

新世纪高校经济学英文版教材

高级微观经济理论

(第二版)

Advanced Microeconomic Theory

SECOND EDITION

GEOFFREY A. JEHLE

Vassar College

PHILIP J. RENY



上海财经大学出版社
Shanghai University of
Finance & Economics Press



图书在版编目(CIP)数据

高级微观经济理论:影印本/[美]杰里(Jehle, G. A.), [美]瑞尼(Reny, P. J.)著. —上海:上海财经大学出版社, 2001. 12

ISBN 7-81049-682-4/F·579

I. 高… II. ①杰… ②瑞 III. 微观经济学-英文 IV. F016

中国版本图书馆 CIP 数据核字(2001)第 086273 号

Advanced Microeconomic Theory, 2nd ed. /Geoffrey A. Jehle and Philip J. Reny

ISBN 0-321-07916-7

Copyright © 2001 Geoffrey A. Jehle and Philip J. Reny

“English reprint edition copyright © (2002 by Shanghai University of Finance and Economics Press) by PEARSON EDUCATION NORTH ASIA LIMITED and SHANGHAI UNIVERSITY OF FINANCE AND ECONOMICS PRESS (Original English language title from Proprietor's edition of the Work)

This edition is authorized for sale only in People's Republic of China(excluding Hong Kong, Macau SAR and Taiwan).”

本书英文影印版由培生教育出版集团北亚有限公司和上海财经大学出版社合作出版。此版本仅限在中华人民共和国境内(不包括中国香港、澳门特别行政区及中国台湾地区)销售。未经出版者书面许可,不得以任何方式复制或抄袭本书的任何部分。

本书封面贴有 Pearson Education 出版集团激光防伪标签,无标签者不得销售。

上海市版权局著作权合同登记号:09—2001—525 号。

GAOJIWEIGUAN JINGJILILUN

高级微观经济理论

Geoffrey A. Jehle 著
Philip J. Reny

责任编辑 王平 封面设计 周卫民

上海财经大学出版社出版发行
(上海市武东路 321 号乙 邮编 200434)

网 址: <http://www.sufep.com>

电子邮箱: webmaster@sufep.com

全国新华书店经销

上海译文印刷厂印刷

上海浦江装订厂装订

2001 年 12 月第 1 版 2003 年 11 月第 3 次印刷

787mm×960mm 1/16 35.75 印张 978 千字

印数:6 001—8 000 定价:50.00 元

出版说明

在我国已经加入 WTO 和各国经济不断朝全球化方向推进的背景下,我国经济与世界经济的融合程度必将进一步提高。为了适应这一新的形势和为了满足我国读者及时了解国外最新的经济学动态,上海财经大学出版社与国外著名的出版公司通力合作,有选择地影印出版当今国外优秀的经济学教材。考虑到我国已经影印出版和翻译出版了一些初级和中级的西方经济学教科书,而相对缺少高级的西方经济学教科书这一情况,我社先推出《高级宏观经济学》和《高级微观经济理论》这两本面向经济学、管理学专业研究生的高层次教科书的英文影印本。

我们希望通过这两本书的影印出版,能对加快我国经济学科的发展步伐和进一步充实我国经济学科的教学内容有所帮助。

欢迎广大读者给我们提出宝贵的意见。

上海财经大学出版社编辑部

2003年1月

To Rana and Kamran

G.A.J.

To Dianne, Lisa, and Elizabeth

P.J.R.

PREFACE

In every chapter of this new edition, our focus remains on the modern core of its respective area. We continue to believe that this approach enables the careful reader to build a deep understanding of the principal pillars of modern microeconomics and to see the connections among them. We are grateful that so many students and colleagues seem to agree.

There are exercises at the end of every chapter, and working through as many of these as possible is the surest way to master the material. Hints and answers for selected exercises are provided at the end of the book, along with lists of theorems and definitions appearing in the text. We also plan to maintain a Readers' Forum on the web, where readers can exchange solutions to exercises in the text. The Readers' Forum can be reached at <http://alfred.vassar.edu>.

In preparing this new edition, we have taken the opportunity to make one major structural change. As more and more students enter graduate programs better prepared in mathematics, we believed we could safely move the pure mathematics to an appendix. There, it will still be available for those who want a refresher or for those who need to fill a gap in their preparation, but it will not stand in the way of instructors who feel their students are prepared to jump right into microeconomic theory from day one. The two full chapters of the Mathematical Appendix still provide students with a lengthy and largely self-contained development of the set theory, real analysis, topology, calculus, and modern optimization theory, which are indispensable in modern microeconomics. The exposition is formal but presumes nothing more than a good grounding in single-variable calculus and simple linear algebra as a starting point. We suggest that even students who are very well-prepared in mathematics browse both chapters of the appendix early on. That way, if and when some review or reference is needed, the reader will have a sense of how that material is organized.

The basic structure of the rest of the text has remained unchanged.

