Economics Today

THE MACRO VIEW

18th Edition

Roger LeRoy Miller

OUR NATIONAL INCOME AND REAL GDP SINCE 1929*

In this table, in which all amounts are in billions of dollars, we see historical data for the various components of nominal GDP. These are given in the first four columns. We then show the rest of the national income accounts going from GDP to NDP to NI to PI to DPI. The last column gives real GDP.

The Sum of Expenditures					Equals	Less	Equals	Plus	Less	Equals	Less			Plus	Equals	Less	Equals	
Year	Personal Consumption Expenditures	Gross Private Domestic Investment	Government Purchases of Goods and Services	Net Exports	Gross Domestic Product	Depreciation	Net Domestic Product	Net U.S. Income Earned Abroad	Statistical Discrepancy	National Income	Corporate Profits	Social Security Taxes	Taxes on Production and Imports Net of Subsidies	Net Transfers and Interest Earnings	Personal Income	Personal Income Taxes and Nontax Payment	Disposable Personal Income	Real GDP (2009 Dollars)
1929	77.3	16.7	8.9	0.3	103.2	9.9	93.3	0.8	9.4	84.7	10.5	0.0	2.6	14.3	85.9	2.6	83.3	***
1933	45.8	1.6	8.3	0.1	55.7	7.6	48.1	0.3	9.0	39.4	−1.2	0.3	6.4	13.1	47.0	1.5	45.5	***
1940	71.0	13.4	1.2	1.4	100.1	9.4	90.7	0.4	11.5	79.6	2.0	2.3	15.0	18.0	78.3	2.6	75.7	***
1944	108.2	7.7	97.1	−2.2	210.9	12.0	198.9	3.5	19.8	182.6	23.8	5.2	18.9	30.6	165.3	19.0	146.3	***
1950	192.1	55.1	38.8	0.7	286.7	23.6	263.1	1.5	24.8	239.8	37.7	6.9	19.7	52.1	227.6	20.7	206.9	***
1955	257.9	69.7	75.3	0.4	403.3	34.3	369.0	2.6	35.3	336.3	46.9	11.1	25.5	58.1	310.9	35.6	275.3	***
1960	331.7	78.9	111.6	4.2	526.4	55.6	470.8	3.1	−1.0	474.9	49.9	20.7	66.5	63.2	401.0	51.0	350.0	2758.7
1965	443.8	118.2	151.5	5.6	719.1	70.7	648.4	5.3	0.3	653.4	76.1	29.6	84.2	75.4	538.9	65.7	473.2	3607.0
1970	647.7	170.1	254.2	3.9	1075.9	136.8	939.1	6.4	5.4	940.1	86.2	46.4	86.6	143.7	864.6	103.1	761.5	4717.7
1971	701.0	196.8	269.3	0.7	1167.8	148.9	1018.9	7.6	9.5	1017.0	100.6	51.2	95.8	162.7	932.1	101.7	830.4	4873.0
1972	769.4	228.1	288.2	−3.3	1282.4	160.9	1121.5	8.6	7.1	1123.0	117.2	59.2	101.3	178.3	1023.6	123.7	899.9	5128.8
1973	851.1	266.9	306.4	4.1	1428.5	178.1	1250.4	12.6	6.0	1257.0	133.4	75.5	112.0	202.4	1138.5	132.4	1006.1	5418.2
1974	932.0	274.5	343.1	−0.8	1548.8	206.2	1342.6	15.5	7.3	1350.8	125.7	85.2	121.6	231.0	1249.3	151.0	1098.3	5390.2
1975	1032.8	257.3	382.9	15.9	1688.9	237.5	1451.4	13.0	13.3	1451.1	138.9	89.3	130.8	274.8	1366.9	147.6	1219.3	5379.5
1976	1150.2	323.2	405.8	−1.6	1877.6	259.2	1618.4	16.9	20.5	1614.8	174.3	101.3	141.3	300.2	1498.1	172.3	1325.8	5669.3
1977	1276.7	396.6	435.8	−23.1	2086.0	288.3	1797.7	20.3	19.3	1798.7	205.8	113.1	152.6	327.0	1654.2	197.5	1456.7	5930.6
1978	1426.2	478.4	477.4	−25.4	2356.6	325.1	2031.5	21.6	23.2	2029.9	238.6	131.3	162.0	361.5	1859.5	229.4	1630.1	6260.4
1979	1589.5	539.7	525.5	−22.6	2632.1	371.1	2261.0	31.9	44.7	2248.2	249.0	152.7	171.6	403.0	2077.9	268.6	1809.3	6459.2
1980	1754.6	530.1	590.8	−13.0	2862.5	426.0	2436.5	34.2	43.9	2426.8	223.6	166.2	190.5	470.3	2316.8	298.8	2018.0	6443.4
1981	1937.5	631.2	654.7	−12.5	3210.9	485.0	2725.9	32.9	36.7	2722.1	247.5	195.7	224.2	541.2	2595.9	345.2	2250.7	6610.6
1982	2073.9	581.0	710.0	−19.9	3345.0	534.3	2810.7	36.5	6.8	2840.4	229.9	208.9	225.9	603.1	2778.8	354.1	2424.7	6484.3
1983	2286.5	637.5	765.7	−51.6	3638.1	560.5	3077.6	37.1	54.2	3060.5	279.8	226.0	242.0	657.0	2969.7	352.3	2617.4	6784.7
1984	2498.2	820.1	825.2	−102.8	4040.7	594.3	3446.4	36.3	38.7	3444.0	337.9	257.5	268.7	701.4	3281.3	377.4	2903.9	7277.2
1985	2722.7	829.6	908.4	−114.0	4346.7	636.7	3710.0	25.4	51.2	3684.2	354.5	281.4	286.9	754.5	3515.9	417.4	3098.5	7585.7
1986	2898.4	849.1	974.5	−131.9	4590.1	682.2	3907.9	16.9	76.6	3848.2	324.4	303.4	298.5	803.2	3725.1	437.2	3287.9	7852.1
1987	3092.1	892.2	1030.8	−144.9	4870.2	728.0	4142.2	17.5	40.5	4119.2	366.0	323.1	317.3	842.5	3955.3	489.0	3466.3	8123.9
1988	3346.9	937.0	1078.2	−109.5	5252.6	782.4	4470.2	22.6	−0.6	4493.4	414.9	361.5	345.0	903.3	4275.3	504.9	3770.4	8465.4

**Note:* Some rows may not add up due to rounding.

OUR NATIONAL INCOME ACCOUNTS AND REAL GDP SINCE 1929*

In this table, in which all amounts are in billions of dollars, we see historical data for the various components of nominal GDP. These are given in the first four columns. We then show the rest of the national income accounts going from GDP to NDP to NI to PI to DPI. The last column gives real GDP.

The Sum of Expenditures					Equals	Less	Equals	Plus	Less	Equals	Less			Plus	Equals	Less	Equals	
Year	Personal Consumption Expenditures	Gross Private Domestic Investment	Government Purchases of Goods and Services	Net Exports	Gross Domestic Product	Depreciation	Net Domestic Product	Net U.S. Income Earned Abroad	Statistical Discrepancy	National Income	Corporate Profits	Social Security Taxes	Taxes on Production and Imports Net of Subsidies	Net Transfers and Interest Earnings	Personal Income	Personal Income Taxes and Nontax Payment	Disposable Personal Income	Real GDP (2009 Dollars)
1989	3592.8	999.7	1151.9	−86.7	5657.7	836.1	4821.6	24.8	64.2	4782.2	414.2	385.2	371.4	1006.8	4618.2	566.1	4052.1	8777.0
1990	3825.6	993.5	1238.4	−77.9	5979.6	886.8	5092.8	34.6	91.3	5036.1	417.2	410.1	398.0	1093.7	4904.5	592.7	4311.8	8945.4
1991	3960.2	944.3	1298.2	−28.7	6174.0	931.1	5242.9	31.6	88.4	5186.1	451.3	430.2	429.6	1196.1	5071.1	586.6	4484.5	8938.9
1992	4215.7	1013.0	1345.4	−34.8	6539.3	959.7	5579.6	31.1	111.0	5499.7	475.3	455.0	453.3	1294.7	5410.8	610.5	4800.3	9256.7
1993	4471.0	1106.8	1366.1	−65.2	6878.7	1003.6	5875.1	32.0	152.3	5754.8	522.0	477.4	466.4	1357.8	5646.8	646.6	5000.2	9510.8
1994	4741.0	1256.5	1403.7	−92.5	7308.7	1055.6	6253.1	23.8	136.7	6140.2	621.9	508.2	512.7	1437.3	5934.7	690.5	5244.2	9894.7
1995	4984.2	1317.5	1452.2	−89.9	7664.0	1122.8	6541.2	28.7	90.4	6479.5	703.0	532.8	523.1	1555.9	6276.5	743.9	5532.6	10163.7
1996	5268.1	1432.1	1496.4	−96.4	8100.2	1176.0	6924.2	31.8	56.6	6899.4	786.1	555.1	545.5	1649.2	6661.9	832.0	5829.9	10549.5
1997	5560.7	1595.6	1554.2	−102.0	8608.5	1240.0	7368.5	24.1	12.2	7380.4	865.8	587.2	577.8	1725.4	7075.0	926.1	6148.9	11022.9
1998	5903.0	1735.3	1613.5	−162.7	9089.1	1310.3	7778.8	18.3	−60.2	7857.3	804.1	624.7	603.1	1762.3	7587.7	1026.4	6561.3	11513.4
1999	6316.9	1884.2	1726.0	−261.4	9665.7	1400.9	8264.8	27.1	−32.5	8324.4	830.2	661.3	628.4	1779.3	7983.8	1107.5	6876.3	12071.4
2000	6801.6	2033.8	1834.4	−380.1	10289.7	1514.2	8775.5	37.0	−94.5	8907.0	781.2	705.8	662.7	1875.5	8632.8	1232.3	7400.5	12565.2
2001	7106.9	1928.6	1958.8	−369.0	10625.3	1604.0	9021.3	51.8	−111.4	9184.5	754.0	733.2	669.0	1958.8	8987.1	1234.8	7752.3	12684.4
2002	7385.3	1925.0	2094.9	−425.0	10980.2	1662.1	9318.1	48.6	−70.1	9436.8	907.2	751.5	721.2	2092.6	9149.5	1050.3	8099.2	12909.7
2003	7764.6	2027.9	2220.8	−501.1	11512.2	1727.2	9785.0	68.0	−12.1	9865.1	1056.4	779.3	758.9	2217.1	9487.6	1000.9	8486.7	13270.0
2004	8257.8	2276.7	2357.4	−614.9	12277.0	1831.7	10445.3	90.0	−6.6	10541.9	1283.3	829.2	817.6	2437.4	10049.2	1046.0	9003.2	13774.0
2005	8790.3	2527.1	2493.7	−715.7	13095.4	1982.0	11113.4	93.5	−33.9	11240.8	1477.7	873.3	873.6	2594.1	10610.3	1208.5	9401.8	14235.6
2006	9297.5	2680.6	2642.2	−762.4	13857.9	2136.0	11721.9	68.5	−215.2	12005.6	1646.5	922.6	940.5	2893.8	11389.8	1352.1	10037.7	14615.2
2007	9744.4	2643.7	2801.9	−709.7	14480.3	2264.4	12215.9	126.4	20.0	12322.3	1529.0	961.4	980.0	3143.8	11995.7	1487.8	10507.9	14876.8
2008	10005.5	2424.8	3003.2	−713.2	14720.3	2363.4	12356.9	173.0	99.1	12430.8	1285.1	988.2	989.4	3262.5	12430.6	1107.6	10995.4	14833.6
2009	9842.9	1878.1	3089.1	−392.2	14417.9	2368.4	12049.5	147.2	72.2	12124.5	1392.6	964.4	967.8	3282.4	12082.1	1144.9	10937.2	14417.9
2010	10201.9	2100.8	3174.0	−518.4	14958.3	2381.6	12576.7	205.9	43.1	12739.5	1740.6	984.1	1001.2	3421.6	12435.2	1191.5	11243.7	14779.4
2011	10711.8	2232.1	3158.7	−568.8	15533.8	2452.6	13081.2	260.7	−53.8	13395.7	1877.7	918.2	1037.2	3628.7	13191.3	1403.9	11787.4	15052.4
2012	11149.6	2475.2	3167.0	−547.2	16244.6	2542.9	13701.7	252.9	−17.0	13971.6	2009.5	950.7	1065.6	3798.0	13743.8	1498.0	12245.8	15470.7
2013	11501.5	2670.0	3125.5	−497.3	16799.7	2646.6	14153.1	257.8	−122.2	14533.1	2102.1	1106.1	1088.0	3898.9	14135.8	1659.1	12476.7	15761.3
2014 [a]	11973.1	2865.1	3232.4	−531.7	17538.9	2758.1	14780.8	258.4	47.3	14991.9	2227.3	1151.2	1103.4	4091.7	14601.7	1898.3	12703.4	16202.6
2015 [a]	12389.4	3071.4	3289.4	−539.6	18210.6	2898.1	15312.5	259.3	69.6	15502.2	2351.2	1193.6	1151.3	4137.2	14943.3	1982.1	12961.2	16672.5

