the result of negotiations between central and local authorities, undercutting the fiscal independence of the local public sector. Second, heavy reliance on grants destroys the incentives for responsible local fiscal decisions. It is essential that localities in choosing to expand or contract various programs consider carefully the cost of these decisions. If funding comes from "above," there may be little real economic cost to the locality associated with these decisions. Funding from own revenues <u>at the margin</u> of local programs is critical if decentralized choice is to play its proper role in the fiscal system.

V. Regulatory Federalism and Interjurisdictional Competition

Although regulatory policy may appear to lie outside the province of an essay on fiscal federalism, it will become clear that the two are, in important ways, intimately related. The basic issue in this section concerns the centralization of regulatory activity--and I shall suggest that the analysis of fiscal issues in a federal structure has much to contribute to our understanding of regulatory federalism. For purposes of concreteness, I shall place the discussion in the context of environmental policy. But as should be obvious, issues in environmental federalism have direct relevance to regulatory issues in other areas.

I can provide some motivation for this section with a striking and intriguing anomaly in U.S. environmental policy. Under the Amendments to the Clean Air Act in 1970, the U.S. Congress directed the Environmental Protection Agency to set uniform standards for air quality on a nationwide basis. The EPA responded by establishing such standards: maximum permissible concentrations of key air pollutants that are to be met at <u>every</u> point in the country. Two years later, the Congress enacted a set of Amendments to the Clean Water Act. Here, the Congress instructed the states to set their own standards for water quality and to develop programs to achieve those standards. The contrasting approaches pose the basic question: Should we set national standards applicable to all areas in the nation or should we adopt a more decentralized approach to standard-setting that would allow state or local agencies to determine specific standards for their own jurisdictions? This question has obvious relevance to the efforts to harmonize environmental policies within the European Community.

On the first cut, basic economic principles seem to provide a straightforward and simple answer to this question: standards should vary among jurisdictions according to local circumstances. The argument here is essentially the same as that for the decentralized provision of any public good. Since for many pollutants, the benefits and costs of environmental management are regional or local in character, the optimal level of control is likely to vary from one jurisdiction to another. A first-best outcome will clearly involve the setting of standards such that the marginal benefits from pollution control equal marginal abatement cost on a jurisdiction-by-jurisdiction basis [Peltzman and Tideman (1972)]. This proposition is subject to the important and obvious qualification that it applies to those pollutants whose effects are localized--where emissions travel across boundaries (as in the case of acid-rain deposition), wholly decentralized solutions are obviously not appropriate for the usual sorts of reasons.

But where the benefits and costs of regulatory programs are "local" in nature, a decentralized approach appears to be in order. This simple prescription, however, may overlook certain political realities in local fiscal and environmental decision-making. John Cumberland (1981), for example, has argued that in their eagerness to attract new business investment to create jobs and income, local decision-makers are likely to relax environmental standards excessively. This argument is obviously a close cousin to George Break's concern over the effects of tax competition among state and local government. As Break (1967) has put it:

> The trouble is that state and local governments have been engaged for some time in an increasingly active competition among themselves for new business...In such an environment government officials do not lightly propose increases in their own tax rates that go much beyond those prevailing in nearby states or in any area with similar natural attractions for industry...Active tax competition, in short, tends to produce either a generally low level of state-local tax effort or a state-local tax structure

with strong regressive features (pp. 23-24).

This issue of interjurisdictional competition has received increased attention in recent years, following on the devolution of fiscal and regulatory responsibility during the Reagan Administration. John Shannon of the Advisory Commission on Intergovernmental Relations suggests that we have entered a new era of "Fend-for-Yourself Federalism." From this perspective, the basic Break-Cumberland argument is that central intervention is needed to "save state and local governments from themselves."

This is not an easy argument to assess--but it is clearly an important one for it goes to the very core of the case for a decentralized fiscal system. Until recently at least, there was little systematic theory addressing this issue--and very little evidence aside from informal and anecdotal reports.

In two recent papers, Robert Schwab and I [Oates and Schwab (1988,1989)] have constructed a set of models that explore the properties of interjurisdictional competition. In these models "local" decision-makers set the values of various policy parameters involving both local tax rates on capital and environmental standards. The setting of these parameters involves explicit tradeoffs between local wage income, levels of local public goods, and environmental quality--the kinds of tradeoffs that are at the heart of the tax competition argument. For the "base case," these models produce an encouraging finding: local decisions that maximize the welfare of local residents are efficient. Environmental standards in these models are set such that the cost of improved environmental quality at the margin equals the residents' willingness-to-pay. In short, in our basic models of interjurisdictional competition, local fiscal <u>and</u> regulatory decisions yield the right sorts of outcomes; such competition is, in these models, efficiency-enhancing--it is not a source of distortions in resource allocation.

