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costing the same as the energy sources that currently power the "grid," the electricity transmission network.

Although photovoltaic energy doesn't require a fuel supply, it does require the manufacture of technologically sophisticated solar panels. If solar power is to reach grid parity, photovoltaics manufacturers must be able to sell panels at a cost that is low enough to compete with other sources but high enough to cover their costs.

Is this an achievable dream? Can solar power become an economically viable alternative to conventional sources, all of which have significant disadvantages? And can a company providing solar energy equipment be both cost-competitive and profitable?

Zhengrong Shi believed the answer to these questions was a resounding yes when he founded the Chinese company Suntech Power in 2001. Suntech quickly shot past $1 billion in revenue, became the world's largest provider of photovoltaic panels, and made China a major player in solar energy. However, the challenges Suntech faces are formidable. Is grid parity a realistic goal? Can the company make the necessary technical advances during a turbulent economy, with costs, demand levels, and material supplies bouncing all over the place? If you were in Shi's place, how would you apply the principles of economics to achieve grid parity while maintaining a profitable company?[1]

INTRODUCTION

1 LEARNING OBJECTIVE

Define *economics*, and explain why scarcity is central to economic decision making.

The experience of Suntech Power (profiled in the chapter-opening Behind the Scenes) is a clear reminder of how economic forces affect every aspect of business. This chapter offers a brief introduction to economics from a business professional's perspective, starting with a high-level look at the study of economics and the all-important concept of scarcity. Understanding basic economic principles is essential to successful business management, and this knowledge can make you a more satisfied consumer and a more successful investor, too.

What Is This Thing Called the Economy?

The **economy** is the sum total of all the economic activity within a given region, from a single city to a whole country to the entire world. The economy can be a difficult thing to get your mind wrapped around because it is so complex, constantly in motion, and at times hard to see—even though it's everywhere around us. People who devote their lives to studying it can have a hard time agreeing on how the economy works, when it might be "broken," or how to fix it if it is broken, but business leaders need to understand and pay attention to some key principles. **Economics** is the study of how a society uses its scarce resources to produce and distribute goods and services.

Economics is roughly divided into a small-scale perspective and a large-scale perspective. The study of economic behavior among consumers, businesses, and industries that collectively determine the quantity of goods and services demanded and supplied at different prices is termed **microeconomics**. The study of a country's larger economic issues, such as how firms compete, the effect of government policies, and how an economy maintains and allocates its scarce resources, is termed **macroeconomics**.

Although microeconomics looks at the small picture and macroeconomics looks at the big picture, understanding the economy at either scale requires an understanding of how the small and large forces interact. For instance, numerous macro forces and policies determine whether homeowners can afford to install solar energy systems. In turn, the aggregate behavior of all those homeowners at the micro level affects the vitality and direction of the overall economy.

FACTORS OF PRODUCTION

Each society must decide how to use its economic resources, or *factors of production* (see Exhibit 2.1 on the next page). **Natural resources** are things that are useful in their natural state, such as land, forests, minerals, and water. **Human resources** are people and their individual talents and capacities. **Capital** includes money, machines, tools, and buildings that a business needs in order to produce goods and services. **Entrepreneurship** is the spirit of innovation, the initiative, and the willingness to take the risks involved in creating and

economy The sum total of all the economic activity within a given region.

economics The study of how a society uses its scarce resources to produce and distribute goods and services.

microeconomics The study of how consumers, businesses, and industries collectively determine the quantity of goods and services demanded and supplied at different prices.

macroeconomics The study of "big-picture" issues in an economy, including competitive behavior among firms, the effect of government policies, and overall resource allocation issues.

natural resources Land, forests, minerals, water, and other tangible assets usable in their natural state.

human resources All the people who work in an organization or on its behalf.

capital The funds that finance the operations of a business as well as the physical, human-made elements used to produce goods and services, such as factories and computers.

entrepreneurship The combination of innovation, initiative, and willingness to take the risks required to create and operate new businesses.

grocery stores as the only customer. However, because you compete with thousands of other consumers for a limited supply of bread, you have far less control over the bread market.

Second, given this universal scarcity of resources, consumers, companies, and governments are constantly forced to make *trade-offs,* meaning they have to give up something to get something else. You have to decide how to spend the 24 hours you have every day, and every choice involves a trade-off: The more time you spend on one activity means less time for every other activity you could possibly pursue. Businesses must make similar trade-offs, such as deciding how much money to spend on advertising a new product versus how much to spend on the materials used to make it, or deciding how many employees to have in sales versus customer support. Just like you, businesses never have enough time, money, and other resources to accomplish what they'd like to, so success in life and in business is largely a matter of making smart trade-offs.