[a]Author's estimates.

**Note:* Some rows may not add up due to rounding.

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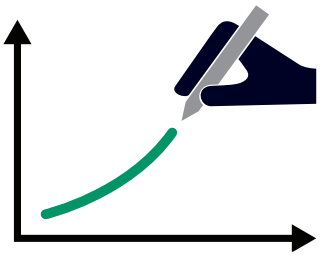

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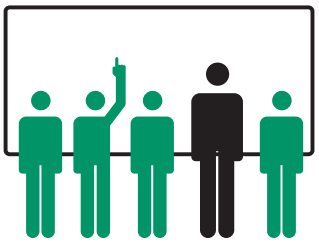

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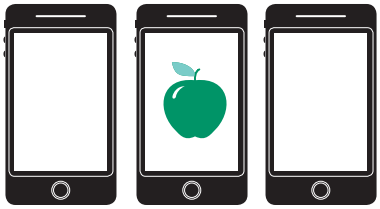

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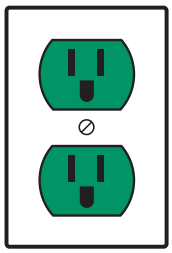

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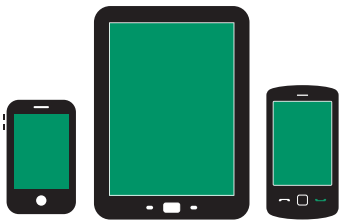

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EIGHTEENTH EDITION

Economics Today

The Macro View

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Thanks for so many years of hard work and loyalty. You remain a valuable member of the team.

—R.L.M.

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Cover Art: Top row (from left to right): Xy/Fotolia; ValentinValkov/Fotolia; Dusan Kostic/Fotolia; ValentinValkov/Fotolia. Middle row (from left to right): Pauws99/Fotolia; JJAVA/Fotolia; Andy Dean/Fotolia; Kovalenko Inna/Fotolia. Bottom row (from left to right): Leungchopan/Fotolia; Monkey Business/Fotolia; Christophe Rio/Fotolia; Cozyta/Fotolia.
Printer/Binder: Courier/Kendallville
Cover Printer: Courier/Kendallville

Library of Congress Cataloging-in-Publication Data

Miller, Roger LeRoy.
Economics today / Roger LeRoy Miller. -- Eighteenth edition.
pages cm
Includes bibliographical references and index.
ISBN 978-0-13-388228-5 (main edition (chapters 1-33))--ISBN 978-0-13-388487-6 (the macro view (chapters 1-18; 32-33))--
ISBN 978-0-13-388507-1 (the micro view (chapters 1-6; 19-33))
1. Economics. 2. Microeconomics. 3. Macroeconomics. I. Title.
HB171.5.M642 2015
330--dc23

2014043493

10 9 8 7 6 5 4 3 2

PEARSON

ISBN 10: 0-13-3884872
ISBN 13: 978-0-13-388487-6

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ONE-SEMESTER COURSE OUTLINE

Macroeconomic Emphasis
The Macro View

1. The Nature of Economics
2. Scarcity and the World of Trade-Offs
3. Demand and Supply
4. Extensions of Demand and Supply Analysis
5. Public Spending and Public Choice
6. Funding the Public Sector
7. The Macroeconomy: Unemployment, Inflation, and Deflation
8. Measuring the Economy's Performance
9. Global Economic Growth and Development
10. Real GDP and the Price Level in the Long Run
11. Classical and Keynesian Macro Analyses
12. Consumption, Real GDP, and the Multiplier
13. Fiscal Policy
14. Deficit Spending and the Public Debt
15. Money, Banking, and Central Banking
16. Domestic and International Dimensions of Monetary Policy
17. Stabilization in an Integrated World Economy
18. Policies and Prospects for Global Economic Growth
32. Comparative Advantage and the Open Economy
33. Exchange Rates and the Balance of Payments

Microeconomic Emphasis
The Micro View

1. The Nature of Economics
2. Scarcity and the World of Trade-Offs
3. Demand and Supply
4. Extensions of Demand and Supply Analysis
5. Public Spending and Public Choice
6. Funding the Public Sector
19. Demand and Supply Elasticity
20. Consumer Choice
21. Rents, Profits, and the Financial Environment of Business
22. The Firm: Cost and Output Determination
23. Perfect Competition
24. Monopoly
25. Monopolistic Competition
26. Oligopoly and Strategic Behavior
27. Regulation and Antitrust Policy in a Globalized Economy
28. The Labor Market: Demand, Supply, and Outsourcing
29. Unions and Labor Market Monopoly Power
30. Income, Poverty, and Health Care
31. Environmental Economics
32. Comparative Advantage and the Open Economy
33. Exchange Rates and the Balance of Payments

Balanced Micro-Macro

1. The Nature of Economics
2. Scarcity and the World of Trade-Offs
3. Demand and Supply
4. Extensions of Demand and Supply Analysis
5. Public Spending and Public Choice
6. Funding the Public Sector
20. Consumer Choice
21. Rents, Profits, and the Financial Environment of Business
22. The Firm: Cost and Output Determination
23. Perfect Competition
24. Monopoly
28. The Labor Market: Demand, Supply, and Outsourcing
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14. Deficit Spending and the Public Debt
15. Money, Banking, and Central Banking
16. Domestic and International Dimensions of Monetary Policy
32. Comparative Advantage and the Open Economy
33. Exchange Rates and the Balance of Payments

PREFACE

This latest edition of *Economics Today—The Macro View* addresses cutting-edge issues while facilitating student learning. The text consistently focuses on demonstrating to students the relevance of economics to *their* own daily lives and on providing them with a variety of ways to evaluate their understanding of fundamental concepts covered in each chapter.

New to This Edition

- **Learning Objectives:** Learning Objectives have been further integrated into every chapter. Each major chapter section is accompanied with a learning objective, which helps to focus student reading comprehension and allows for self-assessment to ensure that students have grasped key concepts.

  All assessment in MyEconLab has also been aligned with Learning Objectives. This integration and alignment makes it simple to include or exclude portions of chapters in both the text and in MyEconLab.
- **Self Checks:** Self Checks appear at the end of every Learning Objective section. Self Checks consist of several fill-in-the-blank questions that allow students to check their understanding of the key concepts they just read before moving on. All answers are available in MyEconLab.
- **Fundamental Points:** At the end of every chapter, new numbered feature, *Fundamental Points*, provides students with a quick rundown of the most salient concepts they must understand for each chapter.
- **References:** Chapter endnotes now provide references and citations for all in-text examples for further exploration by instructors and students.

And New to MyEconLab

- **Videos:** Each chapter contains an Issues & Applications feature, which ties key chapter concepts to a real world example. Each Issues & Applications feature is now accompanied by a brief video that expands on the key point and real world applications of the feature. The videos contain visuals such as photos and graphs, which help to crystallize the key take-aways for the student.
- **Figure Animations:** Figure animations provide a step-by-step walk-through of select figures. Seventy percent of all figures are animated. Figure animations have been updated to reflect changes to the 18th edition.
- **Graphs Updated with Real-Time Data from FRED®:** Data graphs in the eText are continually updated with the latest data from FRED which is a comprehensive, up-to-date data set from the Federal Reserve Bank of St. Louis. Students can display a pop-up graph that shows new data plotted in the graph. The goal of this digital feature is to provide students with the most current macro data available so that they can observe the changing impacts of these important variables on the economy.

  Real-time data analysis exercises in MyEconLab also communicate directly with the Federal Reserve Bank of St. Louis's FRED® site and automatically update as new data are available. These exercises allow students to practice with data to better understand the current economic environment.

  Assessments using current macro data help students understand changes in economic variables and their impact on the economy. Real-Time Data Analysis exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED® site and update as new data are available.
- **Dynamic Study Modules:** Dynamic Study Modules, available from within MyEconLab, continuously assess student performance on key topics in real time, and

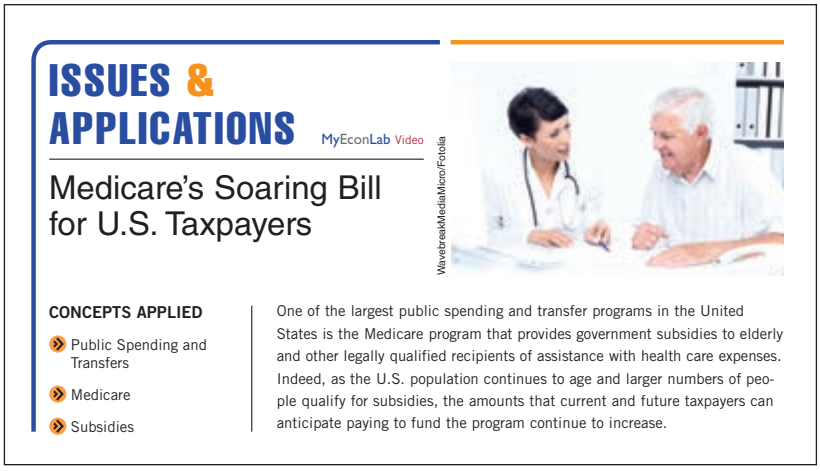
provide additional and personalized practice content. Dynamic Study Modules exist for every chapter and are available on all mobile devices for on-the-go studying.

