

Contents

PREFACE	VII
1 Introduction	1
1.1 International Economics as a Distinct Subject	1
1.2 The Theory and Policy of International Trade: An Overview	3
1.3 References	4
I The Orthodox Theory	7
2 The Classical Theory of Comparative Costs	9
2.1 Comparative Costs (Advantages) and International Trade	9
2.2 Alternative Graphic Representations	12
2.3 A Modern Interpretation in Terms of Optimization	17
2.3.1 Maximization of Real Income in Each Country	17
2.3.2 Maximization of Real World Income	19
2.4 Generalizations	22
2.4.1 Two Goods and n Countries	22
2.4.2 m Goods and n Countries	24
2.5 The Problem of the Determination of the Terms of Trade	28
2.6 References	30
3 The Neoclassical Theory of International Trade	31
3.1 The Transformation Curve and the Box Diagram	31
3.1.1 The Box Diagram	32
3.1.2 The Transformation Curve and its Properties	34
3.2 General Equilibrium in a Simple Closed Economy	38
3.2.1 The Supply Curves	38
3.2.2 The Demand Curves	40
3.2.3 General Equilibrium and Walras' Law	41
3.3 General Equilibrium in Open Economies and International Trade	42
3.4 Offer Curves, International Equilibrium, and Stability	46
3.4.1 Derivation of the Offer Curve	46
3.4.2 International Equilibrium and Stability	48
3.5 Increasing Returns to Scale	53

3.6	The Gains from Trade	57
3.7	Generalizations	60
3.8	Duality Approach	62
3.9	Empirical Studies	62
3.10	References	63
4	The Heckscher-Ohlin Model	65
4.1	Basic Assumptions and Their Meaning	65
4.1.1	Relative Price of Goods and Relative Price of Factors	69
4.2	Proof of the Fundamental Theorem	72
4.3	Factor Price Equalization	76
4.3.1	A Graphic Treatment	78
4.4	Extensions and Qualifications	82
4.4.1	Non-Identical Structures of Demand	82
4.4.2	Factor-Intensity Reversals	84
4.5	Leontief's Paradox and Other Empirical Studies	86
4.5.1	The Paradox	86
4.5.2	Can the Paradox Be Solved?	88
4.5.3	Are the H-O Assumptions Tenable?	90
4.5.4	Concluding Remarks	91
4.6	References	92
5	The Four Core Theorems	95
5.1	Introductory Remarks	95
5.2	The Heckscher-Ohlin and Factor-Price-Equalization Theorems.	95
5.3	The Stolper-Samuelson Theorem	96
5.4	The Rybczynski Theorem	97
5.4.1	An Alternative Diagram	99
5.5	References	100
6	Some Refinements of the Orthodox Theory	101
6.1	Introduction	101
6.2	The Specific Factors Model	101
6.3	Transport Costs and International Trade	106
6.4	Intermediate Goods	110
6.5	Elastic Factor Supply	114
6.6	Non-Traded Goods	115
6.7	Natural Resources, "Dutch Disease", and De-Industrialization	119
6.8	International Factor Mobility and Trade in Factors	125
6.8.1	Factor Mobility, and the Theorems of International Trade	127
6.8.2	Factor Trade	131
6.9	International Trade under Uncertainty	131

6.10	Illegal International Trade and the Economic Theory of Smuggling	134
6.11	References	138
7	Neoricardians vs Neoclassicals	141
7.1	Intermediate and Capital Goods in the Neoclassical Theory . .	141
7.2	The Methodological Debate between Neoclassical and Neoricardian Theories	142
7.3	References	143
II	Trade Policy	145
8	Tariff and Non-Tariff Barriers	147
8.1	Introduction	147
8.2	GATT and WTO	148
8.3	Partial Equilibrium Effects of a Tariff	149
8.4	The Social Costs of a Tariff	151
8.5	General Equilibrium Effects of a Tariff	155
8.5.1	The Production-Possibility Frontier and Tariffs	155
8.5.1.1	The Redistributive and Welfare Effects of a Tariff	157
8.5.2	Tariffs and Reciprocal Demand Curves	158
8.5.2.1	The Metzler and Lerner Cases	160
8.6	Quotas and Other Non-Tariff Barriers	163
8.6.1	Quotas	163
8.6.2	Export Duties	165
8.6.3	International Cartels	167
8.6.4	Other Impediments to Free Trade	173
8.7	Intermediate Goods and Effective Rate of Protection	175
8.8	References	178
9	Free Trade vs Protection, and Preferential Trade Cooperation	181
9.1	The Optimum Tariff	181
9.2	The Infant Industry	185
9.3	Distortions in Domestic Goods Markets	187
9.4	Distortions in Domestic Factor Markets	190
9.5	Non-Economic Motives for Protection	192
9.6	The Theory of Second Best	193
9.7	Preferential Trading Cooperation	195
9.7.1	The Various Degrees of Cooperation	195
9.7.2	The Effects of a Customs Union	196
9.7.3	Empirical Problems	201