By the way, economists have a name for the most-attractive option not selected when making a trade-off. **Opportunity cost** refers to the value of the most appealing alternative from all those that weren't chosen.[3] In other words, opportunity cost is a way to measure the value of what you gave up when you pursued a different opportunity.

opportunity cost The value of the most appealing alternative not chosen.

Checkpoint

LEARNING OBJECTIVE 1: Define *economics*, and explain why scarcity is central to economic decision making.

SUMMARY: Economics is the study of how individuals, companies, and governments use scarce resources to produce the goods and services that meet a society's needs. Scarcity is a crucial concept in economics because it creates competition for resources and forces everyone to make trade-offs.

CRITICAL THINKING: (1) Why is entrepreneurship considered a factor of production? (2) If you had an unlimited amount of money, would you ever need to make trade-offs again? Why or why not?

IT'S YOUR BUSINESS: (1) Did you consider opportunity cost when you chose the college or university you are currently attending? (2) What trade-offs did you make in order to read this chapter at this exact moment in your life? (Think about the decisions you made to get to a point in your life where you're taking a business course.)

KEY TERMS TO KNOW: economy, economics, microeconomics, macroeconomics, natural resources, human resources, capital, entrepreneurship, knowledge, scarcity, opportunity cost

Economic Systems

2 LEARNING OBJECTIVE

Differentiate among the major types of economic systems.

The roles that individuals, businesses, and the government play in allocating a society's resources depend on the society's **economic system**, the basic set of rules for allocating resources to satisfy its citizens' needs (see Exhibit 2.2 on the next page). Economic systems are generally categorized as either *free-market systems* or *planned systems,* although these are really theoretical extremes; every economy combines aspects of both approaches.

economic system The policies that define a society's particular economic structure; the rules by which a society allocates economic resources.

FREE-MARKET SYSTEMS

In a **free-market system**, individuals and companies are largely free to decide what products to produce, how to produce them, whom to sell them to, and at what price to sell them. In other words, they have the chance to succeed—or fail—by their own efforts. **Capitalism** and *private enterprise* are the terms most often used to describe the free-market system, one in which private parties (individuals, partnerships, or corporations) own and operate the majority of businesses and where competition, supply, and demand determine which goods and services are produced.

free-market system Economic system in which decisions about what to produce and in what quantities are decided by the market's buyers and sellers.

capitalism Economic system based on economic freedom and competition.

Although "socialism" is sometimes used as a pejorative term in today's heated political and economic dialogues, and many people believe capitalism is inherently superior to socialism, that opinion is not universal. For example, many European countries, including economic heavyweights France and Germany, incorporate varying degrees of socialism.

Moreover, while free-market capitalism remains the foundation of the U.S. economy, some important elements of the U.S. economy are socialized and have been for many years. Public schools, much of the transportation infrastructure, various local and regional utilities, and several major health-care programs all fit the economic definition of socialism. Socialism and capitalism are competing philosophies, but they are not mutually exclusive, and each approach has strengths and weaknesses, which is why most modern economies combine aspects of both.

NATIONALIZATION AND PRIVATIZATION

The line between socialism and capitalism isn't always easy to define, and it doesn't always stay in the same place, either. Governments can change the structure of the economy by **nationalizing**—taking ownership of—selected companies or in extreme cases even entire industries. They can also move in the opposite direction, **privatizing** services once performed by the government by allowing private businesses to perform them instead.

nationalizing A government's takeover of selected companies or industries.

privatizing Turning over services once performed by the government to private businesses.

In recent years, governments of various countries have done both, for different reasons and in different industries. For example, private companies now own or operate a number of highways, bridges, ports, prisons, and other infrastructure elements in the United States, providing services once provided by the government. The primary reason for this trend is the belief that private firms motivated by the profit incentive can do a more efficient job of running these facilities.[5]

✓ Checkpoint

LEARNING OBJECTIVE 2: Differentiate among the major types of economic systems.

SUMMARY: The two basic types of economic systems are free-market systems, in which individuals and companies are largely free to make economic decisions, and planned systems, in which government administrators make all major decisions. The terms *capitalism* and *private enterprise* are often used to describe free-market systems. Communism is the most extreme type of planned system; socialism lies somewhere between capitalism and communism and generally refers to government ownership of fundamental services. The U.S. economy, like virtually all other economies, blends elements of free-market capitalism and government control.

