

The Modern Mixed Economy



Every individual endeavors to employ his capital so that its produce may be of greatest value. He generally neither intends to promote the public interest, nor knows how much he is promoting it. He intends only his own security, only his own gain. And he is in this led by an invisible hand to promote an end which was no part of his intention. By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it.

Adam Smith

The Wealth of Nations (1776)

Think for a moment about some of the goods and services that you consumed over the last few days. Perhaps you took an airline flight to school or bought some gasoline for the family car. You surely had some home-cooked food bought in a grocery store or a meal purchased at a restaurant. You might have bought a book (such as this textbook) or some pharmaceutical drugs.

Now consider some of the many steps that preceded your purchases. The airplane flight will illustrate the point very well. You may have purchased an airline ticket on the Internet. This simple-sounding purchase involves much tangible capital such as your computer, intellectual property (in software and designs), and sophisticated fiber-optic transmission lines, as well as complicated airline reservation systems and pricing models. The airlines do all this to make profits (although profits have been very modest in that sector).

At the same time, government plays an important role in air travel. It regulates airline safety, owns many airports, manages the traffic-control system, produces the public good of weather data and forecasting, and provides information on flight delays. And this list could go on into the public and private support of aircraft manufacturing, international agreements on airline competition, energy policy on fuels, and other areas.

The same point would apply—in different degrees depending upon the sector—to your purchases of clothing or gasoline or pharmaceuticals or just about any item. The economy of every country in the world is a **mixed economy**—a combination of private enterprise working through the marketplace and government regulation, taxation, and programs. What exactly is a market economy, and what makes it such a powerful engine of growth? What is the “capital” in “capitalism”? What government controls are needed

to make markets function effectively? The time has come to understand the principles that lie behind the market economy and to review government's role in economic life.

A. THE MARKET MECHANISM

Most economic activity in most high-income countries takes place in private markets—through the market mechanism—so we begin our systematic study there. Who is responsible for making the decisions in a market economy? You may be surprised to learn that *no single individual or organization or government is responsible for solving the economic problems in a market economy*. Instead, millions of businesses and consumers engage in voluntary trade, intending to improve their own economic situations, and their actions are invisibly coordinated by a system of prices and markets.

To see how remarkable this is, consider the city of New York. Without a constant flow of goods into and out of the city, New Yorkers would be on the verge of starvation within a week. But New Yorkers actually do very well economically. The reason is that goods travel for days and weeks from the surrounding counties, from 50 states, and from the far corners of the world, with New York as their destination.

How is it that 10 million people can sleep easily at night, without living in mortal terror of a breakdown in the elaborate economic processes upon which they rely? The surprising answer is that, without coercion or centralized direction by anyone, these economic activities are coordinated through the market.

Everyone in the United States notices how much the government does to control economic activity: it regulates drugs, fights fires, levies taxes, sends armies around the world, and so forth. But we seldom think about how much of our ordinary economic life proceeds without government intervention. Thousands of commodities are produced by millions of people every day, willingly, without central direction or master plan.

Not Chaos, but Economic Order

The market looks like a jumble of sellers and buyers. It seems almost a miracle that food is produced in

suitable amounts, gets transported to the right place, and arrives in a palatable form at the dinner table. But a close look at New York or other economies is convincing proof that a market system is neither chaos nor miracle. It is a system with its own internal logic. And it works.

A market economy is an elaborate mechanism for coordinating people, activities, and businesses through a system of prices and markets. It is a communication device for pooling the knowledge and actions of billions of diverse individuals. Without central intelligence or computation, it solves problems of production and distribution involving billions of unknown variables and relations, problems that are far beyond the reach of even today's fastest supercomputer. Nobody designed the market, yet it functions remarkably well. In a market economy, no single individual or organization is responsible for production, consumption, distribution, or pricing.

How do markets determine prices, wages, and outputs? Originally, a market was an actual place where buyers and sellers could engage in face-to-face bargaining. The *marketplace*—filled with slabs of butter, pyramids of cheese, layers of wet fish, and heaps of vegetables—used to be a familiar sight in many villages and towns, where farmers brought their goods to sell. In the United States today there are still important markets where many traders gather together to do business. For example, wheat and corn are traded at the Chicago Board of Trade, oil and platinum are traded at the New York Mercantile Exchange, and gems are traded at the Diamond District in New York City.

Markets are places where buyers and sellers interact, exchange goods and services or assets, and determine prices. There are markets for almost everything. You can buy artwork by old masters at auction houses in New York or pollution permits at the Chicago Board of Trade. A market may be centralized, like the stock market. It may be decentralized, as is the case for most workers. Or it may exist only electronically, as is increasingly the case with “e-commerce” on the Internet. Some of the most important markets are for financial assets, such as stocks, bonds, foreign exchange, and mortgages.

A market is a mechanism through which buyers and sellers interact to determine prices and exchange goods, services, and assets.

The central role of markets is to determine the **price** of goods. A price is the value of the good in terms of money (the role of money will be discussed later in this chapter). At a deeper level, prices represent the terms on which different items can be exchanged. The market price of a bicycle might be \$500, while that of a pair of shoes is \$50. In essence, the market is saying that shoes and bicycles trade on a 10-to-1 basis.

In addition, prices serve as *signals* to producers and consumers. If consumers want more of any good, the price will rise, sending a signal to producers that more supply is needed. When a terrible disease reduces beef production, the supply of beef decreases and raises the price of hamburgers. The higher price encourages farmers to increase their production of beef and, at the same time, encourages consumers to substitute other foods for hamburgers and beef products.

What is true of the markets for consumer goods is also true of markets for factors of production, such as land or labor. If more computer programmers are needed to run Internet businesses, the price of computer programmers (their hourly wage) will tend to rise. The rise in relative wages will attract workers into the growing occupation.

Prices coordinate the decisions of producers and consumers in a market. Higher prices tend to reduce consumer purchases and encourage production. Lower prices encourage consumption and discourage production. Prices are the balance wheel of the market mechanism.

Market Equilibrium. At every moment, some people are buying while others are selling; firms are inventing new products while governments are passing laws to regulate old ones; foreign companies are opening plants in America while American firms are selling their products abroad. Yet in the midst of all this turmoil, markets are constantly solving the *what, how, and for whom*. As they balance all the forces operating on the economy, markets are finding a **market equilibrium of supply and demand**.

A market equilibrium represents a balance among all the different buyers and sellers. Depending upon the price, households and firms all want to buy or sell different quantities. The market finds the equilibrium price that simultaneously meets the desires of

buyers and sellers. Too high a price would mean a glut of goods with too much output; too low a price would produce long lines in stores and a deficiency of goods. Those prices for which buyers desire to buy exactly the quantity that sellers desire to sell yield an equilibrium of supply and demand.

How Markets Solve the Three Economic Problems

We have just described how prices help balance consumption and production (or demand and supply) in an individual market. What happens when we put all the different markets together—beef, cars, land, labor, capital, and everything else? These markets work simultaneously to determine a general equilibrium of prices and production.

By matching sellers and buyers (supply and demand) in each market, a market economy simultaneously solves the three problems of *what, how, and for whom*. Here is an outline of a market equilibrium:

1. *What* goods and services will be produced is determined by the dollar votes of consumers in their daily purchase decisions. A century ago, many dollar votes for transportation went for horses and horseshoes; today, much is spent on automobiles and tires.

Firms, in turn, are motivated by the desire to maximize profits. **Profits** are net revenues, or the difference between total sales and total costs. Firms abandon areas where they are losing profits; by the same token, firms are lured by high profits into production of goods in high demand. Some of the most profitable activities today are producing and marketing drugs—drugs for depression, anxiety, and all other manner of human frailty. Lured by the high profits, companies are investing billions of dollars each year in research to come up with yet more new and improved medicines.