In the second of the two papers (1989), we have extended the basic model to encompass the issue of the well-being of future generations--in response to the expressed concern that purely local decisions in the framework of a mobile society will not take into account the welfare of those yet unborn. An interesting result emerges in our two-period model: we find that local decision-makers again make efficient decisions--but this time in a way that incorporates the welfare of future generations. The mechanism that generates this result is the capitalization of environmental damages that manifest themselves in the future. Present residents take into account the interest of future residents because prospective environmental quality is reflected in the present value of land parcels. While this may not be a surprising finding, it is useful to remember that there is a mechanism that provides this kind of discipline on <u>local</u> choices that is absent at the central level. The usual presumption is that central decision-makers are in a better position to take into account the well-being of future generations--but this is not altogether clear.

The results from the basic models are thus supportive of fiscal and regulatory decentralization. At the same time, these results are not highly robust. They are hedged by a number of important qualifications. If, for example, local officials behave in a Niskanen-type fashion and seek to maximize the size of the local budget, they will, in our models, not only set tax rates too high, but will also establish excessively lax environmental standards in order to attract more business investment and expand the local tax base. Alternatively, if there exist dissident groups in the community with differing interests in economic development and environmental quality, the outcome is no longer likely to be an efficient one (although it can involve too little or too much pollution). Perhaps even more important, if local government is constrained in its choice of tax instruments to a tax on local capital, then as Zodrow and Mieszkowski (1986) and others have shown, inefficiently low levels of local public goods are the predicted result. Or, in a setting of "imperfect competition" with jurisdictional interactions, Mintz and Tulkens (1986) find that Nash equilibria exhibit some tendency toward underprovision of local services.

I know of no systematic empirical evidence on this matter. However, one can't help but feel that we are not on the right course with some of our rigid, national standards for air quality. It is becoming increasingly clear, for example, that the costs of requiring Southern California to meet the same standards for air quality as the rest of the nation are exorbitant and unreasonable. Instead of acknowledging the special circumstances of the Southern California basin, we have responded by extending the time schedule for compliance--and Southern California continues adopting new measures, unjustifiable on any sort of benefit-cost calculation, and with no prospect of ever attaining the standards. The cost, it would seem, of ignoring the case for environmental federalism is likely to be very high. And this may well be true of certain other forms of regulation.

VI. A Public Choice Issue: Decentralization and the Size of the Public Sector

Geoffrey Brennan and James Buchanan (1980) have suggested a wholly different perspective on the role of decentralization in the public sector. Their contention is that decentralization can serve as a constraint on the undesired expansion of government.

The twentieth century has been characterized by a rapid growth of the public sector in most of the developed countries. This continued growth has become the source of widespread concern both in the political world and in certain parts of the scholarly community [see, for example, the papers in Forte and Peacock (1985)]. Presidents and Prime Ministers have been elected on platforms committed to programs of budgetary restraint.

In the public choice literature, one finds extensive efforts to understand and describe the process of public-sector growth. The Brennan and Buchanan view, a very striking one indeed, is that the public sector can be envisioned as a monolithic agent, a

Leviathan, that systematically seeks to maximize its budgetary size--irrespective of the desires of the citizenry. Musgrave (1981), among others, has vigorously contested this view. But what is of interest here is the Brennan and Buchanan claim that decentralization is an effective mechanism to control Leviathan's expansive tendencies. The basic argument is that, just as competition in the private sector exercises its disciplinary force, so competition among different units of government at a decentralized level of government can break the monopolistic hold of a large central government. As Brennan and Buchanan put it, such competition within the public sector in the context of the "interjurisdictional mobility of persons in pursuit of 'fiscal gains' can offer partial or possibly complete substitutes for explicit fiscal constraints on the taxing power" (1980, p. 124).

This is a not only a very provocative policy recommendation for decentralization of the public sector--it also suggests a hypothesis by which the Leviathan view of government can be put to an empirical test. The logic of the Brennan and Buchanan argument suggests that, other things equal, we should expect to find that the size of the government sector varies inversely with the extent of fiscal decentralization.

The initial empirical study of this hypothesis [Oates (1985)] explored the relationship between decentralization and public-sector size for two quite different samples: a cross-sectional sample of 43 countries and a second cross-sectional sample consisting of the state-local sectors in the U.S. In neither case was I able to find any evidence of a significant negative relationship between the extent of fiscal decentralization and the size of government (as measured by tax receipts as a fraction of GNP). The findings, in short, were not consistent with the Leviathan view.

Some subsequent work, however, has muddied the waters a bit.[3] In particular, two studies making use of U.S. county data [Eberts and Gronberg (1988) and Zax (1989)] have found evidence that the presence of more general-purpose local government units is associated with a smaller overall size of the county public sector. It may be that in this smaller geographical setting, the potential mobility of individual households is higher and acts to constrain local government budgetary activity. However, even here the results are not uniformly supportive of Leviathan. Forbes and Zampelli (1989) find that the more counties there are in a metropolitan area, other things equal, the larger is the metropolitan fisc--just the opposite of what the Leviathan view suggests.

Cross-sectional studies at an international level continue to turn up no support for Leviathan. The share of the central government in the national fisc does not appear to be systematically related to the size of the public sector. James Heil (1990), in a follow-up study to mine, has employed two different international data sources with more recent figures, and, as in my earlier study, finds no relationship between the fiscal share of the central government and the size of the public sector.

