Chapter 1

Introduction

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From Africa to the European Union, within the established federations of North America and Australia, in China and India, the two Asian giants of the developing world, in the Russian federation, in the formerly planned economies of Eastern Europe, and throughout Latin America, the functions and financing of local and regional government are major issues in the evolution of economic policy and in broad social and political developments. Reform of the fiscal relations between central and subnational governments is an urgent priority in many countries. Increased economic integration within and among countries means that goods, services, capital, and human resources can flow across political boundaries more easily than ever before, creating a new market environment within which fiscal relations are established among countries and among regions within countries.

Stimulated partly by these rapid political and economic changes and partly by its own internal intellectual dynamics, research on the economics of fiscal federalism has attracted much new attention in recent years. The papers in this book provide a sample of some of the recent work in this field. To differing degrees, each reflects real policy problems that are important in some countries or regions as well as some of the intellectual and analytical challenges that confront serious researchers in the area. These essays also reflect the subject's diversity, and readers of the following pages will find that the contributors examine a wide array of questions from a variety of perspectives, employing a variety of analytical methods. The present chapter is intended to provide a guide to the reader, outlining the organization of the book and briefly introducing each chapter by describing the topics analyzed and indicating some of the principal findings.

Part I of the book, which consists of this and the next chapter, is introductory in nature. In Chapter 2 I describe some of the major policy issues, in different parts of the world, in which problems of intergovernmental fiscal relations and fiscal decentralization are prominent. It is indeed striking that these problems are of such widespread interest. In every major

region of the world, the assignment of fiscal responsibilities and resources among different levels of government, the coordination of fiscal policies among governments at the same or different levels, and a host of related political and social issues are matters of intense interest to policy makers. Important policy reforms have been taking place in all of these regions. What are some of these recent and prospective reforms? What are the problems they are meant to address? As will become apparent, the institutional context of intergovernmental fiscal relations differs greatly among countries and regions, and this institutional background – the overall level of economic development, the nature of the legal system, ongoing processes of economic and political reform, the organization of monetary and financial institutions, tensions arising from ethnic, religious, or economic differences – has a crucial effect on the nature of the fiscal issues that concern policy makers and citizens.

This diversity of experience is worth appreciating both for policy analysts and for academic researchers. On the one hand, the analysis and formulation of policy can benefit from an awareness of the widely varying experiences of different countries and regions, and these experiences offer much fertile ground for academic investigation. At the same time, incautious generalizations from specific institutional contexts are likely to be misleading; policy solutions that work well in one context may be quite inappropriate in others. Researchers face the challenging tasks of culling important insights from particular cases and of applying these insights in other and possibly quite different circumstances. Much of the academic economic research on fiscal federalism has been motivated by concerns with policy issues in developed countries with relatively mature political institutions. Chapter 2, therefore, devotes considerable attention to some of the rather different questions that seem to be particularly relevant in developing countries and in countries undergoing a transition from planned to more liberal economic regimes. This discussion suggests several possible directions for future academic research on fiscal federalism.

Parts II and III of the book, dealing respectively with "Theoretical Issues" and "Policy and Practice," contain a total of eight chapters. The five papers in Part II are theoretical essays that examine vertical and horizontal fiscal interactions in a multijurisdictional setting. The three chapters of Part III have a more applied orientation, two of them dealing with issues of fiscal decentralization and intergovernmental fiscal relations in specific countries (South Africa and Australia) and one presenting a model for policy analysis with applications relevant to local public finance in the United States.

The first paper in Part II, by Robin Boadway and Michael Keen, analyzes a problem that arises very frequently in discussions of intergovernmental

fiscal relations. Given that both higher- and lower-level governments have their own tax systems and expenditure needs, what determines the optimal magnitude of transfers between levels of government? It is common for central governments to transfer substantial fiscal resources to lower-level governments in order to close a perceived "fiscal gap," that is, a gap between the desired level of expenditures by lower-level governments and the level of revenues that they collect. Boadway and Keen formulate the problem of optimal transfers in a framework where each level of government sets the instruments at its disposal in such a way as to promote its own objectives. They study this question in a deliberately stylized model that abstracts from some of the customary reasons for intergovernmental grants, such as the existence of spillover benefits from local public goods or interregional disparities in wealth. This allows them to focus on the normative implications of the fiscal interactions that arise between higher- and lower-level governments when they share a common tax base. In the Boadway-Keen model, the only sources of primary revenue are taxes on the wage income of workers and on rents accruing to other, inelastically supplied factors of production. Since labor is variable in supply, the earnings tax is distortionary, and the distortions the taxes separately imposed by each level of government are cumulative in nature.