2. *How* things are produced is determined by the competition among different producers. The best way for producers to meet price competition and maximize profits is to keep costs at a minimum by adopting the most efficient methods of production. Sometimes change is incremental and consists of little more than tinkering with the machinery or adjusting the input mix to gain a cost advantage. At other times there are drastic

shifts in technology, as with steam engines displacing horses because steam was cheaper per unit of useful work, or airplanes replacing railroads as the most efficient mode for long-distance travel. Right now we are in the midst of just such a transition to a radically different technology, with computers revolutionizing many tasks in the workplace, from the checkout counter to the lecture room.

3. *For whom* things are produced—who is consuming and how much—depends, in large part, on the supply and demand in the markets for factors of production. Factor markets (i.e., markets for factors of production) determine wage rates, land rents, interest rates, and profits. Such prices are called *factor prices*. The same person may receive wages from a job, dividends from stocks, interest on a bond, and rent from a piece of property. By adding up all the revenues from all the factors, we can calculate the person's market income. The distribution of income among the population is thus determined by the quantity of factor services (person-hours, acres, etc.) and the prices of the factors (wage rates, land rents, etc.).

The Dual Monarchy

Who are the rulers in a market economy? Do giant companies like Microsoft and Toyota call the tune? Or perhaps Congress and the president? Or advertising moguls from Madison Avenue? All these people and institutions affect us, but in the end the major forces affecting the shape of the economy are the dual monarchs of *tastes* and *technology*.

One fundamental determinant is the tastes of the population. These innate and acquired tastes—as expressed in the dollar votes of consumer demands—direct the uses of society's resources. They pick the point on the production-possibility frontier (*PPF*).

The other major factor is the resources and technology available to a society. The economy cannot go outside its *PPF*. You can fly to Hong Kong, but there are no flights yet to Mars. Therefore, the economy's resources limit the candidates for the dollar votes of consumers. Consumer demand has to dovetail with business supply of goods and services to determine what is ultimately produced.

You will find it helpful to recall the dual monarchy when you wonder why some technologies fail in the marketplace. From the Stanley Steamer—a car that ran on steam—to the Premiere smokeless cigarette,

which was smokeless but also tasteless, history is full of products that found no markets. How do useless products die off? Is there a government agency that pronounces upon the value of new products? No such agency is necessary. Rather, they become extinct because there is no consumer demand for the products at the going market price. These products make losses rather than profits. This reminds us that profits serve as the rewards and penalties for businesses and guide the market mechanism.

Like a farmer using a carrot and a stick to coax a donkey forward, the market system deals out profits and losses to induce firms to produce desired goods efficiently.

A Picture of Prices and Markets

We can picture the circular flow of economic life in Figure 2-1. The diagram provides an overview of how consumers and producers interact to determine prices and quantities for both inputs and outputs. Note the two different kinds of markets in the circular flow. At the top are the product markets, or the flow of outputs like pizza and shoes; at the bottom are the markets for inputs or factors of production like land and labor. Further, see how decisions are made by two different entities, consumers and businesses.

Consumers buy goods and sell factors of production; businesses sell goods and buy factors of production. Consumers use their income from the sale of labor and other inputs to buy goods from businesses; businesses base their prices of goods on the costs of labor and property. Prices in goods markets are set to balance consumer demand with business supply; prices in factor markets are set to balance household supply with business demand.

All this sounds complicated. But it is simply the total picture of the intricate web of supplies and demands connected through a market mechanism to solve the economic problems of *what*, *how*, and *for whom*.

The Invisible Hand

It was Adam Smith who first recognized how a market economy organizes the complicated forces of supply and demand. In one of the most famous passages of all economics, quoted from *The Wealth of Nations* at the opening of this chapter, Smith saw the harmony between private profit and public interest. Go back and reread these paradoxical words. Particularly note

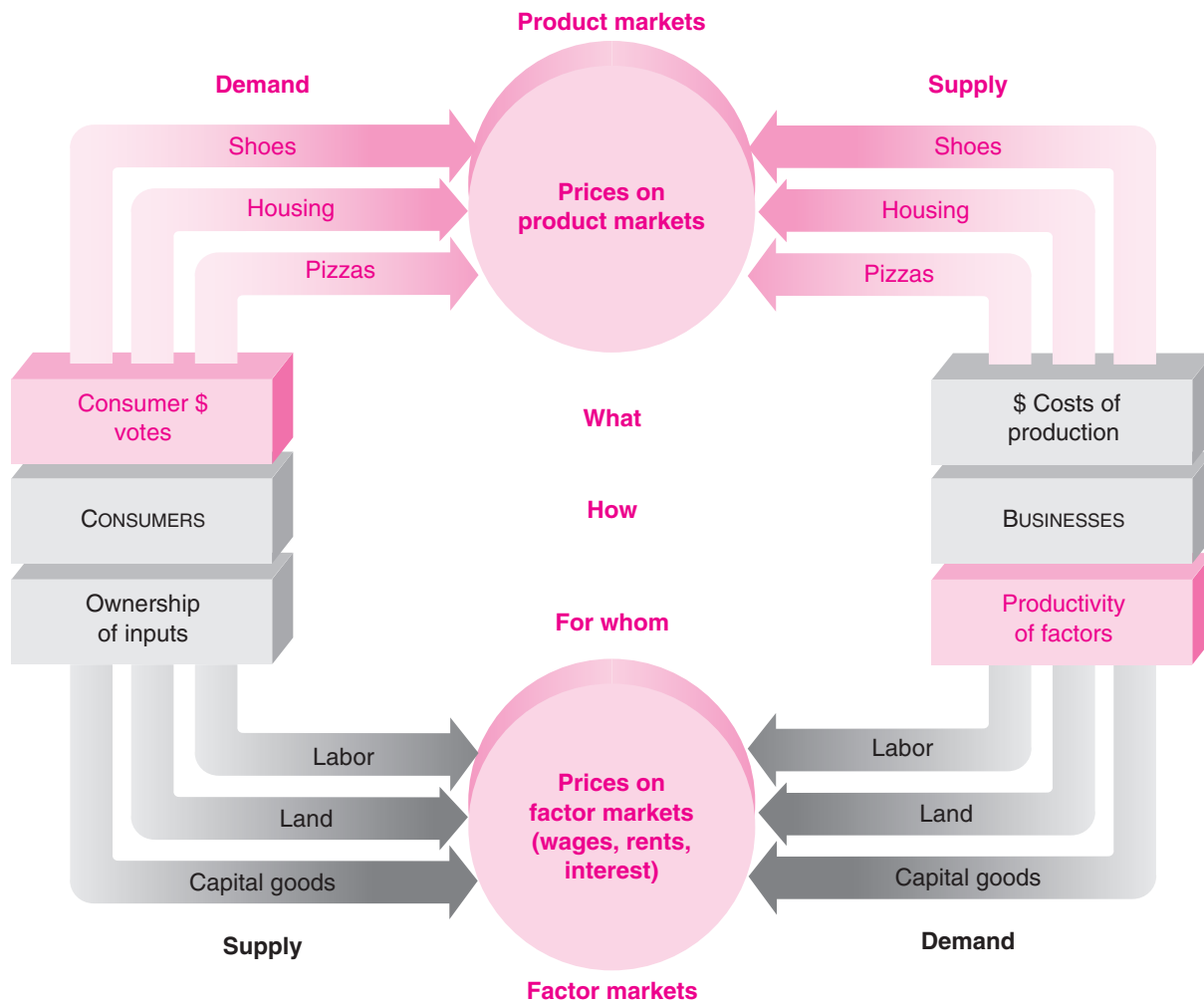


FIGURE 2-1. The Market System Relies on Supply and Demand to Solve the Trio of Economic Problems

We see here the circular flow of a market economy. Dollar votes of consumers (households, governments, and foreigners) interact with business supply in the product markets at top, helping to determine *what* is produced. Business demand for inputs meets the supply of labor and other inputs in the factor markets below, determining wage, rent, and interest payments; incomes thus influence *for whom* goods are delivered. Business competition to buy factor inputs and sell goods most cheaply determines *how* goods are produced.

the subtle point about the **invisible hand**—that private interest can lead to public gain *when it takes place in a well-functioning market mechanism*.

