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## THE THEORY OF TAXATION AND PUBLIC ECONOMICS

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LOUIS KAPLOW

The Theory of Taxation  
and Public Economics



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# 1

## Introduction



This book develops and applies a unifying framework for the analysis of taxation and related subjects in public economics. Its two central features are explicit attention to the social objective of welfare maximization and direct examination of how various government instruments should be orchestrated to achieve that objective. Consistent application of this approach solidifies and extends some familiar results and intuitions, overcomes seemingly intractable obstacles regarding other issues, and overturns several important settled understandings.

Mirrlees (1971), although most remembered for pathbreaking technical analysis of optimal nonlinear income taxation, also provides the seminal modern articulation of this research agenda. Concerns about distribution and distortion and the tradeoff between them, the key issues in his article, arise in connection with many topics in public economics, ranging from all forms of taxation to public goods and the regulation of externalities to social insurance. Nevertheless, literatures vary widely in the extent to which analysis is related to a social welfare function and connected to the backbone of modern fiscal systems: some form of labor income taxation (or consumption taxation equivalents). Even though optimal income tax writing has hewed closely to the course of inquiry suggested by Mirrlees and adopted here, work on the taxation of capital income, transfer programs, public goods, regulation, social insurance, and other subjects often has not done so, and research on other topics such as transfer (estate and gift) taxation and the tax treatment of different family units only rarely attempts the necessary linkages.

It is worth pausing to emphasize the pivotal role of the income tax in studying different types of taxation and many other problems in public economics. The truism that the optimal use of any policy instrument



generally depends on what other ones are feasible is particularly apt when one of the available instruments is the income tax. Consider optimal commodity taxation, explored more fully in chapter 6. The familiar Ramsey (1927) result for the basic case with no demand interdependencies is that commodity tax rates should vary inversely with own-demand elasticities; if heterogeneity is introduced so that income distribution matters, luxuries should be taxed more heavily than necessities, *ceteris paribus*. But these results assume that no income tax is feasible. When an income tax is employed and set optimally, Atkinson and Stiglitz (1976) show that, with weak labor separability in the utility function, no differentiation in commodity tax rates is optimal; indeed, this is so regardless of own-price elasticities and income elasticities. Yet much research ignores the income tax—presumably due to the complexity of optimal income tax analysis—and builds models like Ramsey’s, which may well yield conclusions that are inapplicable to an economy with income taxation, such as most developed economies today.

This book relates the analysis of all of its subjects to the income tax and attends to how both distribution and distortion influence social welfare. In many settings, it proves useful to accomplish this mission by employing a procedure that constructs distribution-neutral (and revenue-neutral) reform packages. Specifically, the income tax is adjusted to offset the distributive incidence of the modification to the policy instrument directly under consideration, whether it be commodity taxation, transfer taxation, public goods provision, or some means of regulating externalities. This method disregards neither the income tax nor important aspects of social welfare. Yet the complexities of optimal income tax analysis are largely moot because the initial income tax need not be optimal and the optimum need not be determined in order to implement this procedure. Moreover, as will now be explained, many second-best complications are successfully moved into the background.

When the entire reform package is distribution neutral, it obviously is appropriate to ignore distributive effects since there are none. Furthermore, distribution-neutral reform packages will be shown to have no effect on labor supply in a benchmark case, indeed, in the same case of weak labor separability noted by Atkinson and Stiglitz (1976). In other words, under the proposed approach both distribution and labor supply—the elements of the tradeoff at the heart of the optimal income

tax problem—can legitimately be set to the side. As a consequence, all that remains to examine are what may be viewed as the distinctive effects of the original policy instrument under consideration. These effects may accordingly be assessed on efficiency grounds alone because any standard social welfare function will favor a reform package that increases efficiency while leaving distribution unaffected.

In this setting, it is correct to follow simple first-best commands like the Samuelson cost-benefit test, the Pigouvian prescription to set pollution taxes and subsidies equal to marginal external costs and benefits, and public sector pricing at marginal cost. This is so (subject to qualifications that will be explored) despite second-best concerns about distribution and labor supply distortion that have occupied increasingly complicated literatures, work that often does not incorporate the income tax and that frequently attends only to distribution or only to distortion—which is quite dangerous given the inevitable tradeoff between the two and, relatedly, the failure to apply a social welfare function. By comparison, the method adopted here enables analysis that is more streamlined and intuitive and, at the same time, more rigorous and reliable.

