

After studying this chapter, you will be able to:

- ◆ Explain why some choices are *public* choices and how these choices are made in the political marketplace
- ◆ Explain how the free-rider problem arises and how the quantity of public goods is determined
- ◆ Explain why mixed goods with external benefits lead to inefficient underproduction and how public production, subsidies, and vouchers can achieve allocative efficiency

# 16

## PUBLIC CHOICES AND PUBLIC GOODS

**F**ighting a California wildfire, screening passengers at an airport, providing good schools and colleges, defending the nation's borders and interests around the globe, policing neighborhoods and highways, operating courts and a legal system: Governments are involved in all these activities. But why? Why does government provide some goods and services and not others? Why don't we leave it to private firms to provide and sell *all* goods and services? Do governments overprovide or underprovide—provide too much or too little? These are the questions we study in this chapter.

We begin by classifying goods and services and explaining the economic theory of why and how governments intervene in markets, or even replace them. We apply this theory to the provision of public services. Two such public services are education and health care. You will see how the political marketplace provides these services.

In *Reading Between the Lines* at the end of the chapter, we look at some of the strengths and weaknesses of the 2010 Affordable Care Act.

## Public Choices

All economic choices are made by individuals, but some choices are *private* and some are *public*. A *private choice* is a decision that has consequences for only the person making it. Decisions to buy (demand) or to sell (supply) goods and services in competitive markets are examples of private choices. At the market equilibrium price, these choices are consistent and one person's decision to buy or sell a little bit more or a little bit less has an imperceptible effect on the outcome.

A **public choice** is a decision that has consequences for many people and perhaps for an entire society. Decisions by political leaders and senior public servants about price and quantity regulations, taxes, international trade policy, and government spending are examples of public choices.

You studied the consequences of some public choices in Chapter 6 where you saw how price ceilings and price floors prevent voluntary exchanges even though marginal social benefit exceeds marginal social cost; you also saw how taxes drive a wedge between marginal social benefit and marginal social cost. In Chapter 7, you saw how tariffs and import quotas restrict international trade. All of these public choices result in scarce resources being used inefficiently—they create deadweight loss.

Why do governments do things that create inefficiency? Aren't they supposed to make things better? If governments make things worse, why do they exist? Why aren't the successful societies those that have no government? The economic theory of government explains both why governments exist and why they do a less-than-perfect job.

### Why Governments Exist

Governments exist for three major reasons. First, they establish and maintain property rights. Second, they provide nonmarket mechanisms for allocating scarce resources. Third, they implement arrangements that redistribute income and wealth.

Property rights are the fundamental foundation of the market economy. By establishing property rights and the legal system that enforces them, governments enable markets to function. In many situations, markets function well and allocate scarce resources efficiently. But sometimes the market results in inefficiency—market failure (see Chapter 5, pp. 114–115).

When market failure occurs, too many of some things and too few of some other things are produced. Choices made in the pursuit of self-interest have not served the social interest. By reallocating resources, it is possible to make some people better off while making no one worse off.

The market economy also delivers a distribution of income and wealth that most people regard as unfair. Equity requires some redistribution.

Replacing markets with government resource-allocation decisions is no simple matter. Just as there can be market failure, there can also be government failure. **Government failure** is a situation in which government actions lead to inefficiency—to either underprovision or overprovision.

Government failure can arise because government is made up of many individuals, each with their own economic objectives. Public choices are the outcome of the choices made by these individuals. To analyse these choices, economists have developed a public choice theory of the political marketplace.

### Public Choice and the Political Marketplace

Four groups of decision makers, shown in Fig. 16.1, interact in the political marketplace. They are

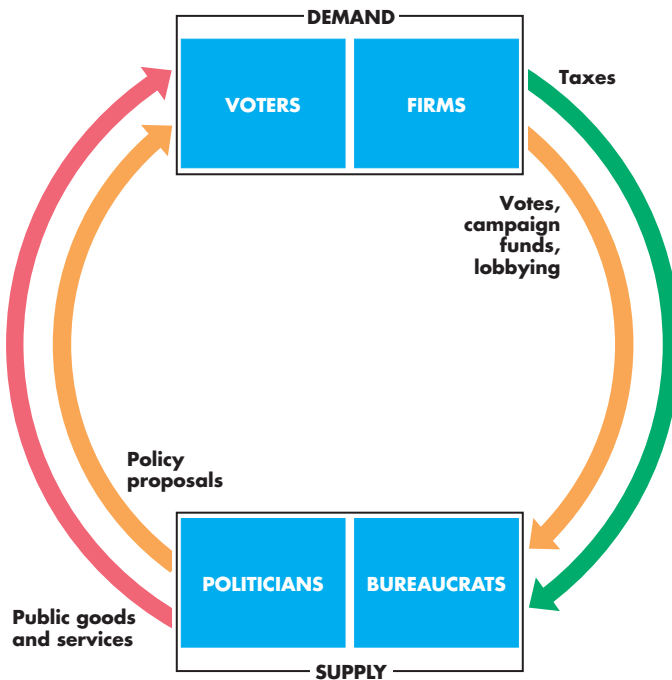
- Voters
- Firms
- Politicians
- Bureaucrats

