Principles of Economics 2e.

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Principles of Economics 2e

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Based on the 2nd edition of *Principles of Economics, Economics and the Economy, 2e* by Timothy Taylor, published in 2011.

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PREFACE

Welcome to *Principles of Economics 2e* (2nd Edition), an OpenStax resource. This textbook was written to increase student access to high-quality learning materials, maintaining highest standards of academic rigor at little to no cost.

About OpenStax

OpenStax is a nonprofit based at Rice University, and it's our mission to improve student access to education. Our first openly licensed college textbook was published in 2012, and our library has since scaled to over 25 books for college and AP® courses used by hundreds of thousands of students. OpenStax Tutor, our low-cost personalized learning tool, is being used in college courses throughout the country. Through our partnerships with philanthropic foundations and our alliance with other educational resource organizations, OpenStax is breaking down the most common barriers to learning and empowering students and instructors to succeed.

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Format

You can access this textbook for free in web view or PDF through OpenStax.org, and for a low cost in print.

About *Principles of Economics 2e*

Principles of Economics 2e (2nd edition) covers the scope and sequence of requirements for a two-semester introductory economics course. The authors take a balanced approach to micro-and macroeconomics, to both Keynesian and classical views, and to the theory and application of economics concepts. The text also includes many current examples, which are handled in a politically equitable way. The second edition has been thoroughly revised to increase clarity, update data and current event impacts, and incorporate the feedback from many reviewers and adopters.

Coverage and scope

To develop the first edition of *Principles of Economics*, we acquired the rights to Timothy Taylor's *Principles of Economics* and solicited ideas from economics instructors at all levels of higher education, from community colleges to PhD-granting universities. For the second edition, we received even more expansive and actionable feedback from hundreds of adopters who had used the book for several academic terms. These knowledgeable instructors informed the pedagogical courses, learning objective development and fulfillment, and the chapter arrangements. Faculty who taught from the material provided critical and detailed commentary.

The result is a book that covers the breadth of economics topics and also provides the necessary depth to ensure the course is manageable for instructors and students alike. We strove to balance theory and application, as well as the amount of calculation and mathematical examples.

The book is organized into eight main parts:

What is Economics? The first two chapters introduce students to the study of economics with a focus on making choices in a world of scarce resources.

Supply and Demand, Chapters 3 and 4, introduces and explains the first analytical model in economics: supply, demand, and equilibrium, before showing applications in the markets for labor and finance.

The Fundamentals of Microeconomic Theory, Chapters 5 through 10, begins the microeconomics portion of the text, presenting the theories of consumer behavior, production and costs, and the different models of market structure, including some simple game theory.

Microeconomic Policy Issues, Chapters 11 through 18, covers the range of topics in applied micro, framed around the concepts of public goods and positive and negative externalities. Students explore competition and antitrust policies, environmental problems, poverty, income inequality, and other labor market issues. The text also covers information, risk and financial markets, as well as public economy.

The Macroeconomic Perspective and Goals, Chapters 19 through 23, introduces a number of key concepts in macro: economic growth, unemployment and inflation, and international trade and capital flows.

A Framework for Macroeconomic Analysis, Chapters 24 through 26, introduces the principal analytic model in macro, namely the aggregate demand/aggregate supply model. The model is then applied to the Keynesian and Neoclassical perspectives. The expenditure-output model is fully explained in a stand-alone appendix.

Monetary and Fiscal Policy, Chapters 27 through 31, explains the role of money and the banking system, as well as monetary policy and financial regulation. Then the discussion switches to government deficits and fiscal policy.

International Economics, Chapters 32 through 34, the final part of the text, introduces the international dimensions of economics, including international trade and protectionism.

Alternate Sequencing

Principles of Economics 2e was conceived and written to fit a particular topical sequence, but it can be used flexibly to accommodate other course structures. One such potential structure, which will fit reasonably well with the textbook content, is provided below. Please consider, however, that the chapters were not written to be completely independent, and that the proposed alternate sequence should be carefully considered for student preparation and textual consistency.

Chapter 1 Welcome to Economics!
Chapter 2 Choice in a World of Scarcity
Chapter 3 Demand and Supply
Chapter 4 Labor and Financial Markets
Chapter 5 Elasticity
Chapter 6 Consumer Choices
Chapter 33 International Trade
Chapter 7 Cost and Industry Structure
Chapter 12 Environmental Protection and Negative Externalities
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Chapter 29 Exchange Rates and International Capital Flows
Chapter 30 Government Budgets and Fiscal Policy
Chapter 31 The Impacts of Government Borrowing
Chapter 32 Macroeconomic Policy Around the World
Chapter 34 Globalization and Protectionism

Appendix A The Use of Mathematics in Principles of Economics
Appendix B Indifference Curves
Appendix C Present Discounted Value
Appendix D The Expenditure-Output Model

Changes to the second edition

OpenStax only undertakes revisions when significant modifications to a text are necessary. In the case of *Principles of Economics 2e*, we received a wealth of constructive feedback. Many of the book's users felt that consequential movement in economic data, coupled with the impacts of national and global events, warranted a full revision. We also took advantage of the opportunity to improve the writing and sequencing of the text, as well as many of the calculation examples. The major changes are summarized below.

