

**MODERN
PUBLIC
FINANCE**

EDITED BY

JOHN M. QUIGLEY

AND

EUGENE SMOLENSKY

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1

Introduction

How can collective action improve resource allocation and economic efficiency and also alter the distribution of income in socially desired ways? This central question—which challenges us to improve our understanding and execution of government policy in pursuit of efficiency and equity objectives—has been debated by public finance specialists from the beginning. Nevertheless, the state of knowledge in the late 1950s constitutes a natural and important baseline from which to examine important developments in modern public finance addressed to such issues. We begin with the years in which Richard Musgrave’s *Theory of Public Finance* first appeared. Musgrave’s *Theory* represented the zenith of partial equilibrium analysis and introduced general equilibrium modeling of taxation. It also demonstrated the first sustained effort to integrate the theory of public goods with “standard” price theory.

Shortly afterward, partial equilibrium analysis of taxation and public expenditure was replaced for most purposes by a general equilibrium treatment—at first the analysis of two sectors (for example, Harberger, 1962), and ultimately the analysis of complex simultaneity (for example, Fullerton et al., 1980). More generally, diagrammatic analyses of individual and market equilibria gave way to the familiar constrained maximization paradigm now used to represent individual and collective choice.

This volume reviews the developments in public finance theory within these new paradigms—selectively, to be sure—and bears witness to the advances that have been made in the application of economic principles to important

problems in the positive economics of taxation and public expenditure. The chapters are not intended primarily as “review papers,” nor are they intended to be comprehensive surveys of the field. Most of them do provide focused surveys of recent developments in the various subfields. But they also report new work that significantly advances our understanding; they illustrate the power of modern public finance and draw specific attention to fertile areas for future research. The chapters define the state of the art for specialists in other research fields and also suggest fruitful research topics for graduate students (as well as public finance specialists). A major objective of the book is to motivate research by advanced graduate students.

Although the topics covered here are diverse, they are unified in their methodological perspective. Each of the chapters considers the implications of public sector decisions from a general equilibrium perspective, where that perspective is derived from an explicit optimizing framework. In Chapter 2, Anthony Atkinson provides a general equilibrium analysis of tax incidence using the employer payroll tax as an example; he analyzes the ultimate burden of payroll taxation in a two-sector model which includes primary and secondary labor markets. The general framework for the model is an extension of the methodology developed in the now-famous Harberger model of corporate taxation. Yet the specific application developed by Atkinson is highly original and yields rich and novel insights. Moreover, the formulation of the model serves as a blueprint for the incorporation of modern notions of labor economics in public finance. Atkinson’s model incorporates such non-neoclassical features as unemployment queues, efficiency wages, and the matching of vacancies with available workers. It vividly indicates how tax changes can qualitatively alter the equilibrium of an entire economy. It also recognizes the distinct possibility that taxes may lead to nonuniqueness in economic equilibria, and thus that tax policy may greatly alter the equilibrium of the economy.

Atkinson also contrasts modern equilibrium notions of tax incidence with previous analyses. He demonstrates that the incidence of taxation is properly *deduced* from the characterization of the market and from the behavior of economic actors; it is not *assumed* as a series of postulates—even postulates representing sophisticated exercises in economic accounting.

By incorporating modern notions of labor economics into the analysis of tax incidence, Atkinson implicitly raises a series of analogous applications of microeconomic theory to public finance—for example, the relationship between industrial organization and the burden of payroll or profits taxes or taxes on real property, or the relationship between the features of international competi-

tiveness and tax incidence. It appears that we can better understand the economic effects of taxation if we embed recent developments in industrial organization or international economics within a general equilibrium model of tax incidence. More generally, tax incidence and distributional analyses can be enriched by the explicit incorporation of imperfections in markets—for products and capital, as well as for labor.

Atkinson also raises a more fundamental question about the meaning of incidence. Ultimately, the burden of taxation is borne by identifiable households or the individuals who constitute them. These individuals simultaneously supply labor, consume products, and receive nonlabor income. In a modern economy, the distinctions between laborers and capitalists as separate “classes” may be far less salient than distinctions among individuals on the basis of productivity, inherited advantage, or random experiences. Furthermore, the burden of taxation will vary according to the way these individuals are distributed across firms of differing sizes, industries, and competitive environments.