Smith's words were written in 1776. That same year was also marked by the American Declaration of Independence. It is no coincidence that both ideas appeared at the same time. Just as Americans were proclaiming freedom from tyranny, Adam Smith

was preaching a revolutionary doctrine emancipating trade and industry from the shackles of a feudal aristocracy. Smith held that government interference with market competition is almost certain to be injurious.

Smith's insight about the functioning of the market mechanism has inspired modern economists—both the admirers and the critics of capitalism.

Economic theorists have proved that under limited conditions a perfectly competitive economy is efficient (remember that an economy is producing efficiently when it cannot increase the economic welfare of anyone without making someone else worse off).

After two centuries of experience and thought, however, we recognize the limited scope of this doctrine. We know that there are “market failures,” that markets do not always lead to the most efficient outcome. One set of market failures concerns monopolies and other forms of imperfect competition. A second failure of the “invisible hand” comes when there are spillovers or externalities outside the marketplace—positive externalities such as scientific discoveries and negative spillovers such as pollution.

A final reservation comes when the income distribution is politically or ethically unacceptable. When any of these elements occur, Adam Smith’s invisible-hand doctrine breaks down and government may want to step in to mend the flawed invisible hand.

In summary:

Adam Smith discovered a remarkable property of a competitive market economy. Under perfect competition and with no market failures, markets will squeeze as many useful goods and services out of the available resources as is possible. But where monopolies or pollution or similar market failures become pervasive, the remarkable efficiency properties of the invisible hand may be destroyed.



Adam Smith: Founding Father of Economics

“For what purpose is all the toil and bustle of this world? What is the end of avarice and ambition, of the pursuit of wealth, of power, and pre-eminence?” Thus wrote Adam Smith (1723–1790), of Scotland, who glimpsed for the social world of economics what Isaac Newton recognized for the physical world of the heavens. Smith answered his questions in *The Wealth of Nations* (1776), where he explained the self-regulating natural order by which the oil of self-interest lubricates the economic machinery in an almost miraculous fashion. Smith believed that the toil and bustle had the effect of improving the lot of the common man and woman. “Consumption is the sole end and purpose of all production.”

Smith was the first apostle of economic growth. At the dawn of the Industrial Revolution, he pointed to the great

strides in productivity brought about by specialization and the division of labor. In a famous example, he described the manufacturing of a pin factory in which “one man draws out the wire, another straightens it, a third cuts it,” and so it goes. This operation allowed 10 people to make 48,000 pins in a day, whereas if “all wrought separately, they could not each of them make twenty, perhaps not one pin a day.” Smith saw the result of this division of labor as “universal opulence which extends itself to the lowest ranks of the people.” Imagine what he would think if he returned today to see what two more centuries of economic growth have produced!

Smith wrote hundreds of pages railing against countless cases of government folly and interference. Consider the seventeenth-century guild master who was attempting to improve his weaving. The town guild decided, “If a cloth weaver intends to process a piece according to his own invention, he should obtain permission from the judges of the town to employ the number and length of threads that he desires after the question has been considered by four of the oldest merchants and four of the oldest weavers of the guild.” Smith argued that such restrictions—whether imposed by government or by monopolies, whether on production or on foreign trade—limit the proper workings of the market system and ultimately hurt both workers and consumers.

None of this should suggest that Smith was an apologist for the establishment. He had a distrust of all entrenched power, private monopolies as much as public monarchies. He was for the common people. But, like many of the great economists, he had learned from his research that the road to waste is paved with good intentions.

Above all, it is Adam Smith’s vision of the self-regulating “invisible hand” that is his enduring contribution to modern economics.

B. TRADE, MONEY, AND CAPITAL

What are some of the distinguishing features of a modern economy? Three important ones are considered in this section:

1. An advanced economy is characterized by an elaborate network of trade that depends on specialization and an intricate division of labor.

2. Modern economies today make extensive use of money, which provides the yardstick for measuring economic values and is the means of payment.
3. Modern industrial technologies rest on the use of vast stocks of capital. Capital leverages human labor into a much more efficient factor of production and allows productivity many times greater than that possible in an earlier age.

TRADE, SPECIALIZATION, AND DIVISION OF LABOR

As compared to the economies of the 1700s, today's economies depend heavily on the specialization of individuals and firms, connected by an extensive network of trade. Modern economies have enjoyed rapid economic growth as increasing specialization has allowed workers to become highly productive in particular occupations and to trade their output for the commodities they need.

Specialization occurs when people and countries concentrate their efforts on a particular set of tasks—it permits each person and country to use to best advantage the specific skills and resources that are available. One of the facts of economic life is that, rather than have everyone do everything in a mediocre way, it is better to establish a *division of labor*—dividing production into a number of small specialized steps or tasks. A division of labor permits tall people to play basketball, numerate people to teach, and persuasive people to sell cars. It sometimes takes many years to receive the training for particular careers—it usually takes 14 postgraduate years to become a certified neurosurgeon.

Capital and land are also highly specialized. In the case of land, some lands form the precious sandy strips of beach between populous cities and warm oceans; others are valuable vineyard lands of France or California; still other lands border on deepwater ports and serve as centers of trade for the world.

Capital also is highly specialized. The computer software that went along with the labor to write this textbook took over a decade to be developed, but it is useless at managing an oil refinery or solving large numerical problems. One of the most impressive examples of specialization is the computer chip that manages automobiles, increases their efficiency, and can even serve as a “black box” to record accident data.

The enormous efficiency of specialization allows the intricate network of trade among people and nations that we see today. Very few of us produce a single finished good; we make but the tiniest fraction of what we consume. We might teach a small part of one college's curriculum, or empty coins from parking meters, or separate the genetic material of fruit flies. In exchange for this specialized labor, we will receive an income adequate to buy goods from all over the world.

The idea of *gains from trade* forms one of the central insights of economics. Different people or countries tend to specialize in certain areas; they then engage in the voluntary exchange of what they produce for what they need. Japan has grown enormously productive by specializing in manufacturing goods such as automobiles and consumer electronics; it exports much of its manufacturing output to pay for imports of raw materials. By contrast, countries which have tried the strategy of becoming self-sufficient—attempting to produce most of what they consume—have discovered that this is the road to stagnation. Trade can enrich all nations and increase *everyone's* living standards.

To summarize:

Specialization and trade are the key to high living standards. By specializing, people can become highly productive in a very narrow field of expertise. People can then trade their specialized goods for others' products, vastly increasing the range and quality of consumption and having the potential to raise everyone's living standards.



Globalization

You can hardly open a newspaper today without reading about the most recent trends in “globalization.” What exactly does this term mean? How can economics contribute to understanding the issues?

Globalization is a term that is used to denote an increase in economic integration among nations. Increasing integration is seen today in the dramatic growth in the flows of goods, services, and finance across national borders.

One major component of globalization is the steady increase in the share of national output devoted to imports and exports. With a continuous drop in transportation and communication costs, along with declining tariffs and other

barriers to trade, the share of trade in U.S. national output has more than doubled over the last half-century. Domestic producers now compete with producers from around the world in their prices and design decisions.

At a deeper level, however, globalization reflects an extension of specialization and division of labor to the entire world. Two centuries ago, most people lived on farms and produced virtually everything they consumed: food, shelter, clothing, fuel, and so on. Gradually, people specialized and bought much of their consumption from others in their community or nation. Today, many goods are produced in several countries and shipped around the world.

An interesting example of the globalized economy is the production of the iPod. Who makes the iPod? You might think that it is made by Apple, while if you look at the back of the iPod, it says “Made in China.” What is the truth here? The iPod is actually a small portable computer for delivering music. It has at least 451 parts, which are made all around the world. Apple designed the software and manages the production process, earning about \$80 for each \$299 of sales. China’s part consists primarily of assembly, under a Taiwanese subcontract, with about \$5 of labor costs. So, while the trade statistics record that an iPod sold in the United States incurs \$150 of trade deficit with China, only a tiny fraction of the \$150 was actually earned by China.