- Augmented explanations in chapters one through four provide a more comprehensive and informative foundation for the book.
- A clearer explanation, using a numerical example, has been given for finding the utility maximizing combination of goods and services a consumer should choose.
- The Theory of Production has been added to the chapter on costs & industry structure.
- A more complete treatment has been given to labor markets, including the theories of competitive and monopsonistic labor markets, and bilateral monopoly; and the labor markets chapter and the poverty and economic inequality chapter have been resequenced.
- Substantial revisions to the AD/AS model in chapters 24-26 present the core concepts of macroeconomics in a clearer, more dynamic manner.
- Case studies and examples have been revised and, in some cases, replaced to provide more relevant and useful information for students.
- Economic data, tables, and graphs, as well as discussion and analysis around that data, have been thoroughly updated.

Wherever possible, data from the Federal Reserve Economic Database (FRED) was included and referenced. In most of these uses, links to the direct source of the FRED data are provided, and students are encouraged to explore the information and the overall FRED resources more thoroughly.

Additional updates and revisions appear throughout the book. They reflect changes to economic realities and policies regarding international trade, taxation, insurance, and other topics. For issues that may change in the months or years following the textbook's publication, the authors often provided a more open-ended explanation, but we will update the text annually to address further changes.

The revision of *Principles of Economics 2e* was undertaken by Steven Greenlaw (University of Mary Washington) and David Shapiro (Pennsylvania State University), with significant input by lead reviewer Daniel MacDonald (California State University, San Bernardino).

Pedagogical foundation

Throughout the OpenStax version of *Principles of Economics 2e*, you will find new features that engage the students in economic inquiry by taking selected topics a step further. Our features include:

Bring It Home: This added feature is a brief case study, specific to each chapter, which connects the chapter's main topic to the real word. It is broken up into two parts: the first at the beginning of the chapter (in the intro module) and the second at chapter's end, when students have learned what's necessary to understand the case and "bring home" the chapter's core concepts.

Work It Out: This added feature asks students to work through a generally analytical or computational problem, and guides them step by step to find out how its solution is derived.

Clear It Up: This boxed feature, which includes pre-existing features from Taylor's text, addresses common student misconceptions about the content. Clear It Ups are usually deeper explanations of something in the main body of the text. Each CIU starts with a question. The rest of the feature explains the answer.

Link It Up: This added feature is a very brief introduction to a website that is pertinent to students' understanding and enjoyment of the topic at hand.

Questions for each level of learning

The OpenStax version of *Principles of Economics 2e* further expands on Taylor's original end of chapter materials by offering four types of end of module questions for students:

Self-Checks are analytical self-assessment questions that appear at the end of each module. They "click to reveal" an answer in the web view so students can check their understanding before moving on to the next module. Self-Check questions are not simple look-up questions. They push the student to think beyond what is said in the text. Self-Check questions are designed for formative (rather than summative) assessment. The questions and answers are explained so that students feel like they are being walked through the problem.

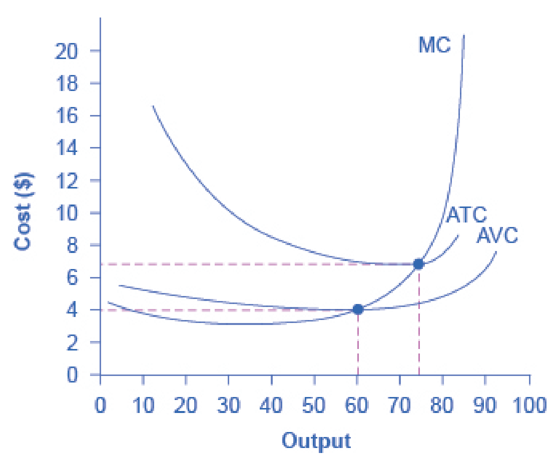
Review Questions have been retained from Taylor's version, and are simple recall questions from the chapter in open-response format (not multiple choice or true/false). The answers can be looked up in the text.

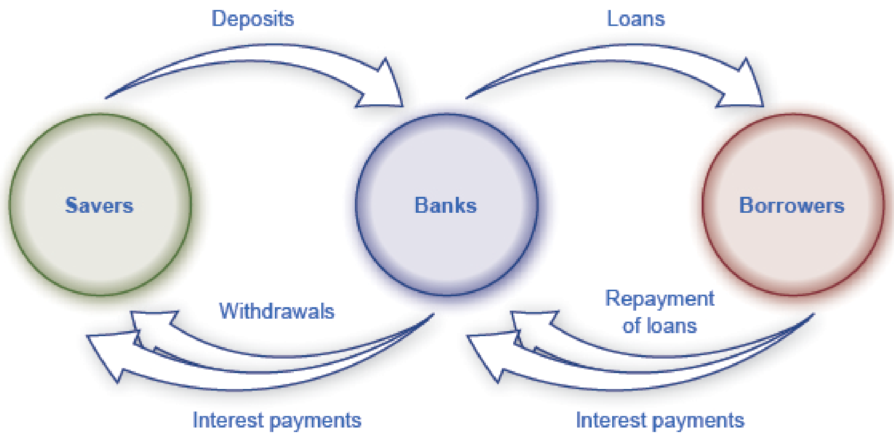
Critical Thinking Questions are new higher-level, conceptual questions that ask students to *demonstrate their understanding by applying* what they have learned in different contexts. They ask for outside-the-box thinking, for *reasoning* about the concepts. They push the student to places they wouldn't have thought of going themselves.

