INTERNATIONAL MACROECONOMICS

Peter J. Montiel

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"Montiel's book is indispensable for anyone wishing to deepen their understanding of International Macroeconomics. It presents a much more realistic picture than what is provided by other textbooks."
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"This text's main strength is its unified approach, as it starts with a general model, and then considers special cases pertaining to particular countries, institutions, and historical time periods."
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"This text's exposition is very methodical, applying the method of comparative statics systematically for evaluating important contemporaneous policy issues as well as historical episodes."
Watanabe Shinichi, International University of Japan

FEATURES OF THE BOOK

- Presents an analytically rigorous introduction to the field and uniquely includes optional econometric studies.
- Provides a unified macroeconomic model to examine rigorously international macroeconomics and then focuses this model on historic cases, institutions, and specific countries, dealing with various types of macroeconomic crises.
- Provides a strong policy orientation by an author who worked for many years at the IMF.
- Is supported by a website with extensive solutions for the problem sets, PowerPoint slides, and an update on the 08–09 meltdown.

Peter J. Montiel is the Farleigh S. Dickinson '41 Professor of Economics at Williams College, and received his PhD from MIT. He has served as a Senior Policy Advisor at the IMF as well as Chief of the Macroeconomics and Growth Division of the Policy Research Department of the World Bank, and has provided expert counsel to a variety of regional development banks and central banks. He is the author of several books, including *Development Macroeconomics, 3rd edition* (with Richard Agenor, 2008) and *Macroeconomics in Emerging Markets* (2nd edition forthcoming), and numerous articles on international macroeconomics.

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Preface

As I write this in early 2009, evidence of how intensely integrated the world economy has become is all around us. The financial crisis through which we are currently living has touched almost every corner of the world, and the international dimension of the required policy response is widely acknowledged. While the current crisis has emphasized the internationalization of macroeconomics in a dramatic way, the international aspects of macroeconomics have been growing rapidly in importance throughout the world over the past two decades. As the world becomes more integrated economically, this process is likely to accelerate. It is easy to predict that issues related to the international aspects of macroeconomics will become increasingly visible and urgent to students in years to come.

In this context, an understanding of the macroeconomics of open economies is likely to become an integral part of the education of students of economics, public policy, business, and international relations, among other disciplines. What makes this study at once fascinating and challenging is that so much of what determines how open economies behave macroeconomically depends on the specific circumstances of each country: its size, degree of macroeconomic openness in both goods and financial markets, the exchange rate and monetary policies that it pursues, the types of economic disturbances that it tends to experience, and so on. In the face of this diversity, the challenge that instructors face in teaching this subject is to provide their students with a versatile analytical framework that they can use to think clearly about the wide range of open-economy macroeconomic issues that they will invariably encounter in the future, whether as citizens, in their professional lives, or as policymakers.

Special Features of this Book

This book is intended to help facilitate that task. I became motivated to write it as the result of many years of teaching this subject at a diverse set of academic institutions as well as of seeing it applied first-hand during a long stint in the Research Department of the International Monetary Fund. My objective has been to present, in as clear a language as possible, a comprehensive, but *unified* analytical approach to the subject, organized along lines motivated by current policy issues and buttressed by a large number of real-world applications and illustrations.

The book is based on the premise that the models that we use to study international macroeconomics share a common analytical core, and that what may often appear to be disparate models are actually special cases drawn from that common core and customized to fit the circumstances that specific countries find themselves in at particular times. I believe that it is important for students to understand both the common analytical core as well as how to do the customization. This approach has the pedagogic virtue that students only need to learn one general framework as well as the algorithms for knowing how to adapt it to specific cases – exactly the process that researchers and policymakers go through in thinking about these issues.

The underlying analytical core on which the models in this book are based consists of a generalized and modernized version of the original Mundell-Fleming model. This version retains the Mundell-Fleming assumptions of complete specialization in production, short-run price stickiness, and behavioral functions based on simple decision rules. It departs from the original, however, in paying careful attention to the specification of stocks and flows as well as to the role of expectations, and its behavioral functions are specified in a manner that provides a natural segue to the optimizing models that are currently used by researchers in this field, a segue that is provided in the final chapter of the book. This analytical framework has two virtues that recommend it for an upper-level undergraduate textbook. First, it has long been – and continues to be – the workhorse for policy analysis and discussion of monetary and exchange rate issues in international macroeconomics. Consequently, it provides students with analytical tools that they will encounter beyond the classroom, especially in the financial press. Second, when stocks and flows are treated correctly, the framework is a natural extension of the standard IS-LM model used in intermediate macroeconomics that will be familiar to most undergraduate students.