**Voters** Voters evaluate politicians' policy proposals, benefit from public goods and services, and pay some of the taxes. In the economic model of public choice, voters support the politicians whose policy proposals make them better off and express their demand for public goods and services by voting, helping in political campaigns, lobbying, and making campaign contributions.

**Firms** Firms also evaluate politicians' policy proposals, benefit from public goods and services, and pay some of the taxes. Although firms don't vote, they do make campaign contributions and are a major source of funds for political parties. Firms also engage in lobbying activity to persuade politicians to propose policies that benefit them.

**Politicians** Politicians are the elected persons in the federal, state, and local governments—from the President of the United States to the Superintendent

**FIGURE 16.1** The Political Marketplace



 animation

of Yuma, Arizona, School District One. Federal and state politicians form coalitions—political parties—to develop policy proposals, which they present to voters in the hope of attracting majority support. Politicians also direct bureaucrats in the delivery of public goods and services and other policy actions. The goal of a politician is to get elected and to remain in office. Votes, to a politician, are like profit to a firm.

**Bureaucrats** Bureaucrats are the public servants who work in government departments. They administer tax collection, the delivery of public goods and services, and the administration of rules and regulations.

The self-interest of a bureaucrat is best served when the budget of her or his department is maximized. The bigger the budget of a department, the greater is the prestige of its chief and the greater are the opportunities for promotion for people further down the bureaucratic ladder. So all the members of a department have an interest in maximizing the department's budget. This economic assumption does not imply that bureaucrats do a poor job. Rather it implies that, in doing what they perceive to be a good job, they take care of their own self-interest too.

Voters express their demand for policies with their votes.

Voters and firms express their demand for policies with campaign contributions and by lobbying.

Politicians express their supply of policies with proposals that they hope will attract enough votes to get them elected and keep them in office. Politicians also set the taxes paid by voters and firms.

Bureaucrats provide public goods and services and try to get the largest possible budget for their departments.

A political equilibrium balances all these public choices.

## Political Equilibrium

Voters, firms, politicians, and bureaucrats make their economic choices to achieve their own self-interest. Public choices, like private choices, are constrained by what is feasible. Each person's public choices are also constrained by the public choices of others.

The balance of forces in the political marketplace determines the outcome of all the public choices that people make. In a **political equilibrium** the choices of voters, firms, politicians, and bureaucrats are all compatible and no group can see a way of improving its position by making a different choice.

Ideally, the political equilibrium will achieve allocative efficiency and serve the social interest, but such an outcome is not guaranteed, as you'll see later in this chapter.

We make public choices because some situations just don't permit private choices. The core of the reason we can't always make private choices is that some goods and services (and some factors of production) have a public nature—they are *public* goods and services.

Your next task is to see exactly what we mean by a *public* good or service.

## What is a Public Good?

To see what makes a good a *public* good, we distinguish two features of all goods: the extent to which people can be *excluded* from consuming them and the extent to which one person's consumption *rivals* the consumption of others.

**Excludable** A good is **excludable** if it is possible to prevent someone from enjoying its benefits. Brink's security services, East Point Seafood's fish, and a U2 concert are examples. People must pay to benefit from them.

A good is **nonexcludable** if it is impossible (or extremely costly) to prevent anyone from benefiting from it. The services of the LAPD, fish in the Pacific Ocean, and a concert on network television are examples. When an LAPD cruiser enforces the speed limit, everyone on the highway benefits; anyone with a boat can fish in the ocean; and anyone with a TV can watch a network broadcast.

**Rival** A good is **rival** if one person's use of it decreases the quantity available for someone else. A Brink's truck can't deliver cash to two banks at the same time. A fish can be consumed only once.

A good is **nonrival** if one person's use of it does not decrease the quantity available for someone else. The services of the LAPD and a concert on network television are nonrival. One person's benefit doesn't lower the benefit of others.

## A Fourfold Classification

Figure 16.2 classifies goods, services, and resources into four types.

**Private Goods** A **private good** is both rival and excludable. A can of Coke and a fish on East Point Seafood's farm are examples of private goods.

**Public Goods** A **public good** is both nonrival and nonexcludable. A public good simultaneously benefits everyone, and no one can be excluded from its benefits. National defense is the best example of a public good.