- **Digital Interactives:** *Digital Interactives* help to facilitate experiential learning through a set of interactives focused on core economic concepts. Fueled by data, decision-making, and personal relevance, each interactive progresses through a series of levels that build on foundational concepts, enabling a new immersive learning experience. The flexible and modular set-up of each interactive makes digital interactives suitable for classroom presentation, auto-graded homework, or both.
- **Learning Catalytics ®:** Learning Catalytics® generate classroom discussion, guides lectures, and promotes peer-to-peer learning with real-time analytics. Now students can use any device to interact in the classroom, engage with content and even draw and share graphs.

Increased Emphasis on Public Policy

Many modern public policy issues in economics that are highlighted throughout the text are particularly relevant to today's students. These include:

- An evaluation of the **incentive effects** of student loans confronted by recent college graduates: Chapter 1 considers whether the substantial run-up of student loan debts has been rational for self-interested individuals who have pursued college and university degrees.
- An assessment of the soaring taxpayer cost of **Medicare subsidies** : Chapter 5 provides an analysis of likely expenses of the Medicare program to be faced by current students who will have to foot the bill as future taxpayers.
- A consideration of how a reduction in **consumption spending** of services has hampered the recovery from the 2007–2009 business contraction: Chapter 12 documents how the slow growth of household expenditures on services has contributed to the weak economic growth confronted by recent degree earners.



What's New in *The Macro View*

In the macro portion of the text, coverage of the following has been included:

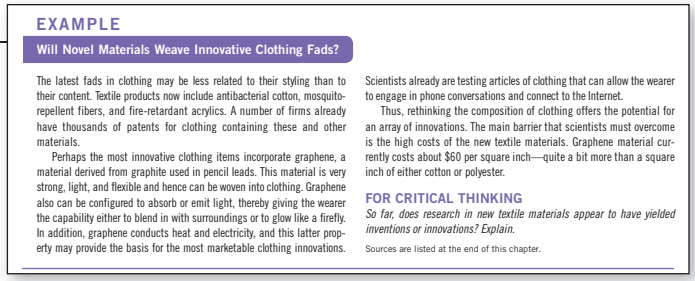
- Chapter 7 discusses the gradual decline in employment of males generated by a significant decline in male **labor force participation** .
- Chapter 8 explores important changes in the measurement of **investment** arising from the government's decision to include intangible investments, such as research and development expenditures and investments in intellectual property. This chapter also explains a **gross output** measure of domestic production of goods and services being tracked by the government.
- Chapter 9 evaluates the implications for U.S. **economic growth** of immigration policies that make it much easier for foreign sports stars to legally work in the United States than is the case for foreign scientists and engineers.
- Chapter 13 explains how differences in **impact ☒scal multipliers versus cumulative ☒scal multipliers** help to explain why substantial increases in discretionary government spending since 2008 have generated relatively small net increases in U.S. economic activity.

MAKING THE CONNECTION— FROM THE CLASSROOM TO THE REAL WORLD

Economics Today—The Macro View provides current examples with critical analysis questions that show students how economic theory applies to their diverse interests and lives. For the Eighteenth Edition, **more than 95 percent** of the examples are new.

DOMESTIC TOPICS AND EVENTS are presented through thought-provoking discussions, such as:

- Will Novel Materials Weave Innovative Clothing Fads?
- A Shift toward More Part-Time Employment
- A U.S. Comparative Advantage in Trash



EXAMPLE

Will Novel Materials Weave Innovative Clothing Fads?

The latest fads in clothing may be less related to their styling than to their content. Textile products now include antibacterial cotton, mosquito-repellent fibers, and fire-retardant acrylics. A number of firms already have thousands of patents for clothing containing these and other materials.

Perhaps the most innovative clothing items incorporate graphene, a material derived from graphite used in pencil leads. This material is very strong, light, and flexible and hence can be woven into clothing. Graphene also can be configured to absorb or emit light, thereby giving the wearer the capability either to blend in with surroundings or to glow like a firefly. In addition, graphene conducts heat and electricity, and this latter property may provide the basis for the most marketable clothing innovations. Scientists already are testing articles of clothing that can allow the wearer to engage in phone conversations and connect to the Internet.

Thus, rethinking the composition of clothing offers the potential for an array of innovations. The main barrier that scientists must overcome is the high costs of the new textile materials. Graphene material currently costs about $60 per square inch—quite a bit more than a square inch of either cotton or polyester.

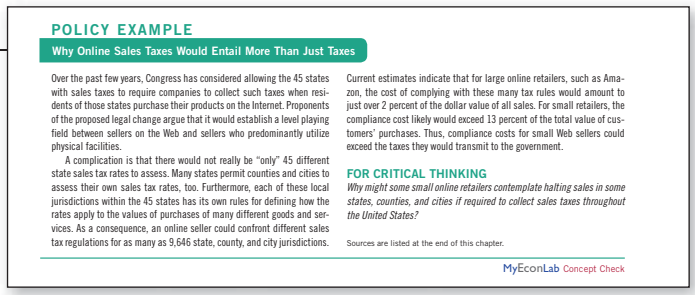
FOR CRITICAL THINKING

So far, does research in new textile materials appear to have yielded inventions or innovations? Explain.

Sources are listed at the end of this chapter.

IMPORTANT POLICY QUESTIONS help students understand public debates, such as:

- Why Online Sales Taxes Would Entail More Than Just Taxes
- Economic Policy Uncertainty as a Source of Shocks
- A Government Agency's Ideas for Reducing the Federal Deficit



POLICY EXAMPLE

Why Online Sales Taxes Would Entail More Than Just Taxes

Over the past few years, Congress has considered allowing the 45 states with sales taxes to require companies to collect such taxes when residents of those states purchase their products on the Internet. Proponents of the proposed legal change argue that it would establish a level playing field between sellers on the Web and sellers who predominantly utilize physical facilities.

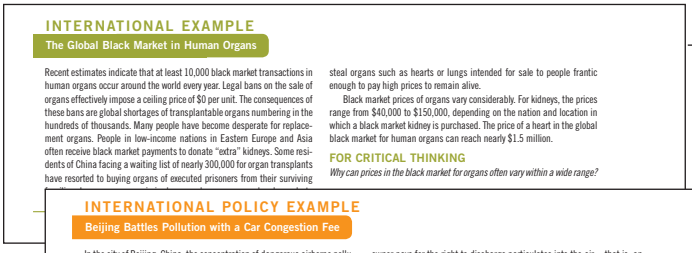
A complication is that there would not really be "only" 45 different state sales tax rates to assess. Many states permit counties and cities to assess their own sales tax rates, too. Furthermore, each of these local jurisdictions within the 45 states has its own rules for defining how the rates apply to the values of purchases of many different goods and services. As a consequence, an online seller could confront different sales tax regulations for as many as 9,646 state, county, and city jurisdictions. Current estimates indicate that for large online retailers, such as Amazon, the cost of complying with these many tax rules would amount to just over 2 percent of the dollar value of all sales. For small retailers, the compliance cost likely would exceed 13 percent of the total value of customers' purchases. Thus, compliance costs for small Web sellers could exceed the taxes they would transmit to the government.

FOR CRITICAL THINKING

Why might some small online retailers contemplate halting sales in some states, counties, and cities if required to collect sales taxes throughout the United States?

Sources are listed at the end of this chapter.

MyEconLab Concept Check



INTERNATIONAL EXAMPLE

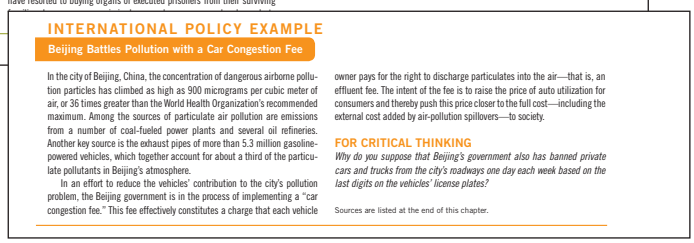
The Global Black Market in Human Organs

Recent estimates indicate that at least 10,000 black market transactions in human organs occur around the world every year. Legal bans on the sale of organs effectively impose a ceiling price of $0 per unit. The consequences of these bans are global shortages of transplantable organs numbering in the hundreds of thousands. Many people have become desperate for replacement organs. People in low-income nations in Eastern Europe and Asia often receive black market payments to donate "extra" kidneys. Some residents of China facing a waiting list of nearly 300,000 for organ transplants have resorted to buying organs of executed prisoners from their surviving steal organs such as hearts or lungs intended for sale to people frantic enough to pay high prices to remain alive.

Black market prices of organs vary considerably. For kidneys, the prices range from $40,000 to $150,000, depending on the nation and location in which a black market kidney is purchased. The price of a heart in the global black market for human organs can reach nearly $1.5 million.

FOR CRITICAL THINKING

Why can prices in the black market for organs often vary within a wide range?



INTERNATIONAL POLICY EXAMPLE

Beijing Battles Pollution with a Car Congestion Fee

In the city of Beijing, China, the concentration of dangerous airborne pollution particles has climbed as high as 900 micrograms per cubic meter of air, or 36 times greater than the World Health Organization's recommended maximum. Among the sources of particulate air pollution are emissions from a number of coal-fueled power plants and several oil refineries. Another key source is the exhaust pipes of more than 5.3 million gasoline-powered vehicles, which together account for about a third of the particulate pollutants in Beijing's atmosphere.

In an effort to reduce the vehicles' contribution to the city's pollution problem, the Beijing government is in the process of implementing a "car congestion fee." This fee effectively constitutes a charge that each vehicle owner pays for the right to discharge particulates into the air—that is, an effluent fee. The intent of the fee is to raise the price of auto utilization for consumers and thereby push this price closer to the full cost—including the external cost added by air-pollution spillovers—to society.

FOR CRITICAL THINKING

Why do you suppose that Beijing's government also has banned private cars and trucks from the city's roadways one day each week based on the last digits on the vehicles' license plates?

Sources are listed at the end of this chapter.