Part I is devoted to modern consumer and producer theories. We treat consumer theory first, and at some length—both because of its intrinsic importance and because its methods and results are paradigms for many other topic areas. Producer theory is next, and we draw attention to the many formal similarities between these two important building blocks of modern microeconomics.

In Part II, we examine the behavior of economic agents when they come together on markets. We fully develop neoclassical models of competitive and noncompetitive market structures, and we take a first look at how market structure, market equilibrium, and economic efficiency are related. This is followed by the theory of general equilibrium, where we consider some of the same questions at the level of the economic system. The chapter on social choice and welfare provides an accessible introduction to systematic normative analysis.

Strategic behavior is the subject of Part III. A lengthy chapter on game theory provides careful and detailed instruction on both strategic and extensive form games. This is followed by a chapter on the economics of information, where we adopt a game-theoretic approach to this important area of current activity and interest. The final chapter offers a careful development of the modern theory of auctions, one of the most active frontiers in theoretical research today.

We have been fortunate to receive helpful suggestions from many careful readers of the previous edition. Many of those suggestions (and all contributed corrections) are included in this edition. The text is stronger for the help these colleagues, friends, and students volunteered, and we extend our grateful appreciation to all of them.

目 录

前言	1
----	---

I 经济代理人

1 消费者理论	3
1.1 主要概念	3
1.2 偏好与效用	5
1.2.1 偏好关系	5
1.2.2 效用函数	13
1.3 消费者问题	19
1.4 间接效用与支出	27
1.4.1 间接效用函数	27
1.4.2 支出函数	33
1.4.3 间接效用函数与支出函数之间的关系	40
1.5 消费者需求的性质	46
1.5.1 相对价格与实际收入	47
1.5.2 收入效应与替代效应	48
1.5.3 一些弹性关系	57
1.6 习题	60

2	消费者理论专题	69
2.1	对偶性:一个细致的考虑	69
2.1.1	支出与消费者偏好	69
2.1.2	凸性与单调性	74
2.1.3	间接效用与消费者偏好	76
2.2	可积分性	80
2.3	显示性偏好	86
2.4	不确定性	92
2.4.1	偏好	93
2.4.2	冯·诺伊曼—莫根施特效用	96
2.4.3	风险厌恶	104
2.5	习题	112
3	厂商理论	117
3.1	主要概念	117
3.2	生产	118
3.2.1	规模报酬与可变比例	124
3.3	成本	126
3.4	生产中的对偶性	134
3.5	竞争性厂商	135
3.5.1	利润最大化	136
3.5.2	利润函数	138
3.6	习题	145

II 市场与福利

4	局部均衡	153
4.1	完全竞争	153
4.2	不完全竞争	158
4.2.1	古诺寡头	161
4.2.2	伯川德寡头	163
4.2.3	垄断竞争	164
4.3	均衡与福利	165
4.3.1	价格与个人福利	166
4.3.2	竞争结果的效率	171
4.3.3	效率与总剩余最大化	173
4.4	习题	175
5	一般均衡	181
5.1	交换均衡	181
5.2	竞争性市场体系均衡	187
5.2.1	均衡的存在性	188
5.2.2	效率	198
5.3	生产均衡	205
5.3.1	生产者	205
5.3.2	消费者	208
5.3.3	均衡	210
5.3.4	福利	217

5.4	核与均衡性	220
5.4.1	复制的经济	221
5.5	习题	232
6	社会选择与福利	239
6.1	问题的性质	239
6.2	社会选择与阿罗定理	240
6.2.1	一种图式的证明	245
6.3	可度量性、可比较性与一些可能性	250
6.3.1	罗尔斯形式	252
6.3.2	功利形式	255
6.3.3	可变的的形式	256
6.4	公正性	258
6.5	习题	260

III 策略性行为

7	博弈论	267
7.1	策略性决策	267
7.2	策略式的博弈	269
7.2.1	占优策略	270
7.2.2	纳什均衡	273
7.2.3	不完全信息	280
7.3	扩展式博弈	285

7.3.1	博弈树:一个图式的表达	288
7.3.2	取拿博弈的一个非正式的分析	290
7.3.3	扩展式博弈策略	291
7.3.4	策略与支付	292
7.3.5	不完善信息博弈与逆向归纳策略	293
7.3.6	不完善信息博弈与子博弈完善均衡	297
7.3.7	序贯均衡	306
7.4	习题	322
8	信息经济学	329
8.1	逆选择	330
8.1.1	信息与市场结果的效率	330
8.1.2	信号显示	335
8.1.3	信号甄别	353
8.2	道德风险与委托—代理问题	362
8.2.1	对称性信息	363
8.2.2	非对称信息	366
8.3	信息与市场绩效	369
8.4	习题	370
9	拍卖与机制设计	373
9.1	四种标准的拍卖	373
9.2	独立私人的估价模型	374
9.2.1	在第一价格密封投标拍卖中的竞拍行为	375
9.2.2	荷式拍卖中的竞拍行为	378
9.2.3	第二价格密封拍卖中的竞拍行为	378

