



# PUBLIC FINANCE

## The McGraw-Hill Series Economics

### ESSENTIALS OF ECONOMICS

Brue, McConnell, and Flynn  
**Essentials of Economics**  
*Second Edition*

Mandel  
**Economics: The Basics**  
*First Edition*

Schiller  
**Essentials of Economics**  
*Seventh Edition*

### PRINCIPLES OF ECONOMICS

Colander  
**Economics, Microeconomics, and Macroeconomics**  
*Eighth Edition*

Frank and Bernanke  
**Principles of Economics, Principles of Microeconomics, Principles of Macroeconomics**  
*Fourth Edition*

Frank and Bernanke  
**Brief Editions: Principles of Economics, Principles of Microeconomics, Principles of Macroeconomics**  
*First Edition*

McConnell, Brue, and Flynn  
**Economics, Microeconomics, and Macroeconomics**  
*Eighteenth Edition*

McConnell, Brue, and Flynn  
**Brief Editions: Microeconomics and Macroeconomics**  
*First Edition*

Miller  
**Principles of Microeconomics**  
*First Edition*

Samuelson and Nordhaus  
**Economics, Microeconomics, and Macroeconomics**  
*Nineteenth Edition*

Schiller  
**The Economy Today, The Micro Economy Today, and The Macro Economy Today**  
*Twelfth Edition*

Slavin  
**Economics, Microeconomics, and Macroeconomics**  
*Ninth Edition*

### ECONOMICS OF SOCIAL ISSUES

Guell  
**Issues in Economics Today**  
*Fifth Edition*

Sharp, Register, and Grimes  
**Economics of Social Issues**  
*Nineteenth Edition*

### ECONOMETRICS

Gujarati and Porter  
**Basic Econometrics**  
*Fifth Edition*

Gujarati and Porter  
**Essentials of Econometrics**  
*Fourth Edition*

### MANAGERIAL ECONOMICS

Baye  
**Managerial Economics and Business Strategy**  
*Seventh Edition*

Brickley, Smith, and Zimmerman  
**Managerial Economics and Organizational Architecture**  
*Fifth Edition*

Thomas and Maurice  
**Managerial Economics**  
*Tenth Edition*

### INTERMEDIATE ECONOMICS

Bernheim and Whinston  
**Microeconomics**  
*First Edition*

Dornbusch, Fischer, and Startz  
**Macroeconomics**  
*Tenth Edition*

Frank  
**Microeconomics and Behavior**  
*Eighth Edition*

### ADVANCED ECONOMICS

Romer  
**Advanced Macroeconomics**  
*Third Edition*

### MONEY AND BANKING

Cecchetti  
**Money, Banking, and Financial Markets**  
*Second Edition*

### URBAN ECONOMICS

O'Sullivan  
**Urban Economics**  
*Seventh Edition*

### LABOR ECONOMICS

Borjas  
**Labor Economics**  
*Fifth Edition*  
McConnell, Brue, and Macpherson  
**Contemporary Labor Economics**  
*Ninth Edition*

### PUBLIC FINANCE

Rosen and Gayer  
**Public Finance**  
*Ninth Edition*

Seidman  
**Public Finance**  
*First Edition*

### ENVIRONMENTAL ECONOMICS

Field and Field  
**Environmental Economics: An Introduction**  
*Fifth Edition*

### INTERNATIONAL ECONOMICS

Appleyard, Field, and Cobb  
**International Economics**  
*Seventh Edition*

King and King  
**International Economics, Globalization, and Policy: A Reader**  
*Fifth Edition*

Pugel  
**International Economics**  
*Fourteenth Edition*





# PUBLIC FINANCE

NINTH EDITION

**Harvey S. Rosen**  
Princeton University

**Ted Gayer**  
Georgetown University

**Mc  
Graw  
Hill**

**Higher Education**



## Higher Education

### PUBLIC FINANCE

Published by McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY, 10020. Copyright © 2010, 2008, 2005, 2002, 1999, 1995, 1992, 1988, 1984 by The McGraw-Hill Companies, Inc. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 QPD/QPD 0 9