GLOBAL AND INTERNATIONAL POLICY EXAMPLES emphasize the continued importance of international perspectives and policy, such as:

- The Global Black Market in Human Organs
- Beijing Battles Pollution with a Car Congestion Fee
- French Soccer Teams Confront Dynamic Tax Analysis

HELPING STUDENTS FOCUS AND THINK CRITICALLY

New and revised pedagogical tools engage students and help them focus on the central ideas in economics today.


Global Economic Growth and Development

9

When a U.S. professional basketball team's managers seek a new "big man" or a new "point guard," those managers do not consider just the latest U.S. college stars. The team's managers also look abroad, to Asia and to Europe, for talented players. Twenty percent of the time, outside the United States is where they find those players. Likewise, U.S. businesses searching for the best scientists and engineers also search abroad. In contrast to basketball managers, however, these firms' managers confront legal limits on how many foreign scientists and engineers they can recruit. U.S. immigration laws permit unlimited immigration by athletes with "extraordinary abilities," but those laws constrain the ability of highly trained scientists and engineers to enter the nation to work. In this chapter, you will learn about the implications of these immigration rules for U.S. *economic growth.*

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

9.1 Define economic growth and explain the importance of economic growth

9.2 Explain why productivity growth, saving are crucial for maintaining economic growth

9.3 Understand the basis of new growth theory

9.4 Evaluate how immigration and property rights influence economic growth

9.5 Discuss the fundamental factors that contribute to a nation's economic development

MyEconLab helps you master each objective and study more efficiently. See the end of the chapter for details.

CHAPTER OPENERS link to the **ISSUES & APPLICATIONS** feature at the end of each chapter. A current application captures students' attention at the beginning of the chapter and is revisited in more depth at the end using the concepts they have just learned.


ISSUES & APPLICATIONS

MyEconLab Video

Immigration Rules Favor Sports Spectacles over Economic Growth

CONCEPTS APPLIED

- Economic Growth
- Labor Productivity
- Productivity Growth

U.S. immigration authorities, operating under rules established by Congress, make it easy for foreign sports stars to work in the United States. At the same time, these authorities enforce rules that limit opportunities for foreign scientists and engineers to join the U.S. labor force. These facts have implications for future U.S. economic growth.

1. Why do the efforts of foreign scientists and engineers contribute *much more* to labor productivity and economic growth than the exertions of foreign sports stars?
2. In your view, are rules that hinder immigration of highly trained scientists and engineers consistent with the policy recommendations of new growth theory?

Web Resources

1. Learn how people with "extraordinary ability" obtain O-1 and P-1 visas in the Web Links in MyEconLab.
2. To view a summary of the many requirements that must be satisfied before a foreign worker qualifies for an H1-B visa, see the Web Links in MyEconLab.

MyEconLab

For more questions on this chapter's Issues & Applications, go to MyEconLab.

In the Study Plan for this chapter, select Section I: Issues and Applications.

Sources are listed at the end of this chapter.

CRITICAL ANALYSIS QUESTIONS AND WEB RESOURCES provide further opportunities for discussion and exploration. Suggested answers for Critical Analysis questions are in the ***INSTRUCTOR'S MANUAL***. Visit MyEconLab for additional practice and assignable questions for each chapter topic.

FUNDAMENTAL POINTS are placed at the beginning of chapter summaries to emphasize the key concepts within the chapter.

Fundamental Points

1. Economic growth is the annual rate of increase in per capita real GDP.
2. Improvements in labor productivity and a higher saving rate generate a higher rate of economic growth.
3. The key implication of new growth theory is that the greater the rewards from adoption of new technologies, the greater the pace of technological innovation.
4. Economists continue to disagree about the implications of immigration for economic growth, but one area of agreement is that failing to clearly define and protect property rights gives individuals less incentive to take risks, which reduces economic growth.
5. Historical evidence indicates nations typically pass through three stages of economic development: the agricultural stage, the manufacturing stage, and the service-sector stage, with rates of economic growth diminishing at each state.

The **END-OF-CHAPTER SUMMARY** shows students what they need to know and where to go in MyEconLab for more practice.

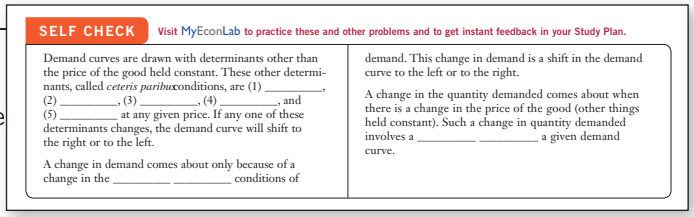
A VARIETY OF END-OF-CHAPTER PROBLEMS offer students opportunities to test their knowledge and review chapter concepts. Answers for odd-numbered questions are provided in MyEconLab, and **ALL QUESTIONS** are assignable in MyEconLab.

WHAT YOU SHOULD KNOW

Here is what you should know after reading this chapter. MyEconLab will help you identify what you know, and where to go when you need to practice.

LEARNING OBJECTIVES	KEY TERMS	WHERE TO GO TO PRACTICE
5.1 Explain how market failures such as externalities might justify economic functions of government *A market failure occurs when too many or too few resources are directed to a specific form of economic activity. One type of market failure is an externality, which is a spillover effect on third parties not directly involved in producing or purchasing a good or service. In the case of a negative externality, firms do not pay for the costs arising from spillover effects that their production of a good imposes on others, so they produce too much of the good in question. In the case of a positive externality, buyers fail to take into account the benefits that their consumption of a good yields to others, so they purchase too little of the good.*	market failure, 107 externality, 108 third parties, 108 property rights, 108 effluent fee, 109 **Key Figure** Figure 5-1, 108	• MyEconLab Study Plan 5.1 • Animated Figure 5-1
5.2 Distinguish between private goods and public goods and explain the nature of the free-rider problem *Private goods are subject to the principle of rival consumption, meaning that one person's consumption of such a good reduces the amount available for another person to consume. In contrast, public goods can be consumed by many people simultaneously at no additional opportunity cost and with no reduction in quality or quantity. In addition, no individual can be excluded from the benefits of a public good even if that person fails to help pay for it.*	antitrust legislation, 112 monopoly, 112 private goods, 112 principle of rival consumption, 112 public goods, 112 free-rider problem, 113	• MyEconLab Study Plan 5.2

SELF CHECKS encourage student interaction and provide an opportunity for them to check their understanding before moving on. Answers are in MyEconLab, and more practice questions can be found there as well.

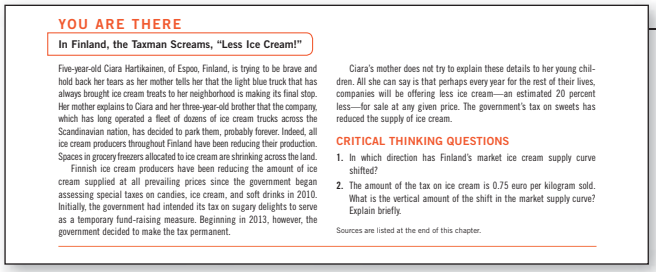


SELF CHECK Visit MyEconLab to practice these and other problems and to get instant feedback in your Study Plan.

Demand curves are drawn with determinants other than the price of the good held constant. These other determinants, called *ceteris paribus* conditions, are (1) _____, (2) _____, (3) _____, (4) _____, and (5) _____ at any given price. If any one of these determinants changes, the demand curve will shift to the right or to the left.

A change in demand comes about only because of a change in the _____ _____ conditions of demand. This change in demand is a shift in the demand curve to the left or to the right.

A change in the quantity demanded comes about when there is a change in the price of the good (other things held constant). Such a change in quantity demanded involves a _____ _____ a given demand curve.



YOU ARE THERE

In Finland, the Taxman Screams, "Less Ice Cream!"

Five-year-old Ciara Hartikainen, of Espoo, Finland, is trying to be brave and hold back her tears as her mother tells her that the light blue truck that has always brought ice cream treats to her neighborhood is making its final stop. Her mother explains to Ciara and her three-year-old brother that the company, which has long operated a fleet of dozens of ice cream trucks across the Scandinavian nation, has decided to park them, probably forever. Indeed, all ice cream producers throughout Finland have been reducing their production. Spaces in grocery freezers allocated to ice cream are shrinking across the land.

Finnish ice cream producers have been reducing the amount of ice cream supplied at all prevailing prices since the government began assessing special taxes on candies, ice cream, and soft drinks in 2010. Initially, the government had intended its tax on sugary delights to serve as a temporary fund-raising measure. Beginning in 2013, however, the government decided to make the tax permanent.

Ciara's mother does not try to explain these details to her young children. All she can say is that perhaps every year for the rest of their lives, companies will be offering less ice cream—an estimated 20 percent less—for sale at any given price. The government's tax on sweets has reduced the supply of ice cream.

CRITICAL THINKING QUESTIONS

1. In which direction has Finland's market ice cream supply curve shifted?
2. The amount of the tax on ice cream is 0.75 euro per kilogram sold. What is the vertical amount of the shift in the market supply curve? Explain briefly.

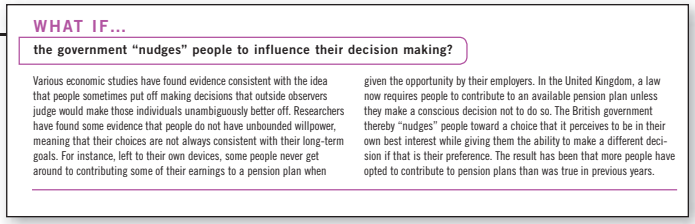
Sources are listed at the end of this chapter.

YOU ARE THERE discusses real people making real personal and business decisions. Topics include:

- In Finland, the Taxman Screams, "Less Ice Cream!"
- In Kenya, Mobile-Phone Airtime Is Money
- Do Social Security Payments Boost Real GDP?

WHAT IF... boxes can be found in every chapter. This feature aims to help students think critically about important real-world questions through the eyes of an economist.

- What If... the government "nudges" people to influence their decision making?
- What if... the federal government seeks to generate increases in aggregate demand and equilibrium levels of real GDP per year through public spending on all-electric and hybrid vehicles?
- What if... the Fed were to act as lender of *first* resort?



WHAT IF...

the government "nudges" people to influence their decision making?

Various economic studies have found evidence consistent with the idea that people sometimes put off making decisions that outside observers judge would make those individuals unambiguously better off. Researchers have found some evidence that people do not have unbounded willpower, meaning that their choices are not always consistent with their long-term goals. For instance, left to their own devices, some people never get around to contributing some of their earnings to a pension plan when given the opportunity by their employers. In the United Kingdom, a law now requires people to contribute to an available pension plan unless they make a conscious decision not to do so. The British government thereby "nudges" people toward a choice that it perceives to be in their own best interest while giving them the ability to make a different decision if that is their preference. The result has been that more people have opted to contribute to pension plans than was true in previous years.