Boadway and Keen show that the fiscal interactions between state and central governments that derive from the sharing of a common tax base can lead these governments to choose policies that are inferior, from a welfare viewpoint, to those that a unified central government would choose. This may not surprise practitioners in the field of fiscal federalism, who have often argued that central government use of a productive revenue source such as an earnings tax can preempt states and leave them with insufficient "room" to raise the revenue needed to finance their expenditures. From this viewpoint, programs of intergovernmental transfers from the center to the states, or (what is virtually the same thing) of sharing central revenues with states, are called for in order to assist states in dealing with what would otherwise be revenue shortfalls. Boadway and Keen find that there may be cases where this practical prescription might indeed be correct, but, rather surprisingly perhaps, they also find that the argument might just as well go the other way: the *central* government may end up with insufficient revenue, and a program of transfers from states to the center may actually be needed to improve the overall efficiency of the public sector (the Chinese model?). They show that the distribution of rents between the central and state governments via the taxation of non-wage income as well as other factors can play an important role in determining whether optimal transfers should flow from the states to the central government. In any event, such a "negative fiscal gap" seems by no

means to be an unusual occurrence in this sort of model, casting doubt on the presumption that transfers should generally flow from the center to the states.

In Chapter 4, Helmuth Cremer, Maurice Marchand, and Pierre Pestieau address informational aspects of fiscal federalism. In the informal literature of the subject, it is often asserted that local governments have "better information" than central governments and that fiscal decentralization therefore facilitates efficiency in public-sector activities. Until relatively recently, however, economists had few analytical tools with which to investigate such assertions formally. Cremer et al. present one of the first attempts to model in a rigorous way the informational asymmetries between central and lower-level governments. In their model, localities differ both in terms of their endowments of resources and in terms of their preferences for public goods. They assume that localities can act independently in choosing the amount of local public goods to provide. A central government can use intergovernmental transfers to provide extra resources to poor localities or to try to influence the levels of local public expenditures. The central government is assumed to use its grant policy in order to maximize a utilitarian social welfare function, but it has only imperfect information on the basis of which to conduct its transfer policy. In particular, Cremer et al. assume that the central government is unable to distinguish the precise level of resources available to each locality from its own endowments or its preferences for local public goods, so that its intergovernmental transfers and the tax system that finances them must be incentive-compatible.

The main goal of the analysis in this chapter is to characterize the optimal policy of the central government in its fiscal interactions with lower-level governments. As in the analysis of optimal income taxation, incentive compatibility imposes constraints on the form of the optimal grant schedule. However, in contrast to optimal income tax models in which the principal (the government) is ignorant of only one agent attribute (a household's ability), here the agents (lower-level governments) have two attributes about which the principal is uninformed. Cremer et al. show that it may be optimal to distort the pattern of local public expenditure through matching grants. An example illustrates how the optimal grant-tax policy can vary in quite complex ways, with positive or negative matching rates depending on the parameters of the model, as the center attempts to balance efficiency and equity while operating under the burden of imperfect information. Of course, when information is limited and useful, there is usually an incentive to acquire more of it. The authors thus examine what happens when the central government is able to verify the attributes of lower-level governments through a system of costly auditing.

Chapter 5, by Claude d'Aspremont and Louis-André Gérard-Varet, begins with a review of recent trends in France in the assignment of fiscal responsibilities among levels of government. As they explain, a reform was initiated in 1982 that was intended to decentralize some aspects of public expenditure policy, a move away from the traditionally heavy reliance on the central government that has characterized French fiscal policy since the time of Napoleon. In practice, however, the process of decentralization raises numerous important issues for French policy makers. The optimal assignment of expenditure functions and of revenue instruments to lower-level governments presents one important challenge. Equally important is the structuring of fiscal relations between governments, including both the relations between the central government and regional, municipal, and other lower-level governments (vertical intergovernmental fiscal relations) and the relations among the lower-level governments themselves (horizontal intergovernmental fiscal relations). Of course, these issues are not unique to France but arise quite commonly in federal systems. For d'Aspremont and Gérard-Varet, the French case provides a backdrop for a general theoretical treatment of some of the fundamental problems that arise in the design of optimal mechanisms for the coordination of economic agents. They study a model where each agent (e.g., a local government) takes actions (e.g., expenditure and tax policies) that affect not only their own well-being but also that of other agents (e.g., through spillovers of benefits from local public expenditures). The question arises as to whether and how these agents may be induced to take actions that produce socially desirable outcomes. This obviously requires a framework within which the impacts of any one agent's decisions on others is somehow taken into account.

