

Contents

| | |
|--|-----|
| <i>List of Figures</i> | vii |
| <i>List of Appendices</i> | x |
| <i>Notes on the Contributors</i> | xi |
| <i>Foreword by Carl E. Walsh</i> | xix |
| Macroeconomic Theory and Macroeconomic Pedagogy: An Introduction | 1 |
| <i>Giuseppe Fontana and Mark Setterfield</i> | |
| Part I The 3-Equation New Consensus Macroeconomic Model | |
| 1 Teaching Intermediate Macroeconomics using the 3-Equation Model | 13 |
| <i>Wendy Carlin and David Soskice</i> | |
| 2 Bringing Undergraduate Macroeconomics Teaching Up to Date | 36 |
| <i>Simon Wren-Lewis</i> | |
| 3 Monetary Policy Analysis: An Undergraduate Toolkit | 55 |
| <i>Jagjit S. Chadha</i> | |
| 4 Rescuing the <i>LM</i> Curve (and the Money Market) in a Modern Macro Course | 76 |
| <i>Roberto Tamborini</i> | |
| 5 The New Consensus in Macroeconomics: A Critical Appraisal | 100 |
| <i>Philip Arestis</i> | |
| 6 Complexity and Macro Pedagogy: The Complexity Vision as a Bridge between Graduate and Undergraduate Macro | 118 |
| <i>David Colander and Casey Rothschild</i> | |
| Part II An Endogenous-Money Theory Amendment of the New Consensus Macroeconomic Model | |
| 7 Teaching Macroeconomics When the Endogeneity of Money is Taken Seriously | 131 |
| <i>Malcolm Sawyer</i> | |

| | | |
|---|---|-----|
| 8 | A Simple (and Teachable) Macroeconomic Model with Endogenous Money <i>Giuseppe Fontana and Mark Setterfield</i> | 144 |
| 9 | Money and Banking in a Realistic Macro Model <i>Peter Howells</i> | 169 |
| Part III Financial Fragility, Liquidity Preference, Unemployment Hysteresis and Other Amendments | | |
| 10 | Taming the New Consensus: Hysteresis and Some Other Post Keynesian Amendments <i>Marc Lavoie</i> | 191 |
| 11 | Minsky Meet Wicksell: Using the Wicksellian Model to Understand the Twenty-First Century Business Cycle <i>Charles L. Weise and Robert J. Barbera</i> | 214 |
| 12 | Macroeconomics Meets Hyman P. Minsky: The Financial Theory of Investment <i>L. Randall Wray and Eric Tymoigne</i> | 234 |
| Part IV The Real Interest Rate, Income Distribution, and Alternative Views of Stabilization Policies | | |
| 13 | Teaching the New Consensus Model of 'Modern Monetary Economics' from a Critical Perspective: Pedagogical Issues <i>John Smithin</i> | 255 |
| 14 | A Post Keynesian Alternative to the New Consensus Model <i>Eckhard Hein and Engelbert Stockhammer</i> | 273 |
| 15 | The Central Banker as 'Regulator of Conflict': A 'Reversed' Reading of the Solow and New Consensus Models <i>Emiliano Brancaccio</i> | 295 |
| 16 | Institutions, Expectations and Aggregate Demand <i>Jesus Ferreiro and Felipe Serrano</i> | 309 |
| | <i>Author/Name Index</i> | 323 |
| | <i>Subject Index</i> | 326 |

Macroeconomic Theory and Macroeconomic Pedagogy: An Introduction

Giuseppe Fontana and Mark Setterfield

The purpose of this book, as its title suggests, is to reflect on the relationship between contemporary macroeconomic theory and prevailing techniques and practices in undergraduate macroeconomics education. Its primary concern is with the development of simple macroeconomic teaching models in light of recent developments in macroeconomic theory, with an eye to promoting a better understanding of current real world issues. As such, the chapters that follow focus on 'content', i.e. what students are taught and its relationship to macroeconomics as it is currently perceived and practised by the profession, rather than methods of and strategies for instruction.

Many of the chapters are intended for direct consumption by students, and are suitable for explicit introduction into the classroom. Others are aimed at instructors, with a view to influencing the way instructors think about macroeconomic theory, and hence what they will subsequently seek to teach to their students. Our hope is that the collection as a whole will inspire academic economists to reflect on the relationship between contemporary macroeconomic theory and the teaching models that they use in the classroom.¹ Put bluntly, our ambition is to influence macroeconomics education by affecting both the material that instructors currently seek to present in their classrooms, and the contents of future generations of macroeconomics textbooks.

In many ways, this is a timely project. Macroeconomics has a long and venerable history of revolutions and counter-revolutions, and since the symposium devoted to macroeconomic pedagogy that appeared in the *Journal of Economic Education* in 1996 (volume 27, issue 2), the discipline has undergone another revolution of sorts. This is associated with the emergence of the 'New Neoclassical Synthesis' or 'New Consensus' in macroeconomics, benchmark statements of which can be found in Clarida *et al.* (1999), and Woodford (2003). In its simplest form, the New Consensus is a three-equation model consisting of an *IS* curve, an accelerationist Phillips curve, and a Taylor rule. It is this last feature that points to the key innovation of the New Consensus,

2 Introduction

namely the fact that it practises ‘macroeconomics without the *LM* curve’ (Romer, 2000). Hence, in *IS–LM* analysis, which has been the workhorse teaching model in undergraduate textbooks for several decades, one of the foundations of the *LM* curve is an exogenously given quantity of money in circulation, determined by the central bank. In the New Consensus, however, the interest rate is understood to be the instrument of monetary policy, and as the central bank manipulates the interest rate, the quantity of money in circulation is determined as an endogenous residual.² In light of all this, a debate has recently emerged regarding the extent to which current undergraduate macroeconomics teaching models are well grounded in and adequately reflect the latest developments in the field. Several well known and widely cited papers – including those by Allsopp and Vines (2000), Romer (2000), Taylor (2000), Walsh (2002), Carlin and Soskice (2005), Bofinger, Mayer and Wollmerhäuser (2006), and Turner (2006) – have already attempted to ‘translate’ the New Consensus into forms suitable for presentation to undergraduates at either the introductory or intermediate levels. Indeed, the New Consensus has already begun to influence the content of macroeconomics textbooks, as evidenced by Sørensen and Whitta-Jacobsen (2005), Carlin and Soskice (2006), DeLong and Olney (2006), and Jones (2008).

Not surprisingly, then, much of this book is concerned with the presentation, further development and/or critique of the 3-Equation New Consensus macroeconomic model. Part I begins with an aptly-titled chapter by Wendy Carlin and David Soskice, showing how the central ideas of the New Consensus can be presented in a form that is accessible to an undergraduate audience. Drawing on their recent works (2005, 2006) the authors provide a simplified diagrammatical exposition of the 3-Equation New Consensus model. They show how this model can be used to analyse a broad range of phenomena, including current commodity price shocks. In so doing, they draw attention to two key features of the New Consensus, namely (1) its emphasis on the forward-looking behaviour of the central bank; and (2) the necessity of appealing to underlying behavioural relations when using the model for comparative static exercises. The latter is seen as a major pedagogical advantage of the model relative to its *IS–LM* based predecessor.

In Chapter 2, Simon Wren-Lewis builds on the diagrammatical exposition of the 3-Equation New Consensus model of Carlin and Soskice. He argues that current undergraduate macroeconomics can and should be updated: central to this project is expunging the *LM* curve from teaching models and re-focusing discussion of monetary policy on manipulation of the interest rate. The author shows that, in conjunction with an up-dated presentation of the *IS* curve and an expectations-augmented Phillips curve, the resulting model permits more intuitive discussion of macroeconomic outcomes and policy interventions. The result, then, is an approach that not only modernizes undergraduate macroeconomics, but also makes teaching macroeconomics easier and more effective.

The development of simple diagrams that can be used by undergraduate students to understand interest rate setting by policy-makers is also the purpose of Chapter 3 by Jagjit Chadha. The author constructs a simple monetary-macro teaching model in keeping with the principles of the New Consensus, and shows how graphical representations of this model can be used to demonstrate the appropriate monetary policy responses to a variety of demand and supply shocks, as well as dislodged inflation expectations. Particular attention is paid to the ways in which the zero lower bound problem and the operation of private financial markets may complicate these policy responses.

Chapter 4 by Roberto Tamborini is devoted to the development of a basic macroeconomic model that conveys clear and theoretically consistent ideas about the relationship between different monetary policy strategies, and the levels of output and inflation. In a break with earlier chapters, Tamborini comes to the rescue of the *LM* curve. More precisely, he seeks to re-integrate a fuller account of the monetary sector – of the sort that was common when the *LM* curve was in vogue – into a New Consensus model. This gives rise to a macro teaching model that admits both ‘exogenous money’ and ‘endogenous money’ regimes, depending on the policy choices and objectives of the central bank. Tamborini argues that this model better integrates macroeconomic theory with the material taught in monetary economics and finance, without giving up the advances in macroeconomics associated with the New Consensus.

The last two chapters of Part I provide a critical appraisal of the main theoretical, empirical and methodological propositions of the New Consensus. In Chapter 5, Philip Arestis assesses the theoretical structure and policy implications of the New Consensus model. The author focuses on six key issues of which teachers and students of the 3-Equation macroeconomics model should be explicitly aware: (1) the emphasis on inflation targeting as the main objective of central banks; (2) the purported long-run neutrality of money and monetary policy; (3) the single-minded focus on excess aggregate demand as the source of inflationary pressure in the economy; (4) the relative neglect of open-economy issues; (5) the assumed desirability of low inflation; and (6) the relative neglect of the destabilizing effects of asset price inflation. Arestis is also critical of the empirical basis of the New Consensus model, especially the interest (in)sensitivity of aggregate expenditure, and the effects of inflation targeting on observed rates of inflation. The author argues that a discussion of these theoretical and empirical issues associated with the 3-Equation New Consensus model helps to highlight the ever-evolving nature of macroeconomic theory and macroeconomic teaching.

