MODERN MICROECONOMICS

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SECOND EDITION

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To Charles F. Carter
and
Janet Carter

By the same author
THEORY OF ECONOMETRICS
(Second Edition)

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Preface to the Second Edition

This edition includes a third part, which covers the three important topics that were omitted from the first edition, namely, the theory of factor pricing, general equilibrium theory, and welfare theory. Thus the book in its present form covers all the topics usually included in textbooks on price theory.

The additional topics are presented at an intermediate level, in keeping with the level of the first edition. The advantage of the presentation of these topics (over that of other microeconomics textbooks) is an attempt to separate clearly the basic general equilibrium theory from welfare economics. These two topics are usually presented together, with the result that students get confused as to the aims and nature of general equilibrium analysis. In addition we present a summary of recent work relating to the introduction of money in the traditional general equilibrium model.

Several new textbooks on price theory have been published since the first edition of this book. They all suffer from the same shortcoming of earlier textbooks, namely, they devote only a few pages to the analysis of the behaviour of oligopolistic firms, which are typical of the real business world. Thus this textbook continues to be the only one which devotes one-third of its total contents (length) to the new developments in the oligopoly front over the last two decades.

I would like to thank Professor John Hotson, Professor Lionel Needleman and Professor Wayne Thirsk of the University of Waterloo for their constructive criticisms and helpful comments. I am also indebted to my teaching assistant, Nicki Debiparshad, who helped me organise the contents of Part Three and clarify various issues.

January 1979

A. KOUTSOYIANNIS

Preface to the First Edition

This is an attempt to present a contemporary microeconomics textbook at an intermediate level. In teaching microeconomic theory at all levels and in various countries the author became increasingly aware of a twofold gap in the established textbooks in this field. Most of these texts use obsolete tools of analysis, namely smooth U-shaped cost curves and steeply sloping demand curves for the individual firms. Such cost and demand curves bear little resemblance to the real world cost and demand conditions, and hence are not suitable for the analysis of the behaviour of the modern large enterprise. Furthermore, it is a fact that in market economies oligopoly is the main market structure. Mixed and capitalistic economies continue to be characterised by increasing concentration in the industrial sector; still most micro-texts continue to do this scant justice, by devoting only a few pages to the analysis of oligopolistic behaviour. The impressive new developments in the oligopoly front over the last two decades are either being ignored or treated superficially in established textbooks. In this book we make an attempt to fill this gap.

The author has adopted the verbal method of presenting the material covered, with extensive use of diagrams to illustrate the verbal exposition. Mathematical proofs, where necessary, are presented in footnotes, or, when in the text, they are printed in small print so as not to interrupt the main theme.

The book is written at an *intermediate level* and is designed for *undergraduate micro-theory courses*. In addition, *post-graduate courses* in which micro-theory is taught not at too specialised a level, could make use of the text.

The approach adopted in this book is that of *partial equilibrium analysis*. We will be examining the behaviour of buyers and sellers in a particular industry in isolation from the conditions prevailing in other industries (markets). The interaction of industries as studied by various *general equilibrium methods* is discussed in the final chapters of this edition.

The book is divided in two parts. In Part One (Chapters 1–4) we examine the behaviour of the consumer and of other buyers, and we develop the basic tools of analysis of the behaviour of the firm, its revenue and cost curves. These curves determine the equilibrium output of the firm. The market demand and the market supply define the equilibrium of the industry. The revenue curve of the firms is closely related to market demand, while the cost curves of the firms determine the market supply. Thus the equilibrium of the firm defines and is defined by the equilibrium conditions of the industry. The revenue and costs of the firm and the demand and supply of the market determine the market price and the output of both the firm and the industry. Chapter 1 contains some definitions and a classification of the main market structures traditionally adopted in micro-economic theory. In Chapter 2 we develop the theory of consumer behaviour and market demand, paying special attention to the recent

developments in this field of microeconomics. In particular, we examine the attempts to abandon the non-operational concept of utility and to render the demand function dynamic by incorporating into it appropriate time lags. In Chapter 3 we develop the theory of production, stressing again the recent developments in this field. In Chapter 4 we examine the traditional and modern theories of cost, and we attempt a systematic analysis of the various types of economies of scale. We also present the available empirical evidence regarding the shape of cost curves, which refutes the smooth U-shaped costs of the traditional theory. The main emphasis in Part One is on equipping the student with a 'kit of modern tools' of economic analysis, which will help him understand and analyse the complexities of the real business world.

