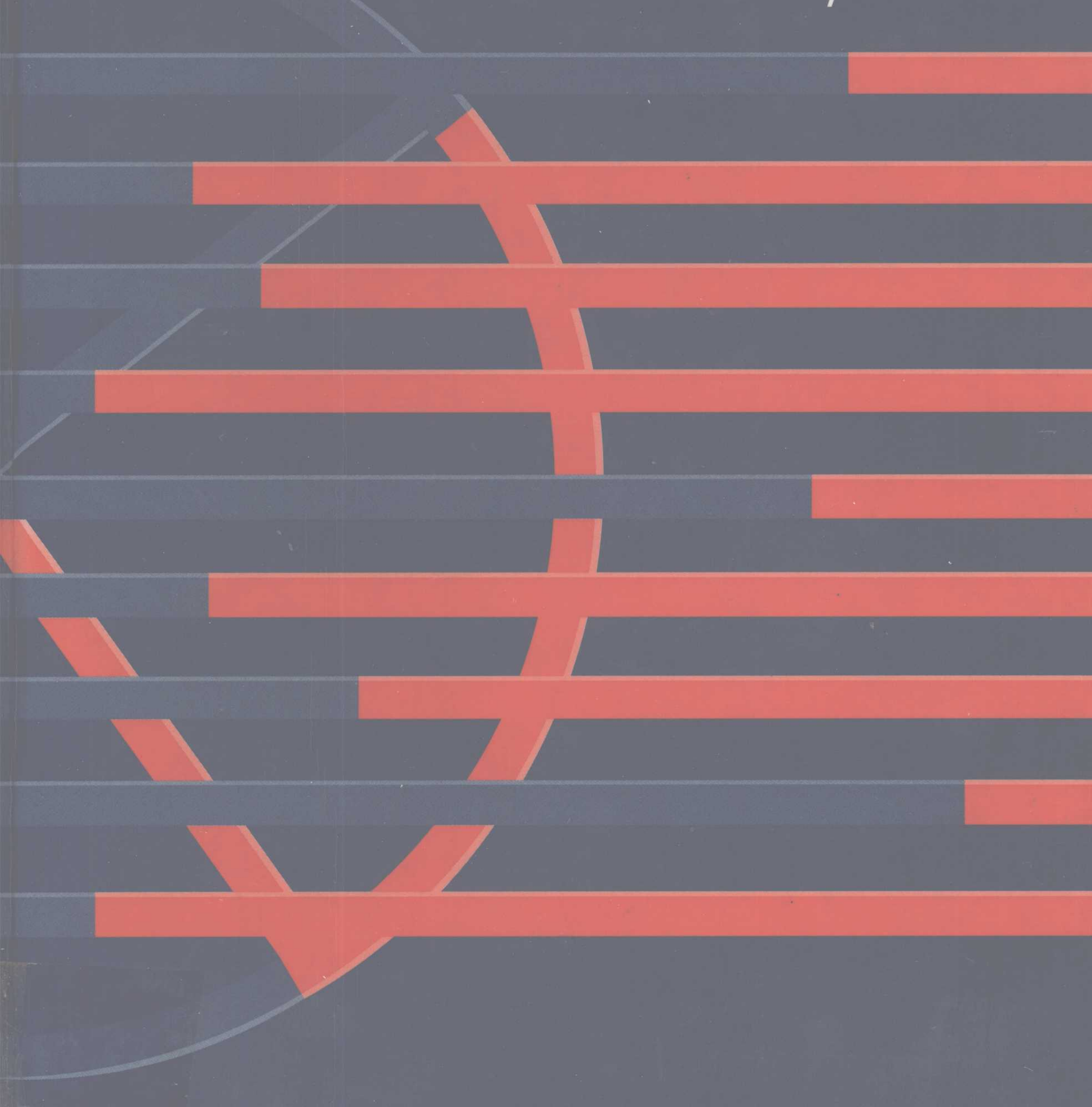
PUBLIC ECONOMICS

Gareth D. Myles



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PUBLIC ECONOMICS

This new and up-to-date textbook provides a thorough treatment of all the central topics in public economics. Written in an accessible style and aimed squarely at senior undergraduate and graduate students, it will be invaluable to those teaching in the field and will also be a vital resource for professional economists.