An omniscient planner would be able to solve this problem directly by simply telling each agent what action to take. However, it is actually difficult or impossible to monitor and control the actions of decentralized agents. This problem of "moral hazard" is captured in the model of d'Aspremont and Gérard-Varet by their assumption that the actions taken by individual agents are not observable by others. Their analysis focuses, therefore, on the design of systems of transfer payments among agents that are conditioned on *observable outcomes*. In the context of intergovernmental fiscal relations, one might think of these transfers as being implemented through a system of grants from higher- to lower-level governments, or perhaps through transfers among the lower-level governments themselves. D'Aspremont and Gérard-Varet first analyze the role of transfers in a static setting, taking into account the mutual interactions of agents in a very general model that incorporates the intrinsic uncertainty of the economic environment as well as the imperfect information that

characterizes each agent's knowledge of actions taken by others. The authors establish conditions under which programs of transfers among agents can lead to efficient decision making. They then extend this model to an explicitly dynamic context, in which the agents interact with one another over time, with actions in each period affecting both current outcomes and the environment in which decisions in the next period are to be made. The authors show that even in this explicitly dynamic, stochastic setting, it is possible once again to find a system of transfers among agents, in each period, that induces them to choose actions that are socially efficient.

The next two chapters focus on intergovernmental horizontal fiscal interactions arising from the mobility of factors of production. Chapter 6, by Harry Huizinga, examines some of the fiscal implications of labor mobility when migration itself produces externalities. A basic premise of the Huizinga model is that the productivity of an individual worker depends on the quality of the entire work force within a locality or country. This externality means that migration can affect aggregate and average incomes, and the overall efficiency of resource allocation, in ways that depend not only on the attributes of migrants themselves but also on their interactions with other workers in the origin and destination jurisdictions.

Huizinga then analyzes the effects of fiscal policy in this externality-ridden environment, focusing especially on public expenditures for programs – such as retirement, disability, or unemployment – that reduce labor-force participation. Broadly speaking, these policies tend to distort migration incentives by giving rise to fiscal externalities; they can improve work-force quality by inducing low-productivity workers to leave the labor force; and, by changing community composition and the employment status of the population, they affect the voting behavior that determines the level of social benefits. These effects give rise to an analytically rich modeling environment where public policies have a variety of complex impacts on the distribution of welfare and on labor productivity within and among jurisdictions.

For example, Huizinga shows that there may be a broad consensus in favor of some level of social benefits for nonworking residents. This is so because the positive externalities derived from the withdrawal of the least productive members of the work force may raise overall labor productivity so much that the policy benefits even those taxpayers who must support those who do not work. He shows further that immigration may be harmful to existing residents, even when immigrants work and pay taxes to support social benefits for nonworking natives. An analysis of voting on the level of social benefits shows, as one might expect, that employed households tend to favor less generous benefits than those who do not

work. Less obviously, voter preferences about immigration will vary by employment status. For example, the median voter always opposes the immigration of workers who will be unemployed. An unemployed median voter would, however, favor entry by any immigrant who works, while only immigrants whose productivity exceeds a certain threshold would be welcomed by a median voter who is employed. These and other findings show that immigration and transfer policies interact in novel ways when the labor market is characterized by external effects, and that familiar conclusions about the welfare gains and losses from these policies must be reassessed in this context.

One major thrust of recent research in local and international public economics has been the analysis of tax competition for mobile capital. The allocation of both portfolio capital and direct investment among jurisdictions depends, in general, on net-of-tax rates of return, and individual jurisdictions may be able to stimulate local investment through tax concessions or other fiscal incentives. A number of studies have examined the efficiency and distributional implications of interjurisdictional competition for mobile capital, with different branches of literature exploring different assumptions about the nature of this competition. The simplest cases to analyze are those in which both firms and governments are numerous and small. When there are many firms, producers do not interact strategically in output or factor markets, responding atomistically to fiscal incentives and to market conditions. When there are many small governments, individual jurisdictions can set their fiscal instruments without taking strategic interactions with other governments into account. The analysis of fiscal competition when both firms and governments operate under idealized conditions of perfect competition has yielded a body of standard benchmark results.

