MACROECONOMICS FOR PROFESSIONALS

Understanding macroeconomic developments and policies in the twenty-first century is daunting: policymakers face the combined challenges of supporting economic activity and employment, keeping inflation low and risks of financial crises at bay, and navigating the ever-tighter linkages of globalization. Many professionals face demands to evaluate the implications of developments and policies for their business, financial, or public policy decisions. Macroeconomics for Professionals provides a concise, rigorous, yet intuitive framework for assessing a country’s macroeconomic outlook and policies. Drawing on years of experience at the International Monetary Fund, Leslie Lipschitz and Susan Schadler have created an operating manual for professional applied economists and all those required to evaluate economic analysis.

Leslie Lipschitz was an economist at the International Monetary Fund for more than thirty-five years. He served as Director of the IMF Institute, taught at the School of Advanced International Studies at Johns Hopkins University and at Bowdoin College, was a guest scholar at the Brookings Institution, worked and consulted with private financial institutions, and has written, spoken, and published widely on open-economy macroeconomics.

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Macroeconomics for Professionals

A Guide for Analysts and Those Who Need to Understand Them

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For Charlotte, Jessica, and Vanessa. After the years of enduring (and sometimes being moved to engage in) ferocious dinner-table debate on issues of political economy, much of what’s in this book may seem like old hat.

And for our former colleagues at the IMF who honed our commitment to getting the macroeconomic diagnosis and policy prescription right.
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Acknowledgments

The authors owe a debt of gratitude to too many former colleagues at the IMF and to economists in government statistical agencies to mention individually; some are acknowledged in the specific areas where they provided data or input. Bas Bakker (at the International Monetary Fund) and David Vines and Adam Bennett (at Oxford University) read an early draft of the manuscript and provided insightful suggestions. Claudio Borio and Ingo Fender (at the Bank for International Settlements) helped improve Chapter 6. Anonymous reviewers, students at Bowdoin College and in an MBA class taught by one of the reviewers, and (perhaps unwittingly) colleagues at Investec Asset Management also helped shape the book. Elizabeth Weston of the Bowdoin College Economics department provided excellent technical and editorial assistance. The authors alone are responsible for any remaining errors.
Glossary of symbols and acronyms

Upper and lower-case letters

Except for interest rates (which are always in small-case letters), most variables are written in capital letters for levels of the variable and small letters for growth rates (or percentage changes) or for ratios of variables to GDP. Which of the two is in use for any specific small letter symbol should be explicit in the text or clear from the context.

Subscripts

\( g \) designates government (as opposed to private)
\( i \) designates one component of an aggregate measure
\( n \) designates a nominal or current price (as opposed to a real or constant price) measure, except when it is used on “P” when it designates the price of nontraded goods
\( p \) designates private (as opposed to government)
\( r \) designates a real or constant price (as opposed to nominal or current price) measure
\( t, t+1 \) designate time periods

Superscripts

\( \ast \) designates a target value (e.g., for the inflation rate), a potential value (e.g., for potential output or growth), or a cyclically neutral value (e.g., for the cyclically neutral interest rate, structural, or cyclically-adjusted, fiscal aggregates)
\( \$ \) designates that the variable is measured in US dollars
Glossary of symbols and acronyms

e designates an expected value. Thus $E_{t+1}$ is the value of the exchange rate expected one period in the future.
d designates domestic variables, such that $i_d$ is the domestic interest rate and $D_d$ the stock of government debt in domestic currency.
f designates foreign, such that $i_f$ is the foreign interest rate and $D_f$ the stock of government debt in foreign currency.
w designates that a variable is measured in US dollars.

Greek symbols

$\alpha$ = share of capital in production and income
$1-\alpha$ = share of labor in production and income
$\beta$ = share of traded goods in the CPI
$1-\beta$ = share of nontraded goods in CPI
$\varepsilon$ = percentage change in the exchange rate, such that a positive number is a depreciation of the home currency
$\gamma_r$ = the elasticity of revenue to nominal income
$\gamma_e$ = the elasticity of expenditure to nominal income
$\pi$ = the aggregate inflation rate (abstracting from the particular price index)

Symbols and acronyms

A = TFP = total factor productivity
ABS = absorption
ARA = IMF’s analysis of reserve adequacy metric
AT$_1$ = additional tier 1 capital
BCBS = Basel Committee on Banking Supervision
BIS = Bank for International Settlements
BOP = balance of payments
C = consumption
CAB = current account balance = $X - M + NFI + TR$
CAC = collective action clause
CAD = -CAB = current account deficit of the balance of payments
CB = central bank loans to the banking system
CET$_1$ = common equity tier 1 capital
CiB = currency in banks
CiC = currency in circulation
CFM = capital flow management (policies)
CO = other claims of the banking system (i.e., those on the private nonbank sector). A suffix "1" refers to the central bank, a suffix "2" refers to the commercial banks, and no suffix is used for the consolidated banking system (or where the context is unambiguous).