The book is entirely self-contained and covers, in the first section, the competitive equilibrium theory and welfare economics that underpin the analysis of policy design. The second section then studies commodity taxation, income taxation, tax reform, the public economics of risk and corporation taxation within the context of the competitive economy.

In the third section, departures from the standard competitive assumptions and their implications for public economics are carefully considered. The final section provides an introduction to the overlapping generation economy before addressing intertemporal issues concerning social security and debt.

PREFACE

This book provides a systematic treatment of the major themes in public economics. It is primarily theoretical although empirical results and simulation results are described where these illustrate the theoretical arguments. The merit of the theoretical approach is that it provides arguments and methods of reasoning that are not dependent on transitory institutional detail but can be applied in a wide variety of contexts. The unifying feature of the analysis is the employment of general equilibrium theory to provide a consistent foundation on which results are developed. The use of general equilibrium techniques reflects the author's belief that, since the secondary effects of policy can sometimes outweigh the direct effects, this is the only method that can provide defensible conclusions.

The book is written primarily for graduate students and economists from other fields wishing to learn about public economics. Although this means that some sections are advanced, and some of the proofs terse, there is much that can be profitably read by advanced undergraduates. In fact, the first three chapters could constitute a self-contained treatment of general equilibrium and welfare economics for such students. I have also attempted to structure the chapters so that the basic points are made early on in the simplest acceptable framework. For graduate students, the book should show them public economics as it appears in academic journals. If they wish really to understand the material and intend to contribute to its future development, then mastery of the methods of argument and the details of proofs is essential. After completing this book they should have moved some way towards achieving these objectives.

In writing the book I have benefited immeasurably from the assistance of my colleagues. From amongst these, special thanks are due to Martin Cripps and Norman Ireland from Warwick and Jean Fan, Ben Lockwood and David de Meza from Exeter. John Black provided invaluable assistance in reading, and correcting, the entire manuscript. I have also received very helpful comments on individual chapters from Sheng Cheng Hu, Stephen Jenkins, Kevin Roberts,

C.C. Yang and John Weymark. Vidar Christiansen provided encouragement when I was originally planning the text and acted as the final reader for Cambridge University Press. His efforts have improved the book considerably. Although I did not always agree with them (nor did they entirely agree amongst themselves), the anonymous referees of Cambridge University Press must also be thanked. Their comments helped provide the incentive to complete the text when it seemed that there was so much left to do and were significant in the direction it developed. Part of the material in chapter 6 on policy reform has its origins in joint work with Ravi Kanbur. In addition, some of the content of chapter 12 reflects my collaboration with Robin Naylor on the economics of tax evasion.

The book originally developed from a series of lectures on public economics first given to graduate students at the University of Warwick in 1988 and to the undergraduate lectures that I have been giving since 1987. Thanks are due to all the students whose comments contributed towards improvement of the early drafts; particular thanks are due to Luigi Franzoni, Umberto Galmirini and Guido Merzoni. Writing was started in earnest in 1991 and the outlines of chapters shown to Cambridge University Press in February 1992. Since that time Patrick McCartan of Cambridge University Press has been a source of continuing enthusiasm which has been of great help. The manuscript was completed at the University of Exeter in November 1994.

For the most part, I have typed the text but the task of converting some of the original lecture notes into typed text at the start of the project was undertaken by Lisa Hayes at Warwick and some of the bibliography was produced by Anita Long at Exeter.

