

Preface

The state of macroeconomics

“*What went wrong with economics? And how the discipline should change to avoid the mistakes of the past*”

was on the cover page, and

“*Where it went wrong — and how the crisis (of 2007–2009) is changing it*”

was the lead article of the venerable *The Economist* in its 18–24 July 2009 issue. Among the subheadings of the related article were “*Rational fools*” and “*Blindsided and divided*”. [*The Economist*, 18 to 24 July 2009, front page and pages 11 to 12.]

On the state of research and teaching of macroeconomics

Some of the opinions from prominent economists quoted by *The Economist* were:

“The past thirty years of macroeconomics training at American and British Universities were a ‘costly waste of time’”.

“Mr. (Paul) Krugman feared that most macroeconomics of the past thirty years was ‘spectacularly useless at best and positively harmful at worst’ . . . ‘We are living through a ‘Dark Age of macroeconomics’, in which the wisdom of the ancients has been lost’”.

“Mr. (Willem) Buiter argues that a training in modern macroeconomics was a ‘severe’ handicap at the onset of the financial crisis . . .”.

“The mainstream macroeconomics embodied in DSGE (Dynamic Stochastic General Equilibrium Models) was a poor guide to the origins of the financial crisis” . . . “According to David Colander, . . . macroeconomics is often the least popular class . . . Mr. Colander asked a group of Chicago students. “Did you do the dynamic stochastic general equilibrium model?” “We learnt a lot of junk like that,” one replied.” [Above quotes taken from *The Economist*, 18 to 24 July 2009, pages 11–12 and 65–67; material in parentheses added.]

“The unfortunate uselessness of most state of the art monetary economics. . . (research) since the 1970s has been motivated by the internal logic, intellectual sunk capital and aesthetic puzzles . . . rather than by a powerful desire to understand how the economy works; let alone how the economy works during times of stress and financial instability” (Willem Buiter, quoted in *The Hindu*, Business Line, 18 March 2009; material in parentheses added).¹

The Economist has not been the only magazine to express such views. The last two years have witnessed a cacophony of similar views in serious journals, in newspapers, and magazines, on the radio, TV, and the Internet. Among others have been:

‘The emperor has no clothes’.

And we might add:

‘Economists are no better than astrologers and soothsayers. But the public and the country suffer far more from their views’.

¹<http://www.blonnet.com/2009/03/18/stories/2009031850070900.htm>.

But then, what justifies another macroeconomics textbook?

In view of all the doubts and dismal opinions of the dismal science² held by the public and economists about the validity and relevance of macroeconomics and its teaching, it must be a wonder that one not only admits to teaching macroeconomics but even dares to write another textbook on the subject. We do so because of our strong belief that macroeconomics and its policy prescriptions are both relevant and need to be learnt to understand what has been happening in recent years, while recognising that the subject and its presentation do need to be changed. Further, there is a glaring lacuna in macroeconomics in that it does not incorporate an adequate analysis of the role of credit in the economy. It is also unfortunate that the teaching of macroeconomics in recent decades has dropped the analysis of disequilibrium and the scope of policies relevant to disequilibrium.

The reformulation of macroeconomics

Macroeconomics is not only one of the pillars of economics, it is probably the most relevant and exciting part of economics for most people, since it deals with the economy and its impact on their job prospects and personal portfolios, as well as explaining the analysis behind the economic and business headlines in newspapers and periodicals. Macroeconomics is rich in theories, but not all are equally good at explaining the stylized facts. This book teaches the students the differences between their assumptions and implications and the use of stylized facts to discriminate among them.

What the quotes above on the sorry state of macroeconomics clearly indicate is that the exposition of macroeconomics needs to be revised, perhaps drastically. As a starting point, its theories have to be tested by their concordance with facts and, if they prove to be invalid (i.e., useless for explaining the economic reality that we live in), they need to be rejected or revised. The revision of theories has to start with the empirical validity of their assumptions, and move on to testing the validity of their implications and predictions. This book undertakes these tasks, and makes the relevance of the established theories to the related stylized facts of the economy a central part of its exposition.

While the general equilibrium assumption can be useful in learning about the healthy state and good times of the macroeconomy, its dominance in macroeconomics to the exclusion of disequilibrium analysis has been central to the recent failure of macroeconomics and its teaching. It should be now beyond dispute that economies do sometimes go into disequilibrium and stay in it. The causes of potential disequilibrium and its analysis have been missing from most macroeconomics textbooks for some decades, and need to be reinstated. Chapter 9 of this book does so.