CRITICAL THINKING: (1) Why are no economies truly free, in the sense of having no controls or restrictions? (2) What are some possible risks of privatizing basic services such as the transportation infrastructure?

IT'S YOUR BUSINESS: (1) What are your emotional reactions to the terms *capitalism* and *socialism*? Explain why you feel the way you do. (2) Would you rather pay lower taxes and accept the fact that you need to pay for many services such as health care and education or pay higher taxes with the assurance that the government will provide many basic services for you? Why?

KEY TERMS TO KNOW: economic system, free-market system, capitalism, planned system, socialism, nationalizing, privatizing

The Forces of Demand and Supply

3 LEARNING OBJECTIVE

Explain the interaction between demand and supply.

At the heart of every business transaction is an exchange between a buyer and a seller. The buyer wants or needs a particular service or good and is willing to pay the seller in order to obtain it. The seller is willing to participate in the transaction because of the anticipated

- The price of *substitute products* (products that can be purchased instead of air travel, including rail tickets, automobile travel, or web conferencing)
- The price of *complementary products* (such as hotel accommodations or restaurant dining for the airline industry)
- Marketing expenditures (for advertising and other promotional efforts)
- Customer expectations about future prices and their own financial well-being

For example, if the economy is down and businesses and consumers have less money to spend, overall demand for air travel is likely to shrink. Businesses will seek less expensive substitutes, such as videoconferencing and online meetings, and consumers may vacation closer to home so they can travel by car. Conversely, if customers have more money to spend, more of them are likely to travel, thereby increasing overall demand.

UNDERSTANDING SUPPLY

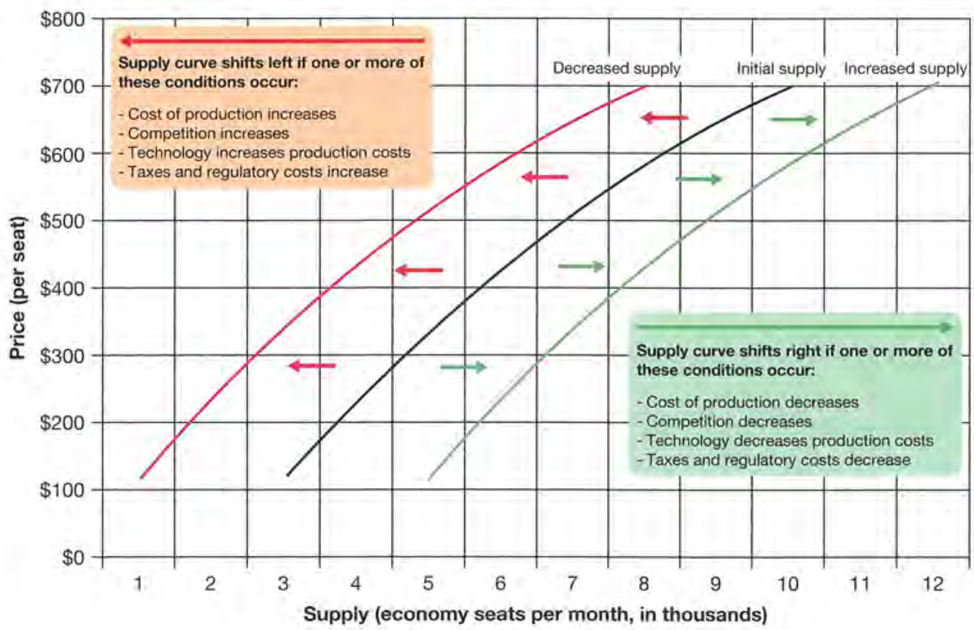
Demand alone is not enough to explain how a company operating in a free-market system sets its prices or production levels. In general, a firm's willingness to produce and sell a product increases as the price it can charge and its profit potential per item increase. In other words, as the price goes up, the quantity supplied generally goes up. The depiction of the relationship between prices and quantities that sellers will offer for sale, regardless of demand, is called a **supply curve.**

supply curve A graph of the quantities of a product that sellers will offer for sale, regardless of demand, at various prices.

Movement along the supply curve typically slopes upward: As prices rise, the quantity that sellers are willing to supply also rises. Similarly, as prices decline, the quantity that sellers are willing to supply declines. Exhibit 2.4 shows a possible supply curve for the monthly number of economy tickets (seats) supplied on an airline's Chicago-to-Denver route at different prices. The graph shows that increasing prices for economy tickets on that route should increase the number of tickets (seats) an airline is willing to provide for that route, and vice versa.