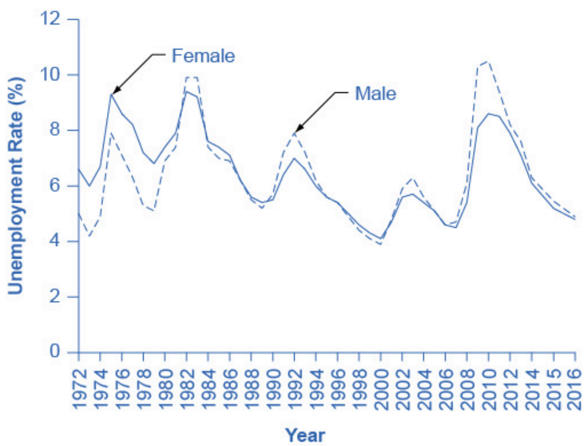
Problems are exercises that give students additional practice working with the analytic and computational concepts in the module.

Updated art

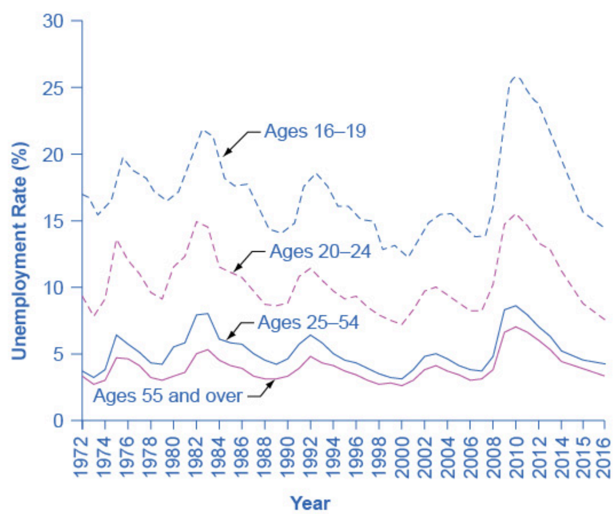
Principles of Economics 2e includes an updated art program to better inform today's student, providing the latest data on covered topics.



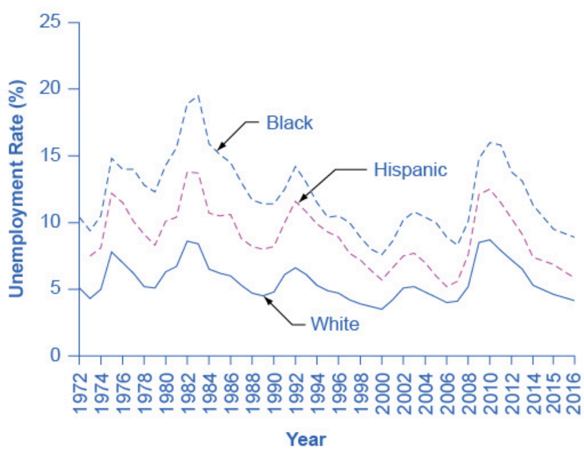




(a) Unemployment rates by gender



(b) Unemployment rates for women, by age



(c) Unemployment rates by race and ethnicity

Additional resources

Student and instructor resources

We've compiled additional resources for both students and instructors, including Getting Started Guides, an instructor solution manual, test bank, and PowerPoint slides. Instructor resources require a verified instructor account, which you can apply for when you log in or create your account on OpenStax.org. Take advantage of these resources to supplement your OpenStax book.

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Steven Greenlaw has been teaching principles of economics for more than 30 years. In 1999, he received the Grellet C. Simpson Award for Excellence in Undergraduate Teaching at the University of Mary Washington. He is the author of *Doing Economics: A Guide to Doing and Understanding Economic Research*, as well as a variety of articles on economics pedagogy and instructional technology, published in the *Journal of Economic Education*, the *International Review of Economic Education*, and other outlets. He wrote the module on Quantitative Writing for *Starting Point: Teaching and Learning Economics*, the web portal on best practices in teaching economics. Steven Greenlaw lives in Alexandria, Virginia with his wife Kathy and their three children.

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Special thanks to Christian Potter from University of Mary Washington, who thoroughly researched and applied many of the data updates and provided the foundation for many new and revised illustrations.

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1 | Welcome to Economics!

Figure 1.1 Do You Use Facebook? Economics is greatly impacted by how well information travels through society. Today, social media giants Twitter, Facebook, and Instagram are major forces on the information super highway. (Credit: Johan Larsson/Flickr)

Bring it Home

Decisions ... Decisions in the Social Media Age

To post or not to post? Every day we are faced with a myriad of decisions, from what to have for breakfast, to which route to take to class, to the more complex—"Should I double major and add possibly another semester of study to my education?" Our response to these choices depends on the information we have available at any given moment. Economists call this "imperfect" because we rarely have all the data we need to make perfect decisions. Despite the lack of perfect information, we still make hundreds of decisions a day.

Now we have another avenue in which to gather information—social media. Outlets like Facebook and Twitter are altering the process by which we make choices, how we spend our time, which movies we see, which products we buy, and more. How many of you chose a university without checking out its Facebook page or Twitter stream first for information and feedback?

As you will see in this course, what happens in economics is affected by how well and how fast information disseminates through a society, such as how quickly information travels through Facebook. "Economists love nothing better than when deep and liquid markets operate under conditions of perfect information," says Jessica Irvine, National Economics Editor for News Corp Australia.