MYECONLAB: PRACTICE, ENGAGE, AND ASSESS

MyEconLab is a powerful assessment and tutorial system that works hand-in-hand with *Economics Today.* MyEconLab includes comprehensive homework, quiz, test, and tutorial options, allowing instructors to manage all assessment needs in one program.

For the Instructor

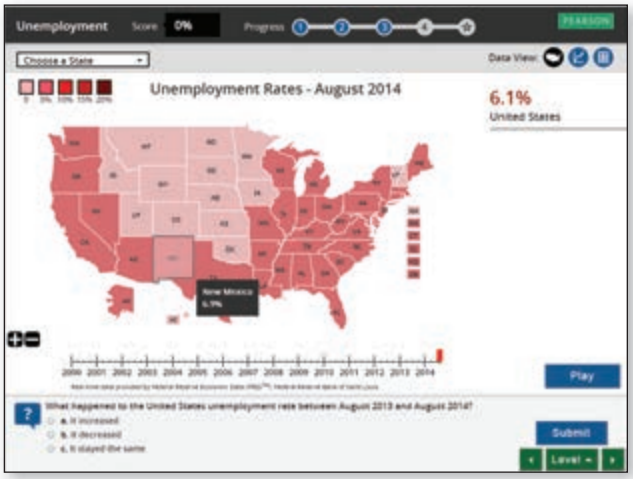
- Instructors can select a prebuilt course option, which creates a ready-to-go course with homework and quizzes already set up. Instructors can also choose to create their own assignments and add them to the preloaded course. Or, instructors can start from a blank course.
- All end-of-chapter problems are assignable and automatically graded in MyEconLab and, for most chapters, additional algorithmic, draw-graph, and numerical exercises are available to choose among.
- Instructors can also choose questions from the Test Bank and use the Custom Exercise Builder to create their own problems for assignment.
- The powerful Gradebook records each student's performance and time spent on the Tests and Study Plan, and generates reports by student or by chapter.

MyEconLab Real-Time Data Analysis

We offer real-time data exercises that students can complete in MyEconLab.

- **Real-Time Data Analysis Exercises** are marked with and allow instructors to assign problems that use up-to-the-minute data. Each RTDA exercise loads the appropriate and most currently available data from FRED, a comprehensive and up-to-date data set maintained by the Federal Reserve Bank of St. Louis. Exercises are graded based on that instance of data, and feedback is provided.
- In the eText available in MyEconLab, select figures labeled Real-Time Data now include a pop-up graph updated with real-time data from FRED.
- Current News Exercises provide a turn-key way to assign gradable news-based exercises in MyEconLab. Every week, Pearson scours the news and finds micro- and macroeconomic news stories (articles and videos), creates an accompanying exercise, and then posts it all to MyEconLab courses for possible assignment. Assigning and grading current news-based exercises that deal with the latest micro and macro events and policy issues has never been more convenient.
- Economics in the News is a turn-key solution to bringing current news into the classroom. Updated weekly during the academic year, this feature posts news articles with questions for further discussion.
- Experiments in MyEconLab are a fun and engaging way to promote active learning and mastery of important economic concepts. Pearson's experiments program is flexible and easy for instructors and students to use.
  - Single-player experiments allow your students to play an experiment against virtual players from anywhere at any time with an Internet connection.
  - Multiplayer experiments allow you to assign and manage a real-time experiment with your class.

  In both cases, pre- and post-questions for each experiment are available for assignment in MyEconLab.



Digital Interactives help to facilitate experiential learning through a set of interactives focused on core economic concepts. Fueled by data, decision-making, and personal relevance, each interactive progresses through a series of levels that build on foundational concepts, enabling a new immersive learning experience. The flexible and modular set-up of each interactive makes digital interactives suitable for classroom presentation, auto-graded homework, or both.

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SUPPLEMENTAL RESOURCES

Student and instructor materials provide tools for success.

Test Bank (Parts 1, 2, and 3) offer more than 10,000 multiple-choice and short answer questions, all of which are available in computerized format in the TestGen software. The significant revision process by author Jim Lee of Texas A&M University–Corpus Christi and accuracy reviewer Conor Molloy of Suffolk County Community College ensure the accuracy of problems and solutions in these revised and updated Test Banks. The Test Bank author has connected the questions to the general knowledge and skill guidelines found in the Association to Advance Collegiate Schools of Business (AACSB) assurance of learning standards.

The Instructor's Manual, prepared by Jim Lee of Texas A&M University–Corpus Christi, includes lecture-ready examples; chapter overviews; objectives; outlines; points to emphasize; answers to all critical analysis questions; answers to all end-of-chapter problems; suggested answers to "You Are There" questions; and selected references.

PowerPoint lecture presentations for each chapter, revised by Jim Lee of Texas A&M University—Corpus Christi, include figures, key terms, and concepts from the text.

Clicker PowerPoint slides allow professors to instantly quiz students in class and receive immediate feedback through Clicker Response System technology.

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ACKNOWLEDGMENTS

I am the most fortunate of economics textbook writers, for I receive the benefit of literally hundreds of suggestions from those of you who use *Economics Today*. Some professors have been asked by my publisher to participate in a more detailed reviewing process of this edition. I list them below. I hope that each one of you so listed accepts my sincere appreciation for the fine work that you have done.

Giuliana Andreopoulos Campanelli, *William Paterson University*
Kenneth Ardon, *Salem State University*
Kevin Beckwith, *Salem State University*
Barbara Blake Gonzalez, *Tidewater Community College*
Theologos Homer Bonitsis, *New Jersey Institute of Technology*
Walter Boyle Fayetteville, *Technical Community College*
James Buck, *East Carolina University*
Bill Burrows Lane, *Community College*
Joel Caron Salem, *State University*
Xudong Chen, *Baldwin Wallace University*
Joel Dalafave, *Bucks County Community College*
Tanya Downing, *Cuesta College*
Stephen Downing, *Danville Area Community College*
Brad Duerson, *DMACC*
Patricia Euzent, *University of Central Florida*
Jamie Falcon, *UMBC*
Elizabeth Faunce, *Immaculata University*
Maurita Fawls, *Portland Community College*
Julia Frankland, *Malone University*
Debora Frazier, *Walla Walla Community College*
George Goerner, *Mohawk Valley Community College*
Dennis Heiner, *College of Southern Idaho*
Stella Hofrenning, *Augsburg College*
Cedric Howie, *Schoolcraft College*
Peng Huang, *Ripon College*
Lillian Kamal, *University of Hartford*
Mohammad Kasraian, *Milwaukee Area Technical College*
Sukanya Kemp, *University of Akron*
James Leaman, *Eastern Mennonite University*
Bozena Leven, *TCNJ*
Jane Lopus, *Cal State University, East Bay*
Michael Machiorlatti, *Oklahoma City Community College*
John McArthur, *Wofford College*
Jeremy McCracken, *Tri County Technical College*
Charles Meyrick, *Housatonic Community College*
Ida Mirzaie, *Ohio State University*
Kevin Murphy, *Oakland University*
Tomi Ovaska, *Youngstown State University*
Lawrence Overlan, *Wentworth*
Joseph Patton, *Lynn University*
Teddi Paulson, *University of Jamestown*
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Chris Phillips, *Somerset Community College*
Rod Raehsler, *Clarion University*
Paul Schoofs, *Ripon College*
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Jeff Shmidl, *Laramie County Community College*
Daniel Strang, *SUNY Geneseo*
Jialu Streeter, *Allegheny College*
Manjuri Talukdar, *Northern Illinois University*
Ian Taylor, *Tidewater Community College*
Ezgi Uzel, *SUNY Maritime College*
Reuben Veliz, *Marymount California University*
Don Weimer, *Milwaukee Area Technical College*
Oxana Wieland, *University of Minnesota Crookston*
Erik Zemljic, *Kent State University*

I also thank the reviewers of previous editions:

Rebecca Abraham, Cinda J. Adams, Esmond Adams, John Adams, Bill Adamson, Carlos Aguilar, John R. Aidem, Mohammed Akacem, Ercument Aksoy, M. C. Alderfer, John Allen, Ann Al-Yasiri, Charles Anderson, Leslie J. Anderson, Fatma W. Antar, Len Anyanwu, Rebecca Arnold, Mohammad Ashraf, Ali A. Ataiifar, Aliakbar Ataiifar, Leonard Atencio, John Atkins, Glen W. Atkinson, Thomas R. Atkinson, James Q. Aylesworth, John Baffoe-Bonnie, Kevin Baird, Maurice B. Ballabon, Charley Ballard, G. Jeffrey Barbour, Robin L. Barlett, Daniel Barszcz, Kari Battaglia, Robert Becker, Charles Beem, Glen Beeson, Bruce W. Bellner, Daniel K. Benjamin, Emil Berendt, Charles Berry, Abraham Bertisch, John Bethune, R. A. Blewett, Scott Bloom, John Bockino, M. L. Bodnar, Mary Bone, Karl Bonnhi, Thomas W. Bonsor, John M. Booth, Wesley F. Booth, Thomas Borcherding, Melvin Borland, Tom Boston, Barry Boyer, Maryanna Boynton, Ronald Brandolini, Fenton L. Broadhead, Elba Brown, William Brown, Michael Bull, Maureen Burton, Conrad P. Caligaris, Kevin Carey, James Carlson, Robert Carlsson, Dancy R. Carr, Scott Carson, Doris Cash, Thomas H. Cate, Richard J. Cebula, Catherine Chambers, K. Merry Chambers, Richard Chapman, Ronald Cherry, Young Back Choi, Marc Chopin, Carol Cies, Joy L. Clark, Curtis Clarke, Gary Clayton, Marsha Clayton, Dale O. Cloninger, Warren L. Coats, Ed Coen, Pat Conroy, James Cox, Stephen R. Cox, Eleanor D. Craig, Peggy Crane, Jerry Crawford, Patrick M. Crowley, Joanna Cruse, John P. Cullity, Will Cummings, Thomas Curtis, Margaret M. Dalton, Andrew J. Dane, Mahmoud Davoudi, Diana Denison, Edward Dennis, Julia G. Derrick, Sowjanya Dharmasankar, Carol Dimamro, William Dougherty, Barry Duman, Diane Dumont, Floyd Durham, G. B. Duwaji, James A. Dyal, Ishita Edwards, Robert P. Edwards, Alan E. Ellis, Miuke Ellis, Steffany Ellis, Frank Emerson, Carl Enomoto, Zaki Eusufzai, Sandy Evans, John L. Ewing-Smith, Frank Falero, Frank Fato, Abdollah Ferdowsi, Grant Ferguson, Victoria L. Figiel, Mitchell Fisher, David Fletcher, James Foley, John Foreman, Diana Fortier, Ralph G. Fowler, Arthur Friedberg, Peter Frost, Timothy S. Fuerst, Tom Fullerton, E. Gabriel, James Gale, Hamilton Galloway, Byron Gangnes, Frank Garland, Peter C. Garlick, Steve Garner, Neil Garston, Alexander Garvin, Joe Garwood, Doug Gehrke, Robert Gentenaar, J. P. Gilbert, Otis Gilley, Frank Glesber, Jack Goddard, Michael G. Goode, Allen C. Goodman, Richard J. Gosselin, Paul Graf, Anthony J. Greco, Edward Greenberg, Gary Greene, Peter A. Groothuis, Philip J. Grossman, Nicholas Grunt, William Gunther, Kwabena Gyimah-Brempong, Demos Hadjiyanis, Reza G. Hamzaee, Martin D. Haney, Mehdi Haririan, Ray Harvey,

