The Theory of Taxation for Developing Countries

edited by
David Newbery
Nicholas Stern

A World Bank
Research Publication

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PUBLISHED FOR THE WORLD BANK
Oxford University Press

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NEW YORK OXFORD LONDON GLASGOW
TORONTO MELBOURNE WELLINGTON HONG KONG
TOKYO KUALA LUMPUR SINGAPORE JAKARTA
DELHI BOMBAY CALCUTTA MADRAS KARACHI
NAIROBI DAR ES SALAAM CAPE TOWN

Manufactured in the United States of America
First printing hardcover
and paperback editions
July 1987

Library of Congress Cataloging-in-Publication Data

The Theory of taxation for developing countries.

Includes bibliographies and index.
1. Taxation—Developing countries. I. Newbery,
David M. G. II. Stern, N. H. (Nicholas Herbert)
HJ2351.7.T47 1987 336.2'009172'4 87-11106
ISBN 0-19-520498-0
ISBN 0-19-520541-3 (pbk.)

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With contributions by

Ehtisham Ahmad
Choong Yong Ahn
Jane Armitage
Anthony Atkinson
Christopher Bliss
Avishay Braverman
Angus Deaton
Peter Diamond
Gary Fields
Mark Gersovitz
Francisco Gil Díaz
Jeffrey Hammer
Christopher Heady
Gordon Hughes
Michael Katz
Pradeep Mitra
Richard Musgrave
Richard Sabot
Raaj Kumar Sah
Joseph Stiglitz
Vito Tanzi
Sweder van Wijnbergen

Preface

ALL GOVERNMENTS NEED RESOURCES, but the problems of raising revenue are particularly severe in developing countries. These problems have been somewhat neglected in the past because work in public economics, both theoretical and applied, has concentrated on developed countries and taxation has not been a central concern in development economics. The past twenty-five years, however, have seen much progress in both fields, with a greater emphasis on construction of simple but clearly articulated models of the economies of developing countries that take into account the goals of, and constraints on, governments. It is now possible to investigate systematically such basic questions of public finance as which goods should be taxed, how tax systems should be reformed, and where additional resources should be sought. In this volume many of the economists whose work has been central to recent developments examine these issues, review progress in specific areas, and discuss directions for further work.

Parts 1 and 2 describe basic theories, facts, and experience; parts 3 through 6 deal with applications to particular countries and problems. Among the subjects covered are general tax theory, along with data requirements and the use of economic models in applications of the theory; the advantages and disadvantages of various taxes; the special characteristics of individual countries' tax systems and revenue sources; tax reform in general and practical experience in India, the Republic of Korea, and Mexico; the problems of taxing agriculture; and the pricing of publicly provided goods and services.

The book as a whole focuses, as the title implies, on taxation in developing countries, with a view to determining what can be achieved by applying the methods of public economics. No attempt has been made to impose a single, uniform view, but most of the authors share a concern with identifying the government's objectives and how they can best be achieved with the available resources, institutional arrangements, data, and tax instruments.

This book has several purposes. Because it uses modern methods and contains both new research and an assessment of the state of the art, it will be useful for economists and graduate students interested in development and taxation, and in particular for economists in governments, international organizations, and consultancies who wish to keep abreast of theoretical and empirical developments in contemporary research and adapt them for practical use. The book may also help to persuade academic economists and research students that taxation is a stimulating and important area for research, and it provides useful analytical tools for solving a broad range of problems. Finally, the collection, with its case studies in economic theory and econometrics, should be valuable as a textbook for courses in both public economics and development economics.

Many of the chapters in this book are necessarily technical because they contain the formal expressions and theoretical arguments that are quantified in the empirical analysis. In almost all cases, however, the discussions are not mathematically difficult. The main requirements of the reader are familiarity with partial differentiation and with the standard results of microeconomic theory as set forth in any standard textbook in which the properties of direct and indirect utility functions are derived. Although we have attempted to use consistent notation throughout the book, practical limitations and the wide range of subjects covered have made complete uniformity impossible. The discussion of "Notation and Terminology," below, provides a brief description of symbols and conventions, and we have also explained the notation as it appears in each chapter.

The immediate origins of this book were in a workshop held in the Development Research Department of the World Bank in June 1982, at which some of the leading exponents of public finance were invited to offer their views on ways of analyzing proposed tax reforms in developing countries. There were two reasons for interest in this topic: the Division of Public Economics, recently established within the Development Research Department, was then in the process of formulating its research program, and there was a sense within the development community that the rapid advances in the theory of public finance that had been made in the 1970s could fruitfully be applied to developing countries. Following the workshop the Research Committee of the World Bank decided to support the production of this book. A number of authors were commissioned to write chapters on specific topics, and the two editors undertook to provide an appropriate framework. The first draft of the manuscript was discussed at a conference held at the World Bank in June 1984 and was revised over the next twelve months. The editors are grateful for the authors' cooperation and patience during this process.