Part Two of the book is divided in six sections. In Section A (Chapters 5–8) we examine the traditional theories of perfect competition, monopoly and monopolistic competition. In Chapters 5 and 6 we examine the behaviour of the firm in the basic market structures of perfect competition and monopoly. In Chapter 7 we discuss price discrimination, a practice widely used by firms in the modern business world. In Chapter 8 we examine the equilibrium of the firm and the industry in the market structure of monopolistic competition. The remaining five Sections of Part Two are devoted to the examination of the behaviour of the firm in oligopolistic market structures. Thus the greatest part of this book deals with oligopoly. There are several reasons for this. Firstly, oligopoly, as we said, is the main form of market structure in the modern industry. Secondly, there are many theories of oligopolistic behaviour, and each of them needs careful examination. Thirdly, theories of oligopoly developed since 1950 have mostly been omitted from textbooks. Almost all textbooks on microeconomics stop at the 'theory' of the kinked-demand curve. Even the classical oligopoly models of collusion and price leadership are dealt with inadequately in most textbooks. In this book we attempt a detailed examination of the main *classical* and *modern* theories of oligopoly. In Section B (Chapters 9–10) we examine the classical models of oligopoly (duopoly, cartels, price leadership). In Section C (Chapters 11–12) we examine the attack on marginalism and the abortive attempts to develop a theory of *average-cost pricing* as a substitute for the traditional marginalistic pricing models. In Section D (Chapters 13–14) we review the basic models of *limit-pricing* (or *entry-preventing pricing*). We discuss in detail the theories of J. Bain and subsequently we examine the recent developments in the limit-price theory (Sylos's model; Modigliani's formalisation of the entry-preventing models; Bhagwati's extensions of earlier models; Pashigian's 'mixed strategy'). In Section E (Chapters 15–17) we examine the *managerial theories* of the firm. We discuss in detail Baumol's 'sales maximisation' hypothesis, Marris's model of 'managerial enterprise', and Williamson's model of 'managerial discretion'. In Section F (Chapter 18) we examine the *behavioural theory* of the firm as developed by Cyert and March. Finally in Section G (Chapters 19–20) we discuss briefly the *theory of games* and the *linear programming* model of optimal decision-making. The models of entry-forstalling, of managerialism and behaviourism are largely ignored in textbooks or are mentioned briefly as 'experiments' in the theory of the firm. In this book we attempt to give these theories their due position in the theory of microeconomics.

Three important topics (factor pricing, general equilibrium, welfare theory) usually included in textbooks on price theory, are omitted from this text. The exclusion was dictated by financial cost considerations: the length of the text had to be kept within such limits that would make it possible to offer the book to students at a reasonable price. Given these length limitations and faced with the choice of either omitting part of the new material in this volume or excluding the above three topics, we felt that the second alternative was preferable. Thus we decided to bring up to date the major areas of micro-theory rather than rehash the material of the existing textbooks on

price theory. It is hoped that the comprehensive treatment of the material covered and the inclusion of the main 'recent' developments in the theory of the firm will provide the student with the necessary modern tools and general theoretical framework with which to approach and analyse with more realism the complex phenomena of the contemporary business world.

I am greatly indebted to Professor Charles F. Carter, Vice-Chancellor of the University of Lancaster and former Editor of the *Economic Journal*, who gave me the opportunity to write this book and made many constructive criticisms and valuable suggestions. I am also indebted to Professor Harry Townsend of the University of Lancaster who read through the typescript and made many helpful suggestions. From Professor Kenneth Alexander of the University of Strathclyde, Professor R. Barback of the University of Hull, Professor Robert Kerton and Professor Stanley Kardasz of the University of Waterloo, Mr. George McGregor-Reid, Mr. Len Skerrat, Mr. Ronald Akehurst, Mr. Geoffrey Dixon and Miss Susan Charles of the University of Lancaster I received helpful comments on particular sections of the book. Mr. Tin Nguyen of the University of Lancaster checked the examples and helped with various suggestions.

I am thankful to my students at the University of Lancaster and the University of Waterloo, Ontario, who with their comments and general reactions helped me improve the exposition of several parts of the book. Katherine Kossentos, Stuart James, Paul Pezaros, John Andrew, Antony Akeroyd and Ian Horgan deserve special mention. I have also benefited from the detailed comments of two anonymous referees. Any mistakes and defects, however, are my responsibility.

I would like to dedicate this book to Charles F. Carter, who taught me the real meaning of economics, and to Janet Carter, who taught me, in her own way, 'what the Ithakas mean'.¹

Waterloo, Ontario, 1975

A. KOUTSOYIANNIS

¹ C. P. Cavafy, 'Ithaka', in *Four Greek Poets* (Penguin, 1966).