EXHIBIT 2.4 Supply Curve

This supply curve for economy seats on the Denver-to-Chicago route shows that the higher the price, the more tickets (seats) the airline would be willing to supply, all else being equal. As with demand, however, the entire supply curve can shift to the left (decreased supply) or the right (increased supply) as producers respond to internal and external forces.



Checkpoint

LEARNING OBJECTIVE 3: Explain the interaction between demand and supply.

SUMMARY: *Demand* is the amount of a good or service that customers will buy at a given time at various prices; it can be shown visually as a *demand curve*. The entire demand curve can shift as market conditions change. Similarly, *supply* is the amount of a good or service that producers will provide on a particular date at various prices; it can be shown with a *supply curve*, which can also shift in response to market forces. In the simplest sense, demand and supply affect price in the following manner: When the price goes up, the quantity demanded goes down, but the supplier's incentive to produce more goes up. When the price goes down, the quantity demanded increases, but the quantity supplied may (or may not) decline. The point at which the demand and supply curves intersect—the point at which demand and supply are equal—is the *equilibrium point*.

CRITICAL THINKING: (1) How does the interaction of demand and supply keep a market in balance, at least approximately and temporarily? (2) If the prices of complementary products for a given product go up, what effect is this increase likely to have on demand for that product?

IT'S YOUR BUSINESS: (1) Are there any products or brands you are so loyal to that you will purchase them at almost any price? Will you accept less-expensive substitutes? (2) Have you ever purchased something simply because it was on sale? Why or why not?

KEY TERMS TO KNOW: demand, supply, demand curve, supply curve, equilibrium point

The Macro View: Understanding How an Economy Operates

4 LEARNING OBJECTIVE

Identify four macroeconomic issues that are essential to understanding the behavior of the economy.

All the individual instances of supply and demand and all the thousands and millions of transactions that take place over time add up to the economy. This section explores four "big-picture" issues in the economy that are essential to understanding the overall behavior of the economy: competition in a free-market system, business cycles, unemployment, and inflation.

COMPETITION IN A FREE-MARKET SYSTEM

Competition is the situation in which two or more suppliers of a product are rivals in the pursuit of the same customers. The nature of competition varies widely by industry, product category, and geography (see Exhibit 2.6 on the next page). At one extreme is **pure competition**, in which no single firm becomes large enough to influence prices and thereby distort the workings of the free-market system. At the other extreme, in a **monopoly**, one supplier so thoroughly dominates a market that it can control prices and essentially shut out other competitors. Monopolies can happen "naturally," as companies innovate or markets evolve (a *pure monopoly*) or by government mandate (a *regulated monopoly*). However, the lack of competition in a monopoly situation is considered so detrimental to a free-market economy that monopolies are often prohibited by law (see "Merger and Acquisition Approvals" on page 82).

Most of the competition in advanced free-market economies is **monopolistic competition**, in which numerous sellers offer products that can be distinguished from competing products in at least some small way. The risk/reward nature of capitalism promotes constant innovation in pursuit of competitive advantage, rewarding companies that do the best job of satisfying customers.

competition Rivalry among businesses for the same customers.

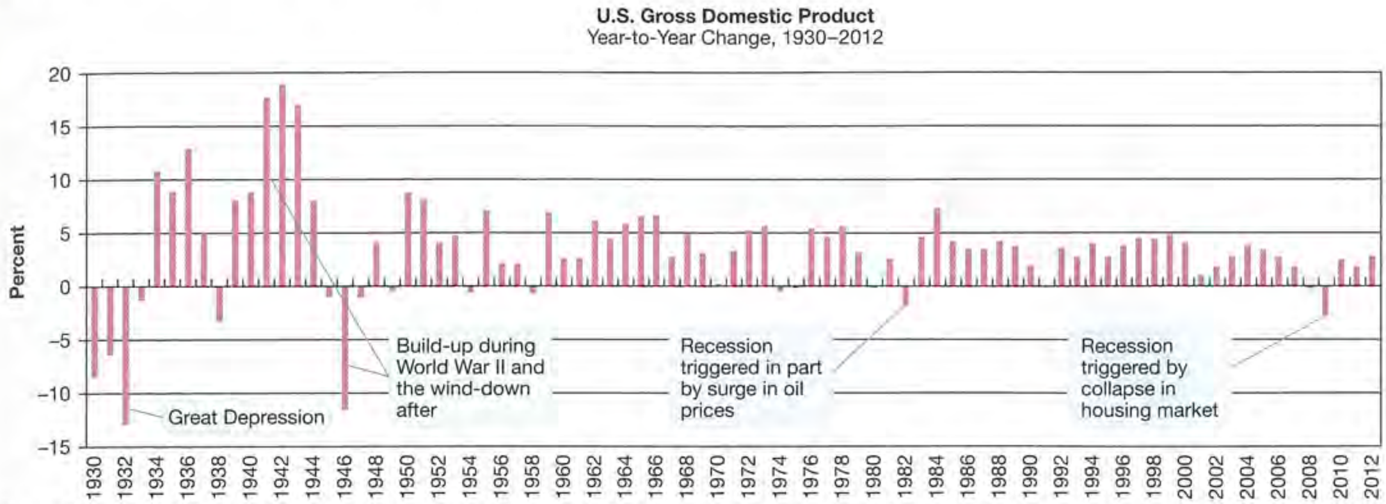
pure competition A situation in which so many buyers and sellers exist that no single buyer or seller can individually influence market prices.