9.8	References	203
10	The “New” Protectionism	205
10.1	Introductory Remarks	205
10.2	Why the New Protectionism?	205
10.3	Voluntary Export Restraints and Import Expansion	206
10.4	Subsidies	209
10.5	The Political Economy of Protectionism	211
10.5.1	The Demand for and Supply of Protection	212
10.6	Administered and Contingent Protection, and Fair Trade	214
10.6.1	Dumping and Antidumping	215
10.6.2	Countervailing Duty	219
10.6.3	Safeguard Actions	222
10.7	References	222
III	The New Trade Theories, and their Policy Consequences	225
11	The New Trade Theories: An Overview	227
11.1	Introduction	227
11.2	Theory	229
11.3	Policy	230
11.4	Growth	231
11.5	Location Theory and Trade	232
11.6	References	232
12	The Precursors	233
12.1	Availability	233
12.2	Technology Gaps	234
12.3	The Product Cycle	235
12.4	Income Effects	237
12.4.1	Linder’s Theory	237
12.4.2	Barker’s Variety Hypothesis	239
12.5	Intra-industry Trade or, The Orthodox Theory Strikes Back	240
12.5.1	Perfectly Homogeneous Goods	241
12.5.2	Differentiated Products	242
12.6	References	244
13	The New Trade Theories, and Strategic Trade Policy	247
13.1	Neo-Heckscher-Ohlin Theories	247
13.1.1	Trade Policy	249
13.2	Monopolistic Competition and International Trade	250
13.2.1	Introduction	250

13.2.2	A Simple Synthesis Model	252
13.2.3	Trade Policy	255
13.3	Oligopoly and International Trade	256
13.3.1	Introduction	256
13.3.2	Homogeneous Commodities	256
13.3.2.1	Strategic Trade Policy	258
13.3.3	Vertically Differentiated Goods	259
13.3.4	Horizontally Differentiated Goods	261
13.3.4.1	Strategic Trade Policy	263
13.4	Empirical Studies	263
13.5	References	264

IV Growth and Trade

267

14	International Trade and Growth: Comparative Statics	269
14.1	Introduction	269
14.2	The Effects of Growth on the Volume of Trade	270
14.2.1	Consumption Effects	270
14.2.2	Production Effects	272
14.2.3	Reformulation in Terms of Elasticities; the Total Effect	273
14.3	Growth and Terms of Trade; Immiserizing Growth	276
14.3.1	The Large Country and the Terms of Trade	276
14.3.2	Immiserizing Growth	278
14.4	Increase in Factor Endowments and International Trade	279
14.5	Technical Progress and International Trade	281
14.5.1	Types of Technical Progress	281
14.5.2	Effects of Neutral Technical Progress on Production Levels and the Terms of Trade	284
14.5.3	Effects of Biased Technical Progress	287
14.5.3.1	Capital-Saving Progress in the Capital- Intensive Sector	287
14.5.3.2	Labour-Saving Progress in the Capital- Intensive Sector	289
14.5.4	Conclusion	291
14.6	References	292
15	International Trade and Growth: Dynamics	295
15.1	Dynamic Models	295
15.2	A Simple Closed-Economy Two-Sector Growth Model	296
15.3	Extension to an Open Economy	299
15.4	References	301