**Common Resources** A **common resource** is rival and nonexcludable. A unit of a common resource can be used only once, but no one can be prevented from using what is available. Ocean fish are a common resource. They are rival because a fish taken by one person isn't available for anyone else, and they are

**FIGURE 16.2** Fourfold Classification of Goods

|                 |  |  |
|-----------------|--|--|
|                 | <b>Private goods</b>                             | <b>Common resources</b>                            |
| <b>Rival</b>    | Food and drink<br>Car<br>House                   | Fish in ocean<br>Atmosphere<br>National parks      |
|                 | <b>Natural monopoly goods</b>                    | <b>Public goods</b>                                |
| <b>Nonrival</b> | Internet<br>Cable television<br>Bridge or tunnel | National defense<br>The law<br>Air traffic control |
|                 | <b>Excludable</b>                                | <b>Nonexcludable</b>                               |

A private good is one for which consumption is rival and from which consumers can be excluded. A public good is one for which consumption is nonrival and from which it is impossible to exclude a consumer. A common resource is one that is rival but nonexcludable. A good that is nonrival but excludable is produced by a natural monopoly.

 animation

nonexcludable because it is difficult to prevent people from catching them.

**Natural Monopoly Goods** A **natural monopoly good** is nonrival and excludable. When buyers can be excluded if they don't pay but the good is nonrival, marginal cost is zero. The fixed cost of producing such a good is usually high so economies of scale exist over the entire range of output for which there is a demand (see p. 300). An iTunes song and cable television are examples of natural monopoly goods.

## Mixed Goods and Externalities

Some goods don't fit neatly into the four-fold classification of Fig. 16.2. They are mixed goods. A **mixed good** is a private good the production or consumption of which creates an externality. An **externality** is a cost (external cost) or a benefit (external benefit) that arises from the production or consumption of a private good and that falls on someone other than its producer or consumer. A **negative externality** imposes a cost and a **positive externality** provides a benefit.

We'll look at some examples of mixed goods with externalities and study those with positive externalities later in this chapter and those with negative externalities in Chapter 17.

## Economics in Action

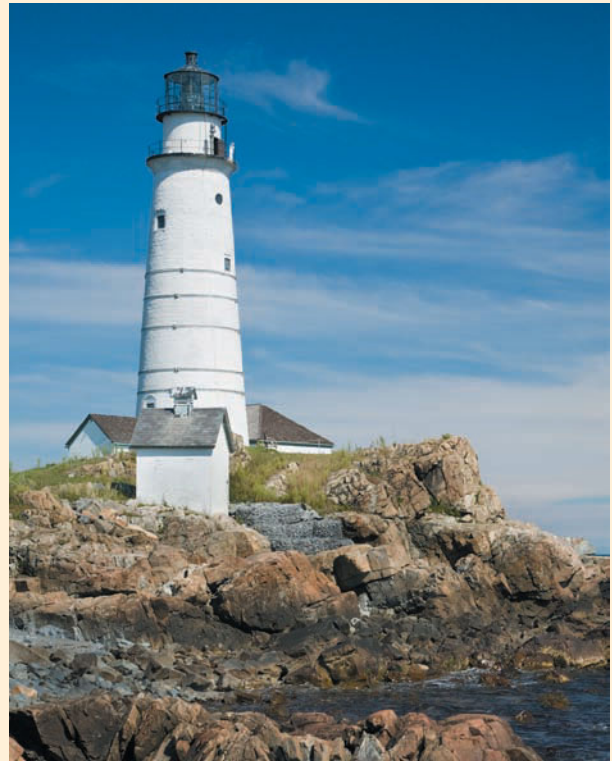
### Is a Lighthouse a Public Good?

Built on Little Brewster Island in 1716 to guide ships into and out of the Boston Harbor, Boston Lighthouse was the first light station in North America.

For two centuries, economists used the lighthouse as an example of a public good. No one can be prevented from seeing its warning light—*nonexcludable*—and one person seeing its light doesn't prevent someone else from doing so too—*nonrival*.

Ronald Coase, who won the 1991 Nobel Prize for ideas he first developed when he was an undergraduate at the London School of Economics, discovered that before the nineteenth century, lighthouses in England were built and operated by private corporations that earned profits by charging tolls on ships docking at nearby ports. A ship that refused to pay the lighthouse toll was *excluded* from the port.

So the benefit arising from the services of a lighthouse is *excludable*. Because the services provided by a lighthouse are nonrival but excludable, a lighthouse is an example of a natural monopoly good and not a public good.



**Mixed Goods with External Benefits** Two of the things that have the greatest impact on your welfare, your education and health care, are mixed goods with external benefits.