Michael J. Haupert, E. L. Hazlett, Sanford B. Helman, William Henderson, Robert Herman, Gus W. Herring, Charles Hill, John M. Hill, Morton Hirsch, Benjamin Hitchner, Charles W. Hockert, R. Bradley Hoppes, James Horner, Grover Howard, Nancy Howe-Ford, Calvin Hoy, Yu-Mong Hsiao, Yu Hsing, James Hubert, George Hughes, Joseph W. Hunt Jr., Scott Hunt, John Ifediora, R. Jack Inch, Christopher Inya, Tomotaka Ishimine, E. E. Jarvis, Ricot Jean, Parvis Jenab, Allan Jenkins, John Jensel, Mark Jensen, S. D. Jevremovic, J. Paul Jewell, Nancy Jianakoplos, Frederick Johnson, David Jones, Lamar B. Jones, Paul A. Joray, Daniel A. Joseph, Craig Justice, M. James Kahiga, Septimus Kai Kai, Devajyoti Kataky, Timothy R. Keely, Ziad Keilany, Norman F. Keiser, Brian Kench, Randall G. Kesselring, Alan Kessler, E. D. Key, Saleem Khan, M. Barbara Killen, Bruce Kimzey, Terrence Kinal, Philip G. King, E. R. Kittrell, David Klingman, Charles Knapp, Jerry Knarr, Tori Knight, Faik Koray, Janet Koscianski, Dennis Lee Kovach, Marie Kratochvil, Richard W. Kreissle, Peter Kressler, Paul J. Kubik, Michael Kupilik, Margaret Landman, Richard LaNear, Larry Landrum, Keith Langford, Theresa Laughlin, James M. Leaman, Anthony T. Lee, Jim Lee, Loren Lee, Bozena Leven, Donald Lien, George Lieu, Stephen E. Lile, Lawrence W. Lovick, Marty Ludlum, Laura Maghoney, G. Dirk Mateer, Robert McAuliffe, James C. McBrearty, Howard J. McBride, Bruce McClung, John McDowell, E. S. McKuskey, James J. McLain, Kevin McWoodson, John L. Madden, Mary Lou Madden, John Marangos, Dan Marburger, Glen Marston, John M. Martin, Paul J. Mascotti, James D. Mason, Paul M. Mason, Tom Mathew, Warren Matthews, Akbar Marvasti, Pete Mavrokordatos, Fred May, G. Hartley Mellish, Mike Melvin, Diego Mendez-Carbajo, Dan C. Messerschmidt, Michael Metzger, Herbert C. Milikien, Joel C. Millonzi, Glenn Milner, Daniel Mizak, Khan Mohabbat, Thomas Molloy, William H. Moon, Margaret D. Moore, William E. Morgan, Stephen Morrell, Irving Morrissett, James W. Moser, Thaddeaus Mounkurai, Martin F. Murray, Densel L. Myers, George L. Nagy, Solomon Namala, Ronald M. Nate, Jerome Neadly, James E. Needham, Claron Nelson, Douglas Nettleton, William Nook, Gerald T. O'Boyle, Greg Okoro, Dr. Larry Olanrewaju, Richard E. O'Neill, Lucian T. Orlowski, Diane S. Osborne, Joan Osborne, Melissa A Osborne, James O'Toole, Benny E. Overton, Jan Palmer, Zuohong Pan, Gerald Parker, Ginger Parker, Randall E. Parker, Mohammed Partapurwala, Kenneth Parzych, Elizabeth Patch, Norm Paul, Wesley Payne, Raymond A. Pepin, Martin M. Perline, Timothy Perri, Jerry Petr, Maurice Pfannesteil, Van Thi Hong Pham, James Phillips, Raymond J. Phillips, I. James Pickl, Bruce Pietrykowski, Dennis Placone, Mannie Poen, William L. Polvent, Robert Posatko, Greg Pratt, Leila J. Pratt, Steven Pressman, Rick Pretzsch, Reneé Prim, Robert E. Pulsinelli, Rod D. Raehsler, Kambriz Raffiee, Sandra Rahman, Jaishankar Raman, John Rapp, Richard Rawlins, Gautam Raychaudhuri, Ron Reddall, Mitchell Redlo, Charles Reichhelu, Robert S. Rippey, Charles Roberts, Ray C. Roberts, Leila Angelica Rodemann, Richard Romano, Judy Roobian-Mohr, Duane Rosa, Richard Rosenberg, Larry Ross, Barbara Ross-Pfeiffer, Marina Rosser, Philip Rothman, John Roufagalas, Stephen Rubb, Henry Ryder, Lewis Sage, Basel Saleh, Patricia Sanderson, Thomas N. Schaap, William A. Schaeffer, William Schamoe, David Schauer, A. C. Schlenker, David Schlow, Scott J. Schroeder, William Scott, Dan Segebarth, Paul Seidenstat, Swapan Sen, Augustus Shackelford, Richard Sherman Jr., Liang-rong Shiau, Gail Shields, David Shorow, Vishwa Shukla, R. J. Sidwell, Jonathan Silberman, David E. Sisk, Alden Smith, Garvin Smith, Howard F. Smith, Lynn A. Smith, Phil Smith, William Doyle Smith, Brian Sommer, Lee Spector, George Spiva, Richard L. Sprinkle, Alan Stafford, Amanda Stallings-Wood, Herbert F. Steeper, Diane L. Stehman, Columbus Stephens, William Stine, Allen D. Stone, Osman Suliman, J. M. Sullivan, Rebecca Summary, Terry Sutton, Joseph L. Swaffar, Thomas Swanke, Manjuri Talukdar, Frank D. Taylor, Daniel Teferra, Lea Templer, Gary Theige, Dave Thiessen, Robert P. Thomas, Deborah Thorsen, Richard Trieff, George Troxler, William T. Trulove, William N. Trumbull, Arianne K. Turner, Kay Unger, Anthony Uremovic, John Vahaly, Jim Van Beek, David Van Hoose, Lee J. Van Scyoc, Roy Van Til, Sharmila Vishwasrao, Craig Walker, Robert F. Wallace, Henry C. Wallich, Milledge Weathers, Ethel C. Weeks, Roger E. Wehr, Robert G. Welch, Terence West, James Wetzel, Wylie Whalthall, James H. Wheeler, Everett E. White, Michael D. White, Mark A. Wilkening, Raburn M. Williams, James Willis, George Wilson, Travis Wilson, Mark Wohar, Ken Woodward, Tim Wulf, Peter R. Wyman, Whitney Yamamura, Donald Yankovic, Alex Yguado, Paul Young, Shik Young, Mohammed Zaheer, Ed Zajicek, Charles Zalonka, Sourushe Zandvakili, Paul Zarembka, George K. Zestos, William J. Zimmer Jr.

As always, a revision of *Economics Today* requires me to put in the latest data at the last minute. If I did not have such an incredible editorial and production team, I wouldn't be able to do so. I do have a fantastic team both at the publisher—Pearson—and at our production house, Cenveo Publisher Services, working through them with my long-time Production Manager, John Orr of Orr Book Services. He again did a terrific job. I was fortunate to have Karen Carter, Project Manager at Pearson, lead the production team to as perfect a textbook as possible. To be sure, I was pushed hard by my Senior Acquisitions Editor, David Alexander, and I was helped greatly by Lindsey Sloan, the Program Manager on this project. The "pushing" all makes sense now.

I am greatly pleased with the design revision created by Cenveo Publisher Services. It is always a challenge to keep the traditional feel of this book, yet make it more exciting for today's students. I think that we succeeded. I appreciate the hard work of my copy editor, Joanne Boehme. And, of course, the proofreader *par excellence*, Robert Safranek, made sure that everything was perfect. As for the supplements for this edition, I wish to thank Andra Skaalrud for managing their production. On the marketing side, I appreciate the fine work performed by Alison Haskins and her team.

The online media materials, particularly great improvements in *MyEconLab*, were accomplished by Melissa Honig and Courtney Kamauf.

Jim Lee of Texas A&M University–Corpus Christi and Conor Molloy of Suffolk County Community College undertook the vast job of revising and improving the three test banks. The *Instructor's Manual* was masterfully revised by Jim Lee of Texas A&M University–Corpus Christi. Jim Lee also updated and improved PowerPoint presentations. Thanks to Professor Calvin Hoy for improving the presentation of certain sections in this edition.

As always, my "super reviewer," Professor Dan Benjamin of Clemson University, really kept me honest, and my long-time assistant, Sue Jasin, did enough typing and retyping to fill a room with paper. I welcome comments and ideas from professors and students alike and hope that you enjoy this latest edition of *Economics Today*.

R. L. M.

The Nature of Economics

1

Mark Humphrey/AP Images

Nearly 39 million U.S. residents are borrowers of student loans who still owe on these debts. The current aggregate volume of student loan debt is about $1.2 trillion. Thus, the average indebtedness of a college graduate or current enrollee with student loan debt exceeds $30,000. This is a substantial sum for a typical young person who is starting out in the world of work following graduation. In recent years, however, the wages of young people with student loans have stagnated even as average student loan debts have increased. In addition, an increasing number of borrowers who do graduate experience difficulties finding jobs that generate sufficient earnings to enable them to repay their debts. When people have borrowed to finance their college educations, have they failed to act in their own self-interest? In this chapter, you will contemplate the answer to this question.

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **1.1** Define economics and discuss the difference between microeconomics and macroeconomics
- **1.2** Identify the three basic economic questions and the two opposing sets of answers
- **1.3** Evaluate the role that rational self-interest plays in economic analysis
- **1.4** Explain why economics is a science
- **1.5** Distinguish between positive and normative economics

MyEconLab helps you master each objective and study more efficiently. See the end of the chapter for details.

DID YOU KNOW THAT... the number of college students majoring in economics rose by more than 50 percent during the past decade? One reason that students opt for extensive study of economics is that they find the subject fascinating. Another reason, however, is self-interest. On average, students who major in economics earn about 15 percent more than business management majors, 25 percent more than chemistry majors, and 50 percent more than psychology majors. Thus, students have a strong incentive to consider majoring in economics.

Incentives
Rewards or penalties for engaging in a particular activity.

