

## CHAPTER 2: FOUNDATIONS OF ECONOMIC ANALYSIS

This chapter presents a number of important concepts that are useful in understanding how the economy works, and in thinking about how we might make it work better as citizens and through government action. We start by describing different ways to investigate economic phenomena. This is followed by an examination of two models that offer different approaches to defining and understanding the economy. The final section provides an introduction to the nature of markets. The concepts discussed in this chapter provide much of the foundational knowledge for later chapters.

### 1. OUR TOOLS FOR UNDERSTANDING

Explanations of economic phenomena draw on two different approaches to seeking knowledge: empiricism and rationalism.

#### 1.1 EMPIRICISM

An empiricist argues that knowledge primarily comes to us from the five senses (seeing, hearing, touching, tasting, and smelling). In economics, **empirical investigation** is mainly about making observations that are then represented in words or images, as well as collecting numerical data. The time-series and cross-sectional data for various economic indicators, presented in Chapter 0 are good examples of empirical investigation.

**empirical investigation:** analysis based on observation and recording of specific events, represented in words, images, or numerical data

**Historical investigation**, which involves using knowledge of historical events to help explain economic phenomena, is also usually empirical. The Great Depression of the 1930s, major wars, changing roles of women in the workforce, the invention of computers, and the financial crash of 2007-8—all are examples of historical events that have had a significant economic impact.

**historical investigation:** study of past events

Induction is a central tool of empiricism. For example, if we observe that swan number 1 is white, swan number 2 is white, and all the rest up to swan number 10,000 are also white, we see a pattern that may prompt us to claim that all swans are white. Of course, if we observe the existence of a black swan, this would disprove our initial claim. Similarly, if we regularly observe that when the price of a good rises, sales of that good will fall, then we might say that this constitutes a general relationship between price and demand. However, if we find cases where price and demand rise together (as sometimes occurs), then this disproves the idea that the relationship between price and demand is fixed. As you can see, empiricism is about real-world evidence.

Empirical investigation is often useful in studying relationships between economic variables. If two economic variables seem empirically related to each other (or “correlated,” to use the statistical term) such that they fluctuate together, it might be tempting to think that changes in one variable are *causing* changes in the other. Sometimes this is true. But two variables may also

be related empirically *without* there being a well-defined causal relationship between them. For example, countries with higher GDP tend to have higher reported levels of cancer. But before we conclude that higher GDP causes cancer, we should consider other possibilities. For example, higher GDP is broadly associated with longer life expectancy, and people living longer are more likely to develop cancer at some point in their lives. Or there may be other factors (including diet, exercise, and a host of other variables) that connect these two observations—cancer and GDP. Economists take seriously the warning that “correlation does not necessarily imply causation.” In other words, the existence of an observable relationship between two economic variables does not imply that changes in one variable *cause* the changes in the other.

## BOX 2.1 GRAPHING REVIEW

Graphs provide a useful way to explore the relationship between two variables and test specific economic hypotheses. Based on Table 2.1, we might form the hypothesis that unemployment rates tend to be higher when GDP growth rates are lower. We call this a **negative, or inverse, relationship**—when an increase in one variable is associated with a decrease in another variable (or, vice versa, when a decrease in one variable is associated with an increase in another variable).

**negative (or inverse) relationship:** the relationship between two variables if an increase in one variable is associated with a decrease in the other variable (or vice versa)

**Table 2.1 Unemployment Rate and Real GDP Growth Rate, United States, 2008–2018 (in Percent)**

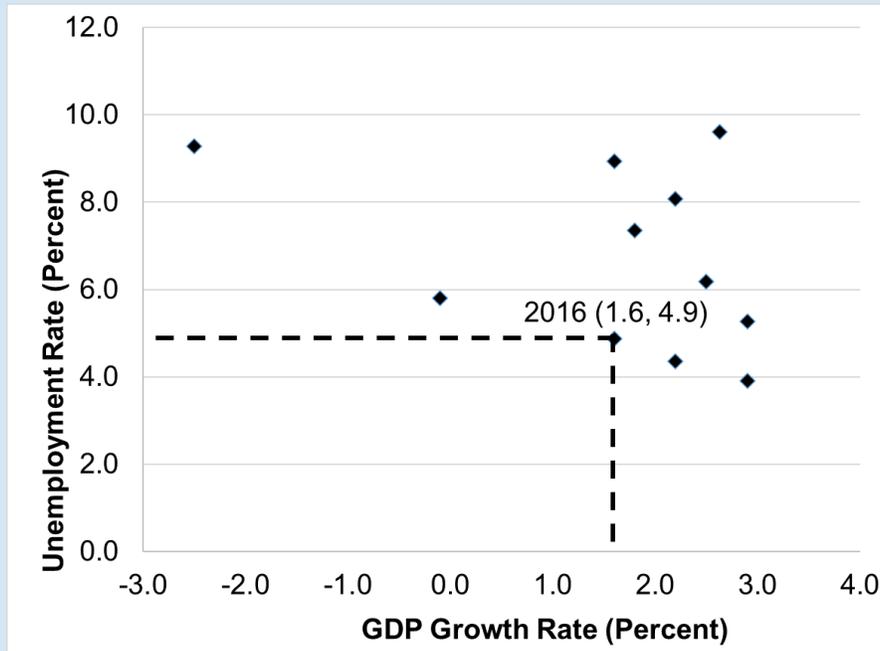
Year	Unemployment rate	Real GDP growth rate
2008	5.8	-0.3
2009	9.3	-2.8
2010	9.6	2.5
2011	8.9	1.6
2012	8.1	2.2
2013	7.4	1.7
2014	6.2	2.4
2015	5.3	2.6
2016	4.9	1.6
2017	4.4	2.2
2018	3.9	2.9

*Sources:* U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics.

Figure 2.1 plots the relationship between unemployment rates and GDP growth rates. Each “data point” on the graph tells us the values of *both* variables for a specific year. In the graph we have kept the real GDP growth rate on the x-axis and the unemployment rate on the y-axis. So the data point for 2016, for example, indicates that the GDP growth rate was 1.6 percent (by reading across the x-axis) and the unemployment rate was 4.9 percent (by reading down the y-axis).

A visual inspection of Figure 2.1 shows relatively high unemployment rates when GDP growth rates were low or negative. In general, the graph seems to support our hypothesis of an inverse relationship between unemployment and GDP growth, but there are some exceptions.

**Figure 2.1 Relationship Between Unemployment and GDP Growth Rate, United States, 2008–2018**



Sources: U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics.

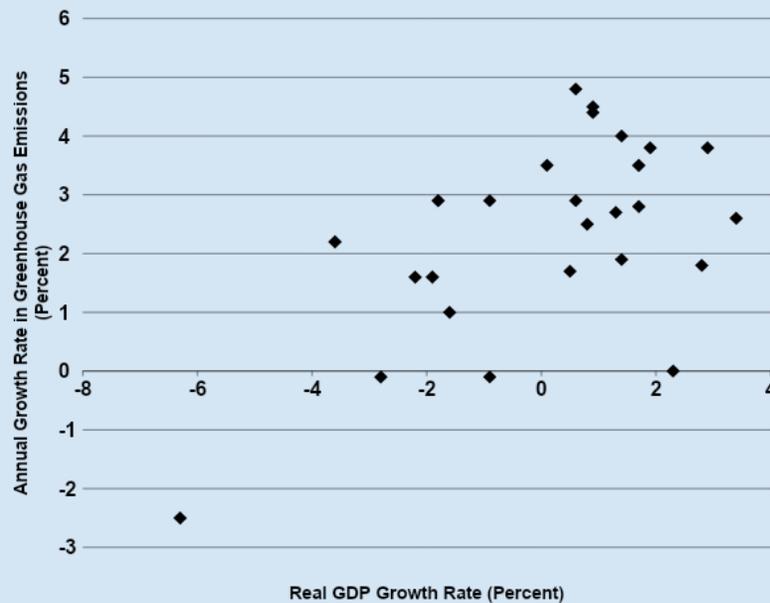
Figure 2.1 can tell us whether our two variables are “correlated,” but we cannot determine whether there is a causal relationship between them. While low GDP growth could cause high unemployment, the causality could potentially be in the opposite direction—that high unemployment causes low GDP growth. Even if the variables seem related in a graph, the relationship could be random, or “spurious.” For example, you may have read stories about how the outcome of sporting events are correlated with the performance of the stock market. But it is highly unlikely that such relationships are causal.

The opposite of an inverse relationship is a **positive, or direct, relationship**. In this case, an increase in one variable is associated with an increase in another variable—or a decrease in one variable is associated with a decrease in another.