This last point is further developed in Chapter 6 by David Colander and Casey Rothschild, who relate the evolving nature of macroeconomic theory and pedagogy to the complex nature of modern economies. Their point of departure is the oft-noted methodological inconsistency between

4 Introduction

macroeconomics education at the undergraduate and graduate levels – an inconsistency that would persist even if the content of undergraduate education were modernized along the lines recommended in preceding chapters. The authors argue that the methods and models characteristic of *both* undergraduate *and* graduate macroeconomics overlook the complexity of real-world economies. Their thesis is that, nevertheless, macroeconomics education can be rendered consistent. Specifically, Colander and Rothschild argue that both undergraduate and graduate teaching models should be presented as different but complementary approaches to the same set of issues and challenges that are presented by the intrinsic complexity of modern economies.

One major issue with the New Consensus model, an issue first discussed in Friedman's (2003) 'The *LM* Curve: A Not-So-Fond Farewell' and echoed in several of the contributions in Part I, is the disappearance of the banking sector from the standard 3-Equation New Consensus model. The New Consensus has rejected the *LM* curve and its unrealistic assumption that the central bank controls monetary aggregates. But, in so doing, it has discarded many interesting research questions about the functioning of the banking system and credit markets more generally. In the New Consensus, the central bank controls the short-run nominal interest rate. But how does it affect the myriad real interest rates in the economy? And how do these real rates influence the interest-sensitive components of aggregate demand? These questions – and answers to them – are the cornerstone of endogenous money theory, which is at the heart of the contributions to Part II of the book.

Chapter 7 by Malcolm Sawyer starts with a simple observation: treating money as an endogenous rather than exogenous variable (as in the old *IS-LM* model) has consequences for macroeconomic analysis that extend well beyond the change it imposes on the policy instrument of the central bank. The author identifies and discusses six broad themes that are affected by the endogeneity of money: (1) the measurement of money and the interest rate; (2) the operations of the banking sector; (3) the operations of the central bank; (4) the formation of aggregate demand; (5) the role of the demand for money; and (6) the nature of the inflation process. The main point that emerges from this chapter is that each of these themes must be satisfactorily addressed in order to teach successfully macroeconomics in an endogenous money environment.

Chapter 8 by Giuseppe Fontana and Mark Setterfield takes up most of Sawyer's themes. The authors build a teaching model which is a further development of both the old *IS-LM* model and the modern 3-Equation New Consensus model. In their resulting endogenous money model, the interest rate is the instrument of monetary policy, and both the behaviour in the credit market of commercial banks and the non-bank private sector, and of the behaviour of the central bank in the reserve market, are explicitly described. The model embodies a Keynesian hierarchy of markets, in which

monetary and financial factors impact the goods market, which in turn determines outcomes in the labour market. In addition, the model generates both Classical and Keynesian adjustment dynamics in response to downwardly-flexible nominal wages. Fontana and Setterfield claim that these features lend their model greater generality than ostensibly similar models based on the New Consensus, making it a better teaching tool.

Chapter 9 by Peter Howells draws Part II to a close in appropriate fashion. Inspired by the work of Fontana (2003, 2006) and the diagrammatic representation of the monetary sector in Carlin and Soskice (2006), Howells aims to integrate a fully developed account of the banking sector into the standard 3-Equation New Consensus macroeconomic model. The result is an amended version of the New Consensus model, which explicitly draws on endogenous money theory. Howells puts to the test his amended New Consensus model by examining its response to shocks emanating from the real economy and the financial sector. Both types of shocks are shown to produce plausible macroeconomic outcomes. Howells concludes that these results recommend the underlying model as a tool for teaching macroeconomics in a manner that explicitly and realistically captures the structure and functioning of the banking sector and of the macro economy more generally.

A second major issue with the New Consensus – and one that is closely related to the themes raised by endogenous money theory discussed in Part II – is the absence of financial markets from the standard 3-Equation New Consensus model (Goodhart and Tsomocos, 2007; Canzoneri *et al.*, 2008). In the face of the recent turmoil in US and world financial markets, ignoring the origin of speculative excesses and panic in financial markets, together with the related probability of default and bankruptcy and its implications for banks and other major financial institutions, makes teaching undergraduate macroeconomics almost embarrassing. Certainly, this state of affairs only makes it harder for students to effect the transition from the macroeconomics of the press to the macroeconomics of the classroom. The contributions to Part III of the book seek to remedy this situation by drawing on (among other things) the contributions of the late Hyman Minsky (2008).

Chapter 10 by Marc Lavoie shows how the 3-Equation New Consensus macroeconomic model can be amended to incorporate financial issues as well as other fundamental Keynesian concerns (such as different configurations of the Phillips curve and hysteresis effects in the labour and capital markets), all of which call into question the centrality to the New Consensus of supply-determined equilibrium in the real economy. In addressing financial issues, the author focuses on the difference between the overnight rate charged by the central bank and the market interest rate charged by commercial banks. His particular interest is in the Minskyan potential for the latter to change relative to the former – as, for example, during financial crises – and the consequences of this for policy-making and aggregate activity.

This last set of issues is the starting point for Chapter 11 by Charles Weise and Robert Barbera. The aim of this chapter is to introduce the analysis of financial intermediation between borrowers, commercial and investment banks, and the central bank into the standard 3-Equation New Consensus model. Specifically, Weise and Barbera focus their attention on a major Minskyan insight, namely, the evolution of risk perceptions over the course of the business cycle as reflected in credit spreads. The result is an ingenious teaching model that places financial market dynamics between the overnight rate set by the central bank and the risk-laden commercial rate at which households and firms borrow. In this way, the chapter introduces students to the importance of finance in generating business cycles.

As is clear from what has been said above, the first two chapters of Part III seek to amend and extend New Consensus-type models by introducing financial themes that are closely related to the work of Hyman Minsky. It is fitting, then, that Chapter 12, by L. Randall Wray and Eric Tymoigne, is devoted to a fuller exploration of the financial theory of investment developed by Minsky. This theory highlights the centrality of money and finance to the dynamics of modern capitalist economies, and thus provides an alternative to contemporary teaching models, which take for granted the long-run neutrality of money and finance. Wray and Tymoigne show how the financial theory of investment gives rise to the possibility that booms will 'sow the seeds of their own destruction', possibly culminating in financial crises. The chapter thus shows how increasing financial instability can arise in the ordinary course of economic growth. This possibility is illustrated with reference to developments in the US economy.

In the standard 3-Equation New Consensus model, the central bank is supposed to change the short-run nominal interest rate with the purpose of changing the output gap so as to achieve the desired rate of inflation. This means that by changing the short-run nominal interest rate the central bank aims to affect real financial conditions in credit markets, which should, in turn, influence interest-responsive components of aggregate demand and hence current output. But perceptive students may wonder whether or not these continuous changes in real financial conditions will have long-lasting effects on the earnings of financial institutions, in addition to their expected short-run countercyclical effects? Students are taught that profits are the reward for entrepreneurial activities while wages are the compensation for labour services. Is it not the case, then, that real financial conditions are the remuneration of financial institutions for the use of their accumulated financial capital? Any answer to this question brings forth discussion of income distribution, and the potential role of the central bank as a disguised arbiter of the income claims of firms, wage-earners and financial institutions (the 'rentiers' of Classical economics). The contributions to Part IV of the book deal with this and other issues related to the basic orientation and 'message' of macroeconomic teaching models.

Chapter 13 by John Smithin has a twofold aim: to present a teachable variant of the New Consensus, and to show that a plausible alternative to this model, which differs fundamentally from the New Consensus in its description of the wage and price setting behaviour of workers and firms, results in macroeconomic outcomes and associated policy conclusions that are very much at variance with those derived from the standard 3-Equation model. The chapter also serves a valuable pedagogical purpose by demonstrating that, the current ‘consensus’ in monetary macroeconomics notwithstanding, there is still room in undergraduate macroeconomics for debate over how the economy operates and how policy-makers should respond to new economic conditions.

A similar pedagogical purpose characterizes Chapter 14 by Eckhard Hein and Engelbert Stockhammer. The aim of this chapter is to construct a teachable alternative to the New Consensus model that nevertheless accounts for short-run, supply-side limits to the extent of real activity. The income-generating process is demand-driven, but the inflation process – which is based on the competing claims on real income of workers, firms and rentiers, and which determines *both* the equilibrium rate of inflation *and* the functional distribution of income – imposes an upper limit on the level of activity in the short run. As in the New Consensus, this limit is only reached by virtue of the proper conduct of monetary policy, but unlike the New Consensus, it is endogenous in the medium run. Ultimately, the authors show that a portfolio of fiscal, monetary and incomes policies is required for effective macroeconomic stabilization.

Chapter 15 by Emiliano Brancaccio shows how the emerging New Consensus teaching model can be amended to broaden the horizons of undergraduates. The immediate concern of this chapter is with the increasing hegemony of ‘the textbook view’ in undergraduate macroeconomics, which identifies ‘modern’ macro as a linear outgrowth of the old Neoclassical Synthesis. This view, Brancaccio argues, admits no place for competing schools of thought in macroeconomics, inhibiting the development of critical thinking by students – and potentially concealing the distributional role of the central bank. Brancaccio shows how this can be remedied using standard teaching tools – namely, the 3-Equation New Consensus model *plus* Solow’s growth theory – simply by altering the choice of exogenous and endogenous variables. The result is two very different representations of the economy and the role of policy-makers, derived from the same core analytical structure.

The book ends with Chapter 16 by Jesus Ferreiro and Felipe Serrano. These authors are concerned with the standard assumptions about decision-making and the availability of information that undergird the majority of macroeconomic models and their teaching variants. The authors highlight the fact that, in a world of full information and rational expectations, aggregate demand is irrelevant in anything other than a strictly short-run context, and the only institutions that matter (apart from competitive markets) are those

that bind the state to consistent, and therefore predictable, policy interventions. Ferreiro and Serrano show that once the existence of fundamental uncertainty is recognized, both the importance of aggregate demand and the role of institutions in the economy are radically revised. Ultimately, then, their chapter serves to draw the attention of students to the vital role played by the most basic premises of macroeconomic theory in the determination of its central results and policy prescriptions.