In Chapter 3, Alan Auerbach considers the dynamic and intertemporal implications of related issues. In particular, he reviews three aspects of dynamic tax incidence: the taxation of lifetime income as compared to annual income; the taxation of capital accumulation; and the long-run versus short-run view of tax incidence. In each case, dynamic considerations can lead to surprising implications for the burden of taxation.

The heart of Auerbach’s contribution, however, is his synthesis of modern research on the nature of the public debt and the link between current and future fiscal choices. Auerbach reviews the profound implications of the Barro proposition of Ricardian equivalence: government debt is not perceived as net wealth by taxpayers because they recognize that the future taxes required to retire this debt represent a liability of equal magnitude. Auerbach also reviews the assumptions that generate Ricardian equivalence and the ambiguous empirical evidence about its validity.

If Ricardian equivalence holds, then the federal deficit cannot be a vehicle for allocating the burden of public expenditures across generations (and social insurance schemes that transfer resources to the elderly have no effect on aggregate saving). Auerbach shows that even under these conditions fiscal policy can still be used to improve welfare, by smoothing tax rates over time and thus reducing the deadweight loss from taxation.

Finally, Auerbach raises important and troubling issues in the measurement of public debt, especially when this is compared with the definition and measurement of debt for private corporations. The ambiguity in the definition of

public debt, in turn, raises further questions about the nature of “tests” of the importance of Ricardian equivalence in the real world.

Auerbach’s analysis pays particular attention to the transition from one tax regime to another and to the distinction between tax design and tax reform; government incentives for individual savings (such as individual retirement accounts) and for corporate investment (such as investment tax credits) are important examples. These issues will have even greater salience as nations in western Europe reform their tax systems to encourage fiscal harmonization and as nations in eastern Europe seek to design tax and expenditure policies to assist in the transition to market economies.

Suzanne Scotchmer takes seriously the possibility that the private profit motive can call forth the appropriate supply of public goods and thereby reduce the branches of Musgravian public finance from three to two (distribution and stabilization). She analyzes the potential role of the profit-maximizing “proprietor” of a community or club. Her points of departure are the classic informal models of Tiebout (1956) and Buchanan (1965).

Scotchmer distinguishes between local public goods and clubs. Local public goods are available in the same amount to all “members” of a community—members who may pay different prices. Clubs consist of “members” who may pay identical prices, but whose willingness to pay for the goods depends upon the number (and perhaps the identities) of others sharing in the consumption.

The distinction between clubs and local public goods reflects the role of space or location as a means of rationing entry. In the former, space is irrelevant and admission fees can be charged directly. In the latter, space is important because it provides the indirect mechanism for restricting entry.

Scotchmer shows that, for a reasonable set of assumptions, a competitive equilibrium in clubs with costless entry generates a fully efficient outcome. She argues, more strongly, that the theory of clubs can be defined as the theory underlying the efficient pricing of the externalities, which identify consumers in groups.

The efficiency of the club model helps explain the magnitude and sources of inefficiency in the local public goods economy. First, efficiency in the local public goods market is limited by the arbitrary and exogenous partitioning of space into communities. Second, to achieve economic efficiency the proprietor of the community must somehow forecast the land price capitalization of all possible tax and expenditure policies. The proprietor must somehow know the preferences of consumers for packages of goods which are not observed in the

market. Third, the efficiency analysis depends upon circumstances in which all residents are landowners and all landowners are residents.

Evidently, efficiency in the provision of goods by the local public sector is far more problematic than efficiency in the provision of goods by exclusive clubs.

Wallace Oates gives more institutional relevance to the microeconomics of the local public sector. His discussion of the allocation of revenue-raising authority among different levels of government indicates how tax exporting can lead to inefficient levels of public spending by state and local governments. Oates finds that when additional and more realistic tax instruments are considered (in comparison to sparse models such as those relied on by Scotchmer), the potential for inefficiency in resource allocation in public goods provision is much larger. As emphasized originally by Break (1967), the distorting effects of fiscal competition among communities provides a justification for grants to local governments—a justification based on economic efficiency.