**positive (or direct) relationship:** the relationship between two variables when an increase in one variable is associated with an increase in the other variable or a decrease in one variable is associated with a decrease in the other variable

A good example of a positive relationship is between the growth rate of GDP and the growth rate of greenhouse gas emissions, such as carbon dioxide and methane. When the economy is growing, greenhouse gas emissions increase as manufacturing industries tend to produce more goods, people tend to fly and drive more, and construction activity tends to increase. The relationship between GDP growth and the growth of greenhouse gas emission is shown in Figure 2.2. In this case, we see a reasonably clear positive relationship—when the economy is growing rapidly greenhouse gas emissions tend to increase. However, as discussed above, we cannot demonstrate causality just by looking at a graph.

**Figure 2.2 Relationship Between GDP Growth Rate and Greenhouse Gas Emissions Growth Rate, United States, 1991–2015**



Source: Greenhouse Gas data from United States Environmental Protection Agency

While empirical evidence creates the foundation of economic analysis, a purely empirical investigation is unlikely to explain causation. Furthermore, we often need guidance on how to sift through the often overwhelming amount of empirical evidence available to us. Thus more tools are clearly needed for economists to try to *explain*, rather than simply describe, economic phenomena.

## 1.2 RATIONALISM

In contrast to an empiricist, a **rationalist** argues that our senses are *not* a reliable source of knowledge and instead directs us to look to reason and logic in order to find knowledge. In fact, a dedicated rationalist would argue that observation (and the use of other senses) is simply not necessary. Consider an example. If we accept (as a premise) that all people are mortal, and Joe Bloggs is a person, then logical deduction dictates that Joe Bloggs *must* be mortal. There is no requirement to wait around for many years in order to *empirically* observe Joe Bloggs's death, as logic and reason tell us that if our *premise* is correct, and our *reasoning* is logical, then our conclusion *must* be correct.

**rationalist investigation:** analysis based on abstract thought and the use of logic and reason

Much economic analysis uses rationalism. This tool can be particularly useful for determining causation between variables. Economists tend to use a rationalist approach to create theories based on assumptions about economic agents, from which, with careful reasoning, they draw out potential implications for economic behavior. For example, if we start from the premise

that individuals are completely rational and fully informed, then we can use logic and reason to predict that they will make a particular choice. This choice is necessarily *optimal* because the individual has all the relevant information and can weigh this information up in a completely accurate (rational) manner.

A rationalist approach to pursuing knowledge can be very useful, but rationalism has its limitations. In particular, if your initial premise is not accurate, then your conclusion is unlikely to be correct. For example, if an individual is not fully informed or fully rational (as is often the case), then that individual's choice is unlikely to be optimal, even if our use of reasoning and logic seems correct.

### 1.3 THEORY AND EVIDENCE

Most analysis is (or at least should be) a mix of empiricism and rationalism. On one hand, we need reason and logic to make sense of, and to organize, a vast jumble of empirical observations. On the other hand, purely rationalist theorizing without any recourse to empirical evidence is likely to produce misleading and irrelevant lines of analysis. A good economic theory is thus informed by empirical evidence as well as rationalist investigation.

Let us now say a little about the nature of economic theory. It should be stressed at the outset that a theory can never be as complex and rich as the reality it seeks to explain, so theory is about simplification. How to simplify is a difficult and somewhat uncertain task. This is one reason there are sometimes competing theories and disagreements within economics. It is important to understand the strengths and weaknesses of particular theories and to be open to considering alternative theories.

Theories often give rise to models. A **model** is an analytical tool that highlights some aspects of reality while ignoring others (in economics, what is ignored is often a portion of the larger historical, social, and environmental context). A model can take the form of a simplified story, an image, a figure, a graph, or a set of equations, and it always involves simplifying assumptions. We look at examples of two basic economic models in Section 2. Other models appear throughout this text.

**model:** an analytical tool that highlights some aspects of reality while ignoring others

An important part of many models is the assumption of **ceteris paribus**, a Latin phrase that means “other things equal” or “all else constant.” In order to focus on one or two variables, we assume that no other variables change. Of course, in the real world, many things are usually changing at the same time. Often, after a basic model is constructed, we can vary the *ceteris paribus* assumption, to see how changes in other variables will affect the model's conclusions.

**ceteris paribus:** a Latin phrase meaning “other things equal” or “all else constant”

Theories and models essentially simplify reality. Is this justifiable? It is if it gives us greater insight into how things actually work. A model plane, for example, cannot carry passengers or freight, but it can give aerodynamic engineers insights into how a real plane works and help them to design better features for real aircraft. In the same way, simplified models can help economists to understand the working of very complex real-world economies. The question is not whether simplification should occur but whether a particular model's simplifications are reasonable.

## Discussion Questions

1. Consider the following examples of investigation. For each one, indicate which mode of investigation it most closely matches, empirical or rational.
  - a) A biologist tries to determine the number of different species of plants found on a plot of rainforest
  - b) Albert Einstein develops his theory of relativity
  - c) An economist measures how GDP varies across countries
  - d) A sociologist examines the impact of movements for equal pay for women on women's social and economic status
  - e) An economist states that a rise in investment will lead to a fall in unemployment
2. Model building is sometimes compared to map making. If someone asks you how to get to your house, what will you put on the map you draw for them? What if the question asked has to do with the location of the highest point in town, the town's political boundaries, the public transit system, or how your dwelling links up to the local sewer system? Is it possible for a single, readable map to answer every possible question? Does the goal you have in mind for the map affect what you put on it?

## 2. DIFFERENT ECONOMIC THEORIES: EXAMPLES OF TWO BASIC MODELS

The discipline of economics, like most other areas of academic and public discussion, has a history of varying approaches, beliefs, and conclusions. We will discuss these different approaches in later chapters, but here we present two theoretical models for understanding the economy: the neoclassical model, which has dominated much of standard economics throughout the twentieth century, and the contextual model, which incorporates post-twentieth century advances in economic research. The contextual model is central to this text. These two approaches have some overlap, but they have different scope and emphasis, and can lead to different understandings of economic theory and policy.

### 2.1 THE BASIC NEOCLASSICAL MODEL

The **basic neoclassical model** is a model of market exchange that—while abstracting away from many real-world factors—portrays some important aspects of markets in a simple way. Neoclassical economics is based on the idea that economies can be thought of as a collection of profit-maximizing firms and utility-maximizing households interacting in perfectly competitive markets. This idea is expressed in terms of formalized assumptions, equations, and graphs.

**basic neoclassical model:** a model that portrays the economy as a collection of profit-maximizing firms and utility-maximizing households interacting in perfectly competitive markets

This model can be portrayed in the **circular-flow diagram**, as shown in Figure 2.3. In this model, the world is simplified to two kinds of economic actors: households and firms—represented by two rectangles. The activity of exchange between the two actors is illustrated using the blue arrows. Households are assumed to consume goods and services with the single (though rather abstract) goal of maximizing their **utility** (or satisfaction). Firms are assumed to produce with the

single goal of maximizing profits. Households are considered the ultimate owners of all resources of land, labor, and capital, called “factors of production” by economists. Households rent the services of these productive factors to firms through **factor markets** (dark blue arrow from households to firms), receiving monetary payments in the form of wages, rents, interests, and profits (light blue arrow from the firms to households). Firms produce goods and services, which they sell to households on **product markets** (dark blue arrow from firms to households) in return for monetary payments (light blue arrow from households to firms). The model further assumes that there are so many firms and households involved in the market for any good or service that a situation of “perfect competition” reigns, in which prices are determined purely by forces of supply and demand.

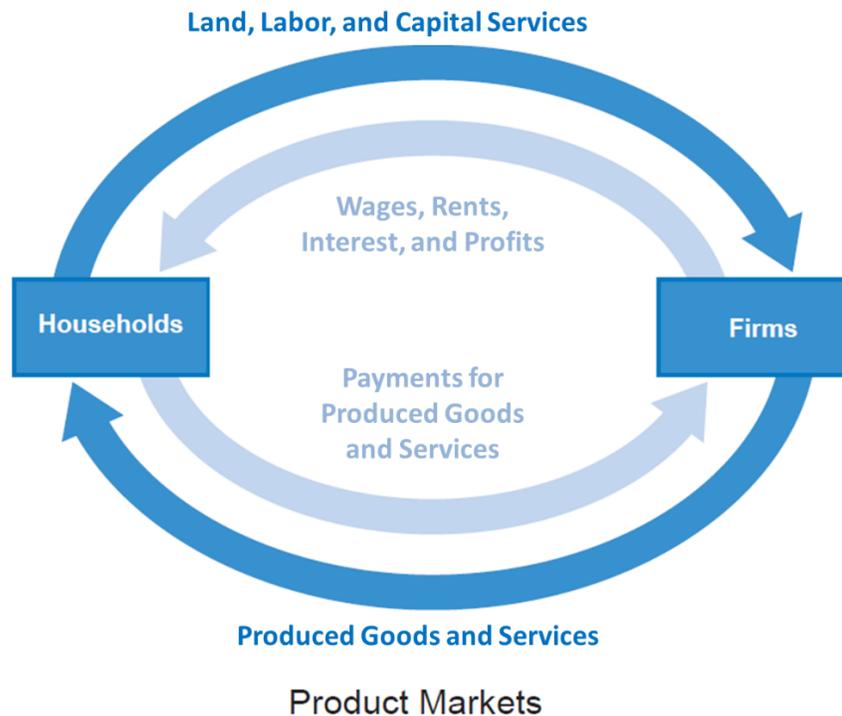
**circular flow diagram:** a graphical representation of the traditional view of an economy consisting of households and firms engaging in exchange

**utility:** the level of usefulness or satisfaction gained from a particular activity such as consumption of a good or service

**factor markets:** markets for the services of land, labor, and capital

**product markets:** markets for newly produced goods and services

**Figure 2.3 The Circular Flow Diagram for the Basic Neoclassical Model**  
**Factor Markets**



The circular flow diagram is useful in portraying, in a very simplified way, two of the major actors (households and firms) and three of the major activities (production, exchange, and consumption) involved in economic life. However, it is important to recognize that the model leaves out some key actors and activities.