In addition to its unified analytical treatment of the subject, the book introduces several innovations to teaching important topics in international macroeconomics. For example:

1 It provides a textbook treatment of imperfect capital mobility under fixed exchange rates from a portfolio-balance perspective that makes appropriate distinctions between stocks and flows.
2 It models expected future exchange rates as the outcome of a rational expectations-formation process, and shows how these expectations are influenced by the expected duration of shocks, as well as by the nature of goods-market adjustment.
3 It provides a new textbook version of a large-country model, again extracted from the general framework, that can be used to think about issues of international policy coordination among industrial countries.
4 It bases the analysis of optimal exchange rate regimes squarely within the analytical framework that students used earlier in the book to analyze fixed and floating rates separately, using a single diagram to illustrate how the economy responds to different types of shocks under alternative exchange rate regimes.

Finally, this book shares with other textbooks on the subject a concern with showing students how the models it develops can be used to understand the world by applying them to a wide range of real-world examples. However, while the anticipated audience of the book mandates a disproportionate representation of the macroeconomic experience of the

United States in these applications, I have tried to broaden these examples to encompass the experience of a large number of other countries. In addition to such direct applications of the models, almost all chapters also contain a unique textbook feature: optional empirical studies at the end of the chapter. These are intended to illustrate the methods that researchers in international macroeconomics have used to learn about specific aspects of the real world that are covered in that chapter.

Organization

The book is divided into five parts, with a structure designed to follow a sequence that I have found to be pedagogically very useful.

Part 1 makes the transition from the largely closed-economy approach of intermediate macroeconomics to the context of macroeconomic openness. This provides an opportunity to address many fundamental open-economy issues early in the book (e.g. the effects of various open-economy variables on economic welfare, the distinction between accounting and economic relationships in open-economy macroeconomics, and the generality of various open-economy parity conditions). All of these are explicitly motivated as building blocks for the construction of a general framework that can be used to think about all of these issues. The virtue of that approach is that hopefully it will serve to place all of these topics in context for the students.

Part 2 of the book, on fixed exchange rates, allows students to gradually build up their familiarity with the analytical framework that will be used for the rest of the book by starting out with the simplest applications of that framework. But the fixed exchange rate topics are not covered just because of their pedagogical role in developing students' understanding of the basic model. This part of the book addresses issues (e.g., "hard" and "soft" pegs, currency boards, and the macroeconomics of capital account restrictions) that, while they may currently be of policy relevance primarily outside of the United States, will be recognized by knowledgeable students as being of topical interest in many places around the world. The issues treated in these chapters have also been of historical importance for the United States, and they continue to be taken seriously in proposed reforms of the international monetary system.

The heart of the book is Part 3, where floating exchange rates are considered in detail. In these chapters, specific adaptations of the floating rate version of the general model are shown to be required, depending on the expected duration of the shocks that affect the domestic economy, on the monetary policy regime that is in place, on the economy's supply-side response, and on its size. Having explored the macroeconomics of fixed and floating exchange rates, the last chapter in Part 3 considers the question of optimal exchange rate regimes – i.e., how the exchange rate regime should be chosen. Because the macroeconomic interactions in these models are more intricate than those in the models of Part 2, this material is introduced only after students have acquired some familiarity with the basic analytical framework.

Part 4 takes up several topics of current interest that have in common a single theme: the optimal design of international monetary arrangements. This part includes chapters on reform of the international financial architecture, G-8 policy coordination, and monetary unification. Important by-products are the extension of the analytical model to the more complicated large-country case and a description of the emergence of the euro in the chapter on monetary unification.

The book concludes in Part 5 with an extension of the analytical framework to encompass intertemporal optimizing behavior on the part of the private sector, the paradigm that currently dominates research in this field. The chapter explains how optimizing models are related to the models based on behavioral decision rules that are used in the rest of the book.

Alternative Teaching Strategies

The material just described comprises 19 chapters, and this may often be too much to cover in a quarter or a short semester. Because the various models studied in the book are all individual special cases of the framework developed in Chapter 4, there are various ways to compile the chapters into shorter courses. For example, Chapters 1–11 plus 17 and 18 could be covered in a short semester, and would include models appropriate for emerging-market economies that intervene heavily in foreign exchange markets, industrial countries such as Japan, the UK, and Canada that maintain floating rates, the United States (a large economy whose actions affect the rest of the world), and countries such as those in Western Europe that participate in a monetary union. Alternatively, by skipping Chapters 5–9 but including Chapters 10–14, 17, and 19, the book can be adapted to a quarter-long US-oriented course that focuses on floating exchange rates only.

Level

This book is intended for students that have completed an intermediate-level course in macroeconomics – i.e., for an audience that will typically consist of junior and senior undergraduates as well as Master's level students in Economics and related disciplines. Although the relevant goods- and financial-market equilibrium conditions are derived from the ground up, the book presumes familiarity with the standard closed-economy IS-LM and derivative models that are featured prominently in most intermediate-level textbooks in macroeconomics. While it makes no use of calculus, the analysis is more advanced and detailed than that in the standard International Economics texts. Though most of the analysis is graphical, models are always presented in equation form and solution algorithms are described in mathematical terms. This means that, even though no more advanced mathematical tools are required than those typically needed to master most intermediate-level textbooks in macroeconomics, and even though I have tried to develop the material as clearly and transparently as possible, the book is likely to speak more clearly to students with some mathematical sophistication in their backgrounds.