Think about a flu vaccination. It is *excludable* because it would be possible to sell vaccinations and exclude those not willing to pay from benefiting from them. A flu vaccination is also *rival* because providing one person with a vaccination means one fewer available for everyone else. A flu vaccination is a private good, but it creates an externality.

If you decide to get a flu vaccination, you benefit from a lower risk of getting infected in the coming flu season. But if you avoid the flu, your neighbor who didn't get vaccinated has a better chance of avoiding it too. A flu vaccination brings a benefit to others, so it is a *mixed good* with an external benefit.

The external benefit of a flu vaccination is like a public good. It is nonexcludable because everyone with whom you come into contact benefits. You can't selectively benefit only your friends! And it is nonrival—protecting one person from the flu does not diminish the protection for others.

Your education is another example of a mixed good with external benefits. If all education was organized by private schools and universities, those not willing or able to pay would be excluded, and one person's place in a class would rival another's. So education is a private good.

But your being educated brings benefits to others. It brings benefits to your friends who enjoy your sharp, educated wit and it brings benefits to the community in which you live because well-educated people with a strong sense of fellowship and responsibility toward others make good neighbors. These external benefits are like a public good. You can't selectively decide who benefits from your good neighborliness and one person's enjoyment of your good behavior doesn't rival someone else's. So education is a mixed good with an external benefit.

**Mixed Goods with External Costs** Mixed goods with external costs have become a huge political issue in recent years. The main ones are electricity and transportation (road, rail, and air) produced by burning hydrocarbon fuels—coal, oil, and natural gas.

Electricity and transportation are excludable and rival—they are private goods. But when you use electricity or travel by car, bus, train, or airplane, carbon dioxide and other chemicals pour into the atmosphere. This consequence of consuming a private good creates an external cost and is a public bad. (A “bad” is the opposite of a good.) No one can be excluded from bearing the external cost and one person’s discomfort doesn’t rival another’s. Electricity and transportation are mixed goods with external costs.

Other private goods that generate external costs include logging and the clearing of forests, which destroy the habitat of wildlife and influence the amount of carbon dioxide in the atmosphere; smoking cigarettes in a confined space, which imposes a health risk on others; and driving under the influence of alcohol, which increases the risk of accident and injury for others.

### Inefficiencies that Require Public Choices

Public goods, mixed goods, common resources, and natural monopoly goods all create inefficiency problems that require public choices. Public choices must be made to

- Provide public goods and mixed goods
- Conserve common resources
- Regulate natural monopoly

**Provide Public Goods and Mixed Goods** Because no one can be excluded from enjoying the benefits of a public good, no one has an incentive to pay for their share of it. Even people with a social conscience have no incentive to pay because one person’s enjoyment of a public good doesn’t lower the enjoyment of others—it is nonrival.

If private firms tried to produce and sell public goods to consumers, they wouldn’t remain in business for very long. The market economy would fail to deliver the efficient quantity of those goods. For example, there would be too little national defense, police services and law enforcement, courts and judges, storm-water and sewage disposal services.

Mixed goods pose a less extreme problem. The market economy would underprovide mixed goods with external benefits because their producers and consumers don’t take the external benefits into account when they make their own choices. The market economy would overprovide mixed goods with

external costs because their producers and consumers don’t take the external costs into account when they make their own choices.

**Conserve Common Resources** Because no one can be excluded from enjoying the benefits of a common resource, no one has an incentive to pay for their share of it or to conserve it for future enjoyment.

If boat owners are left to catch as much Southern Bluefin tuna as they wish, the stock will deplete and eventually the species will vanish. The market economy would overproduce tuna while stocks lasted and then underproduce as stocks ran out.

This problem, called the *tragedy of the commons*, requires public choices to limit the overuse and eventual destruction of common resources.

**Regulate Natural Monopoly** When people can be excluded from enjoying the benefits of a good if they don’t pay for it, and when the good is nonrival, the marginal cost of producing it is zero. A natural monopoly can produce such a good at the lowest cost. But as Chapter 13 explains, when one firm serves a market, that firm maximizes profit by producing too little of the good.

You studied the regulation of natural monopoly in Chapter 13. This chapter and the next one study the other two public choices that must be made. In this chapter, we’ll focus on the underprovision of public goods and mixed goods with external benefits. Chapter 17 studies mixed goods with external costs and conserving common resources.

## REVIEW QUIZ

- 1 List three main reasons why governments exist.
- 2 Describe the political marketplace. Who demands, who supplies, and what is the political equilibrium?
- 3 Distinguish among public goods, private goods, common resources, natural monopoly goods, and mixed goods.
- 4 What are the problems that arise from public goods, common resources, natural monopoly goods, and mixed goods?

You can work these questions in Study Plan 16.1 and get instant feedback.