This leads us to the topic of this chapter, an introduction to the world of making decisions, processing information, and understanding behavior in markets —the world of economics. Each chapter in this book will start with a discussion about current (or sometimes past) events and revisit it at chapter's end—to "bring home" the concepts in play.

Introduction

In this chapter, you will learn about:

- What Is Economics, and Why Is It Important?
- Microeconomics and Macroeconomics
- How Economists Use Theories and Models to Understand Economic Issues
- How Economies Can Be Organized: An Overview of Economic Systems

What is economics and why should you spend your time learning it? After all, there are other disciplines you could be studying, and other ways you could be spending your time. As the Bring it Home feature just mentioned, making choices is at the heart of what economists study, and your decision to take this course is as much as economic decision as anything else.

Economics is probably not what you think. It is not primarily about money or finance. It is not primarily about business. It is not mathematics. What is it then? It is both a subject area and a way of viewing the world.

1.1 | What Is Economics, and Why Is It Important?

By the end of this section, you will be able to:

- Discuss the importance of studying economics
- Explain the relationship between production and division of labor
- Evaluate the significance of scarcity

Economics is the study of how humans make decisions in the face of scarcity. These can be individual decisions, family decisions, business decisions or societal decisions. If you look around carefully, you will see that scarcity is a fact of life. **Scarcity** means that human wants for goods, services and resources exceed what is available. Resources, such as labor, tools, land, and raw materials are necessary to produce the goods and services we want but they exist in limited supply. Of course, the ultimate scarce resource is time- everyone, rich or poor, has just 24 expendable hours in the day to earn income to acquire goods and services, for leisure time, or for sleep. At any point in time, there is only a finite amount of resources available.

Think about it this way: In 2015 the labor force in the United States contained over 158 million workers, according to the U.S. Bureau of Labor Statistics. The total land area was 3,794,101 square miles. While these are certainly large numbers, they are not infinite. Because these resources are limited, so are the numbers of goods and services we produce with them. Combine this with the fact that human wants seem to be virtually infinite, and you can see why scarcity is a problem.

Introduction to FRED

Data is very important in economics because it describes and measures the issues and problems that economics seek to understand. A variety of government agencies publish economic and social data. For this course, we will generally use data from the St. Louis Federal Reserve Bank's FRED database. FRED is very user friendly. It allows you to display data in tables or charges, and you can easily download it into spreadsheet form if you want to use the data for other purposes. The **FRED website (https://openstax.org/l/FRED/)** includes data on nearly 400,000 domestic and international variables over time, in the following broad categories:

- Money, Banking & Finance
- Population, Employment, & Labor Markets (including Income Distribution)

- National Accounts (Gross Domestic Product & its components), Flow of Funds, and International Accounts
- Production & Business Activity (including Business Cycles)
- Prices & Inflation (including the Consumer Price Index, the Producer Price Index, and the Employment Cost Index)
- International Data from other nations
- U.S. Regional Data
- Academic Data (including Penn World Tables & NBER Macrohistory database)

For more information about how to use FRED, see the variety of **videos (https://openstax.org/l/FRED_intro)** on YouTube starting with this introduction.

Figure 1.2 Scarcity of Resources Homeless people are a stark reminder that scarcity of resources is real. (Credit: “daveynin”/Flickr Creative Commons)

If you still do not believe that scarcity is a problem, consider the following: Does everyone require food to eat? Does everyone need a decent place to live? Does everyone have access to healthcare? In every country in the world, there are people who are hungry, homeless (for example, those who call park benches their beds, as **Figure 1.2** shows), and in need of healthcare, just to focus on a few critical goods and services. Why is this the case? It is because of scarcity. Let’s delve into the concept of scarcity a little deeper, because it is crucial to understanding economics.

The Problem of Scarcity

Think about all the things you consume: food, shelter, clothing, transportation, healthcare, and entertainment. How do you acquire those items? You do not produce them yourself. You buy them. How do you afford the things you buy? You work for pay. If you do not, someone else does on your behalf. Yet most of us never have enough income to buy all the things we want. This is because of scarcity. So how do we solve it?

Link It Up

Visit this website (http://openstax.org/l/drought) to read about how the United States is dealing with scarcity in resources.

Every society, at every level, must make choices about how to use its resources. Families must decide whether to spend their money on a new car or a fancy vacation. Towns must choose whether to put more of the budget into police and fire protection or into the school system. Nations must decide whether to devote more funds to national defense or to protecting the environment. In most cases, there just isn't enough money in the budget to do everything. How do we use our limited resources the best way possible, that is, to obtain the most goods and services we can? There are a couple of options. First, we could each produce everything we each consume. Alternatively, we could each produce some of what we want to consume, and "trade" for the rest of what we want. Let's explore these options. Why do we not each just produce all of the things we consume? Think back to pioneer days, when individuals knew how to do so much more than we do today, from building their homes, to growing their crops, to hunting for food, to repairing their equipment. Most of us do not know how to do all—or any—of those things, but it is not because we could not learn. Rather, we do not have to. The reason why is something called *the division and specialization of labor*, a production innovation first put forth by Adam Smith (**Figure 1.3**) in his book, *The Wealth of Nations*.