Furthermore, because the same technique can be utilized for such a wide range of seemingly disparate problems—from commodity taxation to transfer taxation to public goods to regulation—there are substantial economies of effort. In addition, greater specialization is facilitated because inquiries into specific subjects, properly framed using distribution-neutral income tax adjustments, can confine attention to distinctive features. Studies of cigarette taxation can concentrate on the merits of discouraging smoking, evaluations of transfer taxation on the virtues of encouraging consumption by donors rather than by donees, assessments of infrastructure projects on their effects on productivity, and appraisals of environmental measures on the direct costs of different modes of regulation and their environmental consequences. Other researchers can focus on the distribution-distortion tradeoff itself, which is done most directly in the context of the original optimal income tax problem, one that would benefit from greater attention to a number of little-explored yet important variations. There are, of course, interactions in some instances, but it will be seen that these, too, are clarified by the proposed approach.

As the foregoing discussion indicates, the methodological focus of this book is conceptual and normative. Therefore, only occasional attention will be given to the extensive empirical work that bears importantly on ultimate policy recommendations but not as much on how analysis should be structured. Additionally, macroeconomic and political considerations are largely ignored. Finally, except for occasional illustrative purposes, specific policy proposals are not examined. The purpose here is to enhance understanding of how analysis should be conducted and of what research agenda is implied thereby. It will nevertheless be apparent throughout the book that this approach has substantial and sometimes unconventional policy implications.

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The framework for analysis is presented more fully in Part I. Chapter 2 discusses the case for an integrated view of various forms of taxation and associated subjects in public economics and begins to explore what this view entails. Substantial attention is devoted to how distribution-neutral income tax adjustments can be utilized to facilitate the analysis of tax, expenditure, and regulatory policies. Chapter 3 further develops the need for making the social objective explicit, presents the standard formulation of the social welfare function that will be employed throughout the book, and discusses a range of social judgments about redistribution and how differences among them relate to subsequent analysis.

Part II begins application of the framework by examining the optimal income taxation problem and related issues. Chapter 4 presents standard models and results for linear and nonlinear (labor) income taxation that will be drawn upon in subsequent chapters. Even readers already conversant with this work will likely find some nuances of interest. Chapter 5 elaborates and extends the classical analysis along a number of dimensions. Some matters are familiar, like the relevance of administration and enforcement, whereas others have received less attention, such as ability-based taxation, the complication that income may signal different preferences rather than just abilities, and the implications of interdependent preferences. Many of these topics warrant further research; in some instances, preliminary lines of inquiry are sketched.

Chapter 6, on commodity taxation, is especially important for this book because it presents the most elemental formalization of much of the integrative theme. Using the distribution-neutral approach, Atkinson and Stiglitz's (1976) aforementioned result on the inefficiency of differential commodity taxation is extended to the more general case in which the initial income tax is arbitrary rather than optimal and to cases involving partial reforms. A direct implication is that luxury taxes as well as widely employed exemptions, such as those from a VAT for expenditures on necessities, are inefficient tools for achieving distributive objectives. Qualifications to this analysis and its precise relationship to the assumptions and well-known principles associated with Ramsey taxation are discussed. The results of this chapter form a centerpiece for much of the subsequent analysis in the book because the method of distributively offsetting income tax adjustments is a generic one. Accordingly, the logic is not restricted to commodity taxation and thus can be used to reach important and sometimes unexpected conclusions regarding public goods, regulation, and other forms of taxation (such as of private transfers). As will be discussed at various points in the book, many policy instruments are formally quite similar to commodity taxation, so the unity of analytical approaches to these disparate subjects and the similarity of results should not, upon reflection, be viewed as surprising.

Part III completes the integrated framework by taking account of government expenditures. Chapter 7 examines transfer payments, supplementing the simplified treatment in standard optimal income tax analysis. Much study of transfer programs and of taxation is undertaken in isolation, which results in a deceptive picture regarding redistribution and the incentives faced by lower-income individuals. More broadly, existing views about optimal treatment at the bottom of the income distribution have conflicting elements: Extremely high effective marginal tax rates (largely from phase-outs of transfer payments) are widely condemned, whereas optimal income tax analysis suggests that high marginal rates at low income levels are attractive even though they lead the lowest-ability individuals not to work. These competing elements are reconciled, and the results are used to determine the optimal form of categorical assistance, that is, how levels of assistance and marginal tax rates (including phase-outs) should differ across groups, such as the

disabled and those capable of work. It appears that groups that are typically subject to high (low) marginal rates should optimally face low (high) rates. In addition, increasingly popular work inducements are considered, and it is revealed that most existing and proposed schemes may deviate, perhaps substantially, from optimality.