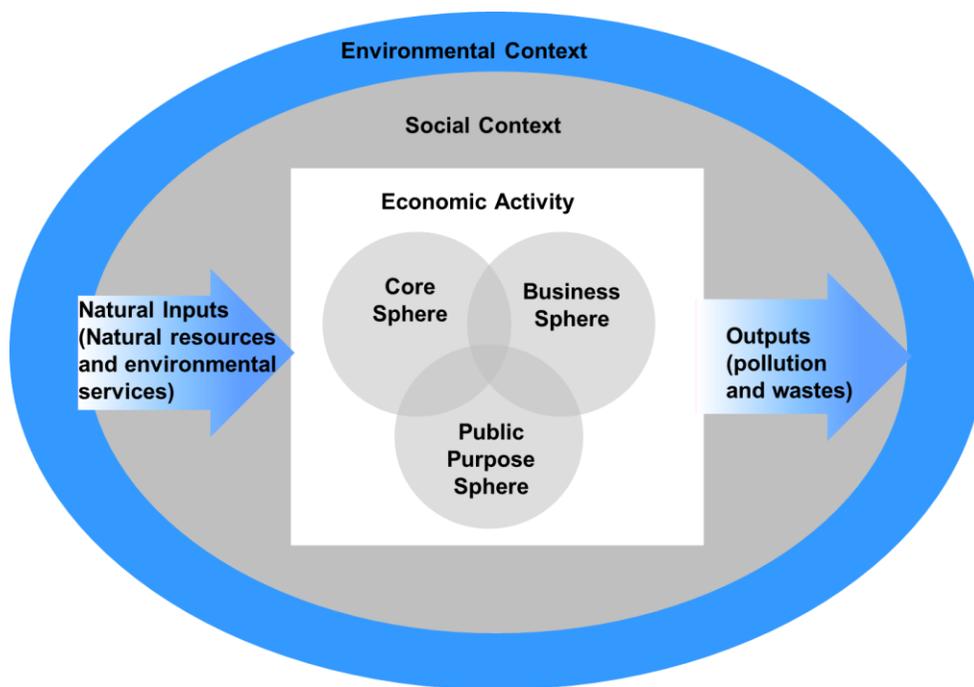
For example, while “land” is included as a factor of production, the fact that natural resources can be used up or polluted is not shown. Because of this, the circular flow diagram is a little like a “perpetual motion machine”; the economy it portrays can apparently keep on generating products forever without any inputs of materials or energy. The necessity of resource management activities is not included.

Also, the diagram only takes into account flows of goods or resources that are paid for through the market. This ignores unpaid work and free use of natural resources, among other things. The roles of socio-cultural norms and historical factors in influencing economic behavior are also neglected in this model. You will also notice that there is no role for government in this diagram. While this oversimplification has some value, in allowing us to focus only on the workings of specific markets, it limits our ability to present a broader picture that considers the context in which economic activities occur.

## 1.2 THE CONTEXTUAL MODEL

As discussed previously, the traditional circular flow model ignores the *environmental* and *social contexts* within which economic activities take place. We therefore need a more inclusive, and more realistic, model than the one presented in Figure 2.3. We present such a model in Figure 2.4.

**Figure 2.4 Social and Environmental Contexts of Economic Activity**



Because all economic production requires the input of natural resources and generates some wastes, the economy operates in an *environmental context*. For example, if we overburden a river with toxic chemicals, the water may not be usable in the future for drinking water supplies. Sometimes economic activity can also generate some positive externalities (unintended spill-overs), such as restorative care for farms and rangelands that make them more productive over time.

The economy also operates in a *social context* created and maintained by human beings; this includes history, politics, culture, ethics, and other human motivations. The social context determines what constitutes acceptable economic activity. For example, we do not allow legal markets for human organs or certain drugs. It also determines the relative weight that a society attaches to the different goals discussed in Chapter 1, such as how to identify and assess a potential tradeoff between ecological sustainability and increasing material living standards.

As we will see in the discussion of markets in Section 3, much economic activity would become impossible without aspects of the social context such as laws, norms, trust, and honesty. Like the environment, society is also the recipient of both positive and negative outputs from the economy, such as inventions, products, services, and perceptions about what is a “good life”. Some of these may be truly well-being enhancing, while others may run counter to actual well-being.

In Figure 2.4, we show the social context as existing inside the environmental context because all human activities—not only those of the economic system—are ultimately dependent on the environmental context. A useful understanding of economics must consider the most critical interactions between the economy and its contexts, showing how the economy is in various ways enabled and constrained by these contexts, and how the environmental and social influences are affected *by* the economy.

The contextual approach presents economic activity as occurring within three spheres: core, public purpose, and business. The core sphere includes households, families, and community institutions. The public purpose sphere includes government and other local, national, and international organizations that seek to enhance human well-being. And the business sphere includes firms producing goods and services for profitable sale. Individuals may move among these three spheres; for example, a woman may be a wife and mother in the core sphere, a volunteer for an environmental group in the public purpose sphere, and a business executive in the business sphere. Thus Figure 2.4 shows the three spheres overlapping. We discuss economic activity in the three spheres in more detail below.

### *Core Sphere*

The **core sphere** includes households, families, and community institutions that undertake economic activities, usually on a small scale, and largely without the use of money. Traditionally, economists have focused on the core sphere as consumers and workers, in their interactions with businesses. But important economic activity occurs *within* the core sphere. For example, the core sphere is the primary site for raising children; preparing meals; maintaining homes; organizing leisure time; and caring for individuals who are sick, elderly, or needy but not in institutions such as hospitals or nursing homes.

#### **core sphere:** households, families, and informal community groups

Conversion of many goods and services (often bought in markets) into forms suitable for final use, such as cooking pasta or planting grass seeds, occurs within the core sphere. Decisions on how to allocate income among consumption, savings or financial investments, are made within the core sphere. So are decisions on allocating time between labor and leisure. As we will see in later chapters, such decisions play an important role in determining economic outcomes.

One distinguishing characteristic of the core sphere is that economic activities are rewarded by what it produces instead of earning money. For example, work in a home garden is rewarded with tomatoes, and the reward from good child care is a happy and healthy child. Activities in the

core sphere respond not only to *wants* but also to *needs*—unlike market activities, which respond to what people are able and willing to pay for, regardless of need.

The core sphere is critical for subsistence economies, where extended families and villages may produce for themselves most of what they consume, with little outside trading.

Core sphere activities are sometimes described as noneconomic or nonproductive because they generally do not produce goods and services for trade through a market. But this can be misleading. Consider the activity of providing care to family members. According to a 2015 analysis, the estimated economic value of this unpaid labor in 2013 was \$470 billion.<sup>1</sup> A different study found that the value of unpaid care work by women in the United States was even higher, at \$1.5 trillion per year.<sup>2</sup>

When the core sphere is working effectively to support human well-being, important goods and services are provided to many people, even if the scale of production in each case is quite small. Of course, core spheres can also work inadequately. The requirements of caring for children or elderly and ill people may overwhelm the resources of impoverished families and communities. One extreme example is the situation of families and communities in sub-Saharan Africa trying to care for the large number of children orphaned by HIV/AIDS or by war, without adequate resources to feed and clothe the children, let alone provide for education and safety. There are limits to what can be accomplished within small-scale, largely informal networks of personal relations. The public purpose sphere, with more formal and larger-scale organizations, is uniquely capable of meeting broader well-being needs.

### *The Public Purpose Sphere*

The **public purpose sphere** includes government agencies, as well as nonprofit organizations such as charities, religious organizations, professional associations, and international institutions such as the World Bank and the United Nations. They may be as large as a national government or an international scientific organization or as small as a local chapter of the Cub Scouts. The distinguishing characteristic of these institutions is that they exist for an explicit purpose related to the public good—that is, the common good of some group larger than a household or informal community—and they do not aim at making a profit.