One of the goals of the project was to survey existing research and put it in a more accessible form. In addition, the book extends and adapts theory so that it can contribute more directly to the problems that face policymakers in developing countries. Much of the work of this kind reported here draws on research that was already under way at the time of the original workshop, some of it funded under other World Bank research projects. The study on India (chapter 11) was supported by the British Economic and Social Research Council and the Overseas Development Administration. This empirical work, and the project as a whole, raised many interesting additional questions, which form a considerable research agenda. The ideas presented here, however, in themselves provide both useful insights and a framework for constructive applied work.

We are grateful to the authors for their contributions, their involvement in revising their own chapters, and their detailed comments on other parts of the work. We also owe thanks to many individuals and institutions, most of all to the Development Research Department of the World Bank.

During the course of the work Newbery was at the World Bank, at Churchill College, Cambridge University, and at the Woodrow Wilson School of Public and International Affairs, Princeton University. He is currently a reader in economics at Cambridge University. Stern was at the University of Warwick, spent part of the summer of 1983 as a visiting scholar in the Fiscal Affairs Department of the International Monetary Fund, and visited the World Bank on other occasions. Since January 1986 he has been at the London School of Economics. Our associates at these and other institutions have been unfailingly helpful. In particular, we thank Bela Balassa, Esra Bennathan, Nancy Birdsall, Roger Bowden, John Duloy, Gregory Ingram, Nizar Jethar, Anne Krueger, Deepak Lal, Ricardo Martin, Graham Pyatt, Marcello Selowsky, Zmarak Shalizi, Lyn Squire, Mateen Thobani, and Arvind Virmani, all of the World Bank, and Ved Gandhi, Peter Heller, and Alan Tait of the International Monetary Fund for their comments on various chapters and for other help. Robin Boadway of Queen's University, David Bradford of Princeton University, Lawrence Lau of Stanford University, and Jesus Seade of Warwick University provided helpful advice. In addition to contributing to the volume and providing valuable comments on a number of chapters, Pradeep Mitra took responsibility for the World Bank administration of the project after Newbery returned to Cambridge in September 1983. We are greatly indebted to him. We are also particularly grateful to Geoffrey Frewer, who read the text in detail, standardized the notation, and prepared the preliminary index. Special thanks are due to James Mirrlees for guidance and encouragement throughout. We also thank Marcia Brubeck for her great care, skill, patience, and judgment in carrying through a most difficult copyediting task on a lengthy and technical volume by disparate contributors with individual preferences and idiosyncrasies. Finally, we are grateful for the kindness and support of the secretaries who have been involved in this work: Susan Buonocore, Vivian Couchoud, and Mary Ann Heraud at the World Bank, Connie Dent at Princeton University, and Jenny Johnson and Liz Thompson at Warwick University.

Notation and Terminology

WE HAVE ATTEMPTED to impose a consistent system of notation throughout the book, occasionally overriding the preferences of individual authors to do so. The main peculiarity is that q is invariably a price (not a quantity) and is the price facing consumers, as distinguished from p, the producer price. In addition, x is individual consumption or net demand and never expenditure, y is individual production, m is money income, and t is almost always a tax rate (but briefly appears as time in chapter 5). The Greek character τ is often an ad valorem tax rate. Capital letters are used for aggregate quantities (but P is the world price); R is government revenue. The shadow price of government revenue or the marginal social cost of raising revenue is always λ or λ_i. Other conventions are that ϵ, ϵ_i, and ϵ_{ij} are usually demand price elasticities (but ϵ is also the elasticity of the social marginal utility of income or the coefficient of inequality aversion) and that η, η_i, and η_{ij} are price elasticities of supply. Subscripts usually refer to goods but sometimes indicate derivatives, whereas superscripts refer to households or sectors. Vectors are usually not distinguished from scalars except that, for special emphasis, the former, where they are denoted by letters of the Latin alphabet, appear in boldface type. Other systematic usage may be detected, but the limited number of distinctive characters available precludes complete consistency. Variables are defined in each chapter.

A tonne is a metric ton.

Abbreviations

AIDS	Almost Ideal Demand System
APC	Average propensity to consume out of income
ARI	Accounting rate of interest
CBA	Cost-benefit analysis
CES	Constant elasticity of substitution
CGE	Computable general equilibrium
CIF	Cost, insurance, and freight
CPI	Consumer price index
CRI	Consumption rate of interest
CV	Coefficient of variation
DRC	Domestic resource cost
DUPS	Directly unproductive profit seeking
EP	Effective protection
EPR	Effective protection rate
EV	Equivalent variation
FAO	Food and Agriculture Organization
FF	Fertilizer fund
FOB	Free on board
FPF	Federal Participation Fund
GDP	Gross domestic product
GMF	Grain Management Fund
GNP	Gross national product
HYV	High-yield variety
IMF	International Monetary Fund
LES	Linear expenditure system
LIFO	Last in, first out
LPG	Liquefied petroleum gas
MANVAT	Value-added tax on manufacturing
MC	Marginal cost
MPC	Marginal propensity to consume out of income
MPL	Marginal product of labor
NSSO	National Sample Survey Organisation (India)
OECD	Organisation for Economic Co-operation and Development
R and D	Research and development

SCBA	Social cost-benefit analysis
SD	Standard deviation
SWF	Social welfare function
TV	Traditional variety
VAT	Value-added tax
WPI	Wholesale price index

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