In concluding this introduction, a few additional words about the general approach and intent of this book are in order. A core belief that runs through all of its chapters is that macroeconomics is a useful – indeed, essential – academic discipline. As the book goes to print, global finance is in the process of being torn apart. Giants of the housing market, investment banking, and the insurance sector have collapsed: Fannie Mae and Freddie Mac, Lehman Brothers, AIG, and HBOS are now household names, and for all the wrong reasons. Macroeconomic theory can help to explain the events that led to this crisis, and how policy-makers should respond. It can also suggest solutions for other current problems – from reconciling stable inflation with rapid growth and low unemployment, to revitalizing real income growth for the majority of wage-earners. But there is much more to macroeconomics besides its capacity for explaining current real-world issues. It is a fascinating and engaging subject in its own right, that can open minds to new perspectives and ideas. It can help to develop the skills associated with critical thinking, as well as contribute to the moulding of personal points of view. In short, students should be encouraged to learn macroeconomics for their own enjoyment and satisfaction, as well as to enhance their understanding of the world around them. The long-lasting ambition of this book is to contribute to the process of making macroeconomics a subject that can be read for pleasure as well as for its real-world relevance.

Notes

1. This is (or should be), of course, an on-going project for macroeconomists, and we are by no means the first to recommend it. See, for example, Froyen (1996).
2. The ‘old’ and the ‘new’ Neoclassical Syntheses may therefore appear to be diametrically opposed, but this is not altogether true. Both can be seen as emerging from essentially the same framework of analysis, under different assumptions about what the central bank chooses to make the instrument of monetary policy (the interest rate or the monetary base), as in the work of Poole (1970).

Note, moreover, that the essential ‘novelty’ of the New Consensus, namely that central banks manipulate the interest rate while the private sector determines the quantity of money in circulation, is not, in fact, new, there being a long history of endogenous money theory in macroeconomics (see, for a classic statement, Moore, 1988). As will become clear in the chapters that follow, there exists a *variety* of macroeconomic traditions, and hence teaching models, that are consistent with the

observation that the interest rate (rather than the quantity of money in circulation) is the instrument of monetary policy.

References

- Allsopp, C. and Vines, D. (2000), 'The assessment: macroeconomic policy', *Oxford Review of Economic Policy*, 16(4), 1–32.
- Bofinger, P., Mayer, E., and Wollmerhäuser, T. (2006), 'The BMW model: a new framework for teaching monetary economics', *Journal of Economic Education*, 37(1), 98–117.
- Canzoneri, M., Cumby, R.E., Diba, B., and Lopez-Solido, D. (2008), 'Monetary aggregates and liquidity in a Neo-Wicksellian framework', *NBER Working Paper Series*, n. 14244.
- Carlin, W. and Soskice, D. (2005), 'The 3-Equation New Keynesian Model – a graphical exposition', *Contributions to Macroeconomics*, 5(1), 1–27.
- Carlin, W. and Soskice, D. (2006), *Macroeconomics: Imperfections, Institutions and Policies*, Oxford: Oxford University Press.
- Carlin, W. and Soskice, D. (2005), *Macroeconomics Imperfections, Institutions and Policies*, Oxford: Oxford University Press.
- Clarida, R., Gali, J., and Gertler, M. (1999), 'The science of monetary policy: a new Keynesian perspective', *Journal of Economic Literature*, 37(4), 1661–707.
- DeLong, J. Bradford and Olney, Martha L. (2006), *Macroeconomics*, 2nd edn, Boston: McGraw-Hill Irwin.
- Fontana, G. (2003), 'Post Keynesian approaches to endogenous money: a time framework explanation', *Review of Political Economy*, 15(3), 291–314.
- Fontana, G. (2006), 'Telling better stories in macroeconomic textbooks: monetary policy, endogenous money and aggregate demand', in M. Setterfield (ed.), *Complexity, Endogenous Money and Macroeconomic Theory: Essays in Honour of Basil J. Moore*, Cheltenham, Edward Elgar, 353–67.
- Friedman B.M. (2003), 'The LM Curve: A Not-so-fond Farewell', *NBER Working Paper Series*, n. 10123.
- Froyen, R.T. (1996), 'The evolution of macroeconomic theory and implications for teaching intermediate macroeconomics', *Journal of Economic Education*, 27(2), 108–15.
- Goodhart, C.A.E and Tsomocos, D.P. (2007), 'Analysis of financial stability', *Oxford Financial Research Centre, Financial Economics WP Series*, no. 4.
- Jones, C.I. (2008), *Macroeconomics*, London: W.W. Norton.
- Minsky, H.P. (2008; orig. 1986), *Stabilizing an Unstable Economy*, New York: McGraw-Hill.
- Moore, B.J. (1988), *Horizontalists and Verticalists: The Macroeconomics of Credit Money*, Cambridge: Cambridge University Press.
- Poole, W. (1970), 'Optimal choice of monetary policy instrument in a simple stochastic macro model', *Quarterly Journal of Economics*, 84(2), 197–216.
- Romer, D. (2000), 'Keynesian macroeconomics without the LM curve', *Journal of Economic Perspectives*, 14(2), 149–69.
- Sørensen, P.B. and Hans Jørgen Whitta-Jacobsen (2005), *Introducing Advanced Macroeconomics: Growth and Business Cycles*, Maidenhead: McGraw-Hill.
- Taylor, J.B. (2000), 'Teaching macroeconomics at the Principles level', *American Economic Review*, 90(2), 90–4.

- Turner, P. (2006), 'Teaching undergraduate macroeconomics with the Taylor-Romer model', *International Review of Economics Education*, 5(1), 73–82.
- Walsh, C.E. (2002), 'Teaching Inflation Targeting: An Analysis for Intermediate Macro', *Journal of Economic Education*, 33(4): 330–46.
- Woodford, M. (2003), *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton: Princeton University Press.

Subject Index

- aggregate demand (*AD*) 3, 4, 7, 19, 23,
 33, 39, 44–5, 56, 58, 59, 61, 64–5,
 67–8, 70, 72, 80, 81, 83, 86f, 86, 87f,
 87, 90f, 90, 91, 92f, 94, 95, 97(n4),
 103, 105, 109, 115(n5), 131–3, 135,
 136, 138, 140, 142, 160, 165,
 167(n15), 172, 185(n5), 206, 220,
 237, 249(n4), 258–9, 260, 261f, 261,
 263, 264–5, 266–7, 267f, 268, 269,
 270–1, 278, 284, 287, 290, 303, 312,
 319–20
AD–AS (or *AS–AD*) framework 13, 32,
 36–40, 52, 65, 78, 80–1, 121, 126,
 128, 172
AD–AS–LM equations/functions 84,
 96
AD–AS–TR system 90, 91
 debt-financed component 148,
 156f, 156–7, 161, 163, 164f
 full employment level 63, 319
 and interest rates 20, 27, 28f, 138–9,
 270–1
 lagged effect of interest rate 17
 wage-led 278, 292(n7)
- aggregate demand curve 36, 150, 156,
 156f, 159, 163–5, 167(n16), 172,
 176, 185(n5), 194, 196, 198f, 198–9,
 204f, 205, 209f, 209, 266, 267f, 268
 derivation 148–51
 downward sloping 150, 151f
- aggregate demand shocks 22, 23, 34(n4),
 87, 91, 221–5
 permanent shock 27, 28f
 temporary versus permanent 21
- aggregate supply (*AS*) 30, 32–3, 50–1,
 53(n5), 57–8, 64, 76, 79, 81, 85, 86f,
 86, 90, 97(n4), 103, 108, 151–3,
 156, 222
- aggregate supply curve 161, 163–5,
 220–1, 231–2, 310
- aggregate supply shock 21–2
- asset markets 77, 96, 214–15, 218, 223
- asset prices 3, 52, 116, 137, 208, 224,
 230, 237, 238–40, 242–5, 247, 244
- bubbles 68, 111
 determination 249(n4)
- asset pricing 74(n6), 110–11, 236
 productivity theory 243, 250(n10)
 ‘rational’, ‘irrational’, ‘convention’
 approaches 243–4
- assets 83, 141, 172, 209, 215–16, 219,
 239, 242, 246, 247, 275
 expected returns 232(n1), 237, 243,
 244, 249(n3, n5)
 marginal efficiency 237, 238
- balance sheets 134–5, 137, 147f, 148,
 177, 178f, 179, 183, 186(n10), 216,
 241, 242
- Bank of Canada 211(n12)
- bank deposits 95, 132, 134f, 135, 137,
 141–2, 146–8, 157–9, 177–82, 183f,
 186(n10)
 created by bank loans 147f, 147
 give rise to demand for monetary
 reserves 147f, 147
 rate of interest 134, 245, 249(n5)
- Bank of England xii, xix, 105, 107,
 112, 144, 179, 184, 185(n8),
 186(n12)
 MPC 172
- Bank of Japan 185(n6)
- bank liquidity 182, 183
- bank loan interest rate 134–6, 140,
 149, 151f, 156, 156f, 159–61, 178f,
 179, 181f, 222, 239, 245, 257
 mark up 138, 146–7, 147f, 150, 157,
 160, 177–8, 179, 181–3, 183f
- bank loans
 conventional 183
 miscellaneous 134–5, 137–8, 141–2,
 178f, 178–80, 182, 186(n10)
 quantity-price relationship 136
 securitized 183
 sudden reduction in
 availability/increase in cost 157,
 160