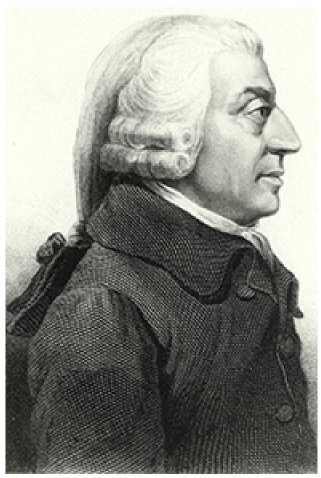

Figure 1.3 Adam Smith Adam Smith introduced the idea of dividing labor into discrete tasks. (Credit: Wikimedia Commons)

The Division of and Specialization of Labor

The formal study of economics began when Adam Smith (1723–1790) published his famous book *The Wealth of Nations* in 1776. Many authors had written on economics in the centuries before Smith, but he was the first to address the subject in a comprehensive way. In the first chapter, Smith introduces the concept of **division of labor**, which means that the way one produces a good or service is divided into a number of tasks that different workers perform, instead of all the tasks being done by the same person.

To illustrate division of labor, Smith counted how many tasks went into making a pin: drawing out a piece of wire, cutting it to the right length, straightening it, putting a head on one end and a point on the other, and packaging pins for sale, to name just a few. Smith counted 18 distinct tasks that different people performed—all for a pin, believe it or not!

Modern businesses divide tasks as well. Even a relatively simple business like a restaurant divides the task of serving meals into a range of jobs like top chef, sous chefs, less-skilled kitchen help, servers to wait on the tables, a greeter at the door, janitors to clean up, and a business manager to handle paychecks and bills—not to mention the economic connections a restaurant has with suppliers of food, furniture, kitchen equipment, and the building where it is located. A complex business like a large manufacturing factory, such as the shoe factory (**Figure 1.4**), or a hospital can have hundreds of job classifications.

Figure 1.4 Division of Labor Workers on an assembly line are an example of the divisions of labor. (Credit: Nina Hale/Flickr Creative Commons)

Why the Division of Labor Increases Production

When we divide and subdivide the tasks involved with producing a good or service, workers and businesses can produce a greater quantity of output. In his observations of pin factories, Smith noticed that one worker alone might make 20 pins in a day, but that a small business of 10 workers (some of whom would need to complete two or three of the 18 tasks involved with pin-making), could make 48,000 pins in a day. How can a group of workers, each specializing in certain tasks, produce so much more than the same number of workers who try to produce the entire good or service by themselves? Smith offered three reasons.

First, **specialization** in a particular small job allows workers to focus on the parts of the production process where they have an advantage. (In later chapters, we will develop this idea by discussing comparative advantage.) People have different skills, talents, and interests, so they will be better at some jobs than at others. The particular advantages may be based on educational choices, which are in turn shaped by interests and talents. Only those with medical degrees qualify to become doctors, for instance. For some goods, geography affects specialization. For example, it is easier to be a wheat farmer in North Dakota than in Florida, but easier to run a tourist hotel in Florida than in North Dakota. If you live in or near a big city, it is easier to attract enough customers to operate a successful dry cleaning business or movie theater than if you live in a sparsely populated rural area. Whatever the reason, if people specialize in the production of what they do best, they will be more effective than if they produce a combination of things, some of which they are good at and some of which they are not.

Second, workers who specialize in certain tasks often learn to produce more quickly and with higher quality. This pattern holds true for many workers, including assembly line laborers who build cars, stylists who cut hair, and doctors who perform heart surgery. In fact, specialized workers often know their jobs well enough to suggest innovative ways to do their work faster and better.

A similar pattern often operates within businesses. In many cases, a business that focuses on one or a few products (sometimes called its “core competency”) is more successful than firms that try to make a wide range of products.

Third, specialization allows businesses to take advantage of **economies of scale**, which means that for many goods, as the level of production increases, the average cost of producing each individual unit declines. For example, if a factory produces only 100 cars per year, each car will be quite expensive to make on average. However, if a factory produces 50,000 cars each year, then it can set up an assembly line with huge machines and workers performing specialized tasks, and the average cost of production per car will be lower. The ultimate result of workers who can focus on their preferences and talents, learn to do their specialized jobs better, and work in larger organizations is that society as a whole can produce and consume far more than if each person tried to produce all of his or her own goods and services. The division and specialization of labor has been a force against the problem of scarcity.

Trade and Markets

Specialization only makes sense, though, if workers can use the pay they receive for doing their jobs to purchase the other goods and services that they need. In short, specialization requires trade.

You do not have to know anything about electronics or sound systems to play music—you just buy an iPod or MP3 player, download the music, and listen. You do not have to know anything about artificial fibers or the construction of sewing machines if you need a jacket—you just buy the jacket and wear it. You do not need to know anything about internal combustion engines to operate a car—you just get in and drive. Instead of trying to acquire all the knowledge and skills involved in producing all of the goods and services that you wish to consume, the market allows you to learn a specialized set of skills and then use the pay you receive to buy the goods and services you need or want. This is how our modern society has evolved into a strong economy.

Why Study Economics?

Now that you have an overview on what economics studies, let's quickly discuss why you are right to study it. Economics is not primarily a collection of facts to memorize, although there are plenty of important concepts to learn. Instead, think of economics as a collection of questions to answer or puzzles to work. Most importantly, economics provides the tools to solve those puzzles. If the economics "bug" has not bitten you yet, there are other reasons why you should study economics.

