

Contents

Part I Flexible Price Models

1 The Representative Agent Model	3
1.1 Basic Model	3
1.2 Economy with a Government	8
1.3 Monetary Economy	12
1.3.1 Monetary Policy Rule: Money Stock Control	12
1.3.2 Monetary Policy Rule: Nominal Interest Rate Control	16
1.4 Real Business Cycle	21
1.5 Exercises	28
2 The Open-Economy Representative Agent Model	33
2.1 Goods Aggregation	33
2.2 Constant Rate of Time Preference	36
2.3 Variable Rate of Time Preference	39
2.4 Interest Rate Risk Premium	43
2.5 The New Keynesian IS Curve	46
2.6 Exercises	57
3 Overlapping Generations	63
3.1 Infinite-Life Overlapping Generations Model	63
3.2 Economy with a Government	69
3.3 Open Economy	71
3.4 Open Economy New Keynesian IS Curve	74
3.5 Finite-Life Overlapping Generations Model	77
3.6 Exercises	85
4 The Solow Growth Model	89
4.1 The Solow Model	89
4.1.1 Predictions and Comparative Dynamics	93
4.1.2 The Golden Rule and Dynamic Inefficiency	97

4.1.3	Convergence	98
4.1.4	Income Per-Capita: Differences Between Countries	102
4.2	The Solow Model with Human Capital	106
4.3	The Solow Model in the Small Open Economy	109
4.3.1	Current Account on the Balance of Payments	111
4.3.2	Sustainability of the Foreign Debt	113
4.4	Growth Accounting	113
4.4.1	Labor Productivity	116
4.5	Exercises	116
5	Economic Growth: Endogenous Savings and Growth	119
5.1	The Ramsey-Cass-Koopmans Model	119
5.2	Overlapping Generations Model	127
5.3	Endogenous Growth Models: An Introduction	132
5.4	The AK Model	136
5.5	The Acemoglu-Ventura AK Model of an Open Economy	139
5.6	The Lucas Human Capital Model	141
5.7	Romer's Varieties of Inputs Model	144
5.8	The Aghion and Howit's Schumpeterian Model	146
5.9	Exercises	149

Part II Sticky Price Models

6	Keynesian Models: The IS and LM Curves, the Taylor Rule, and the Phillips Curve	155
6.1	The Keynesian IS Curve	155
6.1.1	Algebra	158
6.2	The New Keynesian IS Curve	160
6.2.1	Consumer Preferences	160
6.2.2	Consumer Equilibrium: The Euler Equation	163
6.2.3	The New Keynesian IS Curve: Discrete Variables	164
6.2.4	New Keynesian IS Curve: Continuous Variables	167
6.3	The Natural Interest Rate	168
6.4	The LM Curve	169
6.5	The LM Curve: Microfoundations	171
6.5.1	Money in the Utility Function (<i>MIU</i>)	171
6.5.2	Cash-in-Advance Constraint (CIA)	173
6.5.3	Transaction Cost	173
6.6	The Taylor Rule	175
6.7	The Phillips Curve	176
6.8	The New Keynesian Phillips Curve	186
6.9	Exercises	189
7	Economic Fluctuation and Stabilization	197
7.1	Keynesian Model: Inflation Inertia	197
7.2	Keynesian Model: Without Inflation Inertia	206

7.3	New Keynesian Model	208
7.4	Encompassing Keynesian Model	213
7.5	Friedman's Model	222
7.6	Chronic Inflation	228
7.7	Exercises	233
8	Open Economy Macroeconomics	239
8.1	Goods and Services Arbitrage	239
8.1.1	Absolute Purchasing Power Parity	239
8.1.2	Relative Purchasing Power Parity	240
8.1.3	Tradable and Non-Tradable Goods	241
8.1.4	Terms of Trade and Real Exchange Rate	242
8.2	Interest Rate Arbitrage	243
8.2.1	Uncovered Interest Rate Parity	244
8.2.2	Exchange Rate Determination	244
8.2.3	Covered Interest Rate Parity	246
8.2.4	Uncovered Real Interest Rate Parity	247
8.3	The Marshall-Lerner Condition	248
8.4	IS Curve in an Open Economy	250
8.4.1	Keynesian IS Curve	250
8.4.2	New Keynesian IS Curve	252
8.5	Natural Exchange Rate	253
8.6	Taylor Rule in an Open Economy	256
8.7	Phillips Curve in an Open Economy	257
8.7.1	Keynesian Phillips Curve	257
8.7.2	New Keynesian Phillips Curve	259
8.8	Exercises	262
9	Economic Fluctuation and Stabilization in an Open Economy	267
9.1	Mundell-Fleming-Dornbusch Model: Fixed Exchange Rate	267
9.2	Extended Mundell-Fleming-Dornbusch Model: Fixed Exchange Rate	272
9.3	New Keynesian Model: Fixed Exchange Rate	278
9.4	Mundell-Fleming-Dornbusch Model: Flexible Exchange Rate	284
9.5	Extended Mundell-Fleming-Dornbusch Model: Flexible Exchange Rate	293
9.6	New Keynesian Model: Flexible Exchange Rate	296
9.7	Exercises	299
Part III Monetary and Fiscal Policy Models		
10	Government Budget Constraint	307
10.1	Consolidating the Treasury and the Central Bank Balance Sheets	307

10.2	Public Debt Sustainability	310
10.2.1	Constant Primary Deficit (Surplus)	310
10.2.2	Variable Primary Deficit (Surplus)	312
10.3	Inflation Tax	314
10.4	Hyperinflation	318
10.4.1	Bubble	320
10.4.2	Multiple Equilibria	321
10.4.3	Fiscal Crisis and Rigidity	322
10.4.4	Intertemporal Approach: Fiscal Crisis and Rational Expectations	325
10.5	Ricardian Equivalence	327
10.6	Fiscal Theory of the Price Level	330
10.7	Sustainable Monetary Regime	332
10.8	Exercises	333
11	Monetary Theory and Policy	339
11.1	Price of Money	339
11.1.1	Bubbles \times Fundamentals	340
11.1.2	Multiple Equilibria	343
11.1.3	Indeterminacy	344
11.2	Optimum Quantity of Money	345
11.3	Zero Lower Bound Nominal Interest Rate	346
11.4	Dynamic Inconsistency	347
11.5	Interest Rate Smoothing	349
11.5.1	Keynesian Model	350
11.5.2	New Keynesian Model	354
11.6	Inflation Targeting	358
11.7	Monetary Policy Operational Procedures	360
11.8	Term Structure of Interest Rates	361
11.9	Exercises	367
Appendix A: Differential Equations	371	
Appendix B: Optimal Control Theory	393	
Appendix C: Difference Equations	417	