- supply and demand 147, 157–60, 178f, 178
see also mortgages
- bank reserves 95, 134–5, 137, 143(n4), 146, 177–81, 181f, 183, 183f, 242, 247, 250(n9), 288
- banking 102, 242, 247
 commitment model 244–5
 originate-and-distribute model 245
- banking sector 4, 5, 95–6, 142, 170, 176–7, 181f, 181, 214, 274
- banking system 131–4, 137, 169, 179–80, 182, 186(n9), 191, 229
- bankruptcy/insolvency 5, 208, 239
- banks (commercial) 136, 179, 182, 245, 247
 demand for reserves 147f, 148
 liquidity preferences 179
 loan creation 134–6
 profitability of loans 135–6
- bonds 63, 83, 140, 141, 220, 243
 interest rate 186(n14)
 nominal interest rate 83
 risk-free 230
- booms 203, 261, 266
 and busts 77, 107, 215–18, 220, 223–4, 227, 230, 241, 248
 demand-induced 55
 real estate (USA, mid-1990s to 2007) 247
 speculative 223, 242, 244, 247
see also bubbles
- borrower's risk (Minsky) 238f, 238–40, 242, 249(n6)
- borrowers 6, 132, 156, 223, 216, 222, 244–5
- borrowing 41, 42, 185(n6), 257
 corporate 247
- bubbles 68, 216, 217f, 243
see also internet bubble
- budget deficits 68, 241, 250(n7), 260, 263, 290
- Bundesbank 86
- business cycle 39, 41, 49, 78, 92–3, 93f, 97(n2), 257, 309
 centrality of finance (Minsky) 215
 endogenous interpretation 68–9, 74(n23)
 evolution of perceptions of risk (Minsky) 215
 exogenous view 74(n23)
 finance-led (phases) 216
 Keynesian model 40
 short-run 77
 Wicksellian 92, 97(n7), 214–33
see also real business cycles (RBC)
- Calvo pricing 74(n8), 174
- capacity utilization 193–200, 209, 210(n2), 276–7, 284, 302–4
- capital 92, 247, 250(n10), 304–5
 cost for firm 220
 demand price 242
 full utilization 299
 marginal efficiency 236–8, 249(n3)
 ratio to output 152
 supply price 238–9, 242
- capital accumulation 200, 211(n7), 287, 302, 306(n8)
- capital assets 235, 237–42, 249(n5), 250(n10)
 demand price versus supply price 240
 market value: ratio to replacement cost 238f, 239–40
 price 238f, 239
- capital equipment 243
- capital gains/losses 83, 140, 239, 240
- capital goods 215
- capital market 5, 243, 260
- capital mobility 46, 51
- capital stock 112, 131, 152f, 167(n9), 243, 274
 effect of investment 283–4, 286f
 rate of depreciation 298
 slow growth 286f
- capitalism 208, 242–3, 248, 320
- capitalist economies 6, 245, 250(n10), 235–6, 297, 317
see also market economies
- cash flow 215, 219, 222
- central bank loss function 14–15, 17, 20, 23, 29, 31, 72–3, 73–4(n3), 89, 110, 185(n8)
 graphical representation 33–4
- central bank reaction function (*RF*) 89, 97(n6), 193, 195f, 195–6, 198f, 199, 204f, 204–5, 208–10, 259, 260–1, 262, 264, 281, 304

- central banker/s 101, 185(n2), 197, 200, 210
 'discretion' 87–8
- central banks 2, 3, 13–35, 52, 114, 133, 137, 146, 171, 185(n5), 204, 255, 288, 290, 300, 305
 demand for monetary reserves by
 commercial banks 147f, 148
 control of money growth 86, 170–1
 distributive role 7, 303, 304–5
 independence 311
 inflation-averse 30, 34f, 186(n15)
 inflation averse (effect on interest-rate decisions) 27–30
 inflation-targeting (IT) 13, 27, 56, 111, 181, 185(n8), 197, 281–2, 291(n3)
 interest rate manipulation/setting 89, 91, 95, 110, 133, 137, 144–6, 149–50, 160, 166(n6), 167(n8), 169, 170–7, 180–2, 185(n7), 193–6, 297
 'lender of last resort' 133, 137
 monetary policy 96, 144, 149
 optimizing behaviour 13–14, 15, 17
 payment and settlement system 192
 preferences 20, 32, 45
 provision of base money to banking system 132
 reserves 157
 response to credit crunch 159
 role 137
 safeguarding economic system from financial crises 146
 sub-prime lending crisis 185(n6)
see also interest rate instrument
- 'Changes in Money Wages' (Keynes, 1936) 167(n14)
- Circuit approach 306(n5)
- Classical economics 6, 49, 53(n3), 169, 257
 hierarchy of markets 145, 154, 165–6
 return to 124–7
 saving hypothesis 277
- Classical economists 295–6, 306(n2), 311
- Clinton boom 248
- closed economy 33, 45, 46, 48, 51, 114, 274, 278
- Cobb-Douglas production function 61, 79, 97(n4)
- collateral 137, 184, 229, 242
- collateralized debt obligations (CDOs) 182, 218, 245
- collective bargaining 274
- commodity prices 2, 13, 22–7, 88
- competition
 imperfect 14, 17, 49, 50, 103, 265, 273, 275
 monopolistic 53(n4), 174
 perfect 49, 265, 298
- competitiveness 48, 50, 51
- complexity 3–4, 118–28
- confidence 138, 215–16, 237
- 'conflict inflation' 265, 268, 271(n3), 272
- consumer price index (CPI) 24, 25, 48, 111, 228f
- consumption 22–3, 38–9, 41, 48–9, 148, 167(n8), 194, 223, 236–7, 249–50(n7), 271, 277–80, 299
 intertemporal 40, 45–6, 51, 36
 real determinants 80
 trade-off with leisure 50
- consumption smoothing 41, 46, 50, 103
- coordination failures 120, 121
- corporate bonds 82, 249(n5)
 BAA yields 208, 218, 219f, 226, 227–8f
 'commercial paper market' 246–7
- credibility 52, 64, 66–7, 70, 88, 103–6, 173, 197, 311
 benefits 74(n20)
- credit 41–2, 64, 132, 138, 142(n2), 146, 157, 172, 183, 184, 222, 245, 274
 demand for 169
 rate of growth 94, 178
- credit card debt 246
- credit controls 288
- credit creation 140, 256, 257
- credit crisis (August 2007–) xx, 5–6, 8, 13, 22–7, 107, 123, 126, 157–60, 182–4, 208, 210, 214, 215, 216–18, 227, 236, 247
- financial theory of investment 245–8
- housing bubble (2003–8) 22, 182, 222–7
- housing bubble (failure to combat, 2003–5) 225

- sub-prime mortgage market 123, 157, 170, 182, 185(n6), 211(n12), 234, 246–7
- credit market/s xx, 4, 77
 - equilibrium 147f, 147–8, 160
 - real financial conditions 6
- credit money ('inside' money) 167(n7)
- credit spreads 6, 215, 218–19, 219f, 224–5
- credit supply 171, 247, 255
- credit-rating agencies 245, 246
- creditors 167(n15)
- creditworthiness 136, 148, 156, 157, 159, 178, 245, 247, 274
- 'cumulative processes' (Wicksell) 92
- currency 229, 249(n5), 307(n15)
- current account (balance of payments) 51, 102, 104

- debt 104, 106, 132, 134, 172, 208, 216, 240–2, 246–7
 - 'government debt' 51–2
 - real value 163, 167(n15)
- debt deflation 209, 235, 248
- debt finance 222
- debt financing 216, 238f, 239
 - optimal ratio to internal financing 215–16
- debt repayment 240, 291(n4)
- debt stocks 208, 275
- default 185, 208, 218, 222, 235–6, 245–6
- deficit-financing 125, 274, 277–9, 290
- deflation 38, 67–9, 89, 92, 102, 106, 182, 184, 235, 273, 282

- deregulation 106
- disinflation 18, 42, 93
 - unexpected 279–80, 282
- dynamic aggregate demand (DAD) 172
- dynamic stochastic general equilibrium (DSGE) 120–1, 125–8, 128(n2)

- economic activity 208–10, 274, 276, 285, 319–21
 - equilibrium level 311
 - key determinants 317
 - level 167(n9)
 - long-run (actual) 206
 - market economies 318
 - economic crises 79, 106, 211(n14)
 - economic depression 123, 246, 248
 - economic growth 8, 78, 97(n2), 113, 173, 211(n9), 257, 259, 264, 266–7, 268, 319, 321(n4), 321–2(n8)
 - equilibrium rate 268
 - expectations 225
 - 'growth theory' 51, 52
 - long-term 309, 310, 320, 321(n4)
 - relationship with inflation 110
 - see also* economic growth rate
 - economic growth rate 97(n2), 204, 193, 258, 259, 261, 262, 266
 - 'actual' versus 'natural' 202, 203, 204, 205, 211(n7)
 - hysteresis 206–7, 206–7f
 - long-term 263
 - 'natural' 201–5, 257
 - see also* economic growth
 - economic modelling 33, 317, 321(n6)
 - economic recession 106, 195f, 196, 198f, 215, 227, 248
 - economic recovery 218, 219f, 268
 - Economic Stimulus Act (USA, 2008) 160, 165
 - effective demand 237, 241, 249(n4), 290, 319
 - equilibrium level 238
 - efficient markets theory 234–5, 243, 248
 - employment 40, 106, 163, 242, 278, 279, 280, 280f, 281, 282–3, 296
 - aggregate 249(n4)
 - equilibrium level 154–5f, 154–5, 157, 158f, 162f, 164f, 167(n12), 236
 - growth rate 201
 - long-run rate 290
 - stable inflation rate 276, 280, 283–5, 290
 - endogenous money 3, 8(n2), 85, 89–94, 97(n5), 131–43, 143(n3), 165, 166(n4), 170, 185(n1), 256, 265, 274
 - and conduct of macroeconomic policy 146–8
 - key function 134
 - macroeconomic model of 144–68
 - nature and role 132–3
 - endogenous money supply process 147f, 166(n4)