monopoly A situation in which one company dominates a market to the degree that it can control prices.

monopolistic competition A situation in which many sellers differentiate their products from those of competitors in at least some small way.

EXHIBIT 2.7 **Fluctuations in the U.S. Economy**

The U.S. economy has a long history of expansion and contraction. This chart shows the year-to-year change (as a percentage of the previous year) in *gross domestic product* (see page 85), a key measure of the country's overall economic output. (Note that because this chart shows *percentage changes*, not absolute output, all the bars above zero represent years of economic expansion, even though a bar might be smaller than the one preceding. All the bars below zero represent years of contraction.)



Source: Data from U.S. Bureau of Economic Analysis, National Income and Product Accounts Tables, Revised 26 September 2013, www.bea.gov.

When a downward swing or recession is over, the economy enters into a period of recovery. These up-and-down swings are commonly known as **business cycles**, although this term is somewhat misleading, because real economies do not expand and contract in regular and predictable "cycles." *Economic fluctuations* is a more accurate way to characterize the economy's real behavior (see Exhibit 2.7).[6]

business cycles Fluctuations in the rate of growth that an economy experiences over a period of several years.

UNEMPLOYMENT

Unemployment is one of the most serious effects of economic contraction. It is traumatic at a personal level for idle workers and their families, and the decrease in the number of active workers affects the overall economy in terms of lost output.[7] Moreover, unemployed workers increase the financial burden on state governments when they collect unemployment benefit payments.

The **unemployment rate** indicates the percentage of the *labor force* currently without employment. The labor force consists of people ages 16 and older who are either working or looking for jobs.[8] Not all cases of unemployment are the same, however. As Exhibit 2.8 on the next page explains, each of the four types of unemployment—*frictional, structural, cyclical,* and *seasonal*—has unique implications for business and political leaders.

unemployment rate The portion of the labor force (everyone over 16 who has or is looking for a job) currently without a job.

INFLATION

Like almost everything else in the economy, prices of goods and services rarely stay the same for very long. **Inflation** is a steady rise in the average prices of goods and services throughout the economy. **Deflation**, on the other hand, is a sustained fall in average prices. Inflation is a major concern for consumers, businesses, and government leaders because of its effect on *purchasing power,* or the amount of a good or service you can buy for a given amount of money. When prices go up, purchasing power goes down. If wages keep pace with prices, inflation is less worrisome, but if prices rise faster than wages, consumers definitely feel the pinch.

inflation An economic condition in which prices rise steadily throughout the economy.

deflation An economic condition in which prices fall steadily throughout the economy.

IT'S YOUR BUSINESS: (1) What state of the business cycle is the economy currently in? Is this influencing your career plans? (2) Have you ever been unemployed (at a time when you were actively looking for work)? Which of the four categories of unemployment would you have fallen under?

KEY TERMS TO KNOW: competition, pure competition, monopoly, monopolistic competition, oligopoly, recession, business cycles, unemployment rate, inflation, deflation

Government's Role in a Free-Market System

5 LEARNING OBJECTIVE

Outline the debate over deregulation, and identify four key roles that governments play in the economy.

For as long as the United States has been in existence, people have been arguing over just how *free* the free market should be. In the broader view, this argument springs from profound philosophical differences over the role government should play in society as a whole. More narrowly, even professional economists don't always agree on what role the government should play in the economy.