**public purpose sphere:** governments and other local, national, and international organizations established for a public purpose beyond individual or family self-interest and not operating with the goal of making a profit

We can break down the economic functions of public purpose organizations into two general categories: *regulation* and *direct provision*.

#### *Regulation.*

One very basic function of public-purpose organizations is to **regulate** economic activities—that is, to set the standards and “rules of the game” by which other economic actors “play”—so as to create the legal, informational, and social infrastructure for economic activity. Though many people think of “regulation” entirely in terms of “government regulation,” many nonprofit groups also participate in regulating economic activity, particularly in the area of standard setting. For example, standardized exams like the AP, SAT I or II, GRE, GMAT, or TOEFL are all developed and administered by the Educational Testing Service, which is a large private nonprofit organization.

**regulation:** setting standards or laws to govern behavior

*Direct Provision.*

**Direct public provision** is often used to supply goods or services that cannot be supplied equitably or efficiently by core sphere institutions and businesses alone. Some of the goods and services provided by the public purpose sphere are what economists call public goods. A **public good** (or service) is a good whose benefits are freely available to all (**non-excludable**), and whose use by some does not reduce the quantity available to others (**non-rival**).

**direct public provision:** the supply of goods or services from government or nonprofit institutions  
**public good:** a good whose benefits are freely available to anyone, and whose use by one person does not diminish its usefulness to others

**nonexcludable good:** a good whose benefits are freely available to all

**nonrival good:** a good whose use by one person does not reduce the quantity or quality available to others

For example, when a local police force helps to make a neighborhood safe, all the residents benefit. Public roads (at least those that are not congested and have no tolls) are also public goods, as is national defense. Some of the larger public purpose organizations, often associated with some level of government, are charged with purposes such as relieving poverty, providing formal health care and education, protecting the natural environment, and stabilizing global financial markets. Religious organizations are other well-known public purpose organizations. Small and large nonprofits exist to promote various causes, ranging from protecting natural resources to providing the homeless with shelter to lobbying for equality based on race and sexual orientation. Some things are provided by the public purpose sphere because, as a society, we believe that everyone should have access to them, regardless of their ability to pay. Public schooling from kindergarten through high school is a primary example.

In some instances, public purpose organizations offer goods and services for sale as businesses do, but this is generally not their primary focus. They usually raise much of their support by soliciting monetary contributions or, in the case of governments, requiring such contributions in the form of taxes or fees. Your college or university, if it is operated by a nonprofit or government entity, would be part of the public purpose sphere. For-profit universities, however, would fall in the business sphere.

The main strength of public purpose institutions is that (like core institutions) they provide goods and services of high intrinsic value, but (unlike core institutions) they are big enough, or sufficiently well-organized, to take on jobs that require broader social coordination. Unlike in the business sphere, the provision of goods and services itself, and not the financial results of these activities, remains the primary intended focus of public purpose organizations.

The public purpose sphere has its weaknesses, of course. Institutions in the public-purpose sphere are sometimes accused of being rigid, slow to adapt, and inefficient because of excessive regulation and bloated bureaucracy. Organizations can lose sight of the intrinsic, common-good goal of providing “public service” and become more focused on increasing their organizational budget. Many current debates about reforms in governments and non-profits concern how incentives for efficiency can be improved without eroding these organizations’ orientation toward providing goods and services of high intrinsic value.

## *The Business Sphere*

The **business sphere** is made up of firms that are expected to look for opportunities to buy and manage resources in such a way that, after their product is sold, the owners of the firm will earn profits. Whereas the core sphere responds to direct needs, and the public purpose sphere responds to its constituents, business firms are responsive to demands for goods and services, as expressed through markets by people who have the resources to buy the firms' products.

### **business sphere:** firms that produce goods and services for profitable sale

It is sometimes thought that maximizing profits is the *only* goal of businesses. But firms may have motivations beyond profit maximization. They may consider social and ethical aspects in making business decisions, and may aim to be a good “corporate citizen,” with regard to their workers, communities, or the environment. Additionally, the activities of “the firm” are made up of the activities of many people, including its stockholders, board of directors, mid- and top-level managers, and employees. The interests of the various individuals and suborganizations may be in conflict. Sometimes, top officers and managers may act, for example, not in the profit-making interest of the owners but according to their *personal* self-interest such as maximizing their own prestige and incomes. Profits, and even the long-term survival of the company itself, may be sacrificed in a race for individual high salaries and lucrative bonuses.

One strength of businesses is that because they have at least one clear goal—making a profit—their efficiency in reaching that goal may be greater than the efficiency of actors in the other two spheres. The profit motive of businesses also encourages *innovation*: People are motivated to come up with clever new ideas when they know that they may reap financial rewards. We all benefit from innovations when they bring us improved products at lower prices. We should note, however, that the public purpose sphere has also often played a critical role in innovation (see Box 2.2).

The relative weakness of the business sphere comes from the fact that business interests do not necessarily coincide with overall social well-being. Firms *may* act to enhance social well-being—for example, by making decisions that consider the needs of their customers and their workers, as well as taking into account environmental impacts—but business sphere production has no *built-in* correction for adverse social and environment impacts. A more detailed discussion on some of the key limitations of the business sphere can be found in Section 3.4.

### **BOX 2.2 THE GOVERNMENT’S ROLE IN INNOVATION**

Much economic analysis focuses on entrepreneurship and innovations in the business sector as the key drivers of the economy. Proponents of the free market sometimes argue that the private sector—motivated by the profit-maximizing goal—is more efficient and more innovative than the public sector. They therefore advocate for an expansion of the private sector into sectors like education and health care. Others argue that these activities are normally better undertaken in the public sector, as universal access to education and health care are essential for a healthy society.

Evidence indicates that government plays a key role in supporting the business sector in the United States. Not only does the public sector provide the physical and informational infrastructure on which businesses rely, but also many well-known success stories in the business sector have depended on government inventions.

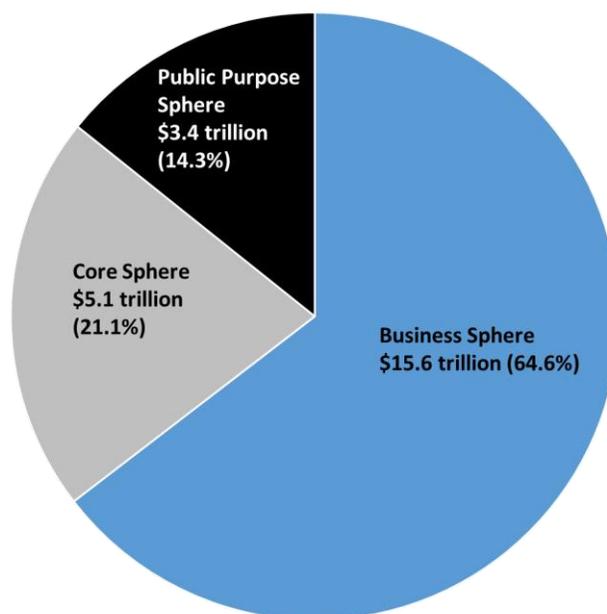
Take, for example, the case of iPhone. The success of iPhone has been largely attributed to Apple—a private corporation. However, each of its core technologies, including capacitive sensors, solid-state memory, the click-wheel, GPS, internet, cellular communications, Siri, microchips, and touchscreen, are innovations that came from research supported by the U.S. government and military. Economist Mariana Mazzucato argues that long-term and steady government funding in technological research has been a nearly invariable prerequisite for breakthrough innovations. She points out that the public sector is, in fact, often more innovative than the private sector, as the government is more willing to make riskier investments.<sup>3</sup>

In the health care sector, also, the government has taken a lead in research and innovation, with almost 75 percent of all important new drugs coming from funding through the National Institutes of Health. Major pharmaceutical companies do develop innovative drugs, but they also invest heavily in advertising, and in developing “me-too” drugs to try to undercut their competitors. Data from GlobalData, a healthcare research firm, shows that nine out of the top ten pharmaceutical companies spent more on advertising than on research.<sup>4</sup> This is partly the result of the United States being one of only two countries where it is legal to market prescription drugs directly to consumers.<sup>5</sup>

### *The Size of the Three Spheres*

Figure 2.5 presents estimates of the monetary value of the annual production of goods and services in the United States by the three spheres in 2018, in dollar and percentage terms. The business sphere contributed 64.6 percent of production, the core sphere 21.1 percent, and the public purpose sphere 14.3 percent. The dollar figures add up to more than the GDP in that year (\$20.6 trillion) because an estimate of the value of unpaid household labor as equal to 18 percent of GDP has been included.<sup>6</sup> This differs from government estimates of GDP in the United States, which do not currently include the value of household production.