Oates reviews the general theory of grants-in-aid among governments and the recent literature on the “flypaper effect.” This latter anomaly may suggest that local government officials are able to manipulate the citizenry to “overspend” the proceeds of grant money on public services. Indeed, this anomaly provides almost the only empirical evidence on the existence of the Leviathan government postulated by Brennan and Buchanan (1980). An alternative and more benign explanation, in terms of transactions costs, can also be held responsible (Quigley and Smolensky, 1993). In any case, Oates demonstrates that there is a real need to devise sharper empirical tests to distinguish among alternative explanations for the phenomenon. More generally, he concludes that careful analysis and reform of the grant system may yield large positive returns, in realizing allocative and distributional goals.

Oates also raises for the first time (at least to our knowledge) the potential importance of “regulatory federalism” in the analysis of public finance. He considers the example of varying regulations governing pollution across areas or regions of the country. This may be but one example of an increasingly important theoretical and empirical problem in intergovernmental fiscal relations—namely, the role of mandates and rules imposed by the federal government upon states and by state governments upon localities. Devising positive and normative models of the imposition of mandates (or the use of mandates as matching requirements) will not be an easy task. But increasingly, the actions of lower-level governments, and the fiscal choices available to them, are re-

stricted by regulations imposed by higher levels of government. The notion of “price” must be expanded to accommodate this reality.

In chapter 6, Charles McLure and George Zodrow consider the way in which public finance theory, and the advances in that theory, have been translated into usable knowledge in the design and execution of tax policy. They consider specifically the interplay between economic analysis and the federal income tax policies actually undertaken in the United States during the past three decades.

McLure and Zodrow begin by characterizing the consensus on theoretical issues that prevailed in 1960, paying particular attention to the logic of those principles that underlay informed scholarly and professional opinion at that time. They discuss the definition of the tax base, the role of the Haig-Simons definition of income, and the implications of this definition for the treatment of inflation, investment, and the timing of taxation.

The authors provide powerful illustrations of the way in which advances in theory and new empirical evidence affected the economic consensus from 1960 to 1985. This analysis of the development of economic thinking during a quarter-century, though selective, is enormously instructive.

McLure and Zodrow indicate, for example, the operational importance of the controversial empirical findings that labor supply behavior is quite sensitive to taxation (Hausman, 1981b), that the amount of savings is affected by its after-tax return (Boskin, 1978a), and that the sensitivity of human capital investment decisions to taxation further increases the long-run labor supply and savings elasticities with respect to tax rates.

The authors also demonstrate the importance of modern computable general equilibrium models in analyzing plausible interactions among economic entities. They provide a careful and balanced review of recent work on the choice between consumption and income tax bases and the controversies over tax expenditures and tax shelters.

The heart of the McLure-Zodrow contribution, however, is the analysis of the interaction between these theoretical advances (and the controversial nature of many of them) and their actual implementation in the Tax Reform Act of 1986. The authors find a major paradox in the application of modern public finance theory. The complexity and subtlety of modern analysis make it ever more difficult to argue convincingly to those who make tax policy in the legislative process. But the difficulty goes deeper than explication, because the complexity of modern analysis also means that empirical results are more fragile and uncertainties are greater. Finally, the diffusion of highly competent public

finance talent throughout the federal government—from the Treasury Department to the legislative staff—encourages the use of sophisticated economic analysis in an adversarial setting. Adding to the adversarial nature of public economics is the fact that strong analytical staffs are now working at the major consulting and accounting firms and are thus available to interest groups and private sector advocates.

This volume includes four chapters analyzing issues in optimal taxation and public finance. As suggested by McLure and Zodrow, a central finding of this new literature—that high or increasing marginal tax rates may not be appropriate, even if the social welfare function is strongly egalitarian—was an important consideration in legislating tax reform. The chapters by James Mirrlees and Peter Diamond provide elegant theoretical analyses extending the paradigm of optimal taxation. Mirrlees addresses the goods produced by tax revenues, while Diamond addresses optimal stabilization policy. The final two chapters, by Robert Haveman and Richard Arnott, provide an interpretation and assessment of the importance of the theory of optimal taxation.