- Virtually every major problem facing the world today, from global warming, to world poverty, to the conflicts in Syria, Afghanistan, and Somalia, has an economic dimension. If you are going to be part of solving those problems, you need to be able to understand them. Economics is crucial.
- It is hard to overstate the importance of economics to good citizenship. You need to be able to vote intelligently on budgets, regulations, and laws in general. When the U.S. government came close to a standstill at the end of 2012 due to the "fiscal cliff," what were the issues? Did you know?
- A basic understanding of economics makes you a well-rounded thinker. When you read articles about economic issues, you will understand and be able to evaluate the writer's argument. When you hear classmates, co-workers, or political candidates talking about economics, you will be able to distinguish between common sense and nonsense. You will find new ways of thinking about current events and about personal and business decisions, as well as current events and politics.

The study of economics does not dictate the answers, but it can illuminate the different choices.

1.2 | Microeconomics and Macroeconomics

By the end of this section, you will be able to:

- Describe microeconomics
- Describe macroeconomics
- Contrast monetary policy and fiscal policy

Economics is concerned with the well-being of *all* people, including those with jobs and those without jobs, as well as those with high incomes and those with low incomes. Economics acknowledges that production of useful goods and services can create problems of environmental pollution. It explores the question of how investing in education helps to develop workers' skills. It probes questions like how to tell when big businesses or big labor unions are operating in a way that benefits society as a whole and when they are operating in a way that benefits their owners or members at the expense of others. It looks at how government spending, taxes, and regulations affect decisions about production and consumption.

It should be clear by now that economics covers considerable ground. We can divide that ground into two parts: **Microeconomics** focuses on the actions of individual agents within the economy, like households, workers, and businesses. **Macroeconomics** looks at the economy as a whole. It focuses on broad issues such as growth of production, the number of unemployed people, the inflationary increase in prices, government deficits, and levels of exports and imports. Microeconomics and macroeconomics are not separate subjects, but rather complementary perspectives on the overall subject of the economy.

To understand why both microeconomic and macroeconomic perspectives are useful, consider the problem of studying a biological ecosystem like a lake. One person who sets out to study the lake might focus on specific topics: certain kinds of algae or plant life; the characteristics of particular fish or snails; or the trees surrounding the lake. Another person might take an overall view and instead consider the lake's ecosystem from top to bottom; what eats what, how the system stays in a rough balance, and what environmental stresses affect this balance. Both approaches are useful, and both examine the same lake, but the viewpoints are different. In a similar way, both microeconomics and macroeconomics study the same economy, but each has a different viewpoint.

Whether you are scrutinizing lakes or economics, the micro and the macro insights should blend with each other. In studying a lake, the micro insights about particular plants and animals help to understand the overall food chain, while the macro insights about the overall food chain help to explain the environment in which individual plants and animals live.

In economics, the micro decisions of individual businesses are influenced by whether the macroeconomy is healthy. For example, firms will be more likely to hire workers if the overall economy is growing. In turn, macroeconomy's performance ultimately depends on the microeconomic decisions that individual households and businesses make.

Microeconomics

What determines how households and individuals spend their budgets? What combination of goods and services will best fit their needs and wants, given the budget they have to spend? How do people decide whether to work, and if so, whether to work full time or part time? How do people decide how much to save for the future, or whether they should borrow to spend beyond their current means?

What determines the products, and how many of each, a firm will produce and sell? What determines the prices a firm will charge? What determines how a firm will produce its products? What determines how many workers it will hire? How will a firm finance its business? When will a firm decide to expand, downsize, or even close? In the microeconomics part of this book, we will learn about the theory of consumer behavior, the theory of the firm, how markets for labor and other resources work, and how markets sometimes fail to work properly.

Macroeconomics

What determines the level of economic activity in a society? In other words, what determines how many goods and services a nation actually produces? What determines how many jobs are available in an economy? What determines a nation’s standard of living? What causes the economy to speed up or slow down? What causes firms to hire more workers or to lay them off? Finally, what causes the economy to grow over the long term?

We can determine an economy's macroeconomic health by examining a number of goals: growth in the standard of living, low unemployment, and low inflation, to name the most important. How can we use government macroeconomic policy to pursue these goals? A nation's central bank conducts **monetary policy**, which involves policies that affect bank lending, interest rates, and financial capital markets. For the United States, this is the Federal Reserve. A nation's legislative body determines **fiscal policy**, which involves government spending and taxes. For the United States, this is the Congress and the executive branch, which originates the federal budget. These are the government's main tools. Americans tend to expect that government can fix whatever economic problems we encounter, but to what extent is that expectation realistic? These are just some of the issues that we will explore in the macroeconomic chapters of this book.

1.3 | How Economists Use Theories and Models to Understand Economic Issues

By the end of this section, you will be able to:

- Interpret a circular flow diagram
- Explain the importance of economic theories and models
- Describe goods and services markets and labor markets

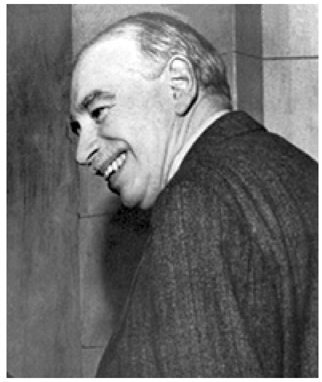

Figure 1.5 John Maynard Keynes One of the most influential economists in modern times was John Maynard Keynes. (Credit: Wikimedia Commons)

John Maynard Keynes (1883–1946), one of the greatest economists of the twentieth century, pointed out that economics is not just a subject area but also a way of thinking. Keynes (Figure 1.5) famously wrote in the introduction to a fellow economist's book: "[Economics] is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions." In other words, economics teaches you how to think, not what to think.