- equilibrium/equilibria 167(n8), 200–1, 203, 210, 249(n4), 264, 268, 278, 279, 311, 317–18, 319, 321(n3, n5–6)
 competitive 309
 constant inflation 17, 18f
 monetary equilibrium 77, 84, 86, 88, 94
 neoclassical conception 314, 315, 316
 path-dependent 316
 role in economic theory 315–19
 supply-constrained and demand-constrained 145
see also market-clearing
- eurozone 86, 134, 286, 293
- European Central Bank (ECB) xix, 86, 98(n8–9), 112, 144, 185(n6, n8), 200
- exchange rate/s 36, 43, 46–7, 73, 109, 114, 137
 devaluation 68
 expectations 104
 fixed 38, 52
 floating 38, 52, 109
 nominal 102–4, 304, 307(n15)
 real 33, 48–9, 51, 102–4, 138
 volatility 52, 106
- exogenous money 3, 85, 86–9, 90, 131–2, 137–42, 170, 185(n1)
- exogenous money models 166(n6)
see also IS–LM model
- expectations 33, 42–4, 48, 59, 70, 79, 102–5, 108, 118, 136, 138, 166(n4), 216, 219–23, 226, 229–31, 232(n1), 237, 239–41, 248, 249(n3–4), 250(n10), 262, 277, 278–9, 280, 309–22
- exports 48, 103, 138, 238, 249(n7), 250(n7)
- factors of production 82, 97(n3), 296, 301, 302–3, 309–10
 ‘fixed’ versus ‘variable’ 79–80
- Fannie Mae/Freddie Mac 8
- federal funds rate (overnight rate) 134, 182, 206, 208–10, 220–9
- Federal Reserve System (FRS, USA) xix, 89, 101, 112, 123, 124, 133, 143(n4), 144, 172, 185(n6), 214–16, 218–19, 221–3, 225–6, 227–8, 228f, 231, 247–8, 228–9, 242
- fiat (paper) money 81, 82
- finance
 asset prices and 242–5
 basic Post Keynesian model 274–5
 behavioural 243
 globalization 246
 ‘neutrality’ 6
 non-bank sources 242
 orthodox theory 235
- financial assets 82, 135, 235, 239, 242, 246
- financial capitalism 6, 234, 245, 248
 instability ‘normal result’ (Minsky) 245
- financial capitalists, *see* rentiers
- financial crisis/crises 5, 92, 106, 123–4, 209, 223, 228, 236
see also credit crisis (2007–)
- financial derivatives 216
- financial imbalances 93, 94, 98(n10)
- financial innovations 96, 247–8
- financial instability (Minsky) 215, 218, 236, 245, 247–8
- financial institutions 5, 145, 192, 246, 258
 asset markets (risky positions) 215
 income claims 6
- financial instruments 245
- financial intermediation 6, 68–9
- financial markets 3, 5, 160, 208, 209, 218, 247, 257
 dynamics 6, 215
 Minskyan boom-bust cycle 218
 recent turmoil (USA) 214
- financial sector 5, 106, 214, 229, 247
 turbulence since 2007 321(n3)
- financial system 123, 214, 244
- financial theory of investment 234–51
 Minsky 236–42
- firms 6–7, 150, 152, 197, 220, 280
 assets and liabilities 219
 debt-financed spending 148–9, 159
 demand for loans 149
 financing decisions 215–16
 investment decisions 211(n12), 215, 277, 278, 292(n6), 302
 pricing behaviour 14, 58, 74(n8), 80, 151–2, 154, 265

- profits 79, 249–50(n7), 275–6
 retained profits versus rentiers' income 279–80
 target income share 276, 277f
- fiscal policy 23, 37, 102, 104, 119, 132, 134, 138–9, 142, 257–8, 260–1, 273–4, 290, 291, 311, 319
 counter-cyclical 52, 120
 expansionary 38
 'ineffectiveness' contested 104, 115
 'ineffectiveness' proposition 48
 interaction with monetary policy 74(n19), 75
- Fisher equation (FE) 16, 62, 63–4f, 66f, 67–8, 69f
- forecasting 17, 18–21, 23, 26, 32–3, 79–81, 88, 110, 258, 317, 321
- Friedman rule 86–7, 89–90, 94
- full employment 63, 69, 104, 161, 163, 164f, 220, 222, 225, 228–9, 245, 249(n4), 283, 299, 319, 320–1, 321–2(n8)
- full-employment equilibrium 296–7, 300–1, 303, 305, 318–19
 natural 302
- GDP 78, 107, 108, 204, 217f, 250(n9), 257–8, 259, 265, 270–1, 310
- general equilibrium 77, 78, 80, 97(n3)
- general price level (GPL) 76, 78–81, 83, 86, 92, 149, 150
- General Theory of Employment, Interest, and Money* (Keynes, 1936) 167(n14), 238, 250, 318
 chapter twelve 243, 244, 249(n4)
 chapter seventeen 236–7, 239, 242, 244, 249(n3)
 chapter twenty-four 245
- globalization 113, 246, 305
- goods market 5, 44, 97(n3), 145, 149, 151, 154–7, 159, 161, 163, 164f
 AS and AD curves 155–6
- goods market equilibrium 103, 153f, 153, 276–7, 278, 292(n6)
 ex ante versus ex-post 278, 279–80, 280f
- government bonds 134, 135
- governments 14, 44, 52, 68, 79, 104, 124, 137–8, 192, 235, 241, 250(n7), 260, 290, 319
- budget constraints 51
 deficit-spending 290
- graduate courses 13, 36, 120, 123, 125, 128(n2)
- graduate DSGE model 120–1
- Great Depression (USA, 1930s) 106, 215, 235, 247, 292(n8)
- 'Great Inflation' (fifteenth-century Europe) 170, 185(n1), 186
- hedge financing 216
- hedge funds 182, 216, 246, 247
- hedging (Minsky's taxonomy) 240, 241
- 'helicopter drop' (Friedman) 95, 140, 143, 235
- 'horizontalist' monetary view 274
- Horizontalists and Verticalists* (Moore, 1988) 171, 185(n3), 187
- households 6, 14, 33, 57, 79, 80, 82, 143(n3), 155–7, 163, 167(n15), 196, 211(n12), 224
 consumption demand 277
 cost of borrowing 150
 debt-financed spending 148–9, 159
 demand for loans 149
 loans 146
- housing/homes 8, 150, 182, 208, 217f, 245
 cash flow expenditures 211(n12)
 'real estate' 244, 247
- housing prices 110
 bubbles 22, 111, 216–18, 222–7
 future increases 211(n12)
see also credit crisis
- hysteresis 5, 191–213, 286, 287, 293, 294
 definition 201
- imports 34(n5), 103, 138, 200, 236, 249(n7)
- income 133, 140, 169, 216, 236, 238–9, 241, 271, 289, 319
 aggregate 249(n4)
 current 148, 211(n12)
 disposable 196, 249–50(n7)
 future expected 80
 nominal 139, 181, 182
 permanent 80
 real 14–16, 23–5, 27

- income distribution 6–7, 168, 266,
269, 290, 291, 298–9, 303
actual 283
conflict 273–4, 275–6, 277f, 288–9,
297
functional 292(n9)
profits versus wages 97(n4), 278,
279–80, 281, 292(n9), 296
stabilization 273–4
- income redistribution 167(n8, n16),
275
- income tax 50, 241, 248(n1)
- income-generation process 276–8
‘demand-driven’ 7
- ‘increasing risk’ principle (Kalecki) 240
- inflation 3, 8, 14, 17, 18f, 20, 27,
34(n6), 42, 58, 60, 63, 72, 78, 81,
83–4, 93, 101, 102, 103, 104, 107,
108, 110, 114, 115, 139, 141–2,
166(n6), 202, 209, 215, 221, 257,
261, 281–2, 285, 310, 311, 319,
321(n8)
causes (NCM) 106, 108–9
central bank reaction 185(n5)
cost-push and other
non-demand-related 108
demand-led 197
domestic versus foreign 305
imported 103
and interest rates 62–4
‘monetary phenomenon’ 101, 102
‘monetary phenomenon’ (contested)
131, 141–2
optimal 63–4, 74(n18), 75, 110
relationship with economic growth
110
trade-off with output 50
trade-off with unemployment 110
unexpected 275–6, 279–82, 288,
290, 291(n5)
see also inflation rate
- inflation barrier 276, 282, 285
- inflation bias 34(n6), 45, 50, 52, 53,
73, 74(n5), 88, 103
- inflation expectations 3, 45, 55–6, 58,
62–4, 74(n4, n7), 77, 81, 87, 103,
105, 108, 137–8, 220, 274–5, 277,
279, 310, 311, 319
dislodged 61, 65–7
escalation 65–7, 74(n20–1)
- inflation forecasting 105–6
- inflation gap 78, 84, 89, 90, 91, 93, 96,
104
AS elasticity 97(n4)
fluctuations around 80
- inflation persistence 14, 15f
- inflation rate 15, 17, 18, 19f, 19–20,
24, 25, 32–3, 43, 45, 66, 67, 67f, 81,
84, 93, 110, 166(n3), 174, 176, 195f,
195, 263–4, 290, 307(n14), 321(n8)
actual/current versus expected 58,
61, 74(n7), 80
actual/current versus target 193–6,
202, 300–1
costs of reducing 43
determination 220
deviation from target 16–17, 103–4
equilibrium level 7, 261–3, 268
trend rate 84, 87–9, 304
see also inflation
- inflation shock 21, 27, 29–30, 32–3,
61, 72, 74(n15), 176, 180–2, 185,
186(n15)
response 174f
- inflation stabilization 61, 89
- inflation target 17, 18f, 20, 23, 26–8,
34(n6), 43, 44f, 50, 56–7, 60–2, 63f,
63, 65–6, 69–73, 92–3, 102, 137,
144, 174, 180–1, 194, 198, 199,
204f, 204–5, 206, 209, 211(n9), 221,
225, 228f, 260, 262f, 263–4, 267f,
267–8, 269, 281, 289, 297, 300, 303,
307(n14)
credible 88–9, 104
deviations from 15, 30–2, 70
- inflation-targeting (IT) 3, 37, 97(n6),
99, 104–5, 107–11, 112, 114,
115(n7), 149, 166(n6), 168–9, 176,
197, 199, 204, 210, 215, 259, 262,
268, 273, 281–2, 284–5, 288,
291(n3), 311
- empirical evidence 112–13
literature 115–17
problems 105–6
- ‘inflation tax’ 62
- inflationary pressure 3, 106, 193, 197,
258
- information 7, 316, 318
imperfect 310
non-existence 313