Much of the debate about the government's role can be framed as a question of **regulation** versus **deregulation**—having more rules in place to govern economic activity or having fewer rules in place and relying more on the market to prevent excesses and correct itself over time. Generally speaking, the argument for more regulation asserts that companies can't always be counted on to act in ways that protect stakeholder interests and that the market can't be relied on as a mechanism to prevent or punish abuses and failures. The argument for deregulation contends that government interference can stifle innovations that ultimately help everyone by boosting the entire economy and that some regulations burden individual companies and industries with unfair costs and limitations.

regulation Relying more on laws and policies than on market forces to govern economic activity.

deregulation Removing regulations to allow the market to prevent excesses and correct itself over time.

Four major areas in which the government plays a role in the economy are protecting stakeholders, fostering competition, encouraging innovation and economic development, and stabilizing and stimulating the economy.

PROTECTING STAKEHOLDERS

Chapter 1 points out that businesses have many stakeholders, including colleagues, employees, supervisors, investors, customers, suppliers, and society at large. In the course of serving one or more of these stakeholders, a business may sometimes neglect, or at least be accused of neglecting, the interests of other stakeholders in the process. For example, managers who are too narrowly focused on generating wealth for shareholders might not spend the funds necessary to create a safe work environment for employees or to minimize the business's impact on the community.

In an attempt to balance the interests of stakeholders and protect those who might be adversely affected by business, the U.S. federal government has established numerous regulatory agencies (see Exhibit 2.9 on the next page), and state and local governments have additional agencies as well. Chapter 4 takes a closer look at society's concerns for ethical and socially responsible behavior and the ongoing debate about business's role in society.

FOSTERING COMPETITION

Based on the belief that fair competition benefits the economy and society in general, governments intervene in markets to preserve competition and ensure that no single enterprise becomes too powerful. For instance, if a company has a monopoly, it can potentially harm customers by raising prices or stifling innovation and harm other potential competitors by denying access to markets. Numerous laws and regulations have been established to help prevent individual companies or groups of companies from taking control of markets or acting in other ways that restrain competition or harm consumers.

EXHIBIT 2.10 **Major Types of Taxes**

Running a government is an expensive affair. Here are the major types of taxes that national governments, states, counties, and cities collect to fund government operations and projects.

Type of Tax	Levied On
Income taxes	Income earned by individuals and businesses. Income taxes are the government's largest single source of revenue.
Real property taxes	Assessed value of the land and structures owned by businesses and individuals.
Sales taxes	Retail purchases made by customers. Sales taxes are collected by retail businesses at the time of the sale and then forwarded to state governments. Disputes continue over taxes e-commerce sales made across state lines.
Excise taxes	Selected items such as gasoline, tobacco, and liquor. Often referred to as "sin" taxes, excise taxes are implemented in part to help control potentially harmful practices.
Payroll taxes	Earnings of individuals to help fund Social Security, Medicare, and unemployment compensation. Corporations match employee contributions.

by establishing *economic development zones*. These zones typically offer a variety of financial incentives such as tax credits, low-interest loans, and reduced utility rates to businesses that meet specific job-creation and local investment criteria.

STABILIZING AND STIMULATING THE ECONOMY

In addition to the specific areas of regulation and policy just discussed, governments have two sets of tools they can use to stabilize and stimulate the national economy: monetary policy and fiscal policy. **Monetary policy** involves adjusting the nation's *money supply*, the amount of "spendable" money in the economy at any given time, by increasing or decreasing interest rates. In the United States, monetary policy is controlled primarily by the Federal Reserve Board (often called "the Fed"), a group of government officials who oversee the country's central banking system. Chapter 20 discusses the objectives and activities of the Fed in more detail.

monetary policy Government policy and actions taken by the Federal Reserve Board to regulate the nation's money supply.

Fiscal policy involves changes in the government's revenues and expenditures to stimulate a slow economy or dampen a growing economy that is in danger of overheating and causing inflation. On the revenue side, governments can adjust the revenue they bring in by changing tax rates and various fees collected from individuals and businesses (see Exhibit 2.10). When the federal government lowers the income tax rate, for instance, it does so with the hope that consumers and businesses will spend and invest the money they save from lower tax bills.

fiscal policy Use of government revenue collection and spending to influence the business cycle.

On the expenditure side, local, state, and federal government bodies constitute a huge market for goods and services, with billions of dollars of collective buying power. Governments can stimulate the economy by increasing their purchases, sometimes even to the point of creating new programs or projects with the specific purpose of expanding employment opportunities and increasing demand for goods and services.