16 Endogenous Growth and Trade, Old and New	303
16.1 Introduction	303
16.2 A Small Open Economy with Endogenous Technical Progress	304
16.3 Endogenous Growth, North-South Trade and Imitation: A New Version of the Product Cycle	306
16.4 References	308
V Globalization	309
17 Globalization and Economic Geography	311
17.1 Introductory Remarks	311
17.2 Transport Cost, Location Theory, and Comparative Advantage	312
17.3 Economic Geography, Globalization, and Trade	314
17.4 References	316
VI Appendices	319
A Appendix to Chapter 2	321
A.1 Maximization of World Income and the Dual Problem	321
A.2 Maximization of National Income and Minimization of Real Cost	323
A.3 A Ricardian Model with a Continuum of Goods	324
A.3.1 Supply	325
A.3.2 Demand	326
A.3.3 Determination of the Relative Wage Rate and Specialization	327
A.3.4 Trade Policy	328
A.4 On the Determination of the Terms of Trade	331
A.5 References	335
B Appendix to Chapter 3	337
B.1 The Transformation Curve and the Box Diagram	337
B.1.1 A Formal Derivation of the Transformation Curve and Its Properties	337
B.1.2 Convexity or Concavity of the Transformation Curve	339
B.1.3 Homogeneous Production Functions and Transforma- tion Curve	340
B.2 A Simple Closed Economy	342
B.2.1 The Basic Model	342
B.2.2 The Supply Side of the Model	342
B.2.3 The Demand Side of the Model	344
B.3 International Trade and Offer Curves	345

B.3.1	The Equilibrium Conditions. The Offer Curve and Its Slope	345
B.3.2	Relationships between the Various Elasticities	347
B.4	Stability	348
B.4.1	Terms-of-Trade Adjustment	348
B.4.2	Quantity Adjustment	349
B.5	Duality Approach	350
B.5.1	The Jones Model	350
B.5.2	Revenue Functions and Expenditure Functions	354
B.6	References	355
C	Appendix to Chapter 4	357
C.1	Factor-Intensity Reversals	357
C.2	Proof of the Fundamental Theorem	360
C.3	The Factor-Price-Equalization Theorem	361
C.4	A Brief Outline of the Generalizations of the Heckscher-Ohlin Model	362
C.5	References	365
D	Appendix to Chapter 5	367
D.1	The Factor-Price-Equalization Theorem	367
D.2	The Stolper-Samuelson Theorem	367
D.3	The Rybczynski Theorem	368
D.4	References	369
E	Appendix to Chapter 6	371
E.1	The Specific Factors Model	371
E.2	The Cost of Transport	376
E.3	Intermediate Goods	377
E.3.1	Final Goods as Inputs	377
E.3.2	Pure Intermediate Goods	378
E.4	Elastic Supply of Factors	382
E.5	Non-Traded Goods	383
E.5.1	The Behaviour of the Offer Curve	384
E.6	Specific Factors and De-Industrialization	387
E.6.1	Effects on Prices, Outputs and Factor Rewards	389
E.7	International Factor Mobility	390
E.7.1	The Theorems of International Trade Theory under Factor Mobility	393
E.7.1.1	The Heckscher-Ohlin Theorem	395
E.7.1.2	Factor Price Equalization	395
E.7.1.3	The Rybczynski Theorem	395
E.7.1.4	The Stolper-Samuelson Theorem	395
E.8	Uncertainty and International Trade	397

E.9	Smuggling	400
E.10	References	402
F	Appendix to Chapter 8	405
F.1	Tariffs, Terms of Trade, Domestic Relative Price	405
F.2	Cartels	408
F.3	The Effective Rate of Protection	409
F.4	References	410
G	Appendix to Chapter 9	411
G.1	The Optimum Tariff	411
G.2	The Theory of Second Best	412
G.3	References	414
H	Appendix to Chapter 10	415
H.1	Lobbies, Political Parties, and Endogenous Determination of Protection	415
H.2	Dumping	417
H.3	References	418
I	Appendix to Chapter 13	419
I.1	A Neo-Heckscher-Ohlin Model	419
I.1.1	Tariffs	421
I.1.1.1	Tariffs and Intra-industry Trade	422
I.2	A Model of Monopolistic Competition	423
I.2.1	Love for Variety and Demand	423
I.2.2	The Production Side	427
I.2.3	International Trade	428
I.2.4	Tariffs	429
I.3	Homogeneous Goods, Oligopoly, and Trade	431
I.3.1	A Cournot-type Model	431
I.3.2	The Equilibrium Solution	431
I.3.3	Stability	433
I.3.4	Strategic Trade Policy	434
I.3.4.1	Tariffs	434
I.3.4.2	Subsidies	435
I.4	Vertically Differentiated Goods, Oligopoly, and Trade	438
I.4.1	Consumers	439
I.4.2	Firms, and Market Equilibrium	440
I.4.3	International Trade	444
I.5	Horizontal Differentiation, Oligopoly, and Trade	444
I.5.1	Demand for Characteristics	445
I.5.2	The Production Side	445
I.5.3	International Trade and Strategic Trade Policy	446