- perfect 316
- information asymmetry 235, 243, 310–11, 312–15, 319–20
- information problems 55, 309 312–15, 318
- innovation 106, 216
- insider-outsider models 283
- institutions
 - aggregate demand and demand-side policies 319–20
 - definition 312–13
 - endogenous or exogenous variable in economic models 314
 - and information problems 312–15
 - role in economy 7–8
- interest payments 216, 240, 274, 277–8, 285
- equilibrium level 299
- real 275, 298
- interest rate/s 6, 13, 14, 17, 18f, 20–2, 25, 27–30, 32, 33, 42f, 42, 43, 46–7, 57, 61, 68, 69–70, 82–3, 81, 84, 91, 92, 94, 95, 96, 97(n4), 101, 102, 104, 105, 108, 109, 123–4, 134, 137, 171–2, 173, 174, 179, 181–4, 186(n13), 193, 208, 215, 216, 218, 223, 227, 228f, 230, 236, 246, 257, 258, 274, 282, 288, 300
- aggregate demand and 17, 138–9, 270–1
- base rate 260, 264, 266, 268–9, 274
- domestic versus international 109, 304, 307(n14)
- equilibrium 104, 222, 264, 269
- expectations theory of term structure 230
- ‘fair’ 168
- inflation and 62–4
- inter-bank 95, 177–8
- long-term 62, 63f, 74(n16), 208, 210, 222, 223, 230
- nominal 6, 62–64, 67–8, 72, 74(n15), 76–9, 96, 102–3, 105, 107, 166(n3), 169, 177, 185(n7), 191, 211(n12), 274–5, 278, 281–2, 288, 307(n14)
- short-term 6, 37, 149–50, 151f, 156, 159–60, 166(n5–6), 170, 206
- transmission mechanism to output 48
- types 134
- variations 291
- world versus domestic 38
- zero-bound constraint 3, 56, 64, 67–8, 70, 74(n15), 102, 160, 228–9, 282, 292(n8)
- see also* natural interest rate; policy interest rate; real interest rate
- interest rate instrument (monetary policy) 89, 144, 172, 173, 184, 185(n6), 191–2, 195f, 195, 198f, 199, 255, 257–8, 260–1, 261f, 273, 281–2, 285, 288, 301
- limitations 111
- interest rate spreads 74(n22), 183–4, 245, 247
- interest rate targeting/targets 210, 214, 255, 288
- investment 38, 51, 80, 104, 106, 112, 137, 138, 150, 165, 179, 214–16, 219, 223, 238f, 241, 248(n1), 274, 278, 286f, 298
- capital stock 283–4, 286f
- financial theory of (Minsky) 6, 234–51
- Keynes’ theory 236–8, 239
- Tobin’s explanation 239–40, 251
- see also* IS–LM model
- investment banking 6, 8, 40, 41, 48, 131, 138, 167(n8), 179, 222, 236, 238–40, 242, 243, 246–7, 249(n4, n7), 250(n8), 277, 279, 302, 317
- investment theory of cycle 236–42
- IS [investment–saving] xx, 31, 32, 139, 195f
- IS curve 1, 2, 13, 15f, 17–20, 21, 22, 23, 25–8, 27, 28f, 30, 38, 39, 44, 48, 51–2, 138, 142, 170, 172–6, 175f, 179, 184, 194, 196, 198f, 199, 204f, 205, 209f, 209, 220–4, 226, 229, 231–2, 258, 260, 300
- microfounding 40–2
- IS equation 14, 16, 17, 18f, 193, 208
- output gap form 16
- IS–LM [investment–saving/liquidity–money] model 2, 4, 36, 37, 53(n2), 77, 100–1, 114, 124–8, 137, 139, 144, 146, 165–6, 167(n7), 171–2, 184, 214
- alternative to 39–51
- criticism 186(n13)

IS-LM – continued

- Hicks' criticism 170, 187
 - undergraduate courses 121–2
- Journal of Economic Education* xiv, xv, 1, 8
- Kaleckian economics 265, 295–6
- Keynesian economics xix, 39, 46, 49, 52, 53(n3), 95, 97(n7), 139, 143, 255–6, 259, 261, 267, 271, 310, 319, 320
- business cycle 40
 - hierarchy of markets 4–5, 145, 154–6, 165–6
 - legacy 82
 - macroeconomics 51, 81, 168
 - micro foundations 52
 - models 50, 255
 - multiplier 138
- Keynesian economists 125, 169–70, 311
- labour/labour force 51, 79, 80, 159, 201, 203, 238, 248(n2), 297–8, 299, 301–3, 309–10
- availability 203
 - bargaining power 193
 - exogenous rate of growth 306(n8)
 - supply and demand 153, 161, 163, 164f, 167(n12)
 - see also* wage-earners; workers
- labour market 5, 14, 17, 24f, 24, 33, 41, 44, 97(n3), 107, 145, 153–6, 161–3, 273, 288, 290, 321(n7)
- persistence mechanisms 283, 284f
 - effects of credit crunch (2007–8) 158f
- labour productivity 25, 201, 274, 289
- labour supply 24, 49, 50, 52, 155f, 155, 167(n11), 168, 278
- labour-output ratio 152, 154, 167(n10)
- lender's risk (Minsky) 238f, 238–40, 242, 249(n6)
- leverage 216, 229–30, 240, 248
- leveraged buy-outs 247
- liabilities 141, 215, 219, 242, 247
- LIBOR 182, 183, 184
- liquidity 69, 82, 83, 111, 134, 144, 146–7, 157, 160, 185(n6), 191–2, 209, 218, 239, 242, 249(n3)
- see also* IS-LM model
- liquidity preference 206, 208–10, 219, 237–8, 243, 244, 249(n3)
- liquidity spectrum 249(n5)
- liquidity trap 228–9
- LM [liquidity-money] curve xix–xx, 2, 3, 32, 36, 37–9, 52, 53(n3), 76, 96, 125–6, 132, 138, 139–41, 143(n4), 169, 170–7, 184, 185(n2), 186(n14), 191, 192, 257
- LM equation
- demand for money and 82–3
 - endogenous 91
 - and inflation 83–4
- loan creation
- banks' behaviour and 134–6
- loan demand curve 181f, 181, 182
- loan supply
- marginal costs 68–9
- loanable funds 196, 222
- loans 131–2, 143(n3), 146
- 'create deposits' 186(n10)
 - loans/demand, 181f, 181, 186(n10, n15)
- Lucas Critique 125, 126
- macroeconomic policy 288–91, 312, 319, 320–1, 321–2(n8)
- macroeconomics 1–10, 121, 255
- changes over last thirty years 295
 - intermediate 126, 127, 170
 - methodology 3–4
 - variety of 8–9(n2)
- marginal propensity to consume 167(n15), 248(n1)
- marginal propensity to import 248(n1)
- marginal propensity to save 236
- mark-up 58–9, 134, 151, 154, 167(n10, n16), 173, 266, 268–9, 274, 284–5
- actual versus target 275
 - pricing decisions 278
 - pricing equation 265
 - see also* bank loan interest rate
- market economies 248, 279, 316–17, 318, 320, 322(n8)
- market-clearing 60, 62, 68–9, 80, 84–5, 147f, 148, 235, 249(n4), 309, 311, 315–16, 318, 321(n7)
- see also* equilibrium
- microfoundations 73(n3), 101, 119, 121–2, 124–5, 273

- 'Minsky moment' 208–9, 247, 251
- monetarism 37, 86–7, 89, 95, 191, 242, 246, 255, 257
- debate with Keynesianism 125
- permanent legacy 87–8
- monetary aggregates 4, 60, 144, 145, 146
- monetary authorities 37, 202, 205, 209, 210
- monetary base 8(n2), 172–3, 184, 191–2
- ' inability of central bank to determine' 170–1
- multiplier equation (conventional) 166–7(n7)
- policy instrument 171
- monetary policy 3, 17, 30, 37, 39–40, 44–5, 51, 52, 61, 75, 94–5, 96, 98(n8–9), 102, 104, 107, 108, 114(n2), 121, 142(n2), 159–60, 181f, 181–2, 184, 186(n15), 205, 207f, 228–9, 256–64, 262, 263, 266, 287, 321–2(n8)
- active/proactive 61, 75, 87, 90, 111
- complications posed by boom-bust cycle (Minskyan perspective) 225–8
- counter-cyclical 120, 128(n3)
- discretionary 105
- interaction with fiscal policy 74(n19), 75
- inflation-targeting 273, 284–5
- limitations of one-instrument policy 111
- response to shocks 3, 27, 28f, 28
- monetary policy (*MP*) curve 45, 144, 172, 185(n4), 194
- monetary policy dilemmas
- money market interest rates versus policy rates 68–70
- zero-bound problem 67–8
- monetary policy instruments 109, 171, 184, 218, 255
- see also* interest rate instrument
- monetary policy reaction function 61, 70, 73, 260
- monetary policy rule/s 32, 40, 70, 103–4, 149, 150, 173, 174, 263, 288
- activist 149, 166(n5)
- benchmark 166(n5)
- monetary regime
- exogenous versus endogenous money 84–95
- monetary reserves 147f, 158f
- supplied by central banks 167(n13)
- supply and demand 147f, 148
- monetary rule 14, 15–16, 19, 40, 55, 105, 172, 174–5
- interest-rate-based 176
- monetary rule equation (*MR-AD*) 15–17, 19f, 19, 20, 22f, 22–3, 25, 28–9, 31–2, 34(n4, n6), 176
- monetary sector 3, 156, 156f, 159, 177–80
- impinges upon formation of *AD* curve 154
- monetary union 30, 52
- money 2, 6, 8–9(n2) 59, 78, 95, 96(n1), 102, 132, 133–4, 135, 145, 146, 183, 235, 237, 238, 239, 249(n5), 250(n10), 257
- creation 131–3, 142, 165
- destruction 132, 133, 142
- functions 82, 134
- high-powered 172–3, 176
- M0 (base money) 132–3, 135, 137, 142, 147, 166(n7), 191
- M1 (narrow money, transactions money) 133–4, 174
- M2, M3, M4 (broad money) 133–4, 173–4
- 'neutrality' 3, 6, 113, 169, 234, 265
- and nominal interest rate 81–4
- opportunity cost 82–3
- properties (Keynes), 237, 248–9(n2)
- quantity 172, 257
- rate of growth 60, 84, 85, 86, 87, 88f, 88, 87, 89, 91, 92f, 93f, 94, 95, 96, 98(n10), 178, 249(n2), 250(n9)
- supply and demand 139, 176, 186(n10), 236, 257
- unit of account 115(n5)
- use as possible nominal anchor 53
- see also* endogenous money;
- exogenous money; 'helicopter drop'; *IS-LM* model
- money demand 52, 53, 57, 83, 84, 89, 94, 95, 96, 97(n4), 123, 132–3, 139–41, 143(n4), 249(n2)
- effect of inflation 83–4