What also seems to be indicated by the proclaimed sorry state of macroeconomics is that divisions within its schools have been overdone to the detriment of the validity of macroeconomics.³ The presentation of and emphasis on these divisions needs to be reduced. If any observation can be explained by several theories (from different schools), we should integrate all of them for a fuller explanation of the observation. Why care from which school the various components originated? This implies downplaying the schools in macroeconomics,

²‘The dismal science’ was the name given to economics by the social reformer Thomas Carlyle in the mid-19th century. The name stuck, and justly so in many ways.

³‘The fault lies not with economics, but with economists. The problem is that economists became overconfident in their preferred models...’. ‘They forgot that there were many other models that led in radically different directions. Hubris creates blind spots. If anything needs fixing, it is the sociology of the profession’. (Quotes taken from an article by Dani Rubrik, in *The Hindu*, New Delhi, 14 March 2009).

and looking directly at the relevant theories. This book adopts this approach (see especially Chapter 8) and subsequently collects the main theories of macroeconomics into the classical and Keynesian paradigms and confines the presentation of these two paradigms into one chapter. Its approach is: learn the relevant theories first (in Chapters 1 to 10), independent of their origins, and then learn the paradigms (set out in Chapter 11) and, to satisfy one's intellectual curiosity, find out in which paradigm they originated.

The emphasis in macroeconomic textbooks has for some decades drifted toward the presentation of long-run equilibrium and growth theories, to the detriment of short-run and disequilibrium analysis. Such an orientation is justified for studying the changes in the standards of living over long periods. It is less justified from the perspective of understanding the economic world that we constantly experience. This book redresses this trend, and brings the presentation of the short-term economics to the early parts of the book.

Understanding the economic crisis of 2007–2010 requires revision of macroeconomics to address the glaring omission of credit in current macroeconomic modelling.⁴ This crisis also firmly establishes the non-neutrality of both money and credit in the short run. This book incorporates the relevant analysis of credit (see Chapter 16) and implies its non-neutrality, as well as the non-neutrality of money and financial institutions, in the modern economy (Chapters 8 and 9).⁵ Even in the context of very long-term growth, this book distinguishes between the neutrality of money and the non-neutrality of the economy's financial structure (Chapter 15).

More specifically on this book

This book presents the current state of knowledge of macroeconomics relevant to elementary and intermediate undergraduate courses. The goal of the book is to provide students with adequate knowledge to: (i) understand the stylized macroeconomic facts, (ii) to learn the rich variety of economic theories and the differences in their implications, (iii) to use the theories to explain the stylized facts, and (iv) to understand the major differences between the developed economies and the developing ones.

This book brings to its treatment of macroeconomics a fresh perspective on the coverage of macroeconomic theories and their validity. Economics is a social science, whose objective is to explain economic reality. This perspective focuses on the ability or inability of the existing theories to explain the established stylized macroeconomic facts, especially on the relationship between monetary and fiscal policies and output and employment. The relevant stylized facts have been established over several decades by intuition and empirical studies, though few macroeconomics textbooks pay adequate attention to them. The recent (2007 to 2010) economic crisis and recession in many economies provide a rich topical confirmation of many of these stylized facts.

Among the stylized facts of macroeconomics is that related to the behavior of the central bank in its pursuit of monetary policy. The general assumption of most macroeconomics books is that the central bank controls and operates on the money supply as the primary monetary policy tool, so that the appropriate assumption for the exposition of macroeconomics is that the money supply is held exogenous. This assumption leads to the IS-LM model for the determination of aggregate demand. This assumption and the resulting IS-LM model are quite unrealistic for many countries, especially developed ones, whose central banks have claimed at least since the mid-1990s that they operate on interest rates as their primary monetary policy tool. This claim changes the exposition of short-run macroeconomics to one in which the interest rate is held exogenous. Few

⁴For virtually all textbooks, financial institutions providing credit do not exist, so that a credit collapse can have no impact on output and employment in the economy. The extent to which banks are envisaged is as creators of money, but not as providers of credit.

⁵In many macroeconomic models, finance is a veil, as is money, so that a credit collapse has no impact on output.

textbooks set out this exposition. This book does so, and calls the resulting short-run macroeconomic model of aggregate demand the IS-IRT model. However, for completeness and to allow instructors a choice between the IS-LM and IS-IRT expositions, this book presents both these models.