CoB = currency outside banks.

CPI = consumer price index.

D = the stock of government debt or of debt to non-residents (external debt).¹

DD = demand deposits.

Def = the overall government deficit (equal to -OB).

DEP = bank deposits.

DIIs = depository institutions (chiefly banks) in the accounts of the US Federal Reserve System.

DSA = debt sustainability analysis (whether of public sector debt in Chapter 5 or external debt in Chapter 7).

DSGE = dynamic stochastic general equilibrium model.

E = exchange rate (domestic currency units per US dollar).

E&O = errors and omissions (in the balance of payments).

EBA = external balance assessment.

EFA = the external financial account of the balance of payments.

EM = emerging market country.

eop = end of period.

ER = excess reserves (i.e., deposits) of the banking system with the central bank.

Exp = government expenditure.

F = forward exchange rate such that \( F_{t+1}^{t} \) is the forward exchange rate for time \( t+1 \) quoted at time \( t \).

FA = foreign assets.

FB = foreign balance = X – M.

FCL = Flexible Credit Line of the IMF.

FDI = foreign direct investment.

FL = foreign liabilities.

FDD = final domestic demand = C + IF = TDD – IN.

FOMC = Federal Open Market Committee.

FSAP = financial sector assessment program (of the IMF and World Bank).

¹ We use the same symbols for these two different measures of indebtedness with D referring to public debt in Chapter 5 and to external debt in Chapter 7.
Glossary of symbols and acronyms

FX = any financial aggregate denominated in foreign exchange
FXD = deposits (of residents) in foreign currency
FXH = foreign exchange holdings of the monetary authorities
GDA = gross domestic absorption, identical to TDD
GDP = gross domestic product
GNDI = gross national disposable income
GNI = GNP = gross national income which is sometimes called gross national product
GOB = gross operating balance, identical to $S_g = (Rev - C_g)$ if $C_g$ excludes capital consumption (i.e., depreciation)
$gr_n$ = the rate of growth of nominal income (that is $\Delta Y_n / Y_{n-1}$)
$gr_r$ = the rate of growth of real income
GS = government surplus = $S_g - I_g$
GSIBs = global systemic important banks (generally identical to TITF)
i = nominal interest rate
I = total investment = $IF + IN$
IF = fixed investment
IMF = International Monetary Fund
IN = inventory investment
IT = inflation targeting
K = index of capital inputs into production
KAB = capital account balance
L = labor hours worked per period
LI = Laspeyres Index
LOANS = net foreign borrowing component of the net financial balance (NFB)
M = imports of goods and services
$M_1$ = narrow money
$M_2$ = broad money
MAC = market access country (country grouping including EMs and advanced countries)
MB = the monetary base (sometimes referred to as reserve money)
MG = monetary gold holdings
MPC = monetary policy committee
mpc = marginal propensity to consume out of income
NAIRU = non-accelerating inflation rate of unemployment
NBER = National Bureau of Economic Research
<table>
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<th>Acronym</th>
<th>Description</th>
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<tr>
<td>NCG</td>
<td>net credit to government. A suffix “1” refers to the central bank, a suffix “2” refers to the commercial banks, and no suffix is used for the consolidated banking system (or where the context is unambiguous)</td>
</tr>
<tr>
<td>NDA</td>
<td>net domestic assets of the central bank</td>
</tr>
<tr>
<td>NDCAB</td>
<td>non-interest current account balance plus net non-debt-creating financial inflows, all measured in dollars</td>
</tr>
<tr>
<td>NFA</td>
<td>net foreign assets in the monetary balance sheet (FA – FL). A suffix “1” refers to the central bank, a suffix “2” refers to the commercial banks, and no suffix refers to the consolidated banking system (or where the context is unambiguous)</td>
</tr>
<tr>
<td>NFB</td>
<td>net financial balance</td>
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<tr>
<td>NFI</td>
<td>net factor income from abroad</td>
</tr>
<tr>
<td>NIIP</td>
<td>net international investment position</td>
</tr>
<tr>
<td>NOB</td>
<td>net operating balance, equal to GOB minus capital consumption; identical to $S_g (= Rev – C_g)$ if $C_g$ includes capital consumption</td>
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<tr>
<td>NPI</td>
<td>net primary income</td>
</tr>
<tr>
<td>NPL</td>
<td>non-performing loan</td>
</tr>
<tr>
<td>$O_i$</td>
<td>gross output of sector $i$</td>
</tr>
<tr>
<td>OA</td>
<td>other short-term assets in foreign currency held by the monetary authority</td>
</tr>
<tr>
<td>OB</td>
<td>overall balance or net lending (defined as $Rev – Exp$)</td>
</tr>
<tr>
<td>OEB</td>
<td>overall external balance</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>OIN</td>
<td>other items net in the balance sheet (defined as an asset). A suffix “1” refers to the central bank, a suffix “2” refers to the commercial banks, and no suffix is used for the consolidated banking system (or where the context is unambiguous). Sometimes OIN is included under a broad conception of NDA</td>
</tr>
<tr>
<td>OMOs</td>
<td>open market operations</td>
</tr>
<tr>
<td>OTH</td>
<td>other influences on the level of government debt</td>
</tr>
<tr>
<td>$o/w$</td>
<td>of which</td>
</tr>
<tr>
<td>$P$</td>
<td>the price level (when the specific index used is not specified)</td>
</tr>
<tr>
<td>$P_i$</td>
<td>price of value added component $i$ of GDP</td>
</tr>
<tr>
<td>$P_n$</td>
<td>price index of nontraded goods (and services).</td>
</tr>
<tr>
<td>$P_w$</td>
<td>world price index (for a traded good) measured in US$</td>
</tr>
</tbody>
</table>
Glossary of symbols and acronyms