## ◆ Providing Public Goods

Why do governments provide firefighting services? Why don't the people of California buy brush fire-fighting services from Firestorm, a private firm that competes for our dollars in the marketplace in the same way that McDonalds does? The answer is that firefighting is a public good. It is nonexcludable and nonrival and it has a free-rider problem.

### The Free-Rider Problem

A free rider enjoys the benefits of a good or service without paying for it. Because a public good is provided for everyone to use and no one can be excluded from its benefits, no one has an incentive to pay his or her share of the cost. Everyone has an incentive to free ride. The **free-rider problem** is that the economy would provide an inefficiently small quantity of a public good. Marginal social benefit from the public good would exceed its marginal social cost and a deadweight loss would arise.

Let's look at the marginal social benefit and marginal social cost of a public good.

### Marginal Social Benefit from a Public Good

Lisa and Max (the only people in a society) value fire-fighting airplanes. Figure 16.3(a) and 16.3(b) graph their marginal benefits from the airplanes as  $MB_L$  for Lisa and  $MB_M$  for Max. The marginal benefit from a public good (like that from a private good) diminishes as the quantity of the good increases.

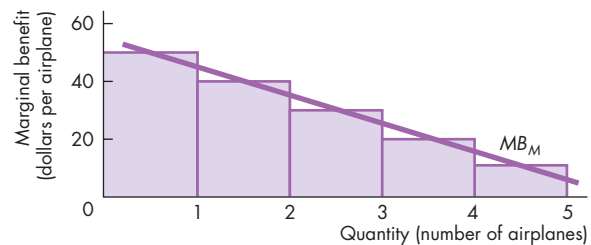
Figure 16.3(c) shows the marginal *social* benefit curve,  $MSB$ . Because everyone gets the same quantity of a public good, its marginal social benefit curve is the sum of the marginal benefits of all the individuals at each *quantity*—it is the *vertical* sum of the individual marginal benefit curves. So the curve  $MSB$  is the marginal social benefit curve for the economy made up of Lisa and Max. For each airplane, Lisa's marginal benefit is added to Max's marginal benefit.

Contrast the  $MSB$  curve for a public good with that of a private good. To obtain the economy's  $MSB$  curve for a private good, we sum the *quantities demanded* by all the individuals at each *price*—we sum the individual marginal benefit curves *horizontally* (see Chapter 5, p. 108).

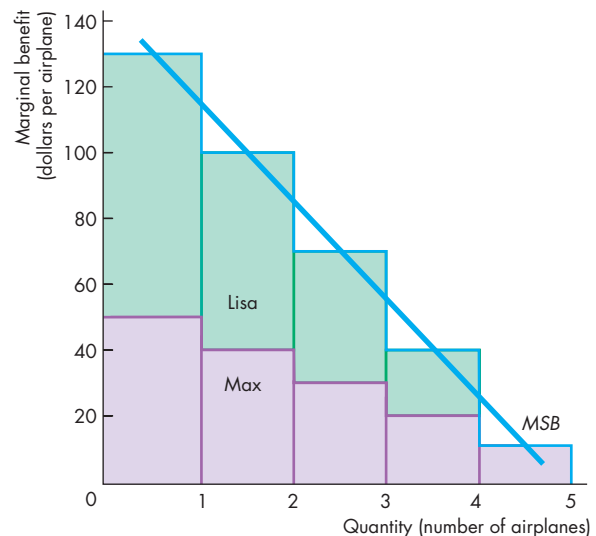
FIGURE 16.3 Benefits of a Public Good



(a) Lisa's marginal benefit



(b) Max's marginal benefit



(c) Economy's marginal social benefit

The marginal social benefit at each quantity of the public good is the sum of the marginal benefits of all individuals. The marginal benefit curves are  $MB_L$  for Lisa and  $MB_M$  for Max. The economy's marginal social benefit curve is  $MSB$ .

### Marginal Social Cost of a Public Good

The marginal social cost of a public good is determined in exactly the same way as that of a private good—see Chapter 5, p. 110. The principle of increasing marginal cost applies to the marginal cost of a public good, so the marginal social cost decreases as the quantity of the public good increases.

### Efficient Quantity of a Public Good

To determine the efficient quantity of a public good, we use the principles that you learned in Chapter 5. The efficient quantity is that at which marginal social benefit equals marginal social cost.

Figure 16.4 shows the marginal social benefit curve, *MSB*, and the marginal social cost curve, *MSC*, for firefighting airplanes. (We'll now think of society as consisting of Lisa and Max and the other 39 million Californians.)