I.6	References	448
J	Appendix to Chapter 14	451
J.1	Classification of the Effects of Growth	451
J.2	Comparative Statics of the Effects of Growth in General . . .	453
J.2.1	Immiserizing Growth	455
J.3	Changes in Factor Endowments, Rybczynski's Theorem, Terms of Trade	457
J.3.1	Simultaneous Increase in Both Factors	460
J.4	Technical Progress	462
J.4.1	Effects of Technical Progress on Factor Intensities and Rewards	463
J.4.2	Effects of Technical Progress on Output Levels	466
J.4.3	Effects of Technical Progress on the Terms of Trade . . .	467
J.5	References	468
K	Appendix to Chapter 15	469
K.1	A Dynamic Model of Growth and Trade	469
K.2	Momentary Equilibrium	471
K.3	Long Run Equilibrium	473
K.4	References	475
L	Appendix to Chapter 16	477
L.1	Endogenous Growth and Orthodox Trade Theory	477
L.2	Endogenous Growth and Trade: Innovation, Imitation, and Product Cycles	479
L.2.1	Demand	479
L.2.2	Supply: Product Quality, Innovation, and Imitation . . .	482
L.2.2.1	The Manufacturing Sector	482
L.2.2.2	Innovation	484
L.2.2.3	Imitation	485
L.2.3	The No-arbitrage Conditions	486
L.2.4	The Labour Markets	487
L.2.5	Steady-State Equilibrium	487
L.2.5.1	Efficient Followers	489
L.2.5.2	Inefficient Followers	491
L.2.6	Comparative Dynamics	492
L.2.6.1	Efficient Followers	492
L.2.6.1.1	Strategic Trade Policy	498
L.2.6.2	Inefficient Followers	498
L.2.6.2.1	Strategic Trade Policy	501
L.3	References	501

M Appendix to Chapter 17	503
M.1 A Model of Economic Geography, International Trade, and Globalization	503
M.1.1 The Demand Side	503
M.1.2 The Supply Side	504
M.1.3 Equilibrium	505
M.2 The Dynamics of the Model and the Emergence of a Core-Periphery Pattern	506
M.2.1 The Manufacturing Sector	507
M.2.2 The Dynamics: Bifurcation Analysis	513
M.3 References	514
Bibliography	515
Index	535

List of Figures

2.1	Graphic representation of comparative costs	13
2.2	Transformation curve and comparative costs	16
2.3	Transformation curve and maximization of real income	18
2.4	World transformation curve and maximization of real world income	21
2.5	The world transformation curve with n countries	23
2.6	Exchange of more than two goods between two countries	26
2.7	Exchange of more than two goods among more than two coun- tries	27
3.1	The box diagram and the efficiency locus	32
3.2	The transformation curve	34
3.3	The transformation curve derived from the box diagram	35
3.4	Marginal rate of transformation, opportunity cost, and rela- tive prices	36
3.5	Transformation curve, supply curves, and determination of general equilibrium in a closed economy	39
3.6	Determination of international equilibrium	43
3.7	Derivation of the offer curve	47
3.8	Adjustment of quantities and stability of international equi- librium: Behaviour assumption I	50
3.9	Adjustment of quantities and stability of international equi- librium: Behaviour assumption II	51
3.10	Graphic measurement of offer curve elasticity	53
3.11	Multiple equilibria and stability-instability	54
3.12	Increasing returns to scale, offer curves, and international equilibrium	56
3.13	The gains from trade	57
3.14	Social indifference curves and the gains from trade: consump- tion and production gains	59
3.15	Trade is beneficial to all countries	61
4.1	Factor intensities: absence and presence of reversals	67
4.2	Behaviour of the K/L ratio without and with factor-intensity reversal	69