CONTENTS

FIGURES

TABLES

Part I

FOUNDATIONS

1

INTRODUCTION

1 PUBLIC ECONOMICS

In the broadest interpretation, public economics is the study of economic policy, with particular emphasis upon taxation. The subject therefore encompasses topics as diverse as responses to market failure due to the existence of externalities and the determination of optimal social security policies. This characterisation reflects an extension of the scope of public economics from its initial emphasis upon the collection and disbursement of government revenues to its present concern with all aspects of government economic intervention. The intention of this book is to provide an introduction to the vast literature of public economics, emphasising the foundations upon which future research can be laid.

Public economics has a long history as a discipline within economics and many eminent economists have written on the subject. For example, Ricardo (1817) discussed the effects of public debt, the incidence of taxation in imperfectly competitive markets was analysed by Cournot (1838), Edgeworth (1925) considered the effects of taxation on multi-product firms and Pareto (1909) set out the foundations for making social decisions. The explanation for this interest in public economics is no doubt contained in the close connection of the analysis with policy and application, which are the ultimate inspiration of most economists. Exposing a theoretical construction to policy analysis also highlights its value and provides a test of its relevance. However, it is also true that before a good policy can be designed an adequate theory must be developed. One of the challenges of public economics is that much of the subject area is still in its infancy with considerable work still to be done.

Although a number of partitions could be used to break down the subject matter of public economics into convenient portions, the most instructive division is between that of determining the effects of alternative policies and that of determining the optimal policy. This division represents the distinction between the exercise in positive economics involved in calculating the change in equilibrium caused by the introduction of a policy and the normative exercise of evaluating, in terms of welfare, the outcome of policy. To achieve the first objective requires a theory that describes how economic agents choose their actions and how these actions are affected by changes in policy. The individual agents must then be combined to form an economy and a theory of equilibrium provided for this economy. The evaluation of policy, and the choice of optimal policy, necessitates the specification of an objective for the policy maker that is capable of providing a measure of the performance of each policy based on the relevant features of the equilibrium resulting from the policy. This evaluation process represents an application of normative economics. The success of public economics has largely followed from the systematic application of these methods.

The theory that is described in the following chapters has developed mainly since 1970 and has built upon developments in microeconomics, macroeconomics, general equilibrium theory and game theory. One of its characteristic features is the use of duality techniques to allow problems to be phrased in the manner most amenable to solution. These techniques permit optimisation exercises to be phrased in terms of the natural choice variables. In this context, the work of Diamond and Mirrlees (1971) was of fundamental importance in introducing these methods into public economics. The use of duality theory has also allowed many problems to be studied with great generality and has often overcome the need to impose restrictive sets of assumptions. A second characteristic feature is the consistent use of general equilibrium theory to provide a rigorous foundation for the policy analysis. A general equilibrium analysis of policy captures both the direct effects of policy and the secondary effects. As the latter may well outweigh the former, a convincing policy analysis cannot be conducted except within a general equilibrium context. These underlying methods of duality and general equilibrium provide the cohesion to what at first glance may appear to be a number of disparate topics.

An emerging trend in the public economics literature has been the use of numerical methods. These have taken the form of both simulations of economies in order to test their behaviour and the evaluation of policy proposals using empirical data. The latter technique indicates a promising convergence between theory and application and is clearly a direction in which the subject will continue to move. Although this book is primarily intended to be a text on the theory of public economics, numerical results are given prominence due to their obvious importance.

The dominant setting for the analysis of public economics is within the mixed economy so that individual decisions are respected but the government intervenes to affect these choices. The design of policy can then be interpreted as the manipulation of individual choices by the choice of policy parameters so as to arrive at an equilibrium preferred to that which would arise in the absence of policy. This makes the results of the studies applicable to most developed economies and concurs with the present ascendancy of such a form of economic organisation. To provide a benchmark from which to judge the outcome of the economy under alternative policies the perfectly controlled command economy with an omniscient planner is often employed. Naturally, this usage of the command economy implies no claim that such perfect control is possible, or even desirable.