ISBN 978-0-07-351135-1

MHID 0-07-351135-8

Vice president and editor-in-chief: *Brent Gordon*

Publisher: *Douglas Reiner*

Director of development: *Ann Torbert*

Development editor: *Anne E. Hilbert*

Editorial coordinator: *Marianne L. Magday*

Vice president and director of marketing: *Robin J. Zwettler*

Marketing director: *Rhonda Seelinger*

Associate marketing manager: *Dean Karampelas*

Vice president of editing, design and production: *Sesha Bolisetty*

Project manager: *Dana M. Pauley*

Production supervisor: *Gina Hangos*

Design coordinator: *Joanne Mennemeier*

Senior photo research coordinator: *Jeremy Cheshareck*

Media project manager: *Balaji Sundararaman, Hurix Systems Pvt. Ltd.*

Typeface: *10.5/12 Times Roman*

Compositor: *Glyph International*

Printer: *Quebecor World Dubuque Inc.*

### Library of Congress Cataloging-in-Publication Data

Rosen, Harvey S.

Public finance / Harvey S. Rosen, Ted Gayer.—9th ed.

p. cm.—(The McGraw-Hill series economics)

Includes index.

ISBN-13: 978-0-07-351135-1 (alk. paper)

ISBN-10: 0-07-351135-8 (alk. paper)

1. Finance, Public—United States. I. Gayer, Ted, 1970- II. Title.

HJ257.2.R67 2010

336.73—dc22

2009029678

A pink-tinted photograph of classical architecture, featuring several columns and an archway, serving as a background for the top section of the page.

# Dedication

*To our children*



# About the Authors



## HARVEY S. ROSEN

Harvey S. Rosen is the John L. Weinberg Professor of Economics and Business Policy at Princeton University. Professor Rosen, a Fellow of the Econometric Society and a Research Associate of the National Bureau of Economic Research, is well known for his contributions to the fields of Public Finance, Labor Economics, and Applied Microeconomics. From 1989 to 1991, he served as Deputy Assistant Secretary (Tax Analysis) at the US Treasury. During a second stint in Washington from 2003 to 2005, he served on the President's Council of Economic Advisers, first as a Member and then as Chairman. In this capacity, he provided advice to the White House on a wide variety of policy issues, including tax reform, Social Security, health care, energy, the federal budget, and financial market regulation. In 2007 he received from the National Tax Association its most prestigious award, the Daniel M. Holland medal for distinguished lifetime contributions to the study and practice of public finance.



## TED GAYER

Ted Gayer is an associate professor at Georgetown University's Public Policy Institute. He is also an adjunct fellow at the Public Policy Institute of California and an adjunct scholar at the American Enterprise Institute. Professor Gayer has published research in environmental economics, regulation, and education policy. From 2003 to 2004, he served as a Senior Economist on the President's Council of Economic Advisers, where he worked primarily on environmental and regulatory policy. He is currently a member of the Environmental Protection Agency's Science Advisory Board. From 2007 to 2008, he served as Deputy Assistant Secretary (Microeconomic Analysis) at the US Treasury. In this capacity, he helped develop policies relating to a wide variety of issues, including housing, credit markets, agriculture, health care, energy, insurance, and the environment. He was also responsible for guiding the Treasury's participation in the Social Security and Medicare Trustees working groups.



# Preface

The British philosopher and mathematician Bertrand Russell wrote, “Change is one thing, progress is another.” In this Ninth edition, we continue to make substantive changes that reflect progress made in the field of public finance. Yet we have been careful to stay focused on the central mission of the book, which is to explain as clearly as possible how the tools of economics can be used to analyze government expenditure and tax policies.

The field of public finance is constantly developing. There are new applications of experimental and quasi-experimental techniques to measure the impact of public policies, and there are new insights provided by fundamental economic theory into the roles of government spending and taxation.

