Outline contents

Reviews ii
Preface ix
How to use the Online Resource Centre xviii
Acknowledgements xx
List of figures xxxi
List of tables xxxviii
Abbreviations xxxix

1 The demand side 1
2 The supply side 42
3 The 3-equation model and macroeconomic policy 80
4 Expectations 116
5 Money, banking and the macro-economy 149
6 The financial sector and crises 183
7 The global financial crisis: applying the models 223
8 Growth, fluctuations and innovation 262
9 The 3-equation model in the open economy 305
10 The open economy: the demand and supply sides 350
11 Extending the open economy model: oil shocks and imbalances 389
12 The Eurozone 428
13 Monetary policy 467
14 Fiscal policy 505
15 Supply-side policy, institutions and unemployment 546
16 Real Business Cycle and New Keynesian models 583

Bibliography 615
Index 629

Contents

Reviews ii

Preface ix

How to use the Online Resource Centre xviii

Acknowledgements xx

List of figures xxxi

List of tables xxxviii

Abbreviations xxxix

1 The demand side 1

1.1 Overview 1

1.1.1 Facts about the demand side and business cycles 3

1.1.2 Introducing the *IS* curve 7

1.2 Modelling 11

1.2.1 Goods market equilibrium 11

1.2.2 The multiplier 13

1.2.3 The *IS* curve 16

1.2.4 Forward-looking behaviour 19

1.2.5 Consumption 20

1.2.6 Investment 29

1.2.7 Consumption, investment and the *IS* curve 32

1.3 Conclusions 34

1.4 Appendix 36

1.4.1 Real and nominal interest rates and the Fisher equation 36

1.4.2 Deriving the Euler equation and the PIH consumption function 37

1.5 Questions 39

1.5.1 Checklist questions 39

1.5.2 Problems and questions for discussion 40

2 The supply side 42

2.1 Overview 42

2.1.1 Unemployment 42

2.1.2 Why the labour market does not clear 42

2.1.3 Supply side effects on unemployment 45

2.1.4 Nominal rigidities and demand-side policy 48

2.1.5 Facts about the supply side 51

2.2 Modelling 55

2.2.1 Supply side effects on unemployment 56

2.2.2 Nominal rigidities, inflation and the business cycle 63

2.3 Applications 70

2.4 Conclusions 72

2.5 Appendix 74

2.5.1 The textbook model: competitive markets and complete contracts 74
2.5.2 The mark-up and the elasticity of demand 75
2.5.3 Deriving the *PS* curve including the tax wedge 77
2.6 Questions 77
2.6.1 Checklist questions 77
2.6.2 Problems and questions for discussion 78

3 The 3-equation model and macroeconomic policy 80

3.1 Overview 80
3.1.1 The role of the central bank in stabilization 83
3.1.2 Inflation and deflation 85
3.1.3 Introduction to the 3-equation model 89
3.2 Modelling 92
3.2.1 The 3-equation model 92
3.2.2 Using the 3-equation model 98
3.3 Applications 100
3.3.1 A temporary demand shock 100
3.3.2 Forecasting and lags 102
3.3.3 The deflation trap 104
3.3.4 A supply shock 107
3.4 Conclusions 109
3.5 Appendix 111
3.5.1 The 3-equation model in more detail 111
3.6 Questions 113
3.6.1 Checklist questions 113
3.6.2 Problems and questions for discussion 114

4 Expectations 116

4.1 Introduction 116
4.2 Risk, uncertainty and expectations 118
4.2.1 Risk and uncertainty 118
4.2.2 Expectations formation in real-world situations 122
4.2.3 The rational expectations hypothesis (REH) 123
4.3 Phillips curves, expectations and inflation 124
4.4 Expectations and the 3-equation model 130
4.4.1 A graphical example 130
4.4.2 Comparison of adaptive and rational inflation expectations 130
4.4.3 Central bank communication and anchoring inflation expectations 133
4.5 The Lucas critique 136
4.6 Expectations hypotheses, inflation bias and time inconsistency 138
4.6.1 Adaptive expections and inflation bias 139
4.6.2 Rational expectations, inflation bias and time inconsistency 141
4.6.3 Approaches to mitigate inflation bias 142
4.7 Conclusions 144
4.8 Questions 146
4.8.1 Checklist questions 146
4.8.2 Problems and questions for discussion 147