Our understanding of fiscal competition is incomplete, however, if it ignores the departures from perfect competition that arise when firms, governments, or both are small in number; this is the topic of Chapter 7, by Uwe Walz and Dietmar Wellisch. They study an economy with only two jurisdictions and only two firms. These two firms compete as Cournot duopolists in an external output market; in general, the absence of competition implies that these firms will earn positive profits in equilibrium. As in the strategic trade literature, individual jurisdictions have incentives to use their policy instruments to improve the competitive position of "their" producers in the output market in order to generate additional domestic profits. In the Walz-Wellisch model, localities provide productive public infrastructure (i.e., infrastructure that influences the production costs of private producers), financing their expenditures with taxes on firms. In the strategic trade tradition, it is of interest to examine how

localities use these fiscal incentives to affect the strategic interactions between firms, and this is one important dimension of the Walz–Wellisch analysis. However, following the literature on fiscal competition for mobile capital, the authors recognize that fiscal incentives affect not only the output decisions of firms but also their locational choices. A jurisdiction that offers a particularly attractive bundle of local public services and taxes may become an agglomeration point for the industry, inducing both firms to locate together; whether or not this occurs depends in part on whether local infrastructure exhibits sufficiently strong public goods characteristics. The policy interactions between localities thus become very complex: not only do fiscal policies affect *how much* firms will produce but also *where* the firms will produce. Walz and Wellisch analyze these interactions in a set-up where infrastructure provision and locational choices are determined first and then output levels are fixed. As they show, both output and locational choices may be distorted away from optimal (joint–profit-maximizing) outcomes, depending on the configuration of production costs, infrastructure technology, and other parameters of the model.

The first paper in Part III, by Junaid Ahmad, discusses urban governance and finance in South Africa. Under the enforced racial separation and settlement patterns of the apartheid system, both the private and the public sectors of the urban economies of South Africa had highly distorted spatial structures. The local public sector in white areas was characterized by high levels of public service provision, effective taxation, and professional administration; the local public sector in black areas by none of these. Amelioration of race-based economic inequality is a pressing task facing South Africa today, and reorganization of the local public sector must inevitably play a major part in that process. As Ahmad explains, there are several ways that this might be done. The "twinning" of formerly white localities with neighboring formerly black localities – so as to share local tax bases and administrative resources – is one possibility. Another is the establishment of geographically comprehensive local governments encompassing entire metropolitan areas. These alternatives, or variations on them, present complex tradeoffs between redistributive objectives and allocative efficiency, especially in the face of rapid economic restructuring as the heavy and arbitrary regulatory controls of the apartheid era are relaxed. A governmental structure adapted to the spatial economic organization of the apartheid urban area is likely to become outmoded as employment centers, housing markets, and transportation systems are transformed. Yet the legacy of the past, embodied in existing location patterns, is a fact that cannot be erased instantly. South Africa must thus attempt to reorganize local governance and local finance in the midst of a spatial transition.

Changes in the jurisdictional structure of local government will certainly influence the ability of localities to meet demands for infrastructure and urban service provision. Grants from higher-level governments will also play a role in financing these activities. As an alternative or supplement to grants, however, localities might attempt to use debt finance as a source of funds. Under apartheid, markets for residential and commercial property in black areas were poorly developed, in significant part due to government policy. Under such circumstances, it is difficult to establish local finance using property or land taxation, which have been traditional revenue sources for white localities in South Africa. However, the dismantling of apartheid and the prospect of improved economic development in poor areas should strengthen local revenues over time. Under these conditions, the use of borrowing to finance a backlog of urban infrastructure has considerable appeal. However, as Ahmad discusses, there are potential pitfalls in the use of borrowing as an instrument of local finance, and an important task for policy makers in South Africa is to structure local government institutions so that they can reap the benefits of capital market access without undermining local fiscal responsibility. Exposure to capital markets can discipline local policy makers and create incentives for efficient financial and investment strategies, but this requires that the rules of the game governing the fiscal interactions among different units of government and the definition of their responsibilities with respect to capital market obligations be clearly and appropriately defined.

Chapter 9 is by Thomas Nechyba, who reports on a program of research aimed at analyzing the simultaneous interaction of market and political decision making in local public finance through a computable general equilibrium (CGE) model. In Nechyba's model, decisions about local public good provision are made through simple majority voting by residents, with property taxes (or, in some experiments, other fiscal instruments) used to finance local spending. A crucial feature of the model is that the local electorate is endogenously determined: households are free to move among localities in order to find the location that is best for them, taking into account local public good provision, local taxes, and local housing costs. Calibrating his model using data from local school districts in New Jersey, Nechyba is able to compute allocations of resources and prices such that all markets clear and all public policies are majority-voting equilibria.