Link It Up

Watch this video (http://openstax.org/l/Keynes) about John Maynard Keynes and his influence on economics.

Economists see the world through a different lens than anthropologists, biologists, classicists, or practitioners of any other discipline. They analyze issues and problems using economic theories that are based on particular assumptions about human behavior. These assumptions tend to be different than the assumptions an anthropologist or psychologist might use. A **theory** is a simplified representation of how two or more variables interact with each other. The purpose of a theory is to take a complex, real-world issue and simplify it down to its essentials. If done well, this enables the analyst to understand the issue and any problems around it. A good theory is simple enough to understand, while complex enough to capture the key features of the object or situation you are studying.

Sometimes economists use the term **model** instead of theory. Strictly speaking, a theory is a more abstract representation, while a model is a more applied or empirical representation. We use models to test theories, but for this course we will use the terms interchangeably.

For example, an architect who is planning a major office building will often build a physical model that sits on a tabletop to show how the entire city block will look after the new building is constructed. Companies often build models of their new products, which are more rough and unfinished than the final product, but can still demonstrate how the new product will work.

A good model to start with in economics is the **circular flow diagram** (Figure 1.6). It pictures the economy as consisting of two groups—households and firms—that interact in two markets: the **goods and services market** in which firms sell and households buy and the **labor market** in which households sell labor to business firms or other employees.

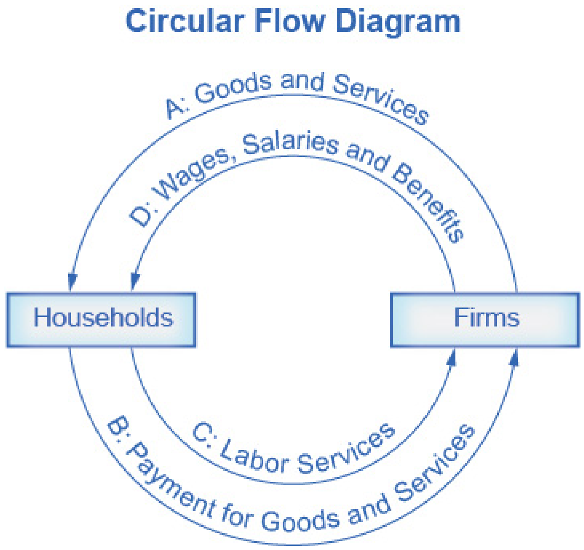

Figure 1.6 The Circular Flow Diagram The circular flow diagram shows how households and firms interact in the goods and services market, and in the labor market. The direction of the arrows shows that in the goods and services market, households receive goods and services and pay firms for them. In the labor market, households provide labor and receive payment from firms through wages, salaries, and benefits.

Firms produce and sell goods and services to households in the market for goods and services (or product market). Arrow "A" indicates this. Households pay for goods and services, which becomes the revenues to firms. Arrow "B" indicates this. Arrows A and B represent the two sides of the product market. Where do households obtain the income to buy goods and services? They provide the labor and other resources (e.g. land, capital, raw materials) firms need to produce goods and services in the market for inputs (or factors of production). Arrow "C" indicates this. In return, firms pay for the inputs (or resources) they use in the form of wages and other factor payments. Arrow "D" indicates this. Arrows "C" and "D" represent the two sides of the factor market.

Of course, in the real world, there are many different markets for goods and services and markets for many different types of labor. The circular flow diagram simplifies this to make the picture easier to grasp. In the diagram, firms produce goods and services, which they sell to households in return for revenues. The outer circle shows this, and represents the two sides of the product market (for example, the market for goods and services) in which households demand and firms supply. Households sell their labor as workers to firms in return for wages, salaries, and benefits. The inner circle shows this and represents the two sides of the labor market in which households supply and firms demand.

This version of the circular flow model is stripped down to the essentials, but it has enough features to explain how the product and labor markets work in the economy. We could easily add details to this basic model if we wanted to introduce more real-world elements, like financial markets, governments, and interactions with the rest of the globe (imports and exports).

Economists carry a set of theories in their heads like a carpenter carries around a toolkit. When they see an economic issue or problem, they go through the theories they know to see if they can find one that fits. Then they use the theory to derive insights about the issue or problem. Economists express theories as diagrams, graphs, or even as mathematical equations. (Do not worry. In this course, we will mostly use graphs.) Economists do not figure out the answer to the problem first and then draw the graph to illustrate. Rather, they use the graph of the theory to help them figure out the answer. Although at the introductory level, you can sometimes figure out the right answer without applying a model, if you keep studying economics, before too long you will run into issues and problems that you will need to graph to solve. We explain both micro and macroeconomics in terms of theories and models. The most well-known theories are probably those of supply and demand, but you will learn a number of others.

1.4 | How To Organize Economies: An Overview of Economic Systems

By the end of this section, you will be able to:

- Contrast traditional economies, command economies, and market economies
- Explain gross domestic product (GDP)
- Assess the importance and effects of globalization

Think about what a complex system a modern economy is. It includes all production of goods and services, all buying and selling, all employment. The economic life of every individual is interrelated, at least to a small extent, with the economic lives of thousands or even millions of other individuals. Who organizes and coordinates this system? Who insures that, for example, the number of televisions a society provides is the same as the amount it needs and wants? Who insures that the right number of employees work in the electronics industry? Who insures that televisions are produced in the best way possible? How does it all get done?