\( P_y \) = GDP deflator

\( \text{PExp} \) = primary expenditure

\( \text{PGFR} \) = public gross financing requirement

\( \text{PI} \) = Paasche Index

\( \text{PL} \) = private credit

\( \text{PL(DC)} \) = private credit in domestic currency

\( \text{PL(FX)} \) = private credit in foreign currency

\( \text{PPF} \) = production possibility frontier

\( \text{PPP} \) = purchasing power parity

\( \text{PRIM} \) = primary balance

\( \text{prim} \) = the primary balance as a ratio to nominal income (that is, \( \text{PRIM}/Y_n \))

\( \text{PROD} \) = productivity (output per person-hour)

\( Q_i \) = quantity of value added component \( i \) of GDP

\( \text{QE} \) = quantitative easing

\( r \) = real interest rate

\( \text{R} \) = rental cost of capital

\( \text{REER} \) = multilateral real effective exchange rate (a weighted index of \( \text{RERs} \) vis-à-vis a group of countries)

\( \text{RER} \) = bilateral real exchange rate

\( \text{Rev} \) = government revenue

\( \text{rp} \) = currency risk premium (this has the dimension of an interest rate)\(^2\)

\( \text{RPF} \) = reserve position in the IMF (foreign currency amounts that a member country may draw from the IMF at short notice)

\( \text{RT} \) = net foreign exchange reserve transactions of the central bank = reserve loss

\( S \) = gross national saving (comprising private and government components)

\( \text{SBA} \) = Stand-by Arrangement of the IMF with a member country

\( \text{SD} \) = statistical discrepancy (in the National Accounts)

\( \text{SDR} \) = special drawing rights issued to the country by the IMF or obtained from another country through the IMF

\( \text{SEI} \) = seigniorage

\( \text{TD} \) = time deposits

\( \text{TDD} \) = total domestic demand = \( C + IF + IN \) sometimes also referred to as Gross Domestic Absorption (GDA)

\(^2\) E.g., \( \left( (1 + i_{\text{max}})/(1 + \text{rp}) \right) - \alpha \) is the interest rate on Mexican bonds adjusted for the risk premium on the peso.
<table>
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<th>Symbol</th>
<th>Definition</th>
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<tr>
<td>TFP</td>
<td>total factor productivity</td>
</tr>
<tr>
<td>TITF</td>
<td>too important to fail (a class of large, interconnected banks)</td>
</tr>
<tr>
<td>TOT</td>
<td>external terms of trade = $price of export/$price of imports</td>
</tr>
<tr>
<td>TR</td>
<td>net transfers from abroad</td>
</tr>
<tr>
<td>ULC</td>
<td>unit labor cost. Lower case used to indicate a rate of change.</td>
</tr>
<tr>
<td>UKC</td>
<td>unit capital cost</td>
</tr>
<tr>
<td>VAR</td>
<td>value at risk (a class of models relevant for setting capital adequacy standards)</td>
</tr>
<tr>
<td>VAT</td>
<td>value added tax</td>
</tr>
<tr>
<td>W</td>
<td>wage rate</td>
</tr>
<tr>
<td>WEO</td>
<td>IMF’s World Economic Outlook</td>
</tr>
<tr>
<td>X</td>
<td>exports of goods and services</td>
</tr>
<tr>
<td>Y</td>
<td>aggregate output often used when we are not distinguishing between various related output measures (e.g., GDP, GNI, etc.)</td>
</tr>
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Preface