No instance of government spending in recent years has generated more heated controversy than the bailouts made during the financial crisis of 2008 and 2009. The federal government spent billions of dollars in investments and loans to troubled banks to encourage lending after the credit markets had dried up and to prevent several large financial companies from collapsing. The government also stepped in to help save the automakers General Motors and Chrysler during this period.

Debate continues on whether it was wise to intervene by rescuing these ailing companies or whether the government should have let market forces play out. Would the money invested in saving one large company have been better spent in helping a dozen small, young companies get off the ground? In general, the rationale for stepping in to rescue any specific company is that its collapse would harm a significant portion of the economy as a whole. However, these decisions hit at the very heart of an economic system because they determine how a society chooses to deploy its scarce resources.

EXHIBIT 2.11 **Composition of the Consumer Price Index**

The U.S. Bureau of Labor Statistics computes a variety of consumer price indexes by tracking prices for a representative collection of goods and services, and it periodically adjusts the mix to reflect consumer buying patterns. The particular CPI shown here, often referred as to the "headline CPI" because it is the one usually mentioned in news reports, is officially called the "All Items CPI for All Urban Consumers." The "core CPI," in comparison, excludes the typically volatile categories of food and energy in an attempt to show long-term trends more accurately. The "market basket" of goods and services is adjusted from time to time; this chart reflects the CPI composition in December 2012.

Source: Data from U.S. Bureau of Labor Statistics, "Relative Importance of Items in the Consumer Price Index," December 2012, www.bls.gov.

consumer price index (CPI), measures the rate of inflation by comparing the change in prices of a representative "basket" of consumer goods and services, such as clothing, food, housing, and transportation (see Exhibit 2.11). The CPI has always been a hot topic because the government uses it to adjust Social Security payments, businesses use it to calculate cost-of-living increases for employees, and many use it as a gauge of how well the government is keeping inflation under control.

consumer price index (CPI)
A monthly statistic that measures changes in the prices of a representative collective of consumer goods and services.

In contrast to the CPI, the **producer price index (PPI)** measures prices at the producer or wholesaler level, reflecting what businesses are paying for the products they need. (Like the CPI, the PPI is often referred to as a single index, but it is actually a family of more than 600 industry-specific indexes.) In addition to monitoring economic activity, PPIs have a number of managerial uses, from helping companies place an accurate value on inventories to protecting buyers and sellers with *price-escalation clauses* in long-term purchasing contracts.[10]

producer price index (PPI)
A statistical measure of price trends at the producer and wholesaler levels.

NATIONAL ECONOMIC OUTPUT

The broadest measure of an economy's health is the **gross domestic product (GDP)**. The GDP measures a country's output—its production, distribution, and use of goods and services—by computing the sum of all goods and services produced for *final* use in a country during a specified period (usually a year). The products may be produced by either domestic or foreign companies as long as the production takes place within a nation's boundaries. Sales from a Honda assembly plant in California, for instance, would be included in the U.S. GDP, even though Honda is a Japanese company. Monitoring GDP helps a nation to evaluate its economic policies and compare current performance with prior periods or with the performance of other nations.

gross domestic product (GDP)
The value of all the final goods and services produced by businesses located within a nation's borders; excludes outputs from overseas operations of domestic companies.

GDP has largely replaced an earlier measure called the *gross national product (GNP)*, which excludes the value of production from foreign-owned businesses within a nation's boundaries and includes receipts from the overseas operations of domestic companies. GNP considers *who* is responsible for the production; GDP considers *where* the production occurs.

For the latest information on economic issues in business, visit http://real-timeupdates.com/bia7 and click on Chapter 2.

times the rate paid for electricity from a nuclear plant. Feed-in tariffs are controversial, with opponents saying that homeowners who can afford to install solar panels and get money back through feed-in tariffs are profiting from those ratepayers who either can't install solar because they live in rental housing or can't afford the installation costs.

Aside from the controversy over financial incentives, photovoltaic suppliers are wrestling with a powerful economic force that can cause enormous upheaval in developing market segments. As producers such as Suntech drove prices down, demand went up, which attracted more competition, which in turn helped drive prices down even further and create an oversupply of product. This is partly good news, partly bad news. The good news for suppliers and customers is that prices are low enough that photovoltaic solar has reached grid parity in many locations around the globe.