9.2.4 英式拍卖中的竞拍行为	379
9.2.5 收益比较	380
9.3 收益等价性理论	383
9.3.1 激励—兼容直销机制	385
9.3.2 效率	389
9.4 收益最大化:机制设计的一个应用	389
9.4.1 个人理性	390
9.4.2 最优销售机制	390
9.4.3 对最优销售机制的细致审视	395
9.4.4 效率、对称性与四个标准拍卖的比较	397
9.5 习题	399

数学附录

第 A1 章 集合与映射	407
A1.1 逻辑要素	407
A1.1.1 必要性与充分性	407
A1.1.2 定理与证明	408
A1.2 集合论的要素	409
A1.2.1 表达式与基本概念	409
A1.2.2 凸集	411
A1.2.3 关系与函数	415
A1.3 一点拓扑学	417
A1.3.1 连续性	426
A1.3.2 一些扩展性的定理	431

A1.4	实值函数	436
A1.4.1	相关集合	437
A1.4.2	凹函数	441
A1.4.3	拟凹函数	445
A1.4.4	凸与拟凸函数	449
A1.5	习题	453
第 A2 章 微积分与最优化		459
A2.1	微积分	459
A2.1.1	单变量函数	459
A2.1.2	多变量函数	461
A2.1.3	齐次函数	469
A2.2	最优化	473
A2.2.1	多变量实值函数	475
A2.2.2	二阶条件	478
A2.3	约束最优化	484
A2.3.1	等式约束	485
A2.3.2	拉格朗日方法	486
A2.3.3	几何图形的解释	491
A2.3.4	二阶条件	494
A2.3.5	不等式约束	498
A2.3.6	库恩—塔克条件	501
A2.4	值函数	504
A2.5	习题	509

8 高级微观经济理论

定理目录	513
定义目录	519
提示与答案	523
参考文献	531
索引	535

CONTENTS

PREFACE	xi
PART I ECONOMIC AGENTS	1
CHAPTER 1 CONSUMER THEORY	3
1.1 Primitive Notions	3
1.2 Preferences and Utility	5
1.2.1 Preference Relations	5
1.2.2 The Utility Function	13
1.3 The Consumer's Problem	19
1.4 Indirect Utility and Expenditure	27
1.4.1 The Indirect Utility Function	27
1.4.2 The Expenditure Function	33
1.4.3 Relations Between the Two	40
1.5 Properties of Consumer Demand	46
1.5.1 Relative Prices and Real Income	47
1.5.2 Income and Substitution Effects	48
1.5.3 Some Elasticity Relations	57
1.6 Exercises	60

CHAPTER 2	TOPICS IN CONSUMER THEORY	69
2.1	Duality: A Closer Look	69
2.1.1	Expenditure and Consumer Preferences	69
2.1.2	Convexity and Monotonicity	74
2.1.3	Indirect Utility and Consumer Preferences	76
2.2	Integrability	80
2.3	Revealed Preference	86
2.4	Uncertainty	92
2.4.1	Preferences	93
2.4.2	Von Neumann-Morgenstern Utility	96
2.4.3	Risk Aversion	104
2.5	Exercises	112
CHAPTER 3	THEORY OF THE FIRM	117
3.1	Primitive Notions	117
3.2	Production	118
3.2.1	Returns to Scale and Varying Proportions	124
3.3	Cost	126
3.4	Duality in Production	134
3.5	The Competitive Firm	135
3.5.1	Profit Maximization	136
3.5.2	The Profit Function	138
3.6	Exercises	145
PART II		
MARKETS AND WELFARE		151
CHAPTER 4	PARTIAL EQUILIBRIUM	153
4.1	Perfect Competition	153
4.2	Imperfect Competition	158
4.2.1	Cournot Oligopoly	161

4.2.2	Bertrand Oligopoly	163
4.2.3	Monopolistic Competition	164
4.3	Equilibrium and Welfare	165
4.3.1	Price and Individual Welfare	166
4.3.2	Efficiency of the Competitive Outcome	171
4.3.3	Efficiency and Total Surplus Maximization	173
4.4	Exercises	175
CHAPTER 5	GENERAL EQUILIBRIUM	181
5.1	Equilibrium in Exchange	181
5.2	Equilibrium in Competitive Market Systems	187
5.2.1	Existence of Equilibrium	188
5.2.2	Efficiency	198
5.3	Equilibrium in Production	205
5.3.1	Producers	205
5.3.2	Consumers	208
5.3.3	Equilibrium	210
5.3.4	Welfare	217
5.4	Core and Equilibria	220
5.4.1	Replica Economies	221
5.5	Exercises	232
CHAPTER 6	SOCIAL CHOICE AND WELFARE	239
6.1	The Nature of the Problem	239
6.2	Social Choice and Arrow's Theorem	240
6.2.1	A Diagrammatic Proof	245
6.3	Measurability, Comparability, and Some Possibilities	250
6.3.1	The Rawlsian Form	252
6.3.2	The Utilitarian Form	255
6.3.3	Flexible Forms	256
6.4	Justice	258
6.5	Exercises	260