Major features of this book

Among the highlights of this book are:

- Rigorous economic analysis and intuitive insights.
- Stylized macroeconomics facts, which are used to discuss the validity and usefulness of theories.
- Treatment of open economy macroeconomics early in the book and throughout the book. Open economy material is integrated into the macroeconomic analysis from the very beginning (Chapters 3 and 5). This treatment is supplemented by Chapters 12 and 13, which include coverage of many topics such as the foreign exchange market, persistence of deficits and surpluses in the balance of payment even when the exchange rate is floating, the J curve, Globalization, Dollarization and Currency Boards, the Gold Standard, and the IMF (including discussion of whether the IMF should evolve into the world's central bank).
- As an illustration of the use of stylized facts to select among theories and/or modify them, this book (Chapters 3 and 13) questions the validity of Purchasing Power Parity on the basis of the stylized facts on price differences across economies, and does not assume PPP in setting up its macroeconomic models. Similarly, Chapters 3 and 13 question some of the unrealistic implications of the Interest Rate Parity theory and modify the Interest Rate Parity condition to allow for deviations of interest rates among countries.
- A fundamental stylized fact relates to how central banks seek to control or influence output and employment through their monetary policies: do they act in such a way that macroeconomic theory can build its model on an exogenously given money supply (leading to the IS-LM model of aggregate demand) or do they act in such a way that macroeconomic theory can build its model on an exogenously given interest rate (leading to the IS-IRT model, which is explained in Chapter 5 of this book (and almost never in other macroeconomic textbooks)). This is a factual question on which many central banks, especially in developed economies, claim that they directly operate on interest rates, not the money supply, in the economy. This monetary policy procedure renders the traditional IS-LM model of aggregate demand irrelevant for many economies, though it is still the mainstay of most macroeconomics textbooks. This book also examines the conditions under which the central bank would prefer to use interest rate targeting or monetary targeting, and vice versa.
- The assumption that the central bank uses the interest rate, rather than the money supply, as its primary monetary policy instrument for controlling aggregate demand is central to the currently popular Taylor Rule and the New Keynesian economics. However, the relevant analysis (called the IS-IRT one in this book, with IRT standing for 'interest rate targeting' as against 'monetary targeting' that leads to the IS-LM analysis) is not set out in almost all other undergraduate and even most graduate, books on macroeconomics. This book presents in Chapter 5 the relevant macroeconomic analysis for the case in which the central bank primarily sets the interest rate.
- For completeness, this book provides both the IS-IRT (Chapter 5) and IS-LM (Chapter 6) models of aggregate demand for the open economy. The instructor is thus provided with the choice of doing only the analysis relevant to their particular country and its central bank's monetary policy, or doing both.

- This book separates the analysis of the long run (Chapter 7), the analysis of the short-run based on errors in expectations, adjustment costs of changing prices, employment, the capital stock and output (Chapter 8), and disequilibrium (Chapter 9). A major argument differentiating this book from others is that the economy can be out of both long-run and short-run equilibrium — and therefore, in disequilibrium. Chapter 9 shows that the implications of disequilibrium for monetary and fiscal policies can differ considerably from those of long run and short run equilibrium.
- The treatment of short-run deviations of output from the long-run one is explained in Chapter 8 as arising from many causes. These include errors in expectations (due to the costs of acquiring adequate information and deriving its implications for the revision in expectations), and the adjustment costs of changing prices (as in the menu cost theory). But they also include the adjustment costs of changing employment (leading to labor hoarding and Okun's rule), the physical capital stock and output. All these occur in the short-run and collectively determine the short-run output and employment.
- The analysis of disequilibrium and the likely behaviour of firms and households and the policies relevant to disequilibrium have often been neglected in many macroeconomics textbooks published over the last three decades. This book devotes a whole chapter (Chapter 9) to this analysis. The relevance of this chapter to the economic crises and fluctuations in output and employment, as during 2007–2010, should not be ignored.
- On the basis of the stylized facts established from earlier studies — and reinforced by the recession of 2007–2010 — one has to reject the relevance and validity of the long-run equilibrium and short-run equilibrium theories to the explanation of many of the stylized facts. The disequilibrium analysis, especially of demand-deficient conditions, presented in Chapter 9 of this book is more appropriate.
- This book provides an explicit analysis of credit as distinct from bonds, and the impact of a credit crisis on the other sectors of the economy. This material is especially relevant to understanding the causes of many downturns in the economy, and to the study of financial and economic crises. Such analysis is missing from most other macroeconomics textbooks but is vital to understanding the Asian Crises of the mid-1990s and the worldwide one during 2007–2010.
- This book discusses (in Chapter 11) the heritage and evolution of theories of the major schools of thought in macroeconomics. It organizes them into the classical and Keynesian *paradigms*, and explains why it is desirable to study both. The exposition of the theories is followed by a comparison of the predictions of the theories with the stylized macroeconomics facts to decide on the validity and relative usefulness of the various theories.
- This book divides its presentation of the analysis of economic growth into two chapters. Chapter 14 focuses on the Solow/neoclassical model of growth, without technical change and with exogenous technical changes. An important topic treated in this chapter is the historical experience of growth epochs, starting with the Malthusian theory for agricultural societies and ending with the modern and post-modern stages of growth of already industrialized societies. Chapter 15 sets out the endogenous growth theories. It also studies the relationship between the growth of output on the one hand and, on the other hand, money supply growth, the inflation rate and the development of the financial structure of the economy.
- The ups and downs of business cycles are very important to the average person and to firms. Contrary to a belief prevalent in the 1980s and 1990s, cyclical fluctuations have not been eliminated or sufficiently moderated. Chapter 16 explains their causes and the evolution of their stages. It also explores the relationship between financial developments and crises and economic crises. Further, it provides an explicit treatment of how a credit crisis can cause adverse shifts in both aggregate supply and aggregate demand in the economy. This exposition helps students to explain why the credit crisis of 2007 in the USA developed into an economic