Chapter 8 addresses government expenditures on goods and services. A proper view of distribution requires attending to how government expenditures are financed and how the combination of expenditure and finance affects distribution and distortion. Using the distribution-neutral income tax adjustments introduced in chapter 2 and analyzed in chapter 6, it is demonstrated that concerns about both distribution and the fact that finance involves income taxation with its associated labor supply distortion can largely be ignored in determining the optimal provision of public goods. In addition, the feedback (if any) of public goods provision on optimal redistributive taxation is examined; that is, it is determined how changing the level of public goods affects the optimal extent of redistribution. The analysis of these issues also elucidates—and in some cases dissolves—challenges that confront attempts to measure the distributive incidence of public policies, and it offers a new perspective on debates about conceptions of benefit taxation. Finally, the analysis of public goods is modified to produce analogous results regarding all manner of government regulation, such as that of the environment, which raises similar concerns regarding distributive effects and labor supply distortion. Again, the results depart, sometimes substantially, from those in the pertinent literature.

Part IV considers other forms and dimensions of taxation. Chapter 9 moves beyond the implicitly static, one-period model used in classical optimal income taxation analysis—actually, the analysis of optimal labor income taxation—to consider the taxation of capital income. Use of the distribution-neutral approach of chapters 2 and 6 to compare different levels of capital taxation serves to clarify and elaborate the point originally advanced by Atkinson and Stiglitz (1976) that capital taxation is equivalent to differential commodity taxation, in this instance of commodities in different time periods, and thus is inefficient in the basic case. A range of qualifications to this result are explored, including the possibility that individuals' savings decisions do not reflect neoclassical maximizing behavior. The conclusions are used to illuminate the

choice between income and consumption taxation, wealth taxation, and corporate income taxation, and the results are extended to address uncertain capital income, capital levies and certain tax regime transitions, and the taxation of human capital. As suggested earlier, the analysis and some of the results in this chapter differ markedly from much of the existing literature on capital taxation because such work employs Ramsey-type models that assume (often implicitly) the infeasibility of income taxation.

Chapter 10 analyzes the taxation (or subsidization) of private transfers between individuals. Although transfer taxation is often understood as a revenue source and an important redistributive supplement in the fiscal system as a whole, these views are misconceived if one joins such taxation with a distributively offsetting income tax adjustment. Then the question becomes: Regarding individuals at a given level of income (say, very high), should their overall tax burden be relatively higher or lower if their marginal dollar is given to descendants rather than spent on themselves to live more opulently? This formulation immediately suggests an entirely different orientation toward the taxation of voluntary transfers. The analysis is complicated by two sets of factors: First, gifts directly affect two individuals, donor and donee, in a manner that qualitatively differs from expenditures on ordinary consumption; this feature gives rise to two species of externalities and has subtle distributive implications that are qualitatively distinct from those usually contemplated. Second, gifts are induced by a wide array of motives that may have diverse implications for behavior and welfare. The distribution-neutral approach neutralizes what many consider to be the most pertinent considerations and brings into view these important factors that previously have been largely hidden. The analysis is also applied to additional subjects, including determination of the optimal policy toward charitable giving, a problem that is also cast in a new light.

Chapter 11 examines aspects of social insurance that are related to the issues addressed elsewhere in the book. First, purely redistributive aspects of social security are noted. It is observed that ordinary redistribution through social security can generally be assimilated to redistribution under the income tax. Then attention turns to more distinctive redistributive dimensions, notably that social security retirement schemes depend on lifetime income (with consideration of how marginal tax



rates optimally vary over the life cycle and whether this pattern is reflected in the ordinary operation of typical income and social security tax schemes), that intergenerational redistribution may be involved, and that different family types are often treated differently. Second, the forced-savings dimension of social security is analyzed, focusing on myopia and other factors that are central to some justifications for the existence of social security schemes. Emphasis is placed on how social security taxes paid during working years may affect labor supply in light of the fact that individuals may be myopic and thus excessively discount benefits paid in the distant future. Some of the results are initially surprising: Notably, in most respects a social security system does not have the effects of an additional tax on top of an existing tax on labor income (the income tax). The sign of the labor supply effects of social security reverses under certain variations of assumptions and parameters, and as the forced-savings constraint just begins to bind there is no first-order effect in one case but a positive effect in the other, yet one that declines rather than rises as the constraint tightens. Finally, more purely insurance-like features of social security are briefly considered.