In this chapter, you will learn why contemplating the nature of self-interested responses to **incentives** is the starting point for analyzing choices people make in all walks of life. After all, how much time you devote to studying economics in this introductory course depends in part on the incentives established by your instructor's grading system. As you will see, self-interest and incentives are the underpinnings for all the decisions you and others around you make each day.

1.1 Define economics and discuss the difference between microeconomics and macroeconomics

The Power of Economic Analysis

Simply knowing that self-interest and incentives are central to any decision-making process is not sufficient for predicting the choices that people will actually make. You also have to develop a framework that will allow you to analyze solutions to each economic problem—whether you are trying to decide how much to study, which courses to take, whether to finish school, or whether the U.S. government should provide more grants to universities or raise taxes. The framework that you will learn in this text is the *economic way of thinking*

This framework gives you power—the power to reach informed judgments about what is happening in the world. You can, of course, live your life without the power of economic analysis as part of your analytical framework. Indeed, most people do. Economists believe, though, that economic analysis can help you make better decisions concerning your career, your education, financing your home, and other important matters.

In the business world, the power of economic analysis can help increase your competitive edge as an employee or as the owner of a business. As a voter, for the rest of your life you will be asked to make judgments about policies that are advocated by political parties. Many of these policies will deal with questions related to international economics, such as whether the U.S. government should encourage or discourage immigration or restrict other countries from selling their goods here.

Defining Economics

Economics
The study of how people allocate their limited resources to satisfy their unlimited wants.

Economics is part of the social sciences and, as such, seeks explanations of real events. All social sciences analyze human behavior, as opposed to the physical sciences, which generally analyze the behavior of electrons, atoms, and other nonhuman phenomena.

> *Economics is the study of how people allocate their limited resources in an attempt to satisfy their unlimited wants. As such, economics is the study of how people make choices.*

Resources
Things used to produce goods and services to satisfy people's wants.

Wants
What people would buy if their incomes were unlimited.

To understand this definition fully, two other words need explaining: *resources* and *wants*. **Resources** are things that have value and, more specifically, are used to produce goods and services that satisfy people's wants. **Wants** are all of the items that people would purchase if they had unlimited income.

Whenever an individual, a business, or a nation faces alternatives, a choice must be made, and economics helps us study how those choices are made. For example, you have to choose how to spend your limited income. You also have to choose how to spend your limited time. You may have to choose how many of your company's limited resources to allocate to advertising and how many to allocate to new-product research. In economics, we examine situations in which individuals choose how to do things, when to do things, and with whom to do them. Ultimately, the purpose of economics is to explain choices.

MyEconLab Concept Check

Microeconomics versus Macroeconomics

Economics is typically divided into two types of analysis: **microeconomics** and **macroeconomics** .

Microeconomics *is the part of economic analysis that studies decision making undertaken by individuals (or households) and by firms. It is like looking through a microscope to focus on the small parts of our economy.*

Macroeconomics *is the part of economic analysis that studies the behavior of the economy as a whole. It deals with economywide phenomena such as changes in unemployment, in the general price level, and in national income.*

Microeconomics
The study of decision making undertaken by individuals (or households) and by firms.

Macroeconomics
The study of the behavior of the economy as a whole, including such economywide phenomena as changes in unemployment, the general price level, and national income.

Microeconomic analysis, for example, is concerned with the effects of changes in the price of gasoline relative to that of other energy sources. It examines the effects of new taxes on a specific product or industry. If the government establishes new health care regulations, how individual firms and consumers would react to those regulations would be in the realm of microeconomics. The effects of higher wages brought about by an effective union strike would also be analyzed using the tools of microeconomics.

In contrast, issues such as the rate of inflation, the amount of economywide unemployment, and the yearly growth in the output of goods and services in the nation all fall into the realm of macroeconomic analysis. In other words, macroeconomics deals with **aggregates** , or totals—such as total output in an economy.

Aggregates
Total amounts or quantities. Aggregate demand, for example, is total planned expenditures throughout a nation.

Be aware, however, of the blending of microeconomics and macroeconomics in modern economic theory. Modern economists are increasingly using microeconomic analysis—the study of decision making by individuals and by firms—as the basis of macroeconomic analysis. They do this because even though macroeconomic analysis focuses on aggregates, those aggregates are the result of choices made by individuals and firms.

MyEconLab Concept Check
MyEconLab Study Plan

SELF CHECK Visit MyEconLab to practice these and other problems and to get instant feedback in your Study Plan.

Economics is a social science that involves the study of how individuals choose among alternatives to satisfy their _____, which are what people would buy if their incomes were _____.

_____, the study of the decision-making processes of individuals (or households) and firms, and _____, the study of the performance of the economy as a whole, are the two main branches into which the study of economics is divided.

The Three Basic Economic Questions and Two Opposing Sets of Answers

1.2 Identify the three basic economic questions and the two opposing sets of answers

In every nation, three fundamental questions must be addressed irrespective of the form of its government or who heads that government, how rich or how poor the nation may be, or what type of **economic system** —the institutional mechanism through which resources are utilized to satisfy human wants—has been chosen.

Economic system
A society's institutional mechanism for determining the way in which scarce resources are used to satisfy human desires.

The Three Basic Questions

The three fundamental questions of economics concern the problem of how to allocate society's scarce resources:

1. *What and how much will be produced* Some mechanism must exist for determining which items will be produced while others remain inventors' pipe dreams or individuals' unfulfilled desires.

2. *How will items be produced?* There are many ways to produce a desired item. It is possible to use more labor and fewer machines, or vice versa. It is possible, for instance, to produce an item with an aim to maximize the number of people employed. Alternatively, an item may be produced with an aim to minimize the total expenses that members of society incur. Somehow, a decision must be made about the mix of resources used in production, the way in which they are organized, and how they are brought together at a particular location.

3. *For whom will items be produced?* Once an item is produced, who should be able to obtain it? People use scarce resources to produce any item, so typically people value access to that item. Thus, determining a mechanism for distributing produced items is a crucial issue for any society.

Now that you know the questions an economic system must answer, how do current systems actually answer them? MyEconLab Concept Check

Two Opposing Sets of Answers

At any point in time, every nation has its own economic system. How a nation's residents go about answering the three basic economic questions depends on that nation's economic system.

CENTRALIZED COMMAND AND CONTROL Throughout history, one common type of economic system has been *command and control* (also called *central planning*) by a centralized authority, such as a king or queen, a dictator, a central government, or some other type of authority that assumes responsibility for addressing fundamental economic issues. Under command and control, this authority decides what items to produce and how many, determines how the scarce resources will be organized in the items' production, and identifies who will be able to obtain the items.

For instance, in a command-and-control economic system, a government might decide that particular types of automobiles ought to be produced in certain numbers. The government might issue specific rules for how to manage the production of these vehicles, or it might even establish ownership over those resources so that it can make all such resource allocation decisions directly. Finally, the government will then decide who will be authorized to purchase or otherwise utilize the vehicles.

Have the U.S. federal government's efforts to direct resources to specific green energy companies always fueled financial success for the recipient firms?

POLICY EXAMPLE

Government Green Energy Financing Flops

Since the end of the last decade, the federal government has considerably boosted its efforts to funnel resources toward so-called green energy technologies aimed at producing electrical power using nontraditional sources of energy. The U.S. Department of Energy typically commits itself to providing to specific green energy firms a certain amount of funds that the government has raised from federal taxes. Within certain prescribed limits, the green energy companies can then draw down these funds to help pay for their operations.

Within only a few years' time, a number of recipients of federal funding have already failed as on-going businesses. Table 1-1 at the top of the next page lists some of the companies to which the Department of Energy has offered funds and the amounts of dollar resources that it initially committed to these companies. In addition to the six failed recipients listed in Table 1-1, more than two dozen other energy firms have recently been faltering and may have halted operations by the time you read these words. Thus, the government's command-and-control efforts to apply taxpayers' dollars to the harnessing of resources have failed to generate as much electricity production as anticipated.

FOR CRITICAL THINKING

Ultimately, who pays for such green energy projects that fail?

Sources are listed at the end of this chapter.

TABLE 1-1

Failed Green Energy Recipients of Federal Government Funding Offers

	Initial Federal Government Commitment ($ millions)
Solyndra	535.0
Abound Solar	400.0
A123 Systems	279.0
Ener1	118.5
ECOtality	115.0
Range Fuels	80.0

Source: U.S. Department of Energy.

THE PRICE SYSTEM The alternative to command and control is the *price system* (also called a *market system*), which is a shorthand term describing an economic system that answers the three basic economic questions via decentralized decision making. Under a pure price system, individuals and families own all of the scarce resources used in production. Consequently, choices about what and how many items to produce are left to private parties to determine on their own initiative, as are decisions about how to go about producing those items. Furthermore, individuals and families choose how to allocate their own incomes to obtain the produced items at prices established via privately organized mechanisms.

In the price system, which you will learn about in considerable detail in Chapters 3 and 4, prices define the terms under which people agree to make exchanges. Prices signal to everyone within a price system which resources are relatively scarce and which are relatively abundant. This *signaling* aspect of the price system provides information to individual buyers and sellers about what and how many items should be produced, how production of items should be organized, and who will choose to buy the produced items.

Thus, in a price system, individuals and families own the facilities used to produce automobiles. They decide which types of automobiles to produce, how many of them to produce, and how to bring labor and machines together within their facilities to generate the desired production. Other individuals and families decide how much of their earnings they wish to spend on automobiles.

MIXED ECONOMIC SYSTEMS By and large, the economic systems of the world's nations are mixed economic systems that incorporate aspects of both centralized command and control and a decentralized price system. At any given time, some nations lean toward centralized mechanisms of command and control and allow relatively little scope for decentralized decision making. At the same time, other nations limit the extent to which a central authority dictates answers to the three basic economic questions, leaving people mostly free to utilize a decentralized price system to generate their own answers.

A given country may reach different decisions at different times about how much to rely on command and control versus a price system to answer its three basic economic questions. Until 2008, for instance, the people of the United States preferred to rely mainly on a decentralized price system to decide which and how many automobiles to produce and how to produce them. Since then, the U.S. government has owned substantial fractions of auto companies and hence has exerted considerable command-and-control authority over U.S. vehicle production.

How is China confronting the issue of what economic system to adopt?

INTERNATIONAL POLICY EXAMPLE

In China, *Chongqing* Plus *Guangdon* Equals a Mixed Economy

During the past decade, residents of China have debated the relative merits of two different economic systems. The first of these systems—the *Chongqing* system, named for a city in that nation's southwest—relies on government-owned enterprises to determine what, how, and for whom goods and services should be produced. Application of the Chongqing system to the steel industry has resulted in China's becoming the world's foremost steel producer. State-supported firms operate most of the nation's 2,700 steel mills, many of which produce more ribbed steel bars intended for reinforcing concrete than people desire to use.