Hal Varian, chief economist for Google, summarized the results of this study very nicely:

Ultimately, there is no simple answer to who makes the iPod or where it is made. The iPod, like many other products, is made in several countries by dozens of companies, with each stage of production contributing a different amount to the final value. The real value of the iPod doesn’t lie in its parts or even in putting those parts together. The bulk of the iPod’s value is in the conception and design of the iPod. That is why Apple gets \$80 for each of these video iPods it sells, which is by far the largest piece of value added in the entire supply chain. Those clever folks at Apple figured out how to combine 451 mostly generic parts into a valuable product. They may not make the iPod, but they created it. In the end, that’s what really matters.¹

Evidence indicates that this process of “slicing up the value added” is typical of manufacturing activities in the United States and other high-income countries.

Globalization occurs in financial markets as well as in goods markets. Financial integration is seen in the

accelerated pace of lending and borrowing among nations as well as in the convergence of interest rates among different countries. The major causes of financial-market integration have been the dismantling of restrictions on capital flows among nations, cost reductions, and innovations in financial markets, particularly the use of new kinds of financial instruments.

Financial integration among nations has undoubtedly led to gains from trade, as nations with productive uses for capital can borrow from countries with excess savings. In the last two decades, Japan and China have served as the world’s major lending countries. Surprisingly, the United States has been the world’s largest borrower—partly because of its low national saving rate and partly because of the dynamism of its industries, such as information and biomedical technologies.

Global integration of goods and financial markets has produced impressive gains from trade in the form of lower prices, increased innovation, and more rapid economic growth. But these gains have been accompanied by painful side effects.

One consequence of economic integration is the unemployment and lost profits that occur when low-cost foreign producers displace domestic production. For example, from 1980 to 2007, U.S. employment in textiles and apparel fell from 2 million to 0.6 million workers. The unemployed textile workers found little solace in the fact that consumers were enjoying declining prices for Chinese clothing. Those who lose from increased international trade are the tireless advocates of “protectionism” in the form of tariffs and quotas on international trade.

A second consequence comes when financial integration triggers international financial crises. The latest crisis began in mid-2007 when a decline in U.S. housing prices spilled over into stock and bond markets around the world. One might ask why the Indian stock market should decline 20 or 30 percent because of problems in the U.S. housing market. The contagion arising from such disturbances is the result of closely linked markets. The irrational exuberance in financial markets in the 2000s led to extremely small risk premiums, raising asset prices around the world. When investors turned pessimistic in 2007 and 2008, risk premiums rose everywhere, including on Indian assets.

Globalization raises many new issues for policymakers. Are the gains from trade worth the domestic costs in terms of social disruption and dislocation? Should countries attempt to insulate themselves from global financial crises by walling off their financial markets? Does integration lead to greater income inequality? How should central

¹ See the website listings in the Further Reading section at the end of this chapter.

banks respond to financial instabilities that spread around the world? These questions are on the minds of policymakers who are attempting to deal with globalization.

MONEY: THE LUBRICANT OF EXCHANGE

If specialization permits people to concentrate on particular tasks, money then allows people to trade their specialized outputs for the vast array of goods and services produced by others.

Money is the means of payment in the form of currency and checks used to buy things. Money is a lubricant that facilitates exchange. When everyone trusts and accepts money as payment for goods and debts, trade is facilitated. Just imagine how complicated economic life would be if you had to barter goods for goods every time you wanted to buy a pizza or go to a concert. What services could you offer Sal's Pizza? What could you barter with your college to cover your tuition? Money acts as a matchmaker between buyers and sellers, effortlessly effecting little marriages of mutual self-interest billions of times every day.

Governments control the money supply through their central banks. But like other lubricants, money can get overheated and damage the economic engine. It can grow out of control and cause a hyperinflation, in which prices increase very rapidly. When that happens, people concentrate on spending their money quickly, before it loses its value, rather than investing it for the future. That's what happened to several Latin American countries in the 1980s, and many former socialist economies in the 1990s, when they had inflation rates exceeding 1000 percent or even 10,000 percent per year. Imagine getting your paycheck and having it lose 20 percent of its value by the end of the week!

Money is the medium of exchange. Proper management of the financial system is one of the major issues for government macroeconomic policy in all countries.

CAPITAL

The two great input partners in the productive process are labor and capital. We know what labor is, because we are all workers who rent our time for

wages. The other partner is **capital**—a produced and durable input which is itself an output of the economy. Capital consists of a vast and specialized array of machines, buildings, computers, software, and so on.

Most of us do not realize how much our daily activities depend upon capital, including the houses where we live, the highways on which we drive, and the wires that bring electricity and cable TV to our homes. The total net capital stock in the U.S. economy in 2008, including government-owned, business, and residential capital, amounted to more than \$150,000 per person.

Unlike land and labor, capital has to be produced before you can use it. For example, some companies build textile machines, which are then used to make shirts; some companies build farm tractors, which are then used to help produce corn.

Use of capital involves time-consuming, roundabout methods of production. People learned long ago that indirect and roundabout production techniques often are more efficient than direct methods of production. For example, the most direct method of catching fish is to wade into a stream and grab fish with your hands, but this yields more frustration than fish. By using a fishing rod (which is capital equipment), fishing time becomes more productive in terms of fish caught per day. By using even more capital, in the form of nets and fishing boats, fishing becomes productive enough to feed many people and provide a good living to those who operate the specialized nets and equipment.

Growth from the Sacrifice of Current Consumption.

If people are willing to save—to abstain from present consumption and wait for future consumption—society can devote resources to new capital goods. A larger stock of capital helps the economy grow faster by pushing out the *PPF*. Look back at Figure 1-5 to see how forgoing current consumption in favor of investment adds to future production possibilities. High rates of saving and investment help explain how Taiwan, China, and other Asian countries have grown so fast over the last three decades. By contrast, many poor countries are caught in a vicious circle called the “poverty trap.” They have low incomes and few productive outlets for their savings, they save and invest little, they grow slowly, and as a consequence they fall further behind in the economic standings of nations.

We summarize as follows:

Economic activity involves forgoing current consumption to increase our capital. Every time we invest—building a new factory or road, increasing the years or quality of education, or increasing the stock of useful technical knowledge—we are enhancing the future productivity of our economy and increasing future consumption.

Capital and Private Property

In a market economy, capital typically is privately owned, and the income from capital goes to individuals. Every patch of land has a deed, or title of ownership; almost every machine and building belongs to an individual or corporation. *Property rights* bestow on their owners the ability to use, exchange, paint, dig, drill, or exploit their capital goods. These capital goods also have market values, and people can buy and sell the capital goods for whatever price the goods will fetch. *The ability of individuals to own and profit from capital is what gives capitalism its name.*

However, while our society is one built on private property, property rights are limited. Society determines how much of “your” property you may bequeath to your heirs and how much must go in inheritance taxes to the government. Society determines how much your factory can pollute and where you can park your car. Even your home is not your castle: you must obey zoning laws and, if necessary, make way for a road.

Interestingly enough, the most valuable economic resource, labor, cannot be turned into a commodity that is bought and sold as private property. Since the abolition of slavery, it has been illegal to treat human earning power like other capital assets. You are not free to sell yourself; you must rent yourself at a wage.

Poor countries have discovered that it is difficult to have an efficient market economy when there are no laws enforcing contracts or guaranteeing that a company can keep its own profits. And when the legal framework breaks down, as in war-torn Iraq after 2003, people begin to fear for their lives. They have little time or inclination to make long-term investments for the future. Production falls and the quality of life deteriorates. Indeed, many of the most horrifying African famines were caused by civil war and the breakdown in the legal order, not by bad weather.

The environment is another example where poorly designed property rights harm the economy. Water and air are generally open-access resources, meaning that no one owns or controls them. As the saying goes, “Everyone’s business is nobody’s business.” In this area, people do not weigh all the costs of their actions. Someone might throw trash into the water or emit smoke into the air because the costs of dirty water or foul air are borne by other people. By contrast, people are less likely to throw trash on their own lawn or burn coal in their own living room because they themselves will bear the costs.