2 MOTIVATION

The motivation for the study of public economics follows naturally from the observation that unregulated economic activity does not lead to a socially optimal outcome. At a very basic level, an economy could not function effectively if there were no contract laws since this would inhibit satisfactory exchange. In addition, although the anarchic equilibrium that would occur without contracts may be in the core of the economy, it need not be particularly stable (Bush and Mayer 1974). It must therefore be accepted that no economy could operate without law enforcement and that in order for organised economic activity to take place, there must be a clearly defined and enforced set of contract laws. These laws cannot be policed free of cost. There is also a need for the enforcement of more general criminal laws and for the provision of a means of defence for the nation. These are also costly activities.

Consequently, even the minimal requirements of the enforcement of contract and criminal laws and the provision of defence need the collection of revenue to provide the required finance. This is the case whether these services are provided by the state or by private-sector organisations. The coordination of the collection of revenue and the provision of services to ensure the attainment of efficient functioning of economic activity therefore provides a natural role for a central state in any economy that wishes to develop beyond the most rudimentary level. In addition, this reasoning also illustrates that to achieve even the most minimal level of efficiency and organisation of economic activity some unavoidable revenue requirements are generated and require financing.

Having determined that the organisation of economic activity must generate a revenue requirement, one aspect of the role of public economics is to determine how this revenue can be collected at the least cost to the economy. Although the concept of least cost has several possible interpretations, both positive and normative, under any interpretation the aim of the economic policy design would be that of finding an efficient means of revenue collection. Such design would involve the identification of feasible policy instruments from the set of possible policies, the choice of policy instruments to be imposed from amongst those that are feasible and the calculation of the optimal level of each instrument. The issue of efficiency in policy design is a continuing and central theme of public economics.

Moving beyond the basic requirements for organised economic activity, it is arguable that there are other situations where state intervention in the economy has the potential to increase welfare. Unlike the basic revenue requirements, however, there will always be a degree of contentiousness about further intervention motivated on these grounds. The situations where state intervention may be warranted can be divided into two categories: those that involve market failure and those that do not. With market failure, the argument for considering whether intervention would be beneficial is compelling. For example, if economic activity generates externalities, so that there is divergence between private and social costs and the competitive outcome is not efficient, it may be felt necessary for the state to intervene to limit the inefficiency that results. This latter point can also be extended to other cases of market failure such as those connected to the existence of public goods and of imperfect competition.

Where market failure does not occur, state intervention can be motivated by the observation that although an equilibrium may be efficient it need not be optimal according to the state's welfare criterion. Such a situation may arise if the equilibrium of the economy is characterised by widespread poverty and an inequitable distribution of income. In such circumstances, the level of economic welfare as viewed by the state may well be raised by a programme of income redistribution. Similar arguments can be applied to the provision of state education, social security programmes and compulsory pension schemes. It should be stressed that such potential increases are with respect to normative assessments of welfare, unlike the positive criteria lying behind the concept of economic efficiency.

In the cases of both market failure and welfare-motivated policies, policy intervention concerns more than just the efficient collection of revenue. The reasons for the failure of the economy to reach the optimal outcome have to be understood and a policy that can counteract these has to be designed. It must also be recognised that the actions of the state, and the feasible policies that it can choose, are often restricted by the same features of the economy that make the competitive outcome inefficient. In each case, policy intervention can only be justified by proving that the state can actually improve upon the market. That it can always do so should not be taken for granted. Extending the scope of public economics to address such issues provides the breadth to public economics.

3 EFFICIENCY VERSUS EQUITY

In conducting an economic policy the state will generally have two conflicting aims. On the one hand, it will aim to implement the policy with the minimum loss to society. The use of policy will cause a loss due to the resources used in the implementation process and from the economic distortions that the policy will cause. Minimising these losses is the efficiency aspect of policy design. Conversely, the state may also feel that it is desirable to intervene in the economy in