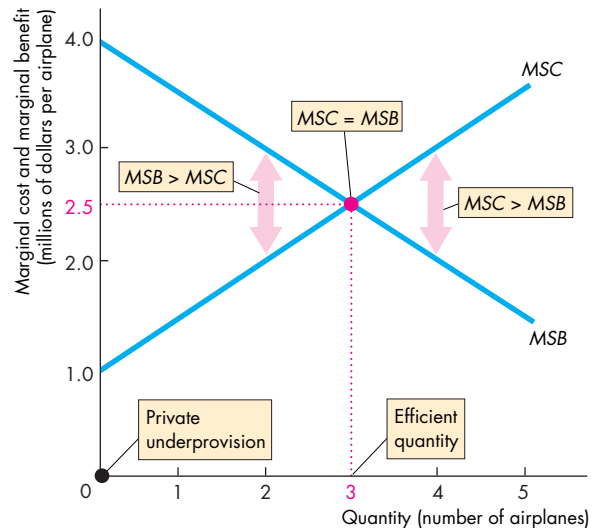
If marginal social benefit exceeds marginal social cost, as it does with 2 airplanes, resources can be used more efficiently by increasing the number of airplanes. The extra benefit exceeds the extra cost. If marginal social cost exceeds marginal social benefit, as it does with 4 airplanes, resources can be used more efficiently by decreasing the number of airplanes. The cost saving exceeds the loss of benefit.

If marginal social benefit equals marginal social cost, as it does with 3 airplanes, resources are allocated efficiently. Resources cannot be used more efficiently because to provide more than 3 airplanes increases cost by more than the extra benefit, and to provide fewer airplanes lowers the benefit by more than the cost saving.

### Inefficient Private Provision

Could a private firm—Firestorm—deliver the efficient quantity of firefighting airplanes? Most likely it couldn't, because no one would have an incentive to buy his or her share of the airplanes. Everyone would reason as follows: The number of airplanes provided by Firestorm is not affected by my decision to pay my share or not. But my own private consumption will be greater if I free ride and do not pay my share of the cost of the airplanes. If I don't pay, I enjoy the same level of fire protection and I can buy more private goods. I will spend my money on private goods and free ride on fire protection. Such reasoning is the free-rider problem. If

**FIGURE 16.4** The Efficient Quantity of a Public Good



With fewer than 3 airplanes, marginal social benefit, *MSB*, exceeds marginal social cost, *MSC*. With more than 3 airplanes, *MSC* exceeds *MSB*. Only with 3 airplanes is *MSC* equal to *MSB* and the number of airplanes is efficient.

animation

everyone reasons the same way, Firestorm has no revenue and so provides no airplanes. Because the efficient number of airplanes is 3, private provision is inefficient.

### Efficient Public Provision

The outcome of the political process might be efficient or inefficient. We look first at an efficient outcome. There are two political parties: Fears and Hopes. They agree on all issues except the number of firefighting airplanes: The Fears want 4, and the Hopes want 2. Both parties want to get elected, so they run a voter survey and discover the marginal social benefit curve of Fig. 16.5. They also consult with airplane producers to establish the marginal cost curve. The parties then do a “what-if” analysis. If the Fears propose 4 airplanes and the Hopes propose 2, the voters will be equally unhappy with both parties. Compared to the efficient quantity, the Hopes want an underprovision of 1 airplane and the Fears want an overprovision of 1 airplane. The deadweight losses are equal and the election would be too close to call.

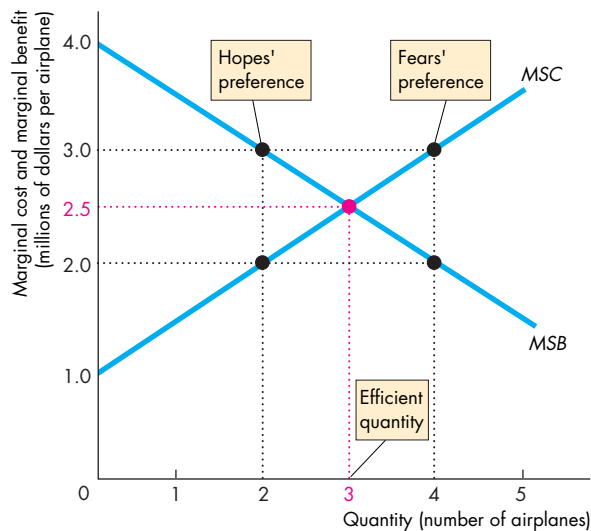


Contemplating this outcome, the Fears realize that they are too fearful to get elected. They figure that, if they scale back to 3 airplanes, they will win the election if the Hopes stick with 2. The Hopes reason in a similar way and figure that, if they increase the number of airplanes to 3, they can win the election if the Fears propose 4.

So they both propose 3 airplanes. The voters are indifferent between the parties, and each party receives 50 percent of the vote. But regardless of which party wins the election, 3 airplanes are provided and this quantity is efficient. Competition in the political place results in the efficient provision of a public good.