Supplements and the '08–'09 Meltdown

Three types of web-based materials for instructors are available as supplements to the book. First, all of the book's analytical figures are available in the form of Powerpoint slides for use in lectures. Second, answers are provided to all of the end-of-chapter exercises. Finally, there are also suggestions for using the analytical tools provided in the text for teaching students about the 2008–2009 international financial meltdown. While these events occurred too recently to treat them in the manuscript, there are several places where the models developed in the book can be very usefully employed to shed light on the macroeconomic implications of the crisis, both for the United States as well as for countries in a variety of other macroeconomic situations that have been affected by the crisis in different ways. These applications are linked to the chapters in the book where they can most usefully be introduced.

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Part 1

Foundations

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An Overview of the Book

Globalization – the extension of the division of labor and specialization beyond national borders – is patently a key to understanding much of our recent economic history. (Alan Greenspan)

The international economic system has undergone a profound transformation over the past several decades. At the beginning of the 21st century many of the most important economies around the world – and many smaller economies as well – are trading goods and services, financial assets, and even the services of factors of production such as labor and capital much more intensively with each other than they had been doing over most of the 20th century. This ongoing process, colloquially known as **globalization**, has meant that markets for many commodities and for a wide range of financial assets are becoming increasingly international in scope, rather than being restricted to the confines of a single country. It is hard to believe that such a process would not fundamentally change the economies that have been engaged in it, and indeed the quote above from Alan Greenspan, the former Chairman of the Board of Governors of the US Federal Reserve System, suggests that it may not be possible to understand macroeconomic developments even in as large an economy as that of the United States without taking into account this continually intensifying process of international economic integration.

This book is about how international economic integration affects domestic macroeconomic performance. It is therefore motivated by one fundamental question: How does the intensification of trade across international boundaries in both goods and services as well as in financial assets affect the way the economy works? As we will see, the answer to this question is the same as that to many other interesting questions in economics: it depends. Factors such as the size of the economy, the degree to which it is integrated with the world economy in different markets, the policies that it adopts toward the value of its currency in terms of the currencies of other countries, and how it conducts its monetary and fiscal policies all influence how the process of globalization affects macroeconomic performance. The objective of this book is to provide you with a set of analytical tools that will help you think in an orderly way about how all of these factors interact to affect an open economy's macroeconomic performance, and thus prepare you to better understand how the process of globalization will continue to affect the way not only that your own economy works, but also the diverse economies of the many countries that you will eventually have reason to care about in our increasingly integrated global environment.

In this first chapter we will go over some fundamental concepts to help establish a framework for the rest of the book. We will also consider some of the topics that we will be investigating together. Finally, we will take a brief tour of the book's contents to give you an overview of its structure and a sense of how the topics to be examined in it fit together.

1.1 What Is International Macroeconomics?

Short-run Macroeconomics

Macroeconomics is the study of an economy's aggregate performance. Macroeconomists typically concern themselves with two sets of issues, which fall into the general categories of **long-run macroeconomics** (or *growth theory*) and **short-run macroeconomics**. In long-run macroeconomics we study the evolution of an economy's productive capacity over time, while in short-run macroeconomics the focus is instead on the factors that determine how fully the economy *uses* its productive capacity at any moment in time, as well as on the behavior of other macroeconomic variables that are affected by the rate of capacity utilization, such as changes in the rate of inflation.

The reason that macroeconomists worry about these things is not just to learn how the world works, but also to understand how to design policies that will enhance the economy's ability to do what it is supposed to do: provide the goods and services that satisfy our society's material needs. To attain that goal, we want to make sure that our economy achieves an optimal rate of growth of productive capacity over time while fully utilizing the productive capacity that it possesses at each moment in time.

In short-run macroeconomics, which is the subject of this book, our main concern is with **stabilization**, which means keeping the economy's actual level of production as close as possible to its productive capacity. The trick involved in doing so is that the economy is continually subjected to a variety of unpredictable changes, either in the economic environment or in the behavior of economic agents, that tend to drive the actual level of production, measured by real gross domestic product (GDP), away from the level of productive capacity, as measured by potential, or full-employment real GDP.[1] Macroeconomists refer to such unpredictable changes as **shocks** to the economy. These shocks tend to generate booms and busts in the level of economic activity, which may destabilize the average price level or create prolonged periods of underutilization of productive capacity. Since shocks are unavoidable, the policy issue that is the focus of short-run macroeconomics is how the economy can be stabilized in the face of such shocks, either by adopting institutional arrangements that make it less vulnerable to shocks or by taking countervailing

1 Full employment GDP is sometimes also referred to as the *natural* level of real GDP.