**Figure 2.5 Estimates of the Size of the Three Spheres in the United States, 2018**



Sources: U.S. Bureau of Economic Analysis, GDP and Personal Income database, and authors' calculations.

In addition to the three spheres discussed so far, all countries have, to some extent, an informal sphere. The **informal sphere** is composed of market enterprises, normally small in scale, operating outside government oversight. Although this sphere could be classified as “business” because it involves private production for sale, it is also similar to the core sphere in that the activities are very small-scale and often depend on family and community connections. Economic activities in the informal sphere may be illegal, as in the case of illicit drugs or prostitution. Other informal sphere activities are legal but do not appear in GDP statistics, such as house cleaning services provided “off the books.” Barter transactions are also part of the informal sphere.

**informal sphere:** businesses, usually small in scale, operating outside government oversight and regulation.

Though accurate data on the size of the informal sphere are difficult to obtain, the average size of the informal economy in 158 countries between 1991 to 2015 was estimated to be 31.9 percent.<sup>7</sup> A 2018 study estimates that 60 percent of the world’s employed population are in the informal economy, with 93 percent of those living in emerging and developing countries.<sup>8</sup>

### *Discussion Questions*

1. Education is sometimes provided within the core sphere (at-home preschool activities and home schooling), often provided by the public purpose sphere (public and nonprofit schools), and sometimes provided by for-profit firms (“charter schools” or firms offering specific training programs). Can you think of some possible advantages and disadvantages of each of these three ways of providing education?
2. Describe three situations in which economic activities could affect their environmental context and three ways in which economic behavior could affect their social context. How might these influences that the economy exerts on its contexts result in changing how the contexts, in turn, affect (either support or constrain) economic activity?

## **3. THE ROLE OF MARKETS**

Having discussed the three major spheres of economic activity, we now take up the more specific issue of how markets work. We begin by defining precisely what we mean by “markets.” Then we look at ways to make markets work smoothly and consider the various advantages and limitations of markets as a way to conduct economic activities.

### **3.1 THE MEANING OF MARKETS**

When you think of the word “market,” you probably think of a store where you buy groceries. But in economics, the word “market” is defined more broadly and has at least three different meanings, ranging from very concrete to very abstract. The appropriate meaning of market must be judged from the context in which it appears.

The most concrete and commonsense definition of a **market** is that it is a *place* where people interact physically or virtually to buy and sell things. Historically markets have been

physical locations such as the Grand Bazaar in Istanbul, Turkey, or African village produce stands where people meet and engage in exchange transactions. In the modern age, the market “location” could be a physical place such as a shopping mall or a stock exchange building. But it could also be virtual, such as Amazon or eBay, where buyers and sellers can come together to make market transactions. Most stock exchanges have also moved to electronic trading, although a role remains for brokers on the floor of the New York Stock Exchange.

**market (first meaning):** a physical place or Web location where there is a reasonable expectation of finding both buyers and sellers for the same product or service

A more general definition of **market** is that it is a concept that covers broad product categories. For example, we can speak of the “real estate market” in a particular city, the market for used cars, or the market for wind turbines. Economists often study trends in specific markets, such as heating oil or AT&T bonds, to try to forecast what might happen in the future, or advise on the specifics of market structures.

**market (second meaning):** the interaction of buyers and sellers defined within the bounds of broad product categories, such as the market for used cars or the real estate market

In the most abstract terms, people refer to markets as an economic system, for example, describing the United States as having a “**market** economy” or indicating a preference for “free markets.” In this macroeconomic sense, a market economy is one that relies heavily on markets (according to both our first and second definitions) to conduct economic activities.

**market (third meaning):** an economic system (a “market economy”) that relies on markets to conduct many economic activities

One alternative to a market economy is a system that relies on central planning to conduct economic activities, as was the case in the Soviet Union. China retains many elements of a central planning system, though the role of markets in China has expanded significantly in recent decades. But even in modern market economies, not all activities are structured by markets. For example, the distribution of resources within the core sphere is mainly based on social or family relationships, and decisions about resource management are often based on scientific evidence or political preferences rather than market forces.

Differing views on the role of markets within an economic system underlies many current debates in economics. Economists who have a “pro-market” view believe that market systems function fairly smoothly and are largely self-regulated, and that a **laissez-faire economy** (one with very little government regulation) is most likely to lead to economic growth and prosperity. Other economists recognize the effectiveness of markets but believe that problems such as poverty, inequality, environmental degradation, and declining social ethics may be caused or exacerbated by unregulated markets. They therefore advocate for government policies and other forces of culture and ethics to ensure that markets serve the broader goals of human well-being. As we examine different issues throughout this book, we frequently refer to these perspectives.

**laissez-faire economy:** an economy with little government regulation

### 3.2 THE INSTITUTIONAL REQUIREMENTS OF MARKETS

Contemporary markets do an amazing thing: They allow many separate decision-makers, acting on decentralized information, to coordinate their behavior, resulting in highly complex patterns of economic activity. However, markets depend on institutions to operate smoothly. An **institution** refers to a formal or informal rule that structures human interactions. They include laws, customs, norms, routines, and operating procedures. In other words, they encompass everything from a national constitution to table manners.

**institution:** formal and informal rules that structure the relationship between individuals and groups

Organizations (for example a hospital) are sometimes called institutions, but it makes more sense to consider organizations as *sets* of particular institutions. For example, a hospital's operations are structured by federal and state laws; customary procedures for doctor visits; and rules and procedures concerning patient admissions; care, and discharges. Organizations are usually housed in buildings and contain physical infrastructure, yet an organization's essence is represented by the formal and informal institutions that govern it, not physical infrastructure. This is why even when an organization relocates to a different building, it can essentially be the same organization.

Many institutions help markets work more smoothly. For example, credit cards are an institution that facilitates purchases without the use of cash. Consumer protection laws are an institution that defines certain exploitative business practices as illegal. The ability to return purchased items for a refund can also be viewed as a widely accepted institution. We classify institutions that facilitate the functioning of markets into three broad groups:

1. institutions related to property and decision-making
2. social institutions of trust
3. money as a medium of exchange.

#### *Institutions Related to Property and Decision-Making*

For markets to work, people need to know what belongs to whom or at least who can or cannot have access and control over something. Ownership is usually defined through systems of property rights set out in law and enforced by courts and police. **Private property** is the ownership of physical or financial assets by nongovernment economic actors. **Common property** is ownership of physical or financial assets by the government or particular subsections of society.

**private property:** ownership of assets by non-government economic actors

**common property:** ownership of assets by government or particular subsections of society

Within a market economy, actors must be allowed to make their own decisions about how to allocate and exchange resources that belong to them. Prices, in particular, must not be controlled by a central planning agency; generally, they should be set by the interactions of market participants themselves.

The institutions of private property and individual decision-making exist both formally, in codes of law, and informally, in social and cultural norms. For example, some Western economists expected markets to grow quickly in the countries of the former Soviet Union as soon as

communism was dismantled and opportunities for markets opened up. This failed to occur, partly because many people living in these countries were accustomed to being told by the state where to work and what to do. Norms of individual initiative and entrepreneurship, it turns out, do not just arise naturally but need to be fostered. Nor did other sorts of market infrastructure appear quickly, and the post-Soviet Russian economy went into a severe decline for some time. When market institutions did develop, they were often designed to facilitate the concentration of power and oligarchy (control by a few very wealthy people). The difficult transition to capitalism in the former Soviet Union indicates that institutions matter and that good institutions do not emerge quickly, naturally, or easily.

### *Social Institutions of Trust*

A degree of trust must exist between buyers and sellers. When a buyer puts down her payment, she must trust that the seller will hand over the merchandise and that it will be of the expected quality. A seller must be able to trust that the payment offered is valid, whether it is in the form of currency, a personal check, credit card, online payment, or a promise of future payment such as an installment loan.

The establishment of direct, one-on-one exchanges between customers and businesses help to build trust and make future transactions smoother. Consumers are more likely to choose sellers with whom they have had good experiences in the past. They may also rely on reputation of firms based on online reviews such as Yelp, or on perceptions about the quality and prices associated with brand names to make consumption decisions. Cultural norms and ethical or religious codes can also help to establish and maintain an atmosphere of trustworthiness.

In some cases, the terms of trade between different parties may be established informally, based on verbal terms or cultural and social expectations. However, in cases where market transactions take place in large, complex, mobile societies where buyers and sellers may not know each other, a more formal, usually written, contract may be needed to legally enforce the terms of exchange. Hence, legal institutions provide an important basis for many market transactions.

Even with a system of formal contracts, social norms are still essential, as it is costly to write and enforce detailed formal contracts, and it is impossible to cover every conceivable contingency. The legal system can work smoothly only if most people willingly obey most laws and believe that it is dishonorable to cheat. In other words, formal institutions usually depend quite heavily on the presence of good informal institutions, particularly good norms of behavior.