**The Principle of Minimum Differentiation** The principle of minimum differentiation is the tendency for competitors (including political parties) to make themselves similar to appeal to the maximum number of clients or voters. This principle describes the behavior of political parties. It also explains why fast-food restaurants cluster in the same block. For example, if Dominoes opens a new pizza outlet, it is likely that Pizza Hut will soon open nearby.

**FIGURE 16.5** An Efficient Political Outcome



The Hopes would like to provide 2 airplanes and the Fears would like to provide 4 airplanes. The political outcome is 3 airplanes because unless each party proposes 3 airplanes, the other party will beat it in an election.

## Economics in Action

### Fighting California's Wildfires

During the 2009 wildfire season (July through November), 63 fires burned across more than 500 square miles of California. The two largest and deadliest fires, Station Fire north of Los Angeles and La Brea Fire in Santa Barbara County, together consumed almost 400 square miles of land.

Wildfires are natural and vital for the ecosystem, but some fires are started by human action, and some both human-made and naturally occurring fires burn close to where people live. So protection against wildfires is a vital public good.

Fighting wildfires is an example of a public good that is *provided* by government and paid for with tax revenues but *produced* by private firms.

Firestorm Wildfire Suppression Inc. is one such firm. Operating from Chico, CA, Firestorm hires and trains firefighters and produces firefighting services to maximize its profit. To achieve this goal, the firm must produce firefighting services at the lowest possible cost.

But if Firestorm (and its competitors) tried to sell their services to each individual home owner in the wildfire regions of California, they wouldn't get enough revenue to remain in business. There would be a free-rider problem. The free-rider problem is avoided because the state of California and federal emergency services agencies buy the services of Firestorm—government is the *provider* of this public good and Firestorm and others are the *producers*.



For the political process to deliver the efficient outcome, voters must be well informed, evaluate the alternatives, and vote in the election. Political parties must be well informed about voter preferences. As the next section shows, we can't expect to achieve this outcome.

### Inefficient Public Overprovision

If competition between two political parties is to deliver the efficient quantity of a public good, bureaucrats must cooperate and help to achieve this outcome. But bureaucrats might have a different idea and end up frustrating rather than facilitating an efficient outcome. Their actions might bring *government failure*.

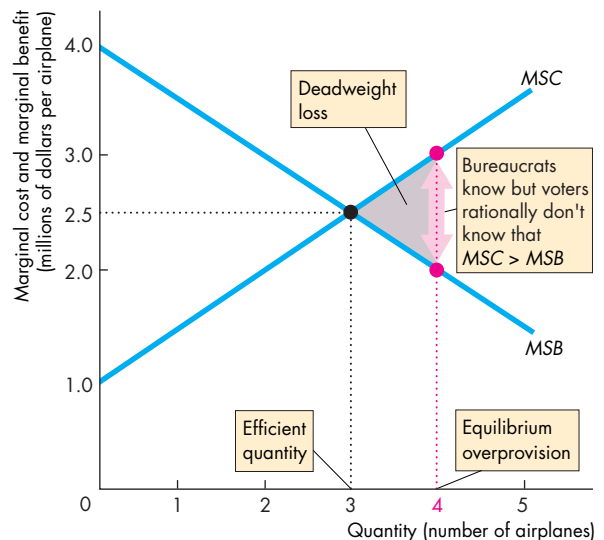
**Objective of Bureaucrats** Bureaucrats want to maximize their department's budget because a bigger budget brings greater status and more power. So the Emergency Services Department's objective is to maximize the budget for firefighting airplanes.

Figure 16.6 shows the outcome if the bureaucrats are successful in the pursuit of their goal. They might try to persuade the politicians that 3 airplanes cost more than the originally budgeted amount; or they might press their position more strongly and argue for more than 3 airplanes. In Fig. 16.6, the Emergency Services Department persuades the politicians to provide 4 airplanes.

Why don't the politicians block the bureaucrats? Won't overproviding airplanes cost future votes? It will if voters are well informed and know what is best for them. But voters might not be well informed, and well-informed interest groups might enable the bureaucrats to achieve their objective and overcome the objections of the politicians.

**Rational Ignorance** A principle of the economic analysis of public choices is that it is rational for a voter to be ignorant about an issue unless that issue has a perceptible effect on the voter's economic welfare. Each voter knows that he or she can make virtually no difference to the fire protection policy of the government of California and that it would take an enormous amount of time and effort to become even moderately well informed about alternative fire-protection technologies. Rationally uninformed voters enable bureaucrats and special interest groups to overprovide public goods.