- money demand – *continued*
 elasticity to interest rate 69, 83
 and *LM* equation 82–3
 nominal and real 91
 stability 139
 transactions demand versus portfolio
 (or speculative) demand 139–40
 volatility 95
- money illusion 62
- ‘money manager capitalism’ (Minsky)
 246
- money market/s 56, 62, 68–70,
 74(n22), 77, 94–5, 172–3, 179
 equilibrium 78, 96
- money multiplier 38, 95, 191
- money rule (Friedman) 250(n9)
- money stock 37, 61, 71, 78, 85, 131,
 135, 137, 140–3, 177
 ‘akin to a residual’ 133
 equilibrium 76
 exogenously determined 149,
 166(n7)
 ‘outside money’ component 166(n7)
 rate of growth 84, 172
 real 76, 83
- money supply xx, 37, 57, 60, 69f, 69,
 85, 91, 123, 125, 133, 139, 143(n4),
 147, 165–6, 166–7(n7), 171, 173,
 186(n10), 191, 192, 214, 255, 257
 endogenous 146, 157, 158f, 171,
 170, 176, 185(n2)
 exogenous 169, 171, 184
 fixed 38, 169, 170, 171
- money wages 79, 80, 108, 265
- mortgage-backed securities 184, 218,
 229, 245
- mortgages 208, 211(n12), 216, 247
 risk classes 246
 securitization 218, 246
see also credit crisis; housing
- multiplier (Keynes) 38, 236–8, 241–2
- Mundell–Fleming model 36, 38, 39,
 48, 52
- natural interest rate (Wicksell) 62–5,
 67–8, 70, 74(n16), 81, 92, 104,
 166(n1), 195–6, 199, 202, 204, 210,
 225–7, 228f, 231
 absence/non-existence 255–6, 258,
 260, 269
 definition 220
 real 205
 shocks 221–3, 223f
- natural rate of growth 201–5, 257, 268
 endogenous 204f, 204–5
 natural rate of unemployment 97(n3),
 107, 139, 144, 225, 228f, 311
see also NAIRU
- neoclassical economics 197, 234–5,
 248, 250(n10), 257, 295–9, 303–4,
 312, 315, 318, 320
 versus alternative formulations
 305–6
 capital 307(n17)
 concept of equilibrium 314, 315, 316
 criticism 306(n4), 308
 crowding-out effect 263
 full employment 321(n7)
- neoclassical synthesis xix, 7, 8(n2),
 100, 114(n3), 124–5, 295(n2), 300,
 306(n9)
- New Classical economics xix, 76, 125,
 309
 rational expectations 100
 RBC theorists 97(n5)
- New Consensus Macroeconomics (NCM)
 xix, 2, 3, 4, 5, 6, 7, 8(n2), 139, 141,
 142(n2) 144, 145, 165–6, 169–87,
 173–4, 166(n6), 196, 208, 234,
 255–72, 263, 273–94, 296, 297, 300,
 303, 306(n6)
 theoretical, empirical, methodological
 propositions 3–4, 100–28
 ‘three-equation model’ 1–10
- New Keynesian (NK) economics xix,
 14, 42, 56–61, 68, 76, 95–6, 125,
 225, 309
 endogenous money regime 89
 full employment concept 321(n7)
- New Keynesian economists 90, 201, 235
- New Keynesian model 56–61, 70,
 74(n6, n9–15), 77, 78–81, 100–1,
 220, 230, 231
- New Keynesian Phillips Curve (NKPC)
 43, 44f, 44, 46, 52
- New Neoclassical Synthesis 1–2, 8(n2),
 76, 78
- nominal interest rate
 money and 81–4
 policy instrument 89

- non-accelerating-inflation
 capacity-utilization (NAICU) 197, 200
- non-accelerating-inflation rate of
 interest (NAIRI) 81, 83–4, 84, 85, 87, 89, 92, 93
- non-accelerating-inflation rate of
 unemployment' (NAIRU) 107, 116, 144–5, 156, 192–4, 202, 276, 279–80, 281–2, 287f, 288, 290, 294, 309, 321(n4, n7)
 calculation (ex post) 286
 critique 291(n3)
 endogeneity of 273, 282–7
- non-accelerating-wage rate of
 unemployment (NAWRU) 321(n7)
- non-inflationary
 consistently-expansionary (NICE)
 era 107
- oil prices xx, 13, 22–7, 33, 106, 193, 198–200
- Old Keynesianism 90, 97(n5)
- open economy/economies 3, 33, 45–9, 50–1, 101, 102–6, 114, 138, 278, 304
- open market operations 192
- 'originate and distribute' model 246
- output xix, 17, 19f, 20, 21, 22f, 27, 29, 30, 40, 48, 57, 60, 74(n6), 78, 80, 84, 89, 93, 97(n2, n7), 106, 152, 156f, 156, 210(n2), 235, 238, 242, 249(n4), 265
- actual versus trend 103
- demand-determined level 139
- demand-determined under sticky
 prices 49
- deviation from equilibrium 15, 30–2
- equilibrium level 14–17, 19f, 19–21, 22f, 23, 25–7, 34(n6), 145, 154f, 154–5, 158f, 159–63, 164f, 176, 179, 236
- flex-price level 57, 61, 72, 74(n16)
- full-capacity 57, 274, 275
- full-employment level 69, 222
- 'natural rate' 180
- nominal 250(n9)
- potential 78, 79, 81, 83, 97(n3)
- real 50, 108, 196, 201, 202, 235
- target level 50, 73, 93, 123
- output gap 6, 14–16, 19, 27, 43–5, 57–8, 60–2, 72–3, 74(n7), 84, 87, 89, 91, 93, 96, 97(n6), 102, 103, 104, 107–8, 110, 137, 139, 174, 180, 184, 220, 221–3, 224–5, 310
 definition 78
 fluctuations around 80
- output stabilization 106, 107, 109–10
- overnight interest rate 5, 6, 134, 146, 182, 206, 208–10, 215, 220–9
- pedagogy (macroeconomic) 1–10
 book purpose 1, 8
 complexity 118–28
 endogeneity of money 131–43
 pension funds 246, 247
 persistence mechanisms
 labour market 283, 284f
- Phillips curve 2, 20, 27–30, 42–4, 50, 125
 accelerationist 1
 'backward looking' 42, 43, 44f, 45
 forward-looking 44f, 103
 horizontal segment (PK amendment) 196–200, 210(n3)
 inertia-augmented (Carlin and Soskice) 174
 long-run 101, 266–7
 short-run (SRPC) 21, 174–5, 197, 259, 273, 276, 281
 vertical 21, 101, 102
- policy interest rate 56–7, 59–60, 62–3, 65, 67–9, 131, 134–8, 142, 181f, 181–2, 184, 255–6
 'equilibrium' real 137
 nominal 137
 real 259, 262
- policy-makers 7, 14, 20, 55, 73–4(n3), 109, 120–1, 126, 128, 161, 165, 172, 184–5, 225, 230, 311
 response to credit crunch 2007–8
 (comparative static exercise) 157–60
- policy-making 5, 8, 77, 248, 256–7
 institutional realities 13
- Ponzi schemes 216, 240, 245, 247
- Post Keynesian economics xiii, 142(n2), 143, 178, 186(n10), 292(n10), 315–18, 321(n2, n4), 322
- amendments (to NCM model) 196–210
 approach to inflation 141–2