James Mirrlees, the founder and original innovator of the optimal tax literature, analyzes the relationship between optimal taxation and the finance of public expenditures, thus formulating the first linkage between optimal tax (in the sense of tax rates applied to labor and commodities) and the “optimal” amount of revenue to be spent on public production. Mirrlees considers the circumstances under which this intricate problem has a well-defined solution. He also examines the relationship between this model and more conventional macroeconomic problems of adjustment and stabilization.

Mirrlees offers an extensive analysis of this challenging class of problems in his consideration of the optimal level of public expenditures in a second-best economy. Much of his work also requires an integrated analysis of the effects of public expenditures on tax revenues. Generalizing the optimal taxation paradigm to include the effects of government production on consumers is no easy task and is a fertile area for theoretical research. It appears that it may be possible to provide a stylized model of the “optimal government” using the techniques developed for the study of taxation.

Peter Diamond presents a complementary analysis of optimal stabilization policy, clearly illuminating the potential tradeoff between economic efficiency and stabilization objectives. His notion of stabilization encompasses situations in which demand is unstable or uncertain, as well as those in which there is some single large shock to the economy. He also discusses circumstances in which there is a prolonged period of low aggregate demand and idle resources.

In the latter case, Diamond sketches out a model that enables one to determine the number of additional public sector jobs required to stabilize the aggregate economy. In this model, public sector job creation depends upon the investment costs required to produce jobs and the substitutability of different kinds of jobs in stimulating aggregate employment and total output. The allocation and stabilization objectives are reconciled by considering explicitly the number of jobs and their division between the public and private sectors.

In his analysis of stabilization policy in response to shocks to the economy, Diamond builds on Musgravian analyses of built-in stabilizers. He asks whether a particular set of tax and transfer mechanisms—which, in effect, insures producers and workers against an exogenous shock in the economy—also provides appropriate incentives to job suppliers and to workers. In several stylized cases, he solves for the optimal stabilization policy and for its effects upon the otherwise optimal tax rate in the economy. He also extends these models informally to address price level changes in an inflationary environment.

Robert Haveman examines the policy lessons that can be learned from the optimal tax literature, considering both commodity and income taxation. He raises important questions about the relevance of this literature to public policy and to the debate about desirable tax reforms. He describes a dozen difficulties in getting unambiguous results from the theory that could be applied in practice. Haveman concludes that popular “lessons” from optimal tax models for tax policies are unwarranted and perhaps misleading. His analysis reinforces the caution expressed by McLure and Zodrow about the fragility of many policy conclusions.

In chapter 10, Richard Arnott addresses two technical issues that complement the analysis presented by Mirrlees. First, what is the relationship between the level of public goods production in the second-best circumstance and the level in the first-best circumstance? Second, how can Mirrlees’ attempt to incorporate macroeconomics into optimal taxation be interpreted? Arnott complements Haveman’s analysis by asking: How has the theory of optimal taxation contributed to public economics?

Arnott extends Mirrlees’ comparison of first-best and second-best public goods provision and demonstrates an alternative and simpler way of approaching the problem. He continues by analyzing a series of models that bring stabilization objectives into the optimal tax framework. In extending and complementing the work of Diamond and Mirrlees, Arnott makes an important contribution to further research.

The third part of Chapter 10 offers a spirited defense of optimal tax theory

and its contributions to public economics. The reader will judge the success of this effort. The argument should be compared not only with the chapters by Mirrlees and Haveman but also with the more general treatment by McLure and Zodrow.

The authors of this book furnish provocative analyses of the most salient issues in the public finance component of public economics, but they do not analyze specific public expenditures. It is not difficult to envision a separate volume, roughly the same size as this, which would be devoted entirely to modern public expenditure analysis—health care, social insurance, agriculture subsidy, the economics of defense spending, and so forth. Such a volume would have a different theoretical basis from the general equilibrium model emphasized here, but it would be a welcome companion to this book.

PART |

DISTRIBUTION,
STABILIZATION,
DYNAMICS