In recent years, economists have proposed extending property rights to environmental commodities by selling or auctioning permits to pollute and allowing them to be traded on markets. Preliminary evidence suggests that this extension of property rights has given much more powerful incentives to reduce pollution efficiently.

We have highlighted some key features of a modern economy: Specialization and the division of labor among people and countries create great efficiencies; increased production makes trade possible; money allows trade to take place efficiently; and a sophisticated financial system allows people’s savings to flow smoothly into other people’s capital.



Property Rights for Capital and Pollution

Economists often emphasize the importance of property rights in an efficient market economy. Property rights define how individuals or firms can own, buy, sell, and use capital goods and other property. These rights are enforced through the legal framework, which constitutes the set of laws within which a society operates. An efficient and acceptable legal framework for a market economy includes the definition of clear property rights, the laws of contract, and a system for adjudicating disputes.

C. THE VISIBLE HAND OF GOVERNMENT

In an idealized market economy, all goods and services are voluntarily exchanged for money at competitive market prices that reflect consumer valuations and social costs. Such a system squeezes the maximum in consumer satisfaction out of a society’s available resources. In reality, however, no economy actually conforms totally to the idealized world of the smoothly

functioning invisible hand. Rather, economic imperfections lead to such ills as pollution, unemployment, financial panics, and extremes of wealth and poverty.

No government anywhere in the world, at any time, no matter how conservative it claims to be, keeps its hands off the economy. Governments take on many tasks in response to the flaws in the market mechanism. The military, the police, and the national weather service are typical areas of government activity. Socially useful ventures such as space exploration and scientific research benefit from government funding. Governments may regulate some businesses (such as finance and drugs) while subsidizing others (such as education and biomedical research). Governments tax their citizens and redistribute some of the proceeds to the elderly and needy.

How do governments perform their functions? Governments operate by requiring people to pay taxes, obey regulations, and consume certain collective goods and services. Because of its coercive powers, the government can perform functions that would not be possible under voluntary exchange. Government coercion increases the freedoms and consumption of those who benefit while reducing the incomes and opportunities of those who are taxed or regulated.

Governments have three main economic functions in a market economy:

1. Governments increase *efficiency* by promoting competition, curbing externalities like pollution, and providing public goods.
2. Governments promote *equity* by using tax and expenditure programs to redistribute income toward particular groups.
3. Governments foster *macroeconomic stability and growth*—reducing unemployment and inflation while encouraging economic growth—through fiscal and monetary policy.

We will examine briefly each function.

EFFICIENCY

Adam Smith recognized that the virtues of the market mechanism are fully realized only when the checks and balances of perfect competition are present. What is meant by **perfect competition**? This technical term refers to a market in which no firm or consumer is large enough to affect the market price. For example, the wheat market is perfectly competitive

because the largest wheat farm, producing only a minuscule fraction of the world's wheat, can have no appreciable effect upon the price of wheat.

The invisible-hand doctrine applies to economies in which all markets are perfectly competitive. Perfectly competitive markets will produce an efficient allocation of resources, so the economy is on its production-possibility frontier. When all industries are subject to the checks and balances of perfect competition, as we will see later in this book, markets will produce the bundle of outputs most desired by consumers using the most efficient techniques and the minimum amount of inputs.

Alas, there are many ways that markets can fall short of efficient perfect competition. The three most important ones involve imperfect competition, such as monopolies; externalities, such as pollution; and public goods, such as national defense and lighthouses. In each case, market failure leads to inefficient production or consumption, and government can play a useful role in curing the disease.

Imperfect Competition

One serious deviation from an efficient market comes from *imperfect competition* or *monopoly* elements. Whereas under perfect competition no firm or consumer can affect prices, **imperfect competition** occurs when a buyer or seller can affect a good's price. For example, if the TV company or a labor union is large enough to influence the price of TV service or labor, respectively, some degree of imperfect competition has set in. When imperfect competition arises, society may move inside its *PPF*. This would occur, for example, if a single seller (a monopolist) raised the price to earn extra profits. The output of that good would be reduced below the most efficient level, and the efficiency of the economy would thereby suffer. In such a situation, the invisible-hand property of markets may be violated.

What is the effect of imperfect competition? Imperfect competition leads to prices that rise above cost and to consumer purchases that are reduced below efficient levels. The pattern of too high price and too low output is the hallmark of the inefficiencies associated with imperfect competition.

In reality, almost all industries possess some measure of imperfect competition. Airlines, for example, may have no competition on some of their routes but face several rivals on others. The extreme case of imperfect competition is the *monopolist*—a single

supplier who alone determines the price of a particular good or service. For example, Microsoft has been a monopolist in the production of Windows operating systems.

Over the last century, most governments have taken steps to curb the most extreme forms of imperfect competition. Governments sometimes regulate the price and profits of monopolies such as local water, telephone, and electric utilities. In addition, government antitrust laws prohibit actions such as price fixing and agreements to divide up markets. The most important check to imperfect competition, however, is the opening of markets to competitors, whether they be domestic or foreign. Few monopolies can long withstand the attack of competitors unless governments protect them through tariffs or regulations.

Externalities

A second type of inefficiency arises when there are spillovers or externalities, which involve involuntary imposition of costs or benefits. Market transactions involve voluntary exchange in which people exchange goods or services for money. When a firm buys a chicken to make frozen drumsticks, it buys the chicken from its owner in the chicken market, and the seller receives the full value of the hen. When you buy a haircut, the barber receives the full value for time, skills, and rent.

But many interactions take place outside markets. While airports produce a lot of noise, they generally do not compensate the people living around the airport for disturbing their peace. On the other hand, some companies which spend heavily on research and development have positive spillover effects for the rest of society. For example, researchers at AT&T invented the transistor and launched the electronic revolution, but AT&T's profits increased by only a small fraction of the global social gains. In each case, an activity has helped or hurt people outside the marketplace; that is, there was an economic transaction without an economic payment.

Externalities (or spillover effects) occur when firms or people impose costs or benefits on others outside the marketplace.

Negative externalities get most of the attention in today's world. As our society has become more

densely populated and as the production of energy, chemicals, and other materials increases, negative externalities or spillover effects have grown from little nuisances into major threats. This is where governments come in. Government *regulations* are designed to control externalities like air and water pollution, damage from strip mining, hazardous wastes, unsafe drugs and foods, and radioactive materials.

In many ways, governments are like parents, always saying no: Thou shalt not expose thy workers to dangerous conditions. Thou shalt not pour out poisonous smoke from thy factory chimney. Thou shalt not sell mind-altering drugs. Thou shalt not drive without wearing thy seat belt. And so forth. Finding the correct balance between free markets and government regulation is a difficult task that requires careful analysis of the costs and benefits of each approach. But few people today would argue for returning to the unregulated economic jungle where firms would be allowed to dump pollutants like plutonium wherever they wanted.

Public Goods

While negative externalities like pollution or global warming get most of the headlines, positive externalities are in fact of great economic significance. Consider the gradual elimination of smallpox, a disease which claimed millions of lives and disfigured even more. No private firm would undertake the research and vaccinations and fieldwork in far corners of the world that were needed to combat the disease. Incentives for private production were inadequate because the benefits were so widely dispersed around the world that firms could not capture the returns. The benefits of eliminating communicable diseases cannot be bought and sold in markets. Similar cases of positive externalities are construction of a highway network, operation of a national weather service, and support of basic science.

The polar case of a positive externality is a public good. **Public goods** are commodities which can be enjoyed by everyone and from which no one can be excluded. The classic example of a public good is national defense. Suppose a country decides to increase spending to defend its borders or to send peacekeepers to troubled lands. All must pay the piper and all will suffer the consequences, whether they want to or not.

However, once the government decides to buy the public good, the market mechanism is still at work. In providing public goods like national defense or lighthouses, the government is behaving exactly like any other large spender. By casting its dollar votes on these items, it causes resources to flow there. Once the dollar votes are cast, the market mechanism then takes over and channels resources to firms so that the lighthouses or tanks get produced.