5 Money, banking and the macro-economy 149

5.1 Introduction 149

5.2 Money and the macro-economy 152
5.2.1 Money 152
5.2.2 Money supply and money demand 153
5.2.3 Money, banks and the 3-equation model 156
5.3 A modern financial system 159
5.3.1 The central bank sets the policy interest rate 159
5.3.2 The mark-up of the lending rate over the policy rate 160
5.3.3 Banks, credit constraints and collateral 162
5.3.4 The role of banks in a fractional reserve system 164
5.3.5 Governance arrangements: banks, central bank and government 167
5.4 The financial system and balance sheets 168
5.5 Banks and macro stabilization 172
5.5.1 Example: an investment boom shifts the *IS* curve 173
5.6 Conclusions 176
5.7 Appendix 178
5.7.1 Modelling the banking mark-up ($r - r^P$) 178
5.8 Questions 181
5.8.1 Checklist questions 181
5.8.2 Problems and questions for discussion 182

6 The financial sector and crises 183

6.1 Introduction 183
6.2 Bank behaviour, cycles and crises 185
6.2.1 Bank behaviour and the macro-economy 185
6.2.2 Financial crises and their cost to the economy 188
6.2.3 Financial cycles and business cycles 190
6.3 Basic mechanisms 194
6.3.1 Asset price bubbles 194
6.3.2 The financial accelerator 197
6.4 The housing feedback process and the 3-equation model 199
6.4.1 Credit constrained households, housing collateral and house prices 199
6.4.2 A plain vanilla financial crisis 201
6.4.3 Housing feedback process and the 3-equation model 202
6.5 The bank leverage-centred feedback process 203
6.5.1 Investment bank behaviour and leverage 204
6.6 A balance sheet recession and the financial accelerator 214
6.7 Conclusions 217
6.8 Appendix 218
6.8.1 Modelling the housing-centred positive feedback process 218
6.8.2 A positive feedback model of investment bank behaviour 219
6.9 Questions 221
6.9.1 Checklist questions 221
6.9.2 Problems and questions for discussion 222

7 The global financial crisis: applying the models 223

7.1 Introduction 223
7.2 Pre-crisis financial system: incentives, instruments and actors 226
7.2.1 Incentives 226

7.2.2 Instruments 226
7.2.3 Actors 229
7.3 The upswing of the financial cycle 232
7.4 The crisis 236
7.4.1 The scale of the crisis and nature of the post-crisis recession 236
7.4.2 The credit crunch 239
7.4.3 The crisis, macroeconomic policy and the 3-equation model 242
7.5 Policy intervention in the crisis 245
7.5.1 What went wrong in the Great Depression? 246
7.5.2 Monetary and fiscal policy in the crisis phase 247
7.5.3 Austerity policies in the post-crisis recession 254
7.5.4 Fixing banks first may mean less government debt later 257
7.6 Conclusions 259
7.7 Questions 260
7.7.1 Checklist questions 260
7.7.2 Problems and questions for discussion 261

8 Growth, fluctuations and innovation 262

8.1 Introduction 262
8.2 Short- and medium-run macro models and growth theory 267
8.3 Growth concepts and useful tools 270
8.4 The Solow model 274
8.4.1 The model 274
8.4.2 Steady state or balanced growth 276
8.5 The Solow model and cross-country performance 282
8.6 Technological progress in the Solow model 288
8.6.1 Technological progress and steady state growth 288
8.6.2 Growth accounting: measuring the impact of technology 290
8.7 Endogenous growth: the Romer model 292
8.7.1 Research and development 292
8.7.2 Endogenous growth and endogenous technological progress: the Romer model 293
8.8 Schumpeterian growth: the Aghion-Howitt model 295
8.8.1 Creative destruction, competition and Schumpeterian growth 298
8.8.2 Schumpeterian growth and business cycle fluctuations 300
8.9 Conclusions 302
8.10 Questions 302
8.10.1 Checklist questions 302
8.10.2 Problems and questions for discussion 303