Here's the bad news. First, prices are now so low that some firms are struggling to maintain profitability. Second, the rise in demand attracted more supply capacity than the market can currently absorb, so the photovoltaics industry is due for a *shakeout*. Shakeouts can occur in fast-developing industries as lots of companies try to get in on the action. Some companies won't be able to capture enough business to keep going, and others will be bought out by better-financed companies trying to expand through both sales and acquisitions.

In the early days of automobiles, for example, nearly 300 car companies were trying to get a piece of the emerging market. The market couldn't sustain that many, and the vast majority of them disappeared, leading to today's market in which a handful of huge companies have the entire mainstream market. Similar shakeouts occurred in televisions, personal computers, and Internet service. Shakeouts are a natural phenomenon in developing industries as customers "vote with their wallets" to select their preferred suppliers, and suppliers with the strongest financial foundations can weather price wars and dole out money to acquire competitors. Within a short period of time, the strong get stronger, and the weak disappear.

As if that weren't enough, along with just about every industry, the solar industry was battered by the recent global recession. Suntech's revenues dropped by almost 90 percent as new construction and solar retrofitting ground to a halt.

Unfortunately for Suntech, the company's problems didn't stop there. As it was trying to recover from the recession, a number of its major customers couldn't pay their bills. The financial blow and some subsequent questions about founder Zhengrong Shi's personal financial interest in those customers (he had invested in some of them) led to his ouster by the board of directors in early 2013. Shortly thereafter, Wuxi Suntech Power Holdings, Suntech's photovoltaic manufacturing subsidiary, filed for bankruptcy.

As of late 2013, the company is still in operation and trying to reorganize in a way that will let it return to profitability. No matter what the future has in store for it, Suntech remains a stark lesson in how economic forces can overtake a company even when it is riding a wave of growth.

Critical Thinking Questions

2-1. What effect are feed-in tariffs likely to have on electricity users who don't adopt solar power? Is this outcome fair? Why or why not?

2-2. If a particular government believes that solar is a more desirable energy source than nonrenewables such as coal and gas, why wouldn't it simply grant solar energy utilities monopoly rights?

2-3. Why could it make sense for a company to acquire one or more competitors during an industry shakeout, if there isn't enough business to sustain all the suppliers in the market?

LEARN MORE ONLINE

Research Suntech's current financial status. Is it still in bankruptcy? If not, did it emerge as a going concern? Does the company's website at www.suntech-power.com have any information about its current financial situation?

MyBizLab
Go to mybizlab.com to complete the problems marked with this icon.

KEY TERMS

business cycles (79)
capital (69)
capitalism (71)
competition (77)
consumer price index (CPI) (85)
deflation (79)
demand (74)
demand curve (74)
deregulation (81)
economic indicators (84)
economic system (71)
economics (69)
economy (69)
entrepreneurship (69)
equilibrium point (76)
fiscal policy (83)
free-market system (71)
gross domestic product (GDP) (85)

PRACTICE YOUR SKILLS

Sharpening Your Communication Skills

The economics of supply and demand can affect us every day, from the ever-changing prices of plane tickets to the depleted stock of the latest must-have products. In a brief paragraph (no more than 100 words), explain the impact and effect of supply and demand on the business world.

Building Your Team Skills

Economic indicators help businesses and governments determine where the economy is headed. As part of a team assigned by your instructor, analyze the following newspaper headlines for clues to the direction of the U.S. economy:

- "Housing Starts Lowest in Months"
- "Fed Lowers Discount Rate and Interest Rates Tumble"
- "Retail Sales Up 4 Percent Over Last Month"
- "Business Debt Down from Last Year"
- "More Manufacturers Showing Interest in Upgrading Production Equipment"
- "Local Economy Sinks as Area Unemployment Rate Climbs to 9.2 Percent"
- "Computer Networking Firm Reports 30-Day Backlog in Installing Business Systems"

Is each item good news or bad news for the economy? Why? What does each news item mean for large and small businesses? Report your team's findings to the class. Did all the teams come to the same conclusions about each headline? Why or why not? With your team, discuss how these different perspectives might influence the way you interpret economic news in the future.

Developing Your Research Skills

In small groups, research examples of privatization in different industries, such as energy and rail, around the world. Consider the following questions: What impact does privatization have on the industry and the economy? What are the kinds of difficulties that may exist when governments try to privatize industries? Write a one-page report summarizing your findings.

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Go to **mybizlab.com** for the following Assisted-graded writing questions:

2-21. Why is competition an important element of the free-market system?

2-22. How might the word "free" affect public and political discussions of free-market systems?

2-23. MyBizLab Only—comprehensive writing assignment for this chapter.

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