Lighthouses as Public Goods

Lighthouses are an example of the concept of public goods. They save lives and cargoes.

But lighthouse keepers cannot reach out to collect fees from ships; nor, if they could, would it serve an efficient social purpose for them to exact an economic penalty on ships that use their services. The light can be provided most efficiently free of charge, for it costs no more to warn 100 ships than to warn a single ship of the nearby rocks.

But wait a moment. A recent history determined that lighthouses in England and Wales were in fact *privately* and *profitably* operated in the early days. They were financed by government-authorized “light duties” levied on ships which used nearby ports. Perhaps, we might conclude, lighthouses are not really public goods.

To understand the issues here, we need to return to fundamentals. The two key attributes of a public good are (1) that the cost of extending the service to an additional person is zero (“nonrivalry”) and (2) that it is impossible to exclude individuals from enjoying it (“nonexcludability”). Both these characteristics are applicable to lighthouses.

But a “public” good is not necessarily publicly provided. Often, it is provided by no one. Moreover, just because it is privately provided does not indicate that it is efficiently provided or that a market mechanism can pay for the lighthouse. The English example shows the interesting case where, *if* provision of the public good can be tied to another good or service (in this case, vessel tonnage), and *if* the government gives private persons the right to collect what are essentially taxes, then an alternative mechanism for *financing* the public good can be found. Such an approach would work poorly where the fees could not be easily tied to tonnage (such as in international waterways). And it would not work at all if the

government refused to privatize the right to collect light duties on shipping.

America shows quite a different experience. From its earliest days, the United States believed that navigational aids should be government-provided. Indeed, one of the first acts of the first Congress, and America’s first public-works law, provided that “the necessary support, maintenance, and repairs of all lighthouses, beacons, [and] buoys . . . shall be defrayed out of the Treasury of the United States.”

But, like many public goods, lighthouses were provided meager funding, and it is interesting to note what happened in the absence of navigational aids. A fascinating case lies off the east coast of Florida, which is a treacherous waterway with a 200-mile reef lying submerged a few feet below the surface in the most active hurricane track of the Atlantic Ocean. This heavily used channel was prime territory for storm, shipwreck, and piracy.

There were no lighthouses in Florida until 1825, and no private-sector lighthouses were ever built in this area. The market responded vigorously to the perils, however. What arose from the private sector was a thriving “wrecking” industry. Wreckers were ships that lurked near the dangerous reefs waiting for an unfortunate boat to become disabled. The wreckers would then appear, offer their help in saving lives and cargo, tow the boat into the appropriate port, and then claim a substantial part of the value of the cargo. Wrecking was the major industry of south Florida in the mid-nineteenth century and made Key West the richest town in America at that time.

While wreckers probably had positive value added, they provided none of the public-good attributes of lighthouses. Indeed, because many cargoes were insured, there was significant “moral hazard” involved in navigation. Conivance between wreckers and captains often enriched both at the expense of owners and insurance companies. It was only when the U.S. Lighthouse Service, financed by government revenues, began to build lighthouses through the Florida channel that the number of shipwrecks began to decrease—and the wreckers were gradually driven out of business.

Lighthouses are no longer a central issue of public policy today and are mainly of interest to tourists. They have been largely replaced by the satellite-based Global Positioning System (GPS), which is also a public good provided free by the government. But the history of lighthouses reminds us of the problems that can arise when public goods are inefficiently provided.

Taxes. The government must find the revenues to pay for its public goods and for its income-redistribution programs. Such revenues come from taxes levied on personal and corporate incomes, on wages, on sales of consumer goods, and on other items. All levels of government—city, state, and federal—collect taxes to pay for their spending.

Taxes sound like another “price”—in this case the price we pay for public goods. But taxes differ from prices in one crucial respect: taxes are not voluntary. Everyone is subject to the tax laws; we are all obligated to pay for our share of the cost of public goods. Of course, through our democratic process, we as citizens choose both the public goods and the taxes to pay for them. However, the close connection between spending and consumption that we see for private goods does not hold for taxes and public goods. I pay for a hamburger only if I want one, but I must pay my share of the taxes used to finance defense and public schools even if I don’t care a bit for these activities.

EQUITY

Our discussion of market failures like monopoly or externalities focused on defects in the allocative role of markets—imperfections that can be corrected by careful intervention. But assume for the moment that the economy functioned with complete efficiency—always on the production-possibility frontier and never inside it, always choosing the right amount of public versus private goods, and so forth. Even if the market system worked perfectly, it might still lead to a flawed outcome.

Markets do not necessarily produce a fair distribution of income. A market economy may produce inequalities in income and consumption that are not acceptable to the electorate.

Why might the market mechanism produce an unacceptable solution to the question *for whom?* The reason is that incomes are determined by a wide variety of factors, including effort, education, inheritance, factor prices, and luck. The resulting income distribution may not correspond to a fair outcome. Moreover, recall that goods follow dollar votes and not the greatest need. A rich man’s cat may drink the milk that a poor boy needs to remain healthy. Does this happen because the market is failing? Not

at all, for the market mechanism is doing its job—putting goods in the hands of those who have the dollar votes. Even the most efficient market system may generate great inequality.

Often the income distribution in a market system is the result of accidents of birth. Every year *Forbes* magazine lists the 400 richest Americans, and it’s impressive how many of them either received their wealth by inheritance or used inherited wealth as a springboard to even greater wealth. Would everyone regard that as necessarily right or ideal? Should someone be allowed to become a billionaire simply by inheriting 5000 square miles of rangeland or the family’s holding of oil wells? That’s the way the cookie crumbles under *laissez-faire* capitalism.

For most of American history, economic growth was a rising tide that lifted all boats, raising the incomes of the poor as well as those of the rich. But over the last three decades, changes in family structure and declining wages of the less skilled and less educated have reversed the trend. With a return to greater emphasis on the market has come greater homelessness, more children living in poverty, and deterioration of many of America’s central cities.

Income inequalities may be politically or ethically unacceptable. A nation does not need to accept the outcome of competitive markets as predetermined and immutable; people may examine the distribution of income and decide it is unfair. If a democratic society does not like the distribution of dollar votes under a *laissez-faire* market system, it can take steps to change the distribution of income.

Let’s say that voters decide to reduce income inequality. What tools could the government use to implement that decision? First, it can engage in *progressive taxation*, taxing large incomes at a higher rate than small incomes. It might impose heavy taxes on wealth or on large inheritances to break the chain of privilege. The federal income and inheritance taxes are examples of such redistributive progressive taxation.

Second, because low tax rates cannot help those who have no income at all, governments can make *transfer payments*, which are money payments to people. Such transfers today include aid for the elderly, blind, and disabled and for those with dependent children, as well as unemployment insurance for the jobless. This system of transfer payments provides a “safety net” to protect the unfortunate from

privation. And, finally, governments sometimes subsidize consumption of low-income groups by providing food stamps, subsidized medical care, and low-cost housing—though in the United States, such spending comprises a relatively small share of total spending.

Tax and transfer programs have always been controversial. Few people think about the public goods that their tax dollars are buying when they fill out their tax returns or look at the big deductions in their paychecks. Yet people also feel that societies must provide the basic necessities to everyone—for food, schooling, and health care.

What can economics contribute to debates about equality? Economics as a science cannot answer such normative questions as how much of our incomes should be taxed, how much income should be transferred to poor families, or what is the proper size of the public sector. These are political questions that are answered at the ballot box in our democratic societies.

Economics can, however, analyze the costs and benefits of different redistributive systems. Economists have devoted much time to analyzing the impact of different tax systems (such as those based on income or consumption). They have also studied whether giving poor people cash rather than goods and services is likely to be a more efficient way of reducing poverty.

And economics can remind us that the market giveth and the market taketh away. In a world of rapid structural change, we should always remember, “There, but for the grace of supply and demand, go I.”