The second system—the *Guangdon* system, named for a coastal province of China—places greater emphasis on allowing individuals who own and operate private businesses to decide what, how, and for whom production should take place. Under the Guangdon system, instead of the government directing resources to produce more steel than people wish to consume, China's people would be free to shift scarce resources to production and distribution of a different item. For example, instead of making more underutilized steel, private firms could manufacture digital devices that many consumers would like to purchase.

FOR CRITICAL THINKING

Why might government-owned companies and private firms that produce steel respond differently if steel buyers purchase less?

Sources are listed at the end of this chapter.

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The three basic economic questions are _____ and how _____ will be produced, _____ will items be produced, and for _____ will items be produced?

The two opposing sets of answers are offered by alternative economy systems: (1) centralized _____ and (2) the _____ system.

1.3 Evaluate the role that rational self-interest plays in economic analysis

The Economic Approach: Systematic Decisions

Economists assume that individuals act *as if* they systematically pursue self-motivated interests and respond predictably to perceived opportunities to attain those interests. This central insight of economics was first clearly articulated by Adam Smith in 1776. Smith wrote in his most famous book, *An Inquiry into the Nature and Causes of the Wealth of Nations,* that "it is not from the benevolence [good will] of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest." Thus, the typical person about whom economists make behavioral predictions is assumed to act *as though* he or she systematically pursues self-motivated interest.

The Rationality Assumption

Rationality assumption
The assumption that people do not intentionally make decisions that would leave them worse off.

The **rationality assumption** of economics, simply stated, is as follows:

> *We assume that individuals do not intentionally make decisions that would leave themselves worse off.*

The distinction here is between what people may think—the realm of psychology and psychiatry and perhaps sociology—and what they do. Economics does *not* involve itself in analyzing individual or group thought processes. Economics looks at what people actually do in life with their limited resources. It does little good to criticize the rationality assumption by stating, "Nobody thinks that way" or "I never think that way" or "How unrealistic! That's as irrational as anyone can get!" In a world in which people can be atypical in countless ways, economists find it useful to concentrate on discovering the baseline. Knowing what happens on average is a good place to start. In this way, we avoid building our thinking on exceptions rather than on reality.

Take the example of driving. When you consider passing another car on a two-lane highway with oncoming traffic, you have to make very quick decisions: You must estimate the speed of the car that you are going to pass, the speed of the oncoming cars, the distance between your car and the oncoming cars, and your car's potential rate of acceleration. If we were to apply a model to your behavior, we would use the rules of calculus. In actual fact, you and most other drivers in such a situation do not actually think of using the rules of calculus, but to predict your behavior, we could make the prediction *as if* you understood those rules.

How did a number of U.S. companies respond rationally to a significant increase in the federal tax rate on dividend payments to their shareholders?

EXAMPLE

Why Did Costco Borrow $3.5 Billion to Distribute to Its Shareholders?

In late 2012, owners of the wholesale-club operator Costco decided that the firm would borrow $3.5 billion, which the company then transmitted in the form of dividend payments to owners of the company's shares of stock. This dividend income received by Costco shareholders was subject to a federal tax rate of 15 percent that applied throughout 2012 instead of a 39.6 percent tax rate that went into effect at the beginning of 2013. After taking into account borrowing costs, this arrangement generated tens of millions of dollars of income tax savings for its shareholders.

More than 170 other U.S. companies seeking income tax savings for their shareholders also substantially boosted their dividends in 2012. In a response that many tax experts called "completely rational," these U.S. firms paid out about four times more dividends than they had in previous years. The companies sharply reduced dividend payments afterward. In effect, the companies shifted most of their dividend payments forward in time to reduce their owners' tax bills.

FOR CRITICAL THINKING

How do you think that individual taxpayers responded to the increase in dividend tax rates?

Sources are listed at the end of this chapter.

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Responding to Incentives

If it can be assumed that individuals never intentionally make decisions that would leave them worse off, then almost by definition they will respond to changes in incentives. Indeed, much of human behavior can be explained in terms of how individuals respond to changing incentives over time.

Schoolchildren are motivated to do better by a variety of incentive systems, ranging from gold stars and certificates of achievement when they are young, to better grades with accompanying promises of a "better life" as they get older. Of course, negative incentives affect our behavior, too. Penalties, punishments, and other forms of negative incentives can raise the total cost of engaging in various activities.

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Defining Self-Interest

Self-interest does not always mean increasing one's wealth measured in dollars and cents. We assume that individuals seek many goals, not just increased wealth measured in monetary terms. Thus, the self-interest part of our economic-person assumption includes goals relating to prestige, friendship, love, power, helping others, creating works of art, and many other matters. We can also think in terms of enlightened self-interest, whereby individuals, in the pursuit of what makes them better off, also achieve the betterment of others around them. In brief, individuals are assumed to want the ability to further their goals by making decisions about how items around them are used. The head of a charitable organization usually will not turn down an additional contribution, because accepting the funds yields control over how they are used, even though their use is for other people's benefit.

Thus, self-interest does not rule out doing charitable acts. Is it possible, nevertheless, that people are likely to be more charitable when their own self-interest clearly is involved?

EXAMPLE

Taking Care of Others—and Self

U.S. residents give more than $300 billion in annual charitable donations, or about 2 percent of the total income that their economic activities generate each year. Consequently, many people seem to incorporate into their self-interested motives some concerns for the well-being of other individuals. People tend to donate more to charity when their own personal interests also are involved. Charitable organizations have long recognized that people are likely to give more to charities that provide them with some form of entertainment in the process, perhaps by participating in raffles or auctions. Recently, these organizations have also begun operating charitable fund-raising programs through social networking sites that promote enjoyable interactions among participating donors.

In the United States, another self-interested incentive to donate to charities is that assessed dollar valuations of many charitable donations are tax deductible. Under this policy, people simultaneously can enjoy giving to others and reducing their own federal tax bills.

FOR CRITICAL THINKING

Why do you suppose economists have found evidence that people tend to give more to charities when they are currently in good health but reduce their giving when they anticipate they will shortly die?

Sources are listed at the end of this chapter.

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In economics, we assume that people do not _____ make decisions that will leave them _____ off.	The statement immediately preceding is known as the _____ assumption.

1.4 Explain why economics is a science

Models, or theories
Simplified representations of the real world used as the basis for predictions or explanations.

Economics as a Science

Economics is a social science that employs the same kinds of methods used in other sciences, such as biology, physics, and chemistry. Like these other sciences, economics uses models, or theories. Economic **models** , or **theories** , are simplified representations of the real world that we use to help us understand, explain, and predict economic phenomena in the real world. There are, of course, differences between sciences. The social sciences—especially economics—make little use of laboratory experiments in which changes in variables are studied under controlled conditions. Rather, social scientists, and especially economists, usually have to test their models, or theories, by examining what has already happened in the real world.

Models and Realism

At the outset it must be emphasized that no model in *any* science, and therefore no economic model, is complete in the sense that it captures *every* detail or interrelationship that exists. Indeed, a model, by definition, is an abstraction from reality. It is conceptually impossible to construct a perfectly complete realistic model. For example, in physics we cannot account for every molecule and its position and certainly not for every atom and subatomic particle. Not only is such a model unreasonably expensive to build, but working with it would be impossibly complex.

The nature of scientific model building is that the model should capture only the *essential* relationships that are sufficient to analyze the particular problem or answer the particular question with which we are concerned. *An economic model cannot be faulted as unrealistic simply because it does not represent every detail of the real world.* A map of a city that shows only major streets is not faulty if, in fact, all you wish to know is how to pass through the city using major streets. As long as a model is able to shed light on the *central* issue at hand or forces at work, it may be useful.

A map is the quintessential model. It is *always* a simplified representation. It is *always* unrealistic. It is, however, also useful in making predictions about the world. If the model—the map—predicts that when you take Campus Avenue to the north, you always run into the campus, that is a prediction. If a simple model can explain observed

behavior in repeated settings just as well as a complex model, the simple model has some value and is probably easier to use. MyEconLab Concept Check

Assumptions

Every model, or theory, must be based on a set of assumptions. Assumptions define the array of circumstances in which our model is most likely to be applicable. When some people predicted that sailing ships would fall off the edge of the earth, they used the *assumption* that the earth was flat. Columbus did not accept the implications of such a model because he did not accept its assumptions. He assumed that the world was round. The real-world test of his own model refuted the flat-earth model. Indirectly, then, it was a test of the assumption of the flat-earth model.

Is it possible to use our knowledge about assumptions to understand why driving directions sometimes contain very few details?

EXAMPLE

Getting Directions

Assumptions are a shorthand for reality. Imagine that you have decided to drive from your home in San Diego to downtown San Francisco. Because you have never driven this route, you decide to use a travel-planner device such as global-positioning-system equipment.

When you ask for directions, the electronic travel planner could give you a set of detailed maps that shows each city through which you will travel—Oceanside, San Clemente, Irvine, Anaheim, Los Angeles, Bakersfield, Modesto, and so on—with the individual maps showing you exactly how the freeway threads through each of these cities. You would get a nearly complete description of reality because the GPS travel planner will not have used many simplifying assumptions. It is more likely, however, that the travel planner will simply say, "Get on Interstate 5 going north. Stay on it for about 500 miles. Follow the signs for San Francisco. After crossing the toll bridge, take any exit marked 'Downtown.'" By omitting all of the trivial details, the travel planner has told you all that you really need and want to know. The models you will be using in this text are similar to the simplified directions on how to drive from San Diego to San Francisco—they focus on what is relevant to the problem at hand and omit what is not.

FOR CRITICAL THINKING

In what way do small talk and gossip represent the use of simplifying assumptions?

THE *CETERIS PARIBUS* ASSUMPTION: ALL OTHER THINGS BEING EQUAL Everything in the world seems to relate in some way to everything else in the world. It would be impossible to isolate the effects of changes in one variable on another variable if we always had to worry about the many other variables that might also enter the analysis. Similar to other sciences, economics uses the *ceteris paribus* **assumption .** *Ceteris paribus* means "other things constant" or "other things equal."

***Ceteris paribus* [KAY-ter-us PEAR-uh-bus] assumption**
The assumption that nothing changes except the factor or factors being studied.

Consider an example taken from economics. One of the most important determinants of how much of a particular product a family buys is how expensive that product is relative to other products. We know that in addition to relative prices, other factors influence decisions about making purchases. Some of them have to do with income, others with tastes, and yet others with custom and religious beliefs. Whatever these other factors are, we hold them constant when we look at the relationship between changes in prices and changes in how much of a given product people will purchase.
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Deciding on the Usefulness of a Model

We generally do not attempt to determine the usefulness, or "goodness," of a model merely by evaluating how realistic its assumptions are. Rather, we consider a model "good" if it yields usable predictions that are supported by real-world observations. In other words, can we use the model to predict what will happen in the world around us? Does the model provide useful implications about how things happen in our world?

Once we have determined that the model may be useful in predicting real-world phenomena, the scientific approach to the analysis of the world around us requires that