In highly marketized economies, many other institutions have evolved to deal with the issue of trust. For example, credit bureaus keep track of consumer credit trustworthiness, Better Business Bureaus keep track of complaints against businesses, and money-back guarantees give consumers a chance to test the quality of a good before they commit to purchasing. Government agencies such as the U.S. Food and Drug Administration and local boards of health are charged with monitoring the quality and purity of many goods that are sold.

Clearly, relationships, social norms and government-created laws are all institutions that are essential to make market activity possible.

### *Money as a Medium of Exchange*

The final basic institution required to facilitate the operation of markets is a generally accepted form of money. Many different things, such as carved stones or particular types of seashells, have been used as money in the past. Gold, silver, and other metal coins were the most common choice

for many centuries. More recently, paper currency became important. Today, the use of checks, credit cards, debit cards, and electronic payment systems further facilitates making payments for goods and services.

What makes something **money**? Three criteria are necessary for something to be defined as money in a market economy.

1. Money must be widely accepted as *a medium of exchange*.
2. Money must provide *a durable store of value*. Imagine the problems that would occur if heads of lettuce, which rot within a week or two, were proposed as money. The value of money must be relatively stable over time, and money *must have minimal handling and storage costs*. By this criterion, paper currency is better than coins, and electronic transactions are better still.
3. Money must be accepted as *a unit of account*. When people say that something is worth \$1,000, that does not necessarily mean that they are proposing to buy or sell the item. Money serves as a way of valuing things, even if no market exchange takes place.

**money:** a medium of exchange that is widely accepted, durable as a store of value, has minimal handling and storage costs, and serves as a unit of account

In most cases, money is created by the banking system, with oversight by national governments. However, this is not always the case. For example, cigarettes have been used as a form of money by prisoners of war. Also, communities smaller than national governments can create their own money. These local currencies are typically exchangeable for goods and services within the community by participating merchants and individuals. In recent years, local “time-banking” currencies have appeared in some communities in the United States and elsewhere. People earn time dollars by performing valuable services for others or for the community as a whole, such as child care, tutoring, or building repairs. Time dollars can then be used to pay for other services or used instead of “normal” dollars to purchase products from local merchants (see Box 2.3).

### BOX 2.3 TIME BANKING

Time banking is a system of exchange where time, not money, is the unit of value. Time banks bring together unused human resources with unmet human needs.<sup>9</sup> When you join a time bank, you indicate what services you might be able to offer others: financial planning, computer debugging, handyman repairs, child care, and so on. For each hour (or fraction of an hour) you spend helping others, you accrue “deposits” in the time bank. Then when you require services, you can “withdraw” accumulated time to request help from others.

Time banks differ from exchange through markets in several important ways. First, everybody’s time is normally considered equally valuable. Whether one is performing nursing services, tutoring new immigrants in English, or driving someone on errands, all activities earn time credits at the same rate (1 hour = 1 credit). Second, exchange through time banks helps build social relationships and community spirit. Many time bank members note that performing activities eventually become viewed as spending time with friends rather than work. In fact, according to one time bank director a majority of members don’t claim credit for all hours logged.<sup>10</sup> Another interesting feature is that time banks can particularly flourish during economic downturns when traditional employment is difficult to find. Thus participants can still feel they are

contributing to society, and accruing credit for needed services, without paid employment.

According to the organization TimeBanks, there are about 1,000 time banks in the world, with about half of these being in the United States.<sup>11</sup> In 2017 a time bank was created in the United Kingdom, partially funded by the UK government to provide care and companionship for elderly people. In this system, people contribute time helping others to eventually be redeemed when they themselves need assistance later in life.<sup>12</sup> Time banking has become popular in New Zealand, where businesses and organizations can also participate, offering goods and services in exchange for time credits rather than money.<sup>13</sup>

### 3.3 INFRASTRUCTURE FOR FLOW OF GOODS AND INFORMATION

Another requirement of markets is physical infrastructure to enable the smooth flow of goods, services, and information. **Physical infrastructure** includes such things as roads, ports, railroads, and warehouses, but also telecommunications and utilities.

**physical infrastructure:** roads, ports, railroads, warehouses, and other tangible structures that provide the foundation for economic activity

The function of infrastructure is not just to allow the movement of goods; it is also required for information to flow freely. Producers and sellers need information on what, and how much, their customers want to buy to be able to decide on what, and how much, should be produced and offered for sale. At the same time, consumers need to know what is available, and how much they will have to pay to get the products that are on the market. Ideally, consumers should be able to compare *all* potential purchases to decide what will best suit their needs. It seems unlikely that this condition for perfect markets will ever be reached, but Web-based exchange systems such as Amazon and eBay have brought it much closer to realization.

Note that infrastructure can be provided by both private and government entities. While private companies normally own things like warehouses, delivery trucks, and computers, governments normally construct and maintain roads, ensure air traffic safety, and make bandwidth available on the Internet. Even in an economic system that primarily relies on private markets, the role of government is critical in supporting market activity.

### 3.4 TYPES OF MARKETS

Markets take a wide variety of forms. The two basic market types—product and factor markets—that we defined in the neoclassical model can be further categorized into different groups based on what is sold, as described in Table 2.2.

**Table 2.2 Different Types of Markets**

Market Type	Description
Retail markets	Markets where goods and services are purchased by consumers from businesses, generally in small quantities. Retail markets deal in tangible goods such as food, books, and clothes, as well as non-tangible objects, including services such as banking or a haircut.
Wholesale	Markets where final goods are purchased by retailers from suppliers,

markets	normally in large quantities. For example, Wal-Mart and most other retailers don't actually produce the goods they sell, but purchase them in bulk from suppliers in wholesale markets.
Intermediate goods markets	Markets where unfinished products are exchanged between businesses, such as the purchase of sheet metal by an automobile company.
Resale markets	Product markets for items that have been previously owned. Examples include used-car markets, and markets for antique furniture. Most shares traded in stock markets are also being resold, having been previously owned by other investors.
Commodities markets	Markets where raw materials such as agricultural products, minerals, or petroleum are bought and sold.
Labor market	A type of factor market, defined as the set of institutions through which people who wish to work offer to sell their services to employers. Unlike a physical object, labor cannot be produced first and then handed to the buyer; rather, the worker promises to do something in return for a promised payment of wages.
Financial markets	Markets for loans, equity finance, and financial assets such as stocks and bonds. Chapter 13 will focus on financial markets.
Underground markets (black markets)	Illegal markets, where either the good or service traded is illegal (such as heroin, or smuggled antiquities), or the goods and services are legitimate but the trading occurs through illegal ways. For example, smugglers may sell cigarettes or imported perfume at prices that do not include payment of required taxes.
Auction markets	Markets in which an item is sold to the highest bidder. Auction markets are often used when the price for an item is relatively unknown and there are many possible buyers or sellers. Although auction markets were commonly limited to goods such as antiques and artwork in the past, the advent of online auction sites such as eBay have made auction markets much more prevalent.

Markets can also be categorized based on how prices are determined. At first glance, it might seem as if many prices set in consumer retail markets do not involve interactions of market participants themselves. In an open-air bazaar or flea market, buyers and sellers haggle about prices. But in a typical retail setting in an industrialized society, you do not “interact” directly with the retailer. The price is listed on the shelf, a tag, or directly on the product. Either you pay the **posted price** set by the seller, or you do not buy the item.

**posted prices:** prices set by a seller

Even though you do not haggle with the cashier at the supermarket, the fact that you *can* decide whether to buy is itself a form of interaction. Over time, retailers will take note of what moves off the shelf most quickly and will then order more of it and may also raise its price. They will also take note of what does not sell so quickly and will then reduce their order from wholesalers or mark the items down. The retailers' purchases from the wholesalers, in turn, give the suppliers information that they can use in deciding how much to order or produce and how to set *their* prices.

So while you may not be able to bargain directly, your actions, in combination with the actions of other customers, ultimately affect the prices and quantities offered in the market. These adjustments should tend, at least in theory, to lead posted prices to reflect what economists call the market-determined price, or **market price**, of the item. Market price, discussed in detail in Chapter 3, is the prevailing price for a specific good or service at a particular time in a given market. The posted price will normally reflect the market price if markets are competitive, the flow of information is good, the adjustment process is given enough time, and no big changes in market conditions occur in the meantime.

**market price:** the prevailing price for a specific good or service at a particular time in a given market

In some cases, a single buyer and a single seller negotiate the price of an item through **bargaining**. Residential real estate, for example, is generally sold by using such negotiated agreements, as are used cars. (Sometimes there is also a posted price, but both parties understand that it is merely a starting point for negotiation.) Salaries of high-level managers, professionals, and unionized employees—and, notably, of sports and entertainment stars—are commonly set by bargaining. The presence of *potential* other buyers and sellers, however, is obviously important in determining the relative bargaining strength of the two parties. A seller who knows that he or she can easily find other eager buyers, for example, will quickly walk away from an unfavorable deal. A seller with fewer options will have less ability to hold out for good terms.