This book incorporates recent developments and along the way takes its readers to the frontiers of current research and policy. While the information presented is cutting edge and reflects the work of economists currently active in the field, our approach makes it accessible to undergraduates whose only prior exposure to economics is at the introductory level.

Each chapter of this Ninth edition has something new. Rather than provide a long list of changes, we will instead highlight some of the key innovations.

## NEW WORLDS TO EXPLORE

### Financial Crisis Coverage

The current generation of students will long remember the financial crisis of 2008 and 2009. Some commentators believe that government policies toward housing may have contributed to the crisis, and at various places throughout the book, we discuss these arguments. For example, the political economy chapter (Chapter 6) discusses some of the consequences when financial firms are operated privately but their debt is, in effect, viewed as backed by the federal government. Similarly, Chapters 5, 15, and 18 highlight examples of how the government subsidized housing, possibly contributing to overconsumption in this sector.

### Expanded Climate Change Coverage

We have expanded our coverage of climate change policy. For example, the chapter on externalities (Chapter 5) includes a new discussion focusing on the choice between a carbon tax and a cap-and-trade program to regulate greenhouse gases. The cost-benefit analysis chapter (Chapter 8) discusses how the choice of a discount rate dramatically affects the scale of the policies needed to deal efficiently with the challenges of climate change.

### Health Care

The chapter on government and the market for health care (Chapter 10) expands considerably the material on reform options. It now includes a discussion of the



individual mandate program recently instituted in the state of Massachusetts, as well as a new discussion of international experiences with single-payer health care systems.

## Tax Issues

The chapters on the US revenue system (Part V)—especially Chapter 17 on the personal income tax—provide numerous updates on tax policies stemming from recent legislation and from proposals made by President Obama.

## Expanded End-of-Chapter Material

We have also expanded the discussion questions at the end of each chapter, in order to provide students with further opportunities to master the tools of public finance.

All of the changes in this Ninth edition were made to further our goal of providing students with a clear and coherent view of the role of government spending and taxation. Our years of policy experience have convinced us that modern public finance provides a practical and invaluable framework for thinking about policy issues. In this textbook, we have tried to do just what we did when we worked in Washington—to emphasize the links between sound economics and the analysis of real-world policy problems.

*Harvey S. Rosen and Ted Gayer*

## UP-TO-DATE TOOLS AND SUPPLEMENTS

### Animated PowerPoint Slides

The Ninth edition includes revised, in-depth, comprehensive PowerPoint slides with animated graphs and figures that appear as if drawn line by line to clarify difficult concepts for students.

### Test Bank

*Public Finance* has been known for its strong, rigorous test bank questions, and the Ninth edition continues this tradition. The test bank has been expertly updated to reflect the cutting-edge changes in the text. New questions in every chapter provide additional opportunities to test student knowledge.

### Instructor's Manual and Online Learning Center

Like the test bank, the instructor's manual has been updated in both content and structure.

[www.mhhe.com/rosen9e](http://www.mhhe.com/rosen9e)

In the Online Learning Center, students can access PowerPoint slides and interesting Web links, while instructors can also access a downloadable version of the Instructor's Manual and the Test Bank.

## CourseSmart

CourseSmart is a new way for faculty to find and review eTextbooks. It's also a great option for students who are interested in accessing their course materials digitally. CourseSmart offers thousands of the most commonly adopted textbooks across hundreds of courses from a wide variety of higher education publishers. It is the only place for faculty to review and compare the full text of a textbook online. At CourseSmart, students can save up to 50% off the cost of a print book, reduce their impact on the environment, and gain access to powerful Web tools for learning including full text search, notes and highlighting, and e-mail tools for sharing notes between classmates. Complete tech support is also available for each title.

Finding your eBook is easy. Visit [www.CourseSmart.com](http://www.CourseSmart.com) and search by title, author, or ISBN.