This framework allows a much more comprehensive analysis of structural changes in local government finance and intergovernmental fiscal relations than is usually possible. For example, Nechyba uses it to show how individual localities – that is, the current, voting residents of individual localities – have incentives to use property taxes rather than income taxes

to finance local expenditures. He also describes how the model can be used to study the effects of both explicit and implicit intergovernmental transfers on the overall levels of, and interjurisdictional variation in, public good provision. Previous theoretical research leads one to anticipate that matching grants ought to stimulate local public spending more than equal amounts transfered in the form of lump-sum grants (e.g., through equalizing grants). Theoretical analysis cannot, however, determine the magnitude of the effects of different types of grants. Nor can theory alone predict the quantitative impact of federal income tax deductibility of local taxes, a form of implicit intergovernmental transfer that Nechyba also analyzes. For policy analysis, estimates of empirical magnitudes are of great value, and the CGE approach has much to offer in this respect. At the same time, because general equilibrium modeling requires that behavioral and accounting relations satisfy overall consistency conditions, it imposes a useful discipline on quantitative policy analysis. For instance, Nechyba's model demands that government budgets be balanced; this means that, although a program of grants to local governments may tend to increase local public spending by providing more resources to the local public sector, the effects of the taxes that are used to finance these transfers must also be explicitly taken into account. The CGE model described here is amenable to many additional types of policy analysis, and the model itself could in principle be extended or modified in a variety of ways to reflect institutional or economic factors that might be of special relevance in particular policy contexts.

The final contribution to the volume, by Jeffrey Petchey and Perry Shapiro, discusses fiscal tensions between the states and the central government in Australia. Their paper is motivated by a perennial issue in any federation – namely, the degree of autonomy that lower-level governments should have. This issue is partly conceptual in nature: is it the nation or its individual component jurisdictions that are regarded as the fundamental constitutional units of the polity? As Petchey and Shapiro discuss, this issue was debated in nineteenth-century America by Calhoun and Webster, and by Deakin and others at the founding of the Australian federation; indeed, it is debated today in the context of the European Union. Questions of "nationhood" certainly entail cultural, social, and political dimensions. For economists, however, it is natural to try to find the critical distinctions between a truly "national" system and a more weakly linked "multistate" regime in terms of their fiscal performance, especially with respect to the efficiency and distributional consequences of centralized versus decentralized tax and expenditure policy. In this spirit, Petchey and Shapiro set out an illustrative analysis in which they compare the economic outcomes of three different political-institutional structures, which

they designate the "competitive federal," "cooperative federal," and "centralized" systems. (Under cooperative federalism, states can enter into agreements with each other to coordinate policies; in competitive federalism, they act entirely independently.) The authors postulate a society divided into two states, each of which contains some people who place a high value on public services ("high demanders") and some who place a low value on these services ("low demanders"). This simple set-up is enough to bring into play the classic problems of minority and majority interests within states and in the nation as a whole, including the possibility that local majorities may not be national majorities. As Petchey and Shapiro show, the levels of taxes and expenditures chosen in each case will differ because the political constituencies and potential policies in each regime are different, and no one regime unambiguously dominates the others in economic terms. For example, cooperative federalism may be better than competitive federalism from the viewpoint of low demanders in one state, but may hurt high demanders, or perhaps fellow low demanders, in the other state. In other words, the diverse groups will not generally agree about which form of political organization provides the best economic results, and the disagreements among groups may run not only along income or preference dimensions but along spatial lines as well.

This assessment of the ambiguous economic performance of different constitutional regimes may reflect the ambiguous resolution of the tensions between state and central authority that we observe in practice. Petchey and Shapiro discuss in some detail the evolution of state and central fiscal authority in Australia, showing that the taxing powers of state governments have been severely constrained not only by the letter of the constitution but by its interpretation in a series of High Court decisions over the course of the present century. The states retain formal responsibility for many important areas of public expenditure. However, Petchey and Shapiro find that their limited ability to raise revenues means that states have relatively little autonomy in practice. Rather, they rely heavily on grants from the central government to finance their expenditures, and the center has used conditionality of grant assistance to control state expenditure policy. Potential reforms of this system, such as moves toward greater state fiscal autonomy, would likely generate patterns of political support and opposition among diverse constituencies in different states, patterns that reflect not only pure income and preference differentials among groups but also the extent to which these groups would be able to influence fiscal policies within the context of more decentralized political decision making.