**bargaining:** an activity in which a single buyer and a single seller negotiate the terms of their exchange

### 3.5 THE ADVANTAGES AND LIMITATIONS OF MARKETS

Markets clearly have many advantages. Competition among sellers in markets means that goods and services can often be provided to people at affordable prices. Markets often encourage innovation, continually leading to new products such as iPhones, electric cars, and streaming video. Of course, many workers have jobs producing goods and services for sale in markets.

Markets also foster a steady flow of information, in terms of prices and volumes of sales, that encourages producers to respond flexibly to consumer desires. Profits provide feedback to sellers about whether resources are being used in ways that individuals are willing (and able) to pay for. Markets also give people a considerable amount of freedom in deciding which activities to engage in, although this freedom may be severely constrained by the resources to which people have access. Markets can also be thought of as a type of democracy in which all participants can express their views by buying some items and not others.

Against these advantages, markets have a number of limitations. As we have noted, the idealized model of a completely free private market (as in the basic neoclassical model) rarely

exists in practice. Actual market-oriented economies always include a mixture of decentralized private decision-making and more public-oriented decision-making. This is because real-world economies include a number of important, complex factors that are not taken into account in the basic neoclassical model. These include social and environmental issues, as well as problems in the way that markets work in certain circumstances. We will briefly discuss some of these issues here, and will expand on them more fully in later chapters.

### *Public Goods*

Recall from our discussion earlier in the chapter that a public good (or service) is one whose use by one person does not diminish the ability of another person to benefit from it and whose benefit it would be difficult to keep any individuals from enjoying. Examples of public goods include public roads, parks, libraries, schools, clean air and water, other environmental goods and services, police protection, and the national defense system.

Because it is difficult to exclude anyone from benefiting from public goods, they are generally not offered through markets. Even if individual actors would be willing to pay for them if necessary, they have little incentive to pay because they cannot be excluded from the benefit. Economists call people who seek to enjoy a benefit without paying for it **free riders**. Because of the problem of free riders, it often makes sense to provide public goods through government agencies, supported by taxes, so that the cost of the public benefit is also borne by the public at large.

**free riders:** people who seek to enjoy the benefit of a good without paying for it

### *Externalities*

Some market activities create **externalities**—spillover effects on parties that are not directly participating in the market exchange. These effects can be either beneficial (“positive externalities”) or harmful (“negative externalities”). Sometimes positive externalities are referred to as “external benefits” and negative externalities are referred to as “external costs.” Externalities are one of the primary reasons the true *social* value of a good or service can differ from its *market* value.

**externalities:** side effects in which the market does not make economic actors feel the full consequences of their actions—consequences that, however, are felt by unrelated persons or entities (such as the environment)

Examples of negative externalities include a situation of a manufacturing firm that dumps pollutants in a river, degrading water quality downstream, or a bar that plays loud music that annoys its neighbors. Examples of activities that have positive externalities include child rearing by parents who, out of love for their children, raise them to become law-abiding citizens, thereby creating benefits for society at large; and providing habitats for beneficial insects (such as bees and other pollinators), which then provide services to neighboring landowners. In both of these cases individual actions have social benefits. Well-educated, productive citizens are an asset to the community as well as to their own families, and without pollinators and other beneficial insects many crops would fail.

Some of the most important externalities relate to the economic activity of resource

management. Relying on markets alone to coordinate economic activities may allow activities that deplete the natural environment to take place, because the cost of pollution may not be felt by the economic actor that created it. Environmental regulations attempt to counteract this, using fines or other disincentives to allocate the true social cost to the economic agents creating those costs. If economic activities affected only the actors directly involved in decision-making, we might be able to think about economic activity primarily in terms of individuals making decisions for their own benefit. But we live in a social and ecological context, in which actions, interactions, and consequences are generally both widespread and interrelated. If decisions are left purely to individual self-interest, then from a societal point of view too many negative externalities and too few positive externalities will be created. The streets might be strewn with industrial wastes, while children might be taught to be honest in dealings within their family but not outside it. Market values and human or social values do not always coincide.

### *Transaction Costs*

**Transaction costs** are the costs of arranging economic activities. In the basic neoclassical model, transaction costs are assumed to be zero. If a firm wants to hire a worker, for example, it is assumed that the only cost involved is the wage paid. In the real world, however, the activity of reaching a hiring agreement may involve its own set of costs. The firm may need to pay costs related to searching, such as placing an ad or paying for the services of a recruiting company. The prospective worker may need to pay for résumé preparation or transportation to an interview. Because of the existence of such costs, some economic interactions that might lead to greater efficiency, and that would occur in an idealized, transaction cost-free, frictionless world, may not happen in the real world.

**transaction costs:** the costs of arranging economic activities

### *Market Power*

In the basic neoclassical model, all markets are assumed to be “perfectly competitive,” such that no one buyer or seller has the power to influence the prices or other market conditions that they face. In the real world, however, we see that many firms have **market power**. For example, when there is only one firm (a monopolist) or a few firms selling a good, they may be able to increase their prices and their profits, creating inefficient allocations of resources. Workers may also be able to gain a degree of market power by joining together to negotiate as a labor union. A government, too, can have market power, for example when the Department of Defense is the sole purchaser of military equipment from private firms.

**market power:** the ability to control, or at least affect, the terms and conditions of a market exchange

The potential for social harm grows when firms gain excessive market power—that is, when they come to dominate the market in their area. They may then be able to charge socially inefficient prices or to squelch socially advantageous innovations by competing firms. Large firms also have considerable power to harm the natural environment on which they ultimately depend.

Businesses may also gain power by their sheer size. The decisions of individual large corporations can have substantial effects on the employment levels, economic growth, living standards, and economic stability of regions and countries. Governments may need to factor in the

responses of powerful business groups in making their macroeconomic decisions. National or state leaders may fear, for example, that raising business tax rates or the national minimum wage may cause companies to leave their country or state, and go elsewhere. Corporations frequently also try to influence government policies directly, through lobbying, campaign contributions, and other methods. We explore the implications of corporate size at more length in Chapter 6.

### *Information and Expectations*

In the basic neoclassical model, in which purely decentralized decisions lead to efficient outcomes, people are assumed to have easy access to all the information that they need to make good choices. This analysis does not consider the time taken to obtain information or make decisions. In the real world, obtaining good information and dealing with future uncertainties may make economic decision-making difficult.

A manufacturing business, for example, might be considering whether to borrow funds to build an additional factory. If the company's managers were able to know exactly what the demand for its products will be like in the future and what interest rates will be—along with additional information about things such as future wages, energy costs, and returns on alternative investments—the decision would be a simple matter of mathematical calculation.

But the managers will have to guess at most of these things. They will form expectations about the future, but these expectations may turn out to be incorrect. If their expectations are optimistic, they will tend to make the new investment and hire new workers. Often optimism is “contagious,” and if a lot of *other* business leaders become optimistic, too, then the economy will boom. If, however, people share an attitude of pessimism, they may all tend to cut back on spending and hiring, thus precipitating the very downturn they feared.

Because no one business wants to take the risk of jumping the gun by expanding too soon, it can be very difficult to get a decentralized market economy out of a slump. How people get their information, how they time their actions, and how they form their expectations of the future are all important topics that are not addressed in the basic neoclassical model. Taking these factors into account suggests why markets sometimes do not work as smoothly as that model suggests.

### *Human Needs and Equity*

Another important issue concerns distribution of income and the ability to pay for goods and services. In the basic neoclassical model, the only consumer demands for goods and services that can affect the market are those that are backed up by a consumer's ability to pay. This has several implications.

First, there is nothing in the model that ensures that resources are distributed in such a way that people can meet their basic human needs. If a few rich people have a lot of money to spend on diamonds, for example, while a great number of poor people lack the money to pay for basic health care, “free markets” will motivate producers to respond to the demand for diamonds but not to the need for basic health care.

For this reason, governments often adopt more deliberate policies of economic development, government provision, subsidies, or income redistribution to try to ensure that decent living standards become more widespread. These policies can sometimes incorporate market mechanisms and sometimes replace them.

Second, the model does not take into account nonmarketed production, such as the care given to children, the sick, and the elderly by family and friends. There is nothing in the basic

neoclassical model that ensures that these sorts of production will be supplied in adequate quantities and quality. Nor does the market model recognize the ways in which caring activities may be disadvantaged by a market culture in which these activities are considered greatly inferior to the status and money gained through formal employment.

Last, it is also the case that problems such as unemployment and inflation tend to affect some people more than others, so how a country deals with these problems also has distributional consequences.