9 The 3-equation model in the open economy 305

9.1 Overview 305
9.2 Modelling 315
9.2.1 The foreign exchange market and the *UIP* condition 316
9.2.2 Medium-run equilibrium in the open economy and the *AD* - *ERU* model 319
9.2.3 *AD* curve 321
9.2.4 Stabilization under flexible exchange rates: 3-equation model and *RX* curve 323
9.2.5 Inflation shock: Comparing closed and open economies 325
9.3 Applications 330
9.3.1 Demand and supply shocks: the 3-equation and *AD-ERU* models 330

9.3.2 Exchange rate overshooting 333
9.3.3 Exchange rate volatility 338
9.4 Conclusions 339
9.5 Appendix 340
9.5.1 Deriving the real *UIP* condition 340
9.5.2 The 3-equation model in more detail 341
9.5.3 Derivation of $(1 - \lambda)$ and its properties 345
9.5.4 Geometry of the *RX* curve: varying the parameters 346
9.6 Questions 347
9.6.1 Checklist questions 347
9.6.2 Problems and questions for discussion 348

10 The open economy: the demand and supply sides 350

10.1 Overview 350
10.1.1 The open economy accounting framework 351
10.1.2 The demand side, trade balance and the supply side 353
10.2 Modelling 357
10.2.1 The demand side and trade balance 357
10.2.2 The supply side in the open economy 366
10.2.3 The medium-run model: *AD–BT–ERU* 371
10.3 Application 379
10.3.1 The UK economy before the crisis 379
10.4 Conclusions 384
10.5 Appendix 385
10.6 Questions 386
10.6.1 Checklist questions 386
10.6.2 Problems and questions for discussion 387

11 Extending the open economy model: oil shocks and imbalances 389

11.1 Overview 389
11.1.1 How does a commodity price rise affect the macro-economy? 390
11.1.2 Interpreting an economy's sector financial balances: does a current account imbalance matter? 394
11.1.3 Inflation targeting in a two-bloc world 395
11.1.4 Different medium-run 'growth' strategies can cause global imbalances 396
11.2 Modelling 399
11.2.1 Oil shocks 399
11.2.2 Current account imbalances 405
11.2.3 Sector financial balances 410
11.2.4 Global interdependence and imbalances 413
11.2.5 A 2-bloc model with inflation-targeting central banks 414
11.3 Conclusions 421
11.4 Appendix 422
11.4.1 Dynamic adjustment to a shock in the 2-bloc model 422
11.5 Questions 425
11.5.1 Checklist questions 425
11.5.2 Problems and questions for discussion 426

12 The Eurozone 428

12.1 Introduction 428
12.1.1 Origins of the Eurozone and the theory of an optimal currency area 430

12.1.2 The Eurozone's performance in its first ten years 432
12.2 The Eurozone policy regime 435
12.2.1 The Maastricht policy assignment 435
12.2.2 Monetary policy in the Eurozone 436
12.2.3 Fiscal policy in the Eurozone 437
12.3 Stabilization in the Eurozone: common shocks 439
12.4 Stabilization in the Eurozone: country–specific shocks 440
12.4.1 Is stabilization policy necessary for country-specific shocks? 440
12.4.2 The real exchange rate (competitiveness) channel 442
12.4.3 The real interest rate channel 443
12.4.4 Using fiscal policy to stabilize 444
12.4.5 The real exchange rate channel–internal devaluation 448
12.4.6 Conclusions about stabilization policy in the Eurozone 450
12.5 Eurozone governance, sovereign risk and the banking system 451
12.5.1 Governance arrangements: banks, governments and central bank 453
12.5.2 Governance solutions 460
12.6 Conclusions 463
12.7 Questions 464
12.7.1 Checklist questions 464
12.7.2 Problems and questions for discussion 465