Chapter 12 addresses the heterogeneity among family units that is central in setting income tax policy, designing transfer programs, and producing descriptive measures of the overall distribution of well-being. Previously, many of the issues have proved intractable and others controversial. Substantial redirection and illumination is provided by the present approach, both by insisting that analysis be explicitly related to the social welfare function and by employing distributively offsetting income tax adjustments to focus on distinctive aspects of the problem. The chapter first analyzes the optimal relative treatment of different family types—single individuals versus couples, and those with varying numbers of children—while abstracting from incentive considerations. Relative allocations may depend on inequality of sharing, economies of scale, different motives that underlie intrafamily sharing, and differences in how resources are translated into utility (notably, by adults compared to children). In each case, depending on traits of utility functions and the social welfare function, optimal results may differ qualitatively from standard views. For example, economies of scale could favor more generous rather than less generous per capita allotments to families, and optimal allocations might favor families with children to such an extent that the

parents are enabled to consume more resources than are made available to adults without children. Then the chapter considers how these principles of allocation may require modification because of incentive considerations involving labor supply, marriage, and procreation.

Part V revisits issues of distributive justice and social welfare that are raised by the standard welfare economic framework initially introduced in chapter 3 and by some of its applications in subsequent chapters. Chapter 13 examines welfarism, the view that the social assessment of policies should depend exclusively on how they affect individuals' well-being. Because this approach is controversial, particularly among moral philosophers and some welfare economists—and more particularly because certain prominent tax equity norms, upon examination, conflict with welfarism—a defense is sketched. It is explained that all nonwelfarist approaches violate the Pareto principle, and further attention is devoted to reconciling the welfarist paradigm with moral intuitions that underlie competing normative criteria. This chapter also elaborates on the concept of well-being that is central to the welfarist approach and assesses a variety of issues that have been raised with regard to crediting individuals' preferences that might be viewed as mistaken or otherwise objectionable. Alternatives to welfarism involving capabilities and primary goods, associated with Sen and Rawls respectively, are shown to be problematic because, among other reasons, they transgress the Pareto principle.

Chapter 14 considers the choice of social welfare function within the welfarist paradigm. Specifically, should the welfare function be utilitarian or more egalitarian? Powerful arguments developed primarily by Harsanyi and further analysis that draws on the Pareto principle and the requirement of time consistency all favor a utilitarian social welfare function. Some standard concerns are addressed, namely, about the possibility of interpersonal comparisons of utility and the sufficiency of the weight given to equality. In choosing a social welfare function, it is also necessary to articulate who should be considered a member of the society whose welfare is to be maximized. Should the focus be local, national, or international? What about future generations? And how should society evaluate policies that affect the size of the pertinent population, and thus may raise total welfare while reducing average welfare? The discussion of these issues will be brief and speculative.

Chapter 15 presents and criticizes other normative criteria for the assessment of tax policy. Consideration is given to various approaches to the measurement of inequality, poverty, progressivity, and redistribution; the concept of horizontal equity; and classical doctrines, notably sacrifice theories, the benefit principle, and the notion of ability to pay. Many of these alternative evaluative precepts are incomplete. Others are redundant, which renders them of little normative use. Of greater concern is that some are in conflict with the Pareto principle. Accordingly, when policy analysis gives weight to these criteria, as is sometimes done, prescriptions may be perverse in ways that are unrecognized. It is suggested that the appeal of these various criteria lies in their tendency to serve as proxies for aspects of social welfare; hence, some may have instrumental value in certain settings, even though they do not constitute ultimate normative objectives.

Following Part V, concluding remarks are offered in chapter 16. The discussion focuses on the central virtues of the unifying conceptual framework that is developed and applied throughout the book. Examples are drawn from different chapters to illustrate the various benefits that are generated by the sort of systematic investigation pursued here. These payoffs arise particularly from use of the distribution-neutral construct, examination of the lessons that can be derived from optimal income tax analysis, and explicit reference to a social welfare function. Implications for research agendas, both analytical and empirical, are also noted.