4.3	Relative price of goods and relative price of factors	70
4.4	Change in the factor-price ratio following a change in the commodity-price ratio	71
4.5	Various relationships between relative price of factors and relative price of goods	72
4.6	Transformation curve and the Heckscher-Ohlin theorem	74
4.7	Transformation curve and the Heckscher-Ohlin theorem: an alternative diagram	75
4.8	The factor-price-equalization theorem	79
4.9	A case of no factor price equalization	81
4.10	Non-identical structures of demand	83
4.11	Factor-intensity reversals, H-O and FPE	85
5.1	Rybczynski's theorem	98
5.2	Rybczynski's theorem and relative price of goods	99
6.1	The specific factors model	103
6.2	The specific factors model and Rybczynski's theorem	105
6.3	The cost of transport: diagram 1	106
6.4	The cost of transport: diagram 2	107
6.5	The cost of transport and offer curves	108
6.6	The cost of transport as a determinant of international trade	110
6.7	Relative prices of traded and non-traded goods	117
6.8	Effects of an extractive boom on the commodity market	120
6.9	Effects of an extractive boom on the labour market	123
6.10	International factor mobility	128
6.11	Smuggling and social welfare	135
8.1	Partial equilibrium effects of a tariff	149
8.2	Variations in the world price, and benefits of a tariff	154
8.3	General equilibrium effects of a tariff	155
8.4	Tariffs and terms of trade	159
8.5	Tariffs and terms of trade: Metzler's case	161
8.6	Tariffs and terms of trade: Lerner's case	162
8.7	Effects of a quota	164
8.8	Effects of an export duty	166
8.9	The monopolistic cartel	168
8.10	A quasi-monopolistic cartel	169
9.1	The optimum tariff	182
9.2	The infant industry	185
9.3	Distortions in domestic goods markets: Specialization in the wrong direction	188
9.4	Distortions in domestic goods markets: Specialization in the right direction	190

9.5	Distortions in domestic factor markets	191
9.6	Intuitive graphic representation of the theory of second best	194
9.7	Effects of a customs union	198
10.1	Effects of a VER	207
10.2	VER and monopolistic cartel	208
10.3	Effects of production and export subsidies	209
10.4	Effects of subsidies to the import-competing sector	211
10.5	The optimal amount of lobbying	212
10.6	Persistent dumping	217
10.7	Export subsidies and countervailing duties	220
13.1	Vertical differentiation and international trade	248
13.2	Trade policy with vertical differentiation	250
13.3	Monopolistic competition and international trade	253
13.4	Homogeneous duopoly and reciprocal dumping	257
13.5	Duopoly and strategic trade policy: subsidies	259
14.1	Consumption effects of growth	271
14.2	Production effects of growth	273
14.3	Growth shifts the offer curve and changes the terms of trade	277
14.4	Immiserizing growth	278
14.5	Rybczynski's theorem and relative price of goods	280
14.6	Neutral technical progress	282
14.7	Labour-saving technical progress	282
14.8	Capital-saving technical progress	283
14.9	Effects of neutral technical progress on factor intensities and price ratio	284
14.10	Effects of neutral technical progress on outputs	285
14.11	Neutral technical progress and relative price of goods	287
14.12	Effects on factor intensities and price ratio of capital-saving technical progress in the capital intensive sector	288
14.13	Effects on productive levels of capital-saving progress in the capital-intensive sector	289
14.14	Effects on factor intensities and price ratio of labour-saving technical progress in the capital-intensive sector: first case	290
14.15	Effects on factor intensities and price ratio of labour-saving technical progress in the capital-intensive sector: second case	290
14.16	Possible effect on productive levels of labour-saving technical progress in the capital-intensive sector	291
15.1	Steady-state growth in a closed economy	297
15.2	Steady-state growth in an open economy	300
16.1	Orthodox trade theory and endogenous growth	305

List of Tables

2.1	Example of absolute advantage	10
2.2	Example of comparative advantage	11
2.3	Pattern of trade of five goods among four countries	27
4.1	Domestic capital and labour requirements per million dollars of US exports and of competitive import replacements (of average 1947 composition)	87
8.1	Nominal and effective rates of protection (per cent)	178
9.1	Effects of a customs union	197
11.1	Orthodox theory and the new theories of international trade .	229
12.1	Example of SITC Classification	241
14.1	Classification of the effects of growth on trade by combining the consumption and production effects	274
16.1	Growth theories and trade theories	303
J.1	Consumption and production effects of growth	452
J.2	Effects of the various types of technological change in sector A	467