The business of macroeconomics is essentially practical. It entails analyzing economies usually open to international influences and buffeted by developments at home and abroad. The objective is sensible policy advice or investment decisions. The emphasis in teaching macroeconomics, however, is usually initially theoretical (focusing on the analytic foundations of different models of the economy), and then empirical in the sense of testing models against data. Often even those who have studied macroeconomics are not fully clear on how to apply what they have learned to real-world questions: for example, how do practitioners actually assess the global competitiveness of an economy? What concretely do practitioners mean when they identify an economy as vulnerable to crisis? How do practitioners balance short-term cyclical considerations and long-term sustainability considerations in assessing monetary and fiscal policies?

In our book, *Macroeconomics for Professionals*, we aim to help analysts (and those who need to understand them) answer these and many other operational questions. In under 300 pages – including real-world examples, figures, and exercises – we provide a guide to the practical tools of macroeconomic analysis. The text reflects decades of working as economists at the International Monetary Fund (IMF) and subsequent work in the private financial sector, think tanks, and academia. The aim is clear-cut exposition with minimal mathematical complexity.

For many economists the initial material in each chapter will be old hat: definitions of well-understood concepts and details on how to read basic presentations of macroeconomic data. They will be able to move quickly over these parts of the book. However, precision on definitions and an understanding of data catchment systems is essential to the next part of each
chapter: how to parse the data for diagnostic content, assess policies in place, and understand commentary on a government’s policy intentions.

The exercises at the end of each chapter relate to frequently encountered real-world problems; they should be manageable given good comprehension of the chapter. However, because they simulate real-world problems, they cannot avoid overlapping with some concepts explained in later chapters. Instructors may decide to assign exercises immediately after each chapter (for a quick assessment of the understanding of key concepts), to postpone assigning some exercises in early chapters until later in the course (to facilitate richer, more complete answers), or to revisit exercises that students found especially interesting or taxing. Those using the book as a self-study guide or reference book can use the exercises to help consolidate the content of each chapter.

Online Teaching and Learning Resources

A companion online workbook volume, available to instructors using the book in their courses, can be accessed at www.cambridge.org/Lipschitz. Those using the book for reference or self-study can obtain the companion volume by following instructions on the website www.macroeconomicsforprofessionals.com. This volume contains complete answers to all the exercises and three case studies with model answers. The case studies are ideal for helping readers integrate the material presented throughout the book.

Each case study describes an actual country that has faced a macroeconomic crisis or serious economic weakness that readers must diagnose and address. Each presents a narrative on the background to the crisis or issues, a cache of actual data, and an outline for the structure of the analysis that is needed. As in the real world, there is no “correct” strategy; the questions posed have no clear-cut right or wrong answers. What is important is the cogency of the argumentation behind the assessment and advice.

The first case study covers the Latvian financial crisis of 2008, and the exercise is an ex post analysis (by a fictional team at the Bank for International Settlements) to cull wisdom from the history on policies that might have forestalled the crisis or lessened its intensity.

The second case study deals with the 2010 sovereign debt crisis in Greece and asks readers to take the perspective of an asset management company with exposure to Greek sovereign debt. This is a fiscal crisis with some unique characteristics. The exercise entails an analysis of the relevant developments and data in order to advise on a strategy with respect to holdings of Greek sovereign debt.
The third case study deals with South Africa in 2013 from the perspective of a fictional consulting team engaged by the government and monetary authorities. No crisis is imminent. However, economic policies confront extreme inequality, dire unemployment, poverty, sluggish output growth, and challenges to longer-term financial stability. Readers are asked to prepare an annotated agenda for a first meeting with the authorities that displays an analytical understanding of the background and an appreciation of the economic and political imperatives.

When the book is used in academic courses, the case studies are useful assignments. The authors have found that having class participants – whether university students or professionals – work in teams, each on one of the case studies, is an excellent end to a course. If the case studies are assigned early in the term, they facilitate in-depth, cooperative team work and provide a specific real-world context for understanding the content of the book.