The evidence is not wholly clear. But it seems to me that there is not enough clear support available to make a convincing case that decentralization in itself constrains government size. _If_ we want smaller government, then other measures are probably in order.

VII. The Role of Fiscal Decentralization in Economic Growth

Although fiscal decentralization may not have a systematic effect on the size of the public sector, it may well have an important role to play in facilitating economic growth. We do not have any real theory that relates public-sector decentralization to economic development. But just as there are reasons for believing that, in a static framework, decentralized decisions tailored to local circumstances enhance social welfare--so, in an intertemporal setting, public-investment decisions that are sensitive to regional or local conditions are likely to promote economic growth.

I have been struck in some of my international empirical work on fiscal decentralization [See Oates (1972, ch. 5 and 1985)] by the quite marked and systematic differences in public-sector structure between the industrialized and developing countries. Of note here is the finding that fiscal decentralization is much greater in the industrialized, than in the developing, nations. In my recent empirical study of "Leviathan" (1985), the central-government share of total public spending was, on average, .65 in my sample of 18 industrialized countries and .89 in my sample of 25 developing nations. The differences are quite striking with several developing countries essentially totally centralized with central-government shares of .99. Developing countries, in short, tend to have highly centralized public finances.

While this is a striking "stylized fact," its meaning and interpretation are not straightforward. Is fiscal decentralization a "cause" or a "result" of economic growth? Or, more likely, is it the result of a more complex interplay of forces over the growth process? There are some good reasons for believing that decentralized fiscal choice has a real contribution to make to economic performance. As was discussed earlier, in a static setting, the Decentralization Theorem makes the basic point that local provision of certain kinds of public goods in accordance with local benefits and costs results in higher levels of social welfare than a centrally determined and uniform level of provision across all jurisdictions.

The thrust of this argument should also have some validity in a dynamic setting of economic growth. The formulation of policies for the provision of infrastructure and even human capital that are responsive to regional or local conditions are likely to be more effective in encouraging economic development than are policies that are wholly centrally determined. Some of my own current research is directed to setting forth a conceptual framework for thinking about this issue and to initiating a series of empirical studies of the relationship between growth rates and the extent of fiscal decentralization. I suspect that there is something here--although it may not be easy to find.

VIII. Some Concluding Thoughts on the Future of Fiscal Federalism

In an almost tautological sense, it is clear that fiscal federalism is here to stay. A public sector in which fiscal decision-making is wholly centralized or, alternatively, wholly decentralized is virtually inconceivable. What we observe is a kind of tension between forces promoting fiscal centralization and those encouraging greater decentralization in the government sector. The balance seems to shift from one period to the next.

As I noted in the introduction, the trend over the first half of this century was, in most of the industrialized countries, toward increased centralization. But this tendency has largely disappeared. What seems to be taking place now is a process of "adjustment" involving the establishment of new units and even levels of government together with a re-assignment, in some instances, of fiscal functions and instruments. The task before us, it seems to me, is to gain a better understanding of the working of multi-level public finance. The options before us are many and varied: there exists a wide range of expenditure, tax, grant, and regulatory instruments. The existing body of literature in fiscal federalism provides an overall framework for analysis and numerous important insights into public finance with several tiers of government. But we need to develop further our understanding of the proper assignment of functions in more specific terms and of the most effective <u>mix</u> of policy instruments at different levels of the public sector.

The "solutions" will not involve the nice clean distinctions that sometimes characterize theoretical papers in fiscal federalism. The real world, as we all know, is much less neat--functions will inevitably be "shared" in varying ways among levels of government as will the fiscal instruments with which these functions are carried out. Morever, the most effective fiscal structure will not be the same across countries. As Richard Bird (1986) has emphasized, the historical and constitutional character of each country has profound implications for the range of feasible and effective federal policy. It is possible, for example, for a unitary country like Great Britain to redraw local boundaries and redefine local tax instruments on a nationwide basis; in countries with federal constitutions, such redesign of fiscal jurisdictions and institutions is outside the realm of the possible. "Federal finance," as Bird stresses, is a quite different matter from multi-level finance in unitary countries.

While being aware of the different sorts of possibilities and constraints that exist in different national settings, we certainly should not conclude that this is "all a matter of individualized politics" and that "anything goes." Studies of intergovernmental fiscal structure and policies reveal all too frequently instances where existing structure and policies simply are not attaining their professed allocative and distributive objectives. Economic analysis, both theoretical and empirical, can make a fundamental contribution to the design of more effective systems of intergovernmental finance--systems in which fiscal functions are best placed within the vertical structure of the public sector and in which the policy instruments are appropriately matched up with these functions.

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Notes

1. In fact, mobility can, under certain circumstances, be a source of distortions. In a regional context, for example, if individuals must work in the same jurisdiction in which they reside, mobility can produce inefficient outcomes. See Flatters, Henderson, and Mieszkowski (1974) and Stiglitz (1977).

2. A case in point is a state or local corporation income tax. Such a tax on mobile capital involves many complexities and can result in a distorted pattern of economic activity across jurisdictions. See McLure (1986a, 1986b).

3. See Oates (1989) for a summary and assessment of this later work.