- Post Keynesian economists xx, 168, 170–1, 192, 208, 234, 256–7, 265, 289f, 289–90, 295(n2), 295–6
- Post Walrasian approach 128(n1), 128, 307(n17)
- postgraduate courses 36, 45, 51, 118–20
- price flexibility 103, 125, 163, 165
- price stability 101, 102, 106–7, 113, 117, 166(n6), 168, 263–4, 273, 321–2(n8)
- versus exchange rate instability 109
- maintenance 104, 115(n6)
- price-makers 17, 23–5, 136, 146
- price-setting 14, 33, 34(n5), 44, 49, 51, 52, 53(n4), 60, 176
- Calvo time-dependent 57
- prices xix, 13, 36, 38, 53, 56, 58, 59, 61–2, 71, 74(n8), 102, 108, 140, 150–2, 154, 156, 161, 163, 164f, 167(n8, n16), 172, 197, 200, 220, 221, 258–9, 265–6, 321(n7)
- downwardly rigid 64
- flexible 103, 310, 315–16
- mark-up over cost of labour 151, 154, 167(n10)
- nominal 235
- normal 244
- relative 17, 200, 235
- sticky 49, 52, 57, 103
- pricing decisions 154, 156, 167(n12)
- principal–agent relationship 314
- production 80, 92, 151–3, 154, 203, 249(n4), 274–5, 298
- production function 57, 79, 80, 152f, 152, 157, 297–8
- productive capacity 298–9
- effective utilization 300–1
- see also* capacity utilization
- productivity 33, 50–1, 58, 107, 196, 216, 257, 268–9, 310
- marginal 79, 243, 250(n10), 298, 299
- see also* labour productivity
- productivity growth 61, 203, 288
- profit margins 23, 25, 108
- profits 6, 24, 216, 230, 238, 242, 245, 247, 250(n10), 265, 269, 277–81, 284, 298–9, 303
- aggregate 241
- discounted future 236
- endogenous aspirations 285f
- expectations 80, 237, 317
- net profit of enterprise versus rentiers' income 274
- share in total income 97(n4), 278, 292(n9), 296
- see also* income distribution
- propensity to consume 194, 195f, 195
- propensity to save 196, 277, 292(n6), 298, 299, 319
- public spending/government
- expenditure 48, 49, 104, 137–8, 148, 160, 165, 194, 195f, 195, 241, 249(n7–8), 298, 310
- 'government spending multiplier' 241, 250(n8)
- purchasing power parity 304, 307(n16)
- quadratic loss function 73(n3)
- quantity theory of money 173, 255, 270
- rational expectations xix, 7, 43, 45–6, 52, 59, 87–8, 100, 125, 220, 225, 230, 309–12, 315–16, 320
- real balance effect (Pigou effect) 84, 87, 90–1, 139, 149–50, 166(n7), 169, 173, 184
- real balances 58, 60, 115(n5), 235
- real business cycle (RBC) 49–52, 78, 97(n5), 101, 125, 235
- real interest rate 16, 104, 146–9, 185(n7), 211(n12), 220, 222f, 222, 224f, 224, 284–5, 287f, 290–1
- equilibrium level 102, 104, 110, 224f, 225, 263, 281
- ex ante versus ex post 274–5
- exogenous 46
- expected 57, 61, 80, 278
- full employment level 228–9
- long-run effect on unemployment 287
- 'stabilizing' or 'natural' 16–17
- real wage/s 17, 23, 49–50, 154, 167(n11–12, n16), 266, 268–9, 298, 302, 321(n7)
- equilibrium level 155f, 155, 157
- flexibility 288–9
- target/objectives 201, 265, 266
- target versus actual 283

- recession/s 106, 125, 203, 205, 215,
218, 219f, 223, 224, 227, 229, 248,
268, 287
monetary-policy-induced 262
prevention 242
recovery from 216, 240
sub-prime crisis (2007) potential cause
123
see also credit crisis
- rentiers 6–7, 274–5, 277–8, 288, 290–1,
292(n6)
propensity to consume 280
'repos' [re-purchase agreements] 134,
177, 179, 192
- representative agent model 122
- reserve market 4
- residential outlays 217f
- resource allocation 243, 310, 312, 314,
316, 319, 322(n8)
- Ricardian equivalency problems 127
- rigidities
nominal 80, 81, 105, 273
real 97(n3), 273
- risk xx, 6, 56, 74(n3), 134, 177, 208,
216, 224, 232(n1), 242, 245, 248,
309, 313
asset markets 215
business cycle (Minsky) 215
of default 135
distribution 182
endogeneity of attitudes 229
extent 182
Kalecki's principle 240
risk aversion 41, 83
risk premia 68, 69f, 74(n23), 104, 209,
210, 218, 219–20, 223, 229, 230
counter-cyclical 69
shocks 220, 221–2, 222f, 225–7,
228f
- risk tolerance 223, 224f, 225, 229–30,
240
- savings 50, 92, 104, 134, 137, 138, 179,
216, 222, 236, 238, 250(n7), 257,
274, 277, 298, 302, 306(n8)
see also IS–LM model
- securitization 111, 182, 183, 246
home mortgages 218
- shares/equity 241, 243
prices 110, 111
- shocks 23, 199
commodity prices (2008) 22–7
deflationary 91
exogenous 80–1, 84–6, 316
expected or unexpected (optimal
response) 52
external/foreign 109, 276
financial 209
i.i.d. 231
macroeconomic 89, 90
monetary 74(n12), 85, 169
money demand 95
money supply 85
money-market 56
oil price (2008) 22–7, 33
optimal interest rate response 32
output 33
permanent 51, 316
productivity 58
real 85
risk premium 227, 228f
stochastic 58, 102–3
supply-side 197, 198f, 198
temporary but persistent 51
see also aggregate demand shocks;
inflation shocks; IS shocks; supply
shocks
- short-run supply curve (SRAS) 259,
260–2
- social class 296, 302, 303
- Solow growth model (1956) 7, 49,
296–7, 299, 300, 308
- Solow residual 57, 61
- South-East Asian crisis (1997–8) 106–7
- speculation/speculators 46, 216, 218,
223
Minsky's taxonomy 240–1
- speculative activities 218, 223
- 'speculative financing' (Minsky) 216
- Sraffian Surplus approach 306(n5)
- stabilization 50, 55, 85–6, 94, 96, 119,
161–3, 176, 195f, 195, 225, 241,
273–4, 280–1, 285, 291
failure 282–3
nominal 289, 290
real 290
short-run 121
- stabilization bias 52, 103
- sterilized interventions 229

- stock markets 111
 - boom 216, 217f
 - crash (1987) 218
 - crash (2000) 227
- stock-flow approach 141
- stock-flow relations 208
- sub-prime crisis *see* credit crisis
- supply shocks 21–2, 23, 56, 70, 108
 - favourable 200
 - negative 61, 65, 106
- supply side 32, 57–8, 81, 85, 94, 103, 131, 142, 165, 172–3, 193, 197–9, 202, 266
- equilibrium 107, 139
- supply-induced contraction 55
- taxation/taxes 106, 134, 138, 236, 274
 - changes (structural effects) 33
 - incentives 165, 290
 - increases (anticipated) 49
 - receipts 104, 310
 - reductions 160
- 'Taylor principle' 259
- Taylor Rule (TR) 1, 14, 16, 17, 30–2, 33, 45, 52–3, 56, 76–7, 89–96, 101, 104, 117, 123–4, 137, 139, 143, 193, 225–6, 227, 228f, 231, 259, 300
- technical change/progress 201, 203, 257, 263
- technology 92, 106, 152, 217f, 296, 297, 310
- textbooks xiv, xix–xx, 1, 2, 39, 45–6, 77, 79, 86, 95, 123, 125, 137, 173, 191–2, 234, 236, 255, 258, 260–1, 265, 273, 295(n2), 306(n9), 309, 319
 - distributional issues 269
 - intermediate level 169, 214
 - MBA students 256
 - 'modern monetary economics' 270
 - US manuals 295
- time 43–5, 47f, 52, 56–7, 74(n7), 78–81, 89, 94, 97(n2), 102–3, 107–8, 131, 136, 207f, 215, 220, 230–1, 236, 239, 241, 256, 261, 264, 266, 276, 279, 320
 - future 313
 - historical 312, 316–17, 318, 321(n1, n6)
 - logical 312, 321(n1)
- time-inconsistency 127, 311
- Tobin's *q* 239–40
- trade unions 25, 163, 275–6, 283, 290
- transmission mechanism 48, 52, 101, 109
 - between 'high-powered money' and final money stock 95
 - policy interest rate to other interest rates in system 258
 - rate of interest to inflation 105
- transparency 52, 89, 105, 171, 248
- two-price system (Minsky) 238f, 238, 241
- uncertainty 8, 41, 45–6, 63, 70, 105, 111, 143(n4), 170, 219, 240, 242–4, 309, 313–17, 319–20
- Uncovered Interest Parity (UIP) 38, 43, 46–50, 52, 304, 306(n13)
- undergraduate courses 36–54, 118–28
 - first year xiv, 39–41, 44, 51–2, 295–6
 - IS/LM model 121–2
 - macroeconomic model with endogenous money 165–6
 - macroeconomic models (intermediate) 122
 - macroeconomics 1, 36
 - Minsky's ideas 215
 - monetary policy analysis 55–75
 - second year 40, 44, 51, 52–3
 - third year 44, 52–3
 - see also* pedagogy
- undergraduate students xix, 32, 73(n1)
 - critical spirit/thinking skills 8, 14, 295–6
 - horizons 7
- unemployment 8, 25, 34f, 88, 109, 113, 125, 161–5, 163, 164f, 165, 194, 245, 250, 276–7, 283, 299, 302, 303, 321(n4)
 - adjustment towards NAIRU 290
 - deviation from NAIRU 281–2, 283, 288
 - equilibrium level 20, 23, 24f, 155f, 155, 157, 159–60, 167(n12)
 - frictional 283
 - and growth hysteresis 202–6, 211(n8)
 - persistence 286
 - structural 97(n3)
 - trade-off with inflation 110

- unemployment gap 225
- unemployment hysteresis 193, 200–5, 206, 207f
- unemployment rate 74(n7), 156f, 196–7, 200, 201, 202, 204, 225, 275, 321(n7)
 - ‘natural’ 97(n3), 107, 139, 144, 225, 228f, 311, 264
- unit labour costs 275, 285, 289

- wage aspirations 108, 275
 - based on conventional behaviour 283, 285f
 - endogenous 285f
- wage bargaining 265–6, 273, 291
 - coordination at national level 290, 292(n10)
 - decentralization 288
 - nominal stabilization role 290
- wage flexibility 125, 161–5
- wage inflation 197, 201
- wage-earners 8
 - income claims 6–7
 - propensity to consume 278
 - saving level 250(n7)

- wage-setters 17, 23–5
- wage-setting 14, 25, 26f, 33, 49, 51, 52
- wages 6, 25, 50, 106, 108, 279, 281, 289, 298, 299
 - downwardly rigid 64
 - downwardly-flexible nominal 5
 - equilibrium level 299, 301
 - market-clearing, 321(n7)
 - nominal 151–2, 154, 156, 161, 163, 164f, 167(n16), 265, 283, 288
 - share in total income 275–6, 277f, 285, 292(n9)
 - see also* real wage
- wealth 42, 64, 111, 140
- welfare state 14, 320
- Wicksellian economics 94, 221f, 255–6, 307(n17)
 - business cycle 214–33
- workers/labourers 97(n3), 167(n16), 237, 266, 277, 288, 291
 - bargaining power 24, 201
 - household consumption demand 277