one in 2008 and how the stimulatory monetary and fiscal policies were able to shorten its duration and decrease its intensity.

The book also innovates in its presentation in several ways. These include:

- **Fact Sheets:** Each chapter has Fact Sheets to provide graphs on the major points relevant to the chapter. These Fact Sheets use data from: the USA, the world's largest economy; Canada, a developed small economy; and several developing economies, which include Thailand, Malaysia, China, and India.
- **Boxes:** There are three types of boxes (Boxes, Extended Analysis Boxes, and Mathematical Boxes) in each chapter. These boxes dig deeper into the analysis or the relevant facts, so that they extend the material beyond that in the text. Extended Analysis boxes provide advanced material and are meant to give the instructor the choice between whether to omit them or cover them. Mathematical boxes provide the students with the knowledge relevant to the economic theories presented in the chapter.
- **Review of material:** Besides bulleted Conclusions, each chapter has at its end Key Concepts and Summary of Critical Conclusions, which facilitates the student's review their knowledge of the material of the chapter.
- **Questions:** The book divides the questions at the end of each chapter into Review and Discussion Questions, and Technical and Advanced Questions. Less mathematically oriented courses can omit the Technical Questions.
- **Technical Questions:** The technical questions at the end of each chapter require knowledge of high school algebra and the ability to solve linear equations, but do not require any university level mathematical courses and specifically do not require knowledge of calculus. While the technical questions and their solutions can be omitted from courses using only verbal arguments, intuition, and diagrams, they do illustrate and deepen the knowledge of the theories and their implications presented in the chapter.
- **Calculus:** While the book, especially its Mathematical boxes and Technical Questions, rely on knowledge of high school mathematics, they do not require a prior knowledge of calculus (or teach it).

Coverage of the Textbook Over Two Semesters

This book consists of 16 chapters, which are meant to be covered over two semesters, so that each chapter would take on average about two weeks to cover. Instructors can choose the pattern of coverage of the chapters according to:

- Chapters 1 to 9 are designed to provide a very good one-semester introductory course in macroeconomics, with the major emphasis on short-run economics. If desired, these chapters can be supplemented by Chapter 16 on business cycles and economic crises. If this beginning course is followed by an intermediate macroeconomics course, the latter would cover the more advanced Chapters 10 to 16.
- If the desired focus of the first course is more on growth, the appropriate chapters for it would be Chapters 1 to 3 and 14 to 16, along with some additional chapters selected by the instructor.

Study Guide

The book comes with a Study Guide on an enclosed CD. Each chapter of the Study Guide provides an introduction to the main topics in the chapter, followed by answers to the Review and Discussion questions, as well as the Technical and Advanced questions, at the end of the chapter.

Acknowledgments

I am indebted to several generations of students who used my macroeconomics course notes. Their comments helped me refine the material in this book. I am especially indebted to several teaching and research assistants over the years for writing or revising the answers in the Study Guide.

I especially wish to acknowledge the assistance of Oana Ciobanu with the Fact Sheets in the chapters, and of Marc Jean Baraghid with the final version of the Study Guide.

*Prof. Jagdish Handa
McGill University, Montreal, Canada
Jagdish.handa@mcgill.ca*