Clearly, although market systems have strong advantages in some areas, they cannot solve all economic problems. Economists sometimes use the term **market failure** to refer to a situation in which a market form of organization leads to inefficient or harmful results. Because of the various limitations of markets discussed above, economic systems cannot rely on “free markets” alone if they are to contribute effectively to present and future human well-being.

**market failure:** situations in which markets yield inefficient or inappropriate outcomes

To some extent, *private* nonmarket institutions may help remedy “market failure.” For example, a group of privately owned factories located around a lake may voluntarily decide to restrict their waste emissions, because too much deterioration in water quality hurts them all. Likewise, a widespread custom of private charitable giving may help alleviate poverty. But sometimes the problems are so large or widespread that only government, *public* actions at the national or international levels seem to offer a solution. Exactly how much government action is required, and exactly what governments should do, has been a much-debated question within contemporary economics.

Market economies today face a major conundrum: How can societies continue to benefit from the strengths of the business sphere while ensuring that this sphere supports the kind of world that will sustain the livelihoods and the well-being of future generations? This question suggests that it is necessary to think both about regulatory issues as they apply to the business sphere, and about what goods and services should be provided by the business sphere and which ones should instead be provided by either the core or public purpose spheres.

### 3.6 ASSESSING MARKET OUTCOMES

Unfortunately, too often the debate about markets comes down to one side being “pro-market” while the other side is “anti-market.” We seek to avoid such a polarizing and simplistic distinction in this text. Such broad generalizations often reflect a lack of knowledge about when markets do, and do not, work effectively at enhancing well-being.

So rather than trying to decide whether you are “pro-market” or “anti-market,” we encourage you to think of the following three broad categories of market outcomes:

1. Situations in which market outcomes are reasonably efficient, fair, and sustainable, with only limited government involvement required. The market for T-shirts in the United States, for example, would fall into this category. Significant competition among many producers means that T-shirt prices are low and virtually anyone can afford them. Though there are some environmental impacts of producing and transporting T-shirts, and labor standards need to be upheld, there is limited government involvement in the T-shirt market

2. Situations in which market outcomes are reasonably efficient, fair, and sustainable only with significant government involvement. The market for gasoline in Europe is an example of a good in this category. While gasoline is provided by private companies in European markets, it is heavily taxed (typically \$3-\$4 per gallon) to account for its negative externality of environmental pollution.<sup>14</sup> An unregulated gasoline market outcomes is both inefficient and unsustainable
3. Situations in which market outcomes are not efficient, fair, and/or sustainable, necessitating provision through non-market institutions (such as government). Goods such as national defense and major highways—which are nearly always provided by governments rather than private markets—fall in this category. In many countries, services such as education or health care are provided by the government and funded by taxes. In the United States, health care in particular is often provided by private markets, but whether these markets are efficient and fair is a subject of debate.

In short, we need to assess markets contextually. We need to understand the contexts in which markets work well, the contexts in which government regulation of markets is needed, and the contexts in which markets do not result in acceptable outcomes.

### *Discussion Questions*

1. When you shop on-line, how do you know that you can trust the seller to deliver the goods as promised? What is necessary for the social institution of trust to work, and how might it break down, in on-line transactions?
2. On a sheet of paper, draw two columns. In one column, list some historical and contemporary advantages of market exchanges, and in the other, list some disadvantages. Can you give examples beyond those listed in the text?

### **REVIEW QUESTIONS**

1. What are the two main modes of economic investigation? Describe each.
2. What is a positive (direct) relationship? What is a negative (inverse) relationship?
3. What is a model? How does the *ceteris paribus* assumption simplify the creation of a model?
4. What are some of the assumptions of the basic neoclassical model? Why are markets said to be efficient according to this model?
5. What are some of the shortcomings of the neoclassical model? In what ways does the contextual model overcome these shortcomings?
6. What are the three spheres of economic activity?
7. What are some major characteristics and functions of the core sphere?
8. What are some major characteristics and functions of the public purpose sphere?
9. What are some major characteristics, and strengths and weaknesses, of the business sphere?
10. What is the informal sphere? Where is it most significant?
11. What are the three different meanings of the term “markets”?
12. What are the four institutional requirements of markets?
13. What is a public good? Why will private markets generally undersupply public goods?
14. What are negative and positive externalities? Give examples of each.
15. Besides public goods and externalities, describe four real world factors that can cause market outcomes to be less than ideal.

## EXERCISES

1. Consider the following data, taken from the Federal Reserve Bank’s website. Perform the graphing exercises below using either pencil and graph paper or a computer spreadsheet or presentation program.

Year	Unemployment rate (%)	Inflation (% per year)
2009	9.3	-0.4
2010	9.6	1.6
2011	8.9	3.2
2012	8.1	2.1
2013	7.4	1.5
2014	6.2	1.6
2015	5.3	0.1
2016	4.9	1.3
2017	4.4	2.1
2018	3.9	2.4

- Looking at the data listed in the chart, can you detect a trend in the unemployment rate during these years? In the inflation rate? If so, what sort of trends do you see?
  - Create a time-series graph for the unemployment rate during 2009-2018.
  - Create a scatter-plot graph with the unemployment rate on the horizontal axis and inflation on the vertical axis.
  - Using your graph in part (c), do the two variables seem to have an empirical relationship during this period, or do the points seem to be randomly scattered? If there appears to be an empirical relationship, is it inverse or direct?
2. Identify the sphere in which each of the following activities takes place. Could some involve more than one sphere?
- Recycling is picked up at curbside in a community
  - Tomatoes are grown in a home garden
  - A fire department answers an emergency call
  - People purchase groceries at a supermarket
  - An environmental protection group lobbies for stronger pollution control laws
3. Match each concept in Column A with an example in Column B.

Column A	Column B
a. Theoretical investigation	1. The apple tree that you plant for your own enjoyment also pleases people passing by
b. A core sphere activity	2. Perfectly competitive markets
c. A positive externality	3. The production of apple pie creates water pollution that harms downstream communities
d. A public purpose sphere activity	4. Einstein develops the theory of relativity

- |  |   |
|--|---|
| e. A public good                                 | 5. Police Services  |
| f. An assumption of the basic neoclassical model | 6. There is only one apple producer who is able to make very high profits |
| g. Ceteris paribus                               | 7. Home care for the elderly  |
| h. Historical investigation                      | 8. All variables except one are held constant                             |
| i. Negative externality                          | 9. An economist studies the Great Depression                              |
| j. Market power                                  | 10. A city park   |

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## NOTES

<sup>1</sup>Reinhard, Susan C., Lynn Friss Feinberg, Rita Choula, and Ari Houser. 2015. "Valuing the Invaluable: 2015 Update," *AARP Public Policy Institute*, July 2015.

<sup>2</sup>McKinsey & Company. 2015. "The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth," *McKinsey Global Institute*, September 2015.

<sup>3</sup>Mazzucato, Mariana. 2018. *The Entrepreneurial State: Debunking Private Sector versus Public Sector Myths*, Penguin, London.

<sup>4</sup>Swanson, Ana. 2015. "Big Pharmaceutical Companies Are Spending Far More on Marketing than Research," *The Washington Post*, February 11,

<sup>5</sup>Harvard Men's Health Watch. 2017. "Do Not Get Sold on Drug Advertising." February.  
<https://www.health.harvard.edu/drugs-and-medications/do-not-get-sold-on-drug-advertising>

<sup>6</sup>Folbre, Nancy. 2015. "Valuing Non-market Work." UNDP Human Development Report Office Think Piece.

<sup>7</sup>Medina, Leandro and Friedrich Shadow Schneide., 2018. "Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?" IMF Working Paper WP/18/17

<sup>8</sup>International Labor Organization. 2018. "More Than 60 percent of the World's Employed Population are in the Informal Economy", Press Release, April 30.

[https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_627189/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_627189/lang--en/index.htm)

<sup>9</sup>Goodwin, Neva, and Edgar Cahn. 2018. "Unmet Needs and Unused Capacities: Time Banking as a Solution" *Interdisciplinary Journal of Partnership Studies*, 5(1), Article 3.

<sup>10</sup>Rosenburg, Tim. 2011. "Where All Work Is Created Equal." *The New York Times*, September 15.

<sup>11</sup>Thorpe, Devin 2018. "Time Banking Helps Build Individuals, Organizations And Communities" *Forbes*, March 21.

<sup>12</sup>Anonymous, 2016. "Time Is Money." *The Economist*, December 17.

<sup>13</sup>Borroughs, David. 2017. "Timebanking Taking Off as Thousands of Kiwis Donate their Time to Each Other." *Stuff*, June 11.

<sup>14</sup>Watson, Garret, 2019 How High are Other Nations' Gas Taxes? Tax Foundation, May 2.  
<https://taxfoundation.org/oced-gas-tax/>