MACROECONOMIC GROWTH AND STABILITY

Since its origins, capitalism has been plagued by periodic bouts of inflation (rising prices) and recession (high unemployment). Since World War II, for example, there have been 10 recessions in the United States, some putting millions of people out of work. These fluctuations are known as the *business cycle*.

Today, thanks to the intellectual contribution of John Maynard Keynes and his followers, we know how to control the worst excesses of the business cycle. By careful use of fiscal and monetary policies, governments can affect output, employment, and

inflation. The *fiscal policies* of government involve the power to tax and the power to spend. *Monetary policy* involves determining the supply of money and interest rates; these affect investment in capital goods and other interest-rate-sensitive spending. Using these two fundamental tools of macroeconomic policy, governments can influence the level of total spending, the rate of growth and level of output, the levels of employment and unemployment, and the price level and rate of inflation in an economy.

Governments in advanced industrial countries have successfully applied the lessons of the Keynesian revolution over the last half-century. Spurred on by active monetary and fiscal policies, the market economies witnessed a period of unprecedented economic growth in the three decades after World War II.

In the 1980s, governments became more concerned with designing macroeconomic policies to promote long-term objectives, such as economic growth and productivity. (*Economic growth* denotes the growth in a nation’s total output, while *productivity* represents the output per unit input or the efficiency with which resources are used.) For example, tax rates were lowered in most industrial countries in order to improve incentives for saving and production. Many economists emphasize the importance of public saving through smaller budget deficits as a way to increase national saving and investment.

Macroeconomic policies for stabilization and economic growth include fiscal policies (of taxing and spending) along with monetary policies (which affect interest rates and credit conditions). Since the development of macroeconomics in the 1930s, governments have succeeded in curbing the worst excesses of inflation and unemployment.

Table 2-1 summarizes the economic role played by government today. It shows the important governmental functions of promoting efficiency, achieving a fairer distribution of income, and pursuing the macroeconomic objectives of economic growth and stability. In all advanced industrial societies we find some variant of a **mixed economy**, in which the market determines output and prices in most individual sectors while government steers the overall economy with programs of taxation, spending, and monetary regulation.

Failure of market economy	Government intervention	Current examples of government policy
Inefficiency:		
Monopoly	Encourage competition	Antitrust laws, deregulation
Externalities	Intervene in markets	Antipollution laws, antismoking ordinances
Public goods	Encourage beneficial activities	Provide public education, build roads
Inequality:		
Unacceptable inequalities of income and wealth	Redistribute income	Progressive taxation of income and wealth Income-support or transfer programs (e.g., subsidize health care)
Macroeconomic problems:		
Business cycles (high inflation and unemployment)	Stabilize through macroeconomic policies	Monetary policies (e.g., changes in money supply and interest rates) Fiscal policies (e.g., taxes and spending programs)
Slow economic growth	Stimulate growth	Improve efficiency of tax system Raise national savings rate by reducing budget deficit or increasing budget surplus

TABLE 2-1. Government Can Remedy the Shortcomings of the Market

THE RISE OF THE WELFARE STATE

Our textbook focuses on the mixed market economy of modern industrialized nations. It will be useful to trace its history briefly. Before the rise of the market economy, going back to medieval times, aristocracies and town guilds directed much of the economic activity in Europe and Asia. However, about two centuries ago, governments began to exercise less and less power over prices and production methods. Feudalism gradually gave way to markets, or what we call the “market mechanism.”

In most of Europe and North America, the nineteenth century became the age of **laissez-faire**. This doctrine, which translates as “leave us alone,” holds that government should interfere as little as possible in economic affairs and leave economic decisions to the private decision making of buyers and sellers. Many governments adopted this economic philosophy starting in the middle of the nineteenth century.

Nevertheless, a century ago, the many excesses of capitalism—including monopolies and trusts, corruption, dangerous products, and poverty—led most industrialized countries to retreat from unbridled laissez-faire. Government’s role expanded steadily as it regulated businesses, levied income taxes, and pro-

vided a social safety net for the elderly, unemployed, and impoverished.

This new system, called the **welfare state**, is one in which markets direct the detailed activities of day-to-day economic life while government regulates social conditions and provides pensions, health care, and other necessities for poor families.

Conservative Backlash

Many critics of the welfare state worried that government interventions were tilting the scales in favor of *socialism*, in which the state owns, operates, and regulates much of the economy. In 1942, the great Harvard economist Joseph Schumpeter argued that the United States was “capitalism living in an oxygen tent” on its march to socialism. Capitalism’s success would breed alienation and self-doubt, sapping its efficiency and innovation.

Libertarian critics like Friedrich Hayek and Milton Friedman argued for a return to free markets and minimal government. This group argued the state is overly intrusive; governments create monopoly; government failures are just as pervasive as market failures; high taxes distort the allocation of resources; social security threatens to drain the public purse; environmental regulations dull the spirit of

enterprise; and government attempts to stabilize the economy only reduce growth and increase inflation. In short, for some, government is the problem rather than the solution.

Beginning around 1980, the tide turned as conservative governments in many countries began to reduce taxes and deregulate government's control over the economy. Many government-owned industries were privatized, income-tax rates were lowered, and the generosity of many welfare programs was reduced.

The most dramatic turn toward the market came in Russia and the socialist countries of Eastern Europe. After decades of extolling the advantages of a government-run command economy, beginning around 1990, these countries scrapped central planning and made the difficult transition to a decentralized market economy. China, while still run by the Communist party bureaucracy, has enjoyed an economic boom in the last three decades by allowing private enterprises and foreign firms to operate within its borders. Many formerly socialist regimes in India, Africa, and Latin America have embraced capitalism and reduced the role of government in their economies.

The Mixed Economy Today

In weighing the relative merits of state and market, public debate often oversimplifies the complex choices that societies face. Markets have worked miracles in some countries. But markets need well-crafted legal and

political structures, along with the social overhead capital that promotes trade and ensures a stable financial system. Without these governmental structures, markets often produce corrupt capitalism, great inequality, pervasive poverty, and declining living standards.

In economic affairs, success has many parents, while failure is an orphan. The success of market economies may lead people to overlook the important contribution of collective actions. Government programs have helped reduce poverty and malnutrition and have reduced the scourge of terrible diseases like tuberculosis and polio. Even as the world's largest economies head into a deep recession in 2008–2009, macroeconomic policies help to stem financial-market panics and reduce the length and severity of business cycles. State-supported science has split the atom, discovered the DNA molecule, and explored space.

The debate about government's successes and failures demonstrates that drawing the boundary between market and government is an enduring problem. The tools of economics are indispensable to help societies find the golden mean between an efficient market mechanism and publicly decided regulation and redistribution. The good mixed economy is, perforce, the limited mixed economy. But those who would reduce government to the constable plus a few lighthouses are living in a dream world. An efficient and humane society requires both halves of the mixed system—market and government. Operating a modern economy without both is like trying to clap with one hand.



SUMMARY

A. The Market Mechanism

1. In an economy like the United States, most economic decisions are made in markets, which are mechanisms through which buyers and sellers meet to trade and to determine prices and quantities for goods and services. Adam Smith proclaimed that the *invisible hand* of markets would lead to the optimal economic outcome as individuals pursue their own self-interest. And while markets are far from perfect, they have proved remarkably effective at solving the problems of *how*, *what*, and *for whom*.
2. The market mechanism works as follows to determine the *what* and the *how*: The dollar votes of people affect prices of goods; these prices serve as guides for the

amounts of the different goods to be produced. When people demand more of a good, its price will increase and businesses can profit by expanding production of that good. Under perfect competition, a business must find the cheapest method of production, efficiently using labor, land, and other factors; otherwise, it will incur losses and be eliminated from the market.

3. At the same time that the *what* and *how* problems are being resolved by prices, so is the problem of *for whom*. The distribution of income is determined by the ownership of factors of production (land, labor, and capital) and by factor prices. People possessing fertile land or the ability to hit home runs will earn many dollar

votes to buy consumer goods. Those without property or with skills, color, or sex that the market undervalues will receive low incomes.