13 Monetary policy **467**

13.1 Introduction 467
13.2 Monetary policy and the economy's nominal anchor 468
13.2.1 The classical dichotomy and the nominal anchor 468
13.2.2 From theory to practice: monetary policy and inflation in the 1970s and 1980s 469
13.2.3 The inflation target as the nominal anchor 473
13.3 Modelling 473
13.3.1 Active rule-based policy 473
13.3.2 Central bank preferences: sacrifice ratios and costly disinflation 473
13.3.3 The *MR* equation and Taylor rules 476
13.4 The modern monetary policy framework–practice 478
13.4.1 Taylor rules in practice 480
13.5 Monetary policy and the global financial crisis 483
13.5.1 Asset price bubbles and central bank intervention 483
13.5.2 Unorthodox monetary policy in the Great Recession 484
13.6 Post-crisis reform of financial regulation and the macro policy framework 493
13.6.1 The failures of the conventional macroeconomic policy framework 493
13.6.2 Post-crisis reforms for a safer financial system 495
13.7 Conclusions 501
13.8 Questions 503
13.8.1 Checklist questions 503
13.8.2 Problems and questions for discussion 504

14 Fiscal policy **505**

14.1 Introduction 505
14.2 Fiscal policy's role in stabilization 506
14.2.1 The scope of fiscal policy 506
14.2.2 The effects of discretionary fiscal policy 507
14.2.3 The automatic stabilizers 513

14.3 Debt dynamics 516
14.3.1 The government's budget identity 516
14.3.2 Debt dynamics 518
14.3.3 The costs of high and rising government debt 525
14.3.4 Can fiscal consolidation be expansionary? 528
14.4 The government's budget constraint and Ricardian equivalence 530
14.4.1 Ricardian equivalence and the PIH 531
14.4.2 Ricardian equivalence and fiscal policy effectiveness 534
14.5 Deficit bias and the political economy of debt 535
14.5.1 Causes of deficit bias 536
14.5.2 Why deficit bias may vary across countries 536
14.5.3 Approaches to tackle deficit bias 537
14.6 Conclusions 541
14.7 Questions 542
14.7.1 Checklist questions 542
14.7.2 Problems and questions for discussion 543

15 Supply-side policy, institutions and unemployment 546

15.1 Introduction 546
15.2 Flows, matching and the Beveridge curve 549
15.3 Unions and wage-setting arrangements 554
15.4 Efficiency wage models 557
15.4.1 A micro model of efficiency wage setting 558
15.4.2 What is the empirical evidence on efficiency wages? 562
15.5 Hysteresis and persistence in unemployment 564
15.6 Unemployment in OECD countries 568
15.6.1 Definitions: employment, unemployment and inactivity 568
15.6.2 Overview 569
15.6.3 Empirical studies 571
15.7 Labour market behaviour in the crisis 574
15.7.1 US unemployment during the crisis 575
15.7.2 European unemployment during the crisis 576
15.8 Conclusions 579
15.9 Questions 580
15.9.1 Checklist questions 580
15.9.2 Problems and questions for discussion 581

16 Real Business Cycle and New Keynesian models 583

16.1 Introduction 583
16.2 The real business cycle model 585
16.2.1 Introduction 585
16.2.2 The RBC model and business cycle facts 586
16.2.3 The model and its properties 588
16.2.4 Results 593
16.2.5 Criticisms of the RBC model 596
16.2.6 The impact of RBC modelling 599
16.3 The New Keynesian model and stabilization policy 600
16.3.1 The New Keynesian Phillips curve 600
16.3.2 Stabilization bias 604
16.3.3 NK DSGE modelling 606

16.4 Conclusions 610
16.5 Questions 611
16.5.1 Checklist questions 611
16.5.2 Problems and questions for discussion 612

Bibliography 615

Index 629