There are at least three ways that societies organize an economy. The first is the **traditional economy**, which is the oldest economic system and is used in parts of Asia, Africa, and South America. Traditional economies organize their economic affairs the way they have always done (i.e., tradition). Occupations stay in the family. Most families are farmers who grow the crops using traditional methods. What you produce is what you consume. Because tradition drives the way of life, there is little economic progress or development.

Figure 1.7 A Command Economy Ancient Egypt was an example of a command economy. (Credit: Jay Bergesen/ Flickr Creative Commons)

Command economies are very different. In a **command economy**, economic effort is devoted to goals passed down from a ruler or ruling class. Ancient Egypt was a good example: a large part of economic life was devoted to building pyramids, like those in **Figure 1.7**, for the pharaohs. Medieval manor life is another example: the lord provided the land for growing crops and protection in the event of war. In return, vassals provided labor and soldiers to do the lord's bidding. In the last century, communism emphasized command economies.

In a command economy, the government decides what goods and services will be produced and what prices it will charge for them. The government decides what methods of production to use and sets wages for workers. The government provides many necessities like healthcare and education for free. Currently, Cuba and North Korea have command economies.

Figure 1.8 A Market Economy Nothing says “market” more than The New York Stock Exchange. (Credit: Erik Drost/ Flickr Creative Commons)

Although command economies have a very centralized structure for economic decisions, market economies have a very decentralized structure. A **market** is an institution that brings together buyers and sellers of goods or services, who may be either individuals or businesses. The New York Stock Exchange (**Figure 1.8**) is a prime example of a market which brings buyers and sellers together. In a **market economy**, decision-making is decentralized. Market economies are based on **private enterprise**: the private individuals or groups of private individuals own and operate the means of production (resources and businesses). Businesses supply goods and services based on demand. (In a command economy, by contrast, the government owns resources and businesses.) Supply of goods and services depends on what the demands. A person’s income is based on his or her ability to convert resources (especially labor) into something that society values. The more society values the person’s output, the higher the income (think Lady Gaga or LeBron James). In this scenario, market forces, not governments, determine economic decisions.

Most economies in the real world are mixed. They combine elements of command and market (and even traditional) systems. The U.S. economy is positioned toward the market-oriented end of the spectrum. Many countries in Europe and Latin America, while primarily market-oriented, have a greater degree of government involvement in economic decisions than the U.S. economy. China and Russia, while over the past several decades have moved more in the direction of having a market-oriented system, remain closer to the command economy end of the spectrum. The Heritage Foundation provides information about how free and thus market-oriented different countries' are, as the following Clear It Up feature discusses. For a similar ranking, but one that defines freedom more broadly, see the Cato Foundation's Human Freedom **Index (https://openstax.org/l/cato)** .

Clear It Up

What countries are considered economically free?

Who is in control of economic decisions? Are people free to do what they want and to work where they want? Are businesses free to produce when they want and what they choose, and to hire and fire as they wish? Are banks free to choose who will receive loans, or does the government control these kinds of choices? Each year, researchers at the Heritage Foundation and the *Wall Street Journal* look at 50 different categories of economic freedom for countries around the world. They give each nation a score based on the extent of economic freedom in each category.

The 2016 Heritage Foundation’s Index of Economic Freedom report ranked 178 countries around the world: **Table 1.1** lists some examples of the most free and the least free countries. Several additional countries were not ranked because of extreme instability that made judgments about economic freedom impossible. These countries include Afghanistan, Iraq, Libya, Syria, Somalia, and Yemen.

The assigned rankings are inevitably based on estimates, yet even these rough measures can be useful for discerning trends. In 2015, 101 of the 178 included countries shifted toward greater economic freedom, although 77 of the countries shifted toward less economic freedom. In recent decades, the overall trend has been a *higher level of economic freedom around the world*.

Most Economic Freedom	Least Economic Freedom
1. Hong Kong	167. Timor-Leste
2. Singapore	168. Democratic Republic of Congo
3. New Zealand	169. Argentina
4. Switzerland	170. Equatorial Guinea
5. Australia	171. Iran
6. Canada	172. Republic of Congo
7. Chile	173. Eritrea
8. Ireland	174. Turkmenistan
9. Estonia	175. Zimbabwe
10. United Kingdom	176. Venezuela
11. United States	177. Cuba
12. Denmark	178. North Korea

Table 1.1 Economic Freedoms, 2016 (Source: The Heritage Foundation, 2016 Index of Economic Freedom, Country Rankings, http://www.heritage.org/index/ranking)

Regulations: The Rules of the Game

Markets and government regulations are always entangled. There is no such thing as an absolutely free market. Regulations always define the "rules of the game" in the economy. Economies that are primarily market-oriented have fewer regulations—ideally just enough to maintain an even playing field for participants. At a minimum, these laws govern matters like safeguarding private property against theft, protecting people from violence, enforcing legal contracts, preventing fraud, and collecting taxes. Conversely, even the most command-oriented economies operate using markets. How else would buying and selling occur? The government heavily regulates decisions of what to produce and prices to charge. Heavily regulated economies often have **underground economies** (or black markets), which are markets where the buyers and sellers make transactions without the government's approval.

The question of how to organize economic institutions is typically not a black-or-white choice between all market or all government, but instead involves a balancing act over the appropriate combination of market freedom and government rules.