B. Trade, Money, and Capital

4. As economies develop, they become more specialized. Division of labor allows a task to be broken into a number of smaller chores that can each be mastered and performed more quickly by a single worker. Specialization arises from the increasing tendency to use roundabout methods of production that require many specialized skills. As individuals and countries become increasingly specialized, they tend to concentrate on particular commodities and trade their surplus output for goods produced by others. Voluntary trade, based on specialization, benefits all.
 5. Trade in specialized goods and services today relies on money to lubricate its wheels. Money is the universally acceptable medium of exchange—including primarily currency and checking deposits. It is used to pay for everything from apple tarts to zebra skins. By accepting money, people and nations can specialize in producing a few goods and can then trade them for others; without money, we would waste much time negotiating and bartering.
 6. Capital goods—produced inputs such as machinery, structures, and inventories of goods in process—permit roundabout methods of production that add much to a nation's output. These roundabout methods take time and resources to get started and therefore require a temporary sacrifice of present consumption in order to increase future consumption. The rules that define how capital and other assets can be bought, sold, and used are the system of property rights. In no economic system are private-property rights unlimited.
- ### C. The Visible Hand of Government
7. Although the market mechanism is an admirable way of producing and allocating goods, sometimes market failures lead to deficiencies in the economic outcomes. The government may step in to correct these failures. Its role in a modern economy is to ensure efficiency, to correct an unfair distribution of income, and to promote economic growth and stability.
 8. Markets fail to provide an efficient allocation of resources in the presence of imperfect competition or externalities. Imperfect competition, such as monopoly, produces high prices and low levels of output. To combat these conditions, governments regulate business behavior. Externalities arise when activities impose costs or bestow benefits that are not paid for in the marketplace. The government may decide to step in and regulate these spillovers (as it does with air pollution) or provide for public goods (as in the case of public health).
 9. Markets do not necessarily produce a fair distribution of income; they may spin off unacceptably high inequality of income and consumption. In response, governments can alter the pattern of incomes (the *for whom*) generated by market wages, rents, interest, and dividends. Modern governments use taxation to raise revenues for transfers or income-support programs that place a financial safety net under the needy.
 10. Since the development of macroeconomics in the 1930s, the government has undertaken a third role: using fiscal powers (of taxing and spending) and monetary policy (affecting credit and interest rates) to promote long-run economic growth and productivity and to tame the business cycle's excesses of inflation and unemployment.
 11. Drawing the right boundary between market and government is an enduring problem for societies. Economics is indispensable in finding the golden mean between an efficient market and publicly decided regulation and redistribution. An efficient and humane society requires both halves of the mixed system—market and government.

CONCEPTS FOR REVIEW

The Market Mechanism

market, market mechanism
 markets for goods and for factors
 of production
 prices as signals
 market equilibrium
 perfect and imperfect competition
 Adam Smith's invisible-hand doctrine

Features of a Modern Economy

specialization and division of labor
 money
 factors of production (land, labor,
 capital)
 capital, private property, and property
 rights

Government's Economic Role

efficiency, equity, stability
 inefficiencies: monopoly and
 externalities
 inequity of incomes under markets
 macroeconomic policies:
 fiscal and monetary policies
 stabilization and growth

FURTHER READING AND INTERNET WEBSITES

Further Reading

A useful discussion of globalization is contained in “Symposium on Globalization in Perspective,” *Journal of Economic Perspectives*, Fall 1998.

For examples of the writings of libertarian economists, see Milton Friedman, *Capitalism and Freedom* (University of Chicago Press, 1963), and Friedrich Hayek, *The Road to Serfdom* (University of Chicago Press, 1994).

A strong defense of government interventions is found in a history of the 1990s by Nobel Prize winner Joseph E. Stiglitz, *The Roaring Nineties: A New History of the World’s Most Prosperous Decade* (Norton, New York, 2003). Paul Krugman’s columns in *The New York Times* are a guide to current economic issues from the perspective of one of America’s most distinguished economists; his most recent book, *The Great Unraveling: Losing Our Way in the New Century* (Norton, New York, 2003), collects his columns from the early 2000s.

A fascinating example of how a small economy is organized without money is found in R. A. Radford, “The Economic

Organization of a P.O.W. Camp,” *Economica*, vol. 12, November 1945, pp. 189–201.

Websites

You can explore recent analyses of the economy along with a discussion of major economic policy issues in the *Economic Report of the President at* www.access.gpo.gov/eop/. See www.whitehouse.gov for federal budget information and as an entry point into the useful Economic Statistics Briefing Room.

The study of the iPod is Jason Dedrick, Kenneth L. Kraemer, and Greg Linden, “Who Profits from Innovation in Global Value Chains? A Study of the iPod and Notebook PCs,” available at <http://pcic.merage.uci.edu/papers/2008/WhoProfits.pdf>. Hal Varian’s review is Hal R. Varian, “An iPod Has Global Value: Ask the (Many) Countries That Make It,” *The New York Times*, June 28, 2007, available by Internet search.

QUESTIONS FOR DISCUSSION

1. What determines the composition of national output? In some cases, we say that there is “consumer sovereignty,” meaning that consumers decide how to spend their incomes on the basis of their tastes and market prices. In other cases, decisions are made by political choices of legislatures. Consider the following examples: transportation, education, police, energy efficiency of appliances, health-care coverage, television advertising. For each, describe whether the allocation is by consumer sovereignty or by political decision. Would you change the method of allocation for any of these goods?
2. When a good is limited, some means must be found to ration the scarce commodity. Some examples of rationing devices are auctions, ration coupons, and first-come, first-served systems. What are the strengths and weaknesses of each? Explain carefully in what sense a market mechanism “ration” scarce goods and services.
3. This chapter discusses many “market failures,” areas in which the invisible hand guides the economy poorly, and describes the role of government. Is it possible that there are, as well, “government failures,” government attempts to curb market failures that are worse than the original market failures? Think of some examples of government failures. Give some examples in which government failures are so bad that it is better to live with the market failures than to try to correct them.
4. Consider the following cases of government intervention: regulations to limit air pollution, income support for the poor, and price regulation of a telephone monopoly. For each case, (a) explain the market failure, (b) describe a government intervention to treat the problem, and (c) explain how “government failure” (see the definition in question 3) might arise because of the intervention.
5. The circular flow of goods and inputs illustrated in Figure 2-1 has a corresponding flow of dollar incomes and spending. Draw a circular-flow diagram for the dollar flows in the economy, and compare it with the circular flow of goods and inputs. What is the role of money in the dollar circular flow?
6. Consider three periods of American history: (a) the early 1800s, when Jones lived on an isolated farm cut off from the rest of the world; (b) the late 1940s, when Smith lived in a country where domestic trade

and exchange was extensive but international trade was cut off because of damage from World War II; and (c) 2009, when Hall lives in a globalized world that promotes trade with all countries.

Suppose you were living in each of these situations. Describe the opportunities for specialization and division of labor of Jones, Smith, and Hall. Explain how the globalized world in (c) both allows greater productivity of Hall and allows a much greater variety of consumption goods. Give specific examples in each case.

7. “Lincoln freed the slaves. With one pen stroke he destroyed much of the capital the South had accumulated over the years.” Comment.
8. The table to the right shows some of the major expenditures of the federal government. Explain how each one relates to the economic role of government.
9. Why does the saying “No taxation without representation” make sense for public goods but not private goods? Explain the mechanisms by which individuals can “protest” against (a) taxes that are thought excessive to pay for defense spending, (b) tolls that are

thought excessive to pay for a bridge, and (c) prices that are thought excessive for an airline flight from New York to Miami.

Major Expenditure Categories for Federal Government

Budget category	Federal spending, 2009 (\$, billion)
Health care	713
National defense	675
Social security	649
Income security	401
Natural resources and environment	36
International affairs	38

Source: Office of Management and Budget, *Budget of the United States Government*, Fiscal Year 2009.