**FIGURE 16.6** Bureaucratic Overprovision



Well-informed bureaucrats want to maximize their budget and rationally ignorant voters enable the bureaucrats to go some way toward achieving their goal. A public good might be inefficiently overprovided with a deadweight loss.

 myeconlab animation

## REVIEW QUIZ

- 1 What is the free-rider problem? Why do free riders make the private provision of a public good inefficient?
- 2 Under what conditions will competition among politicians for votes result in an efficient provision of a public good?
- 3 How do rationally ignorant voters and budget-maximizing bureaucrats prevent the political marketplace from delivering the efficient quantity of a public good?
- 4 Explain why public choices might lead to the overprovision rather than the underprovision of a public good.

You can work these questions in Study Plan 16.2 and get instant feedback.

 myeconlab

You've seen how the political marketplace provides public goods and why it might *overprovide* them. Your next task is to see how the political marketplace provides mixed goods that bring external benefits.

## Providing Mixed Goods with External Benefits

Most of the goods and services provided by governments are *mixed* goods, not *public* goods. Two of the largest mixed goods with external benefits are education and health care. We're going to look at how governments operate in such s. We're also going to look at possible improvements on the current arrangements in these markets.

To keep our explanation clear, we'll focus first on the market for college education. We'll then apply the lessons we learn to the market for health care.

We begin our study of the provision of mixed goods by distinguishing between private benefits and social benefits.

### Private Benefits and Social Benefits

A *private benefit* is a benefit that the consumer of a good or service receives. For example, expanded job opportunities and a higher income are private benefits of a college education.

*Marginal benefit* is the benefit from an *additional unit* of a good or service. So **marginal private benefit** (*MB*) is the benefit that the consumer of a good or service receives from an additional unit of it. When one additional student attends college, the benefit that student receives is the marginal private benefit from college education.

The *external benefit* from a good or service is the benefit that someone other than the consumer of the good or service receives. College graduates generate many external benefits. On average, they are better citizens, have lower crime rates, and are more tolerant of the views of others. They enable the success of high quality newspapers and television channels, music, theater, and other organized social activities that bring benefits to many other people.

A **marginal external benefit** is the benefit from an additional unit of a good or service that people *other than its consumer* enjoy. The benefit that your friends and neighbors get from your college education is the marginal external benefit of your college education.

**Marginal social benefit** (*MSB*) is the marginal benefit enjoyed by society—by the consumer of a good or service (marginal private benefit) and by others (the marginal external benefit). That is,

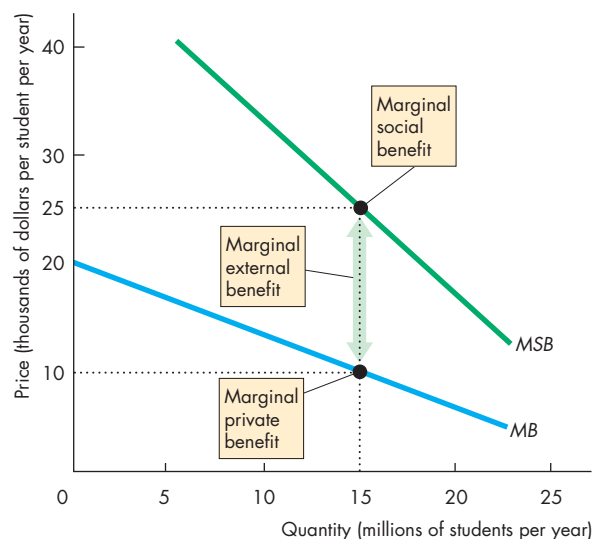
$$MSB = MB + \text{Marginal external benefit.}$$

Figure 16.7 shows an example of the relationship between marginal private benefit, marginal external benefit, and marginal social benefit. The marginal benefit curve, *MB*, describes the marginal private benefit enjoyed by the people who receive a college education. Marginal private benefit decreases as the number of students enrolled in college increases.

In the example in Fig. 16.7, when 15 million students enroll in college, the marginal external benefit is \$15,000 per student per year. The marginal social benefit curve, *MSB*, is the sum of marginal private benefit and marginal external benefit at each number of students. For example, when 15 million students a year enroll in college, the marginal private benefit is \$10,000 per student and the marginal external benefit is \$15,000 per student, so the marginal social benefit is \$25,000 per student.

When people make schooling decisions, they ignore its external benefits and consider only its private benefits. So if education were provided by private schools

**FIGURE 16.7** An External Benefit



The *MB* curve shows the marginal private benefit enjoyed by the people who receive a college education. The *MSB* curve shows the sum of marginal private benefit and marginal external benefit. When 15 million students attend college, the marginal private benefit is \$10,000 per student, the marginal external benefit is \$15,000 per student, and the marginal social benefit is \$25,000 per student.