

## How to Study for Classes 17 and 18 The Role of Government

Classes 17 and 18 discuss the place that government has in a market economy. Begin by looking over the Objectives listed below. This will tell you the main points you should be looking for as you read the chapter.

1. New words or definitions are highlighted in italics in the text. Other key points are highlighted in bold type.
2. You will be given an In Class Assignment and a Homework assignment to illustrate the main concepts of this chapter. The teacher will teach the basic principle in the class. Try to provide as many examples of each function as you can think of.
3. When you have finished the text and the assignments, go back to the Objectives. See if you can answer the questions without looking back at the text. If not, go back and re-read that part of the text. Then, try the Practice Quiz.

### Objectives for Classes 17 and 18

1. Define “**laissez faire**” and name the functions of government that are acceptable under laissez faire.
2. How does the mining law illustrate the point that the specific rules that the government makes and the way its enforces it lead to specific market outcomes?
3. Define **contract law, tort law, corporation law**.
4. Define “**common property**” and explain the problems that result from it.
5. Explain how the problems of fishing illustrate the problems that result when there is common property. How are individual transferable quotas and aquaculture being used to try to overcome this problem?
6. Explain how the water problems in California in part result from the way that property rights to water are specified. In your answer, explain the problems that result from the prior appropriations doctrine and the “use it or lose it” principle.
7. Define the term “**antitrust law**”. Describe the antitrust laws.
8. Define “**public good**” and gives examples. Explain why public goods must be provided by governments.
9. Define “**external cost (negative externality)**” and “external benefit (**positive externality**)”. Give examples of each. Explain what action government needs to take in each case and why it must do so. What is the difference between a “**private cost**” and a “**social cost**”?
10. Explain how it is argued that there should be a government subsidy for new sports arenas because they provide **positive externalities (external benefits)**? What might these positive externalities be? What does the evidence show?
11. Explain how highway congestion illustrates the problems that result from **negative externalities (external costs)**. How might tolls be used to “internalize” these externalities?
12. Define “**merit good**” and give examples.
13. Explain how people’s incomes are determined in a market economy and why there might be a need for government to redistribute income.

## Classes 17 and 18    **The Role Of Government** (latest revision September 2004)

If markets work so well, then what is the proper function for the government in a market system? This is a major question. To those who believe strongly in the market system, the answer is called *laissez faire*. Literally translated, this means "let it be" or "hands off". "That government is best that governs least" is a famous quotation from Thoreau. Yet, *laissez faire* does not mean an absence of government. Indeed, there are certain well-specified functions for government, even in a market system. Most economists agree on these functions; their disagreements are in the implementation. Let us enumerate the proper functions of government under *laissez faire*.

### 1. Provide the Rules

The first, and probably most important, function of government under *laissez faire* is that **government provides the rules by which markets operate**. Government also acts to enforce those rules. Buyers and sellers respond to the incentives created by those rules. As an illustration of the importance of the rules, take football. The game in Canada has changed just a few rules from that in the United States: three downs instead of four, a wider field, no backfield in motion penalty, and so forth. Those who are familiar with football will know that the game is very different in the two countries. The types of players attracted are also very different; many of the better American players would not be good players under Canadian rules. Similarly, many companies that are presently successful might not be successful with a different set of rules and many that are not successful might become successful with different rules. **Rules provide the incentives that determine rewards and penalties. The goal here is to have a set of rules that will guide people to behave in ways most desired by society. Creating rules and enforcing them has become the most difficult stumbling block in the transition of former communist countries into market economics.**

One important set of rules involves *the contract law*. Imagine there were no such law or that there were no one to enforce it. A buyer wants a builder to build a home for her. But the builder would be afraid that the buyer would not pay once the building is completed. And the buyer who paid in advance would be afraid that the building would not be the one desired. The two would most likely be reluctant to do business at all. If they did do business, each would have to monitor the other frequently. Instead, of course, the two would develop a formal contract. The contract would specify the rights and responsibilities of each party. Government is there to enforce the contract, if necessary. The builder can build with complete reliance that he or she will be paid. The buyer can rest more easily, knowing that if the building is not built according to the contract, she can sue to fix the deficiency. In the language of the economist, contract law acts to lower *transactions costs*, and therefore makes market transactions easier to accomplish.

Another government rule is called *the tort law*. "Tort" is derived from the Latin and means "wrong". The rule created by the government determines when a seller or employer has committed a "wrong" and what that seller or employer must do make rectify the damage. One example involves medical malpractice. Government, through

the court system, has determined that certain actions of doctors and hospitals are torts (wrongs). Many of these were not torts in the past. The court system has also greatly increased the damages that may have to be paid if a tort is committed. Doctors and hospitals have changed the way they provide their services as a result. For example, many obstetricians have even left obstetrics. A second example involves the workplace. Until well into the 1970s, government rules determined that a job belonged to the employer. The employer could hire and fire anyone he or she desired for whatever reason. Now the rules have changed. Refusing to hire certain workers because of race, gender, or age is now subject to damage awards. And firing a worker for any reason except poor job performance or the elimination of the job is now also subject to suit. As a result, behaviors of companies have changed greatly.

A third government rule of importance is *the corporation law*. In law, a corporation is chartered by the government and is legally a person, separate from its owners. In American law, the directors and management of the corporation are legally obligated to act in the interest of the shareholders and no one else. The “interest of the shareholders” means short-run profits. On the other hand, Japanese corporations have no such obligation. The result is that corporations behave very differently in the two countries. Japanese corporations have very different relationships with workers and with suppliers than that found in the United States and are more focused on the very long run. These differences were a source of advantage for Japanese companies in international competition in the past.

### Case on Making and Enforcing the Rules: The Mining Law

The gold rush of the mid-nineteenth century began the large population increase in the American West. Tens of thousands of miners came to the West to find gold. Of course, they located where the gold was --- in mining camps in remote, steep canyons. Like all participants in a market economy, they needed well-defined laws to protect the labor and materials they had to put into their operations. The laws they developed were adapted from Spanish rules that had been brought north by Mexican miners. As noted elsewhere, they included “first in time, first in right”. This meant that a miner had exclusive right to a find he had discovered. It also required that mining claims be worked diligently. This typically meant at least one day’s work per month during the mining season. These rules later became codified into state law.

By the 1860s, mining in loose deposits in soil or gravel (known as “placers”) began to run out. The mining shifted to ore embedded in rock. Since this often required deep tunnels, it required much more capital. Small miners faded away and were replaced by large companies, financed by Eastern investors. Their interests led to the passage of the Mining Law of 1872, known as the **hardrock law**. It remains the law today in virtually the same form it was written over 125 years ago. It zoned nearly all of the American West (over a billion acres in 1872) to be free and open for mining. Over 400 million of these acres are still open today. No permit or lease is required. Any miner who made a discovery and expended \$1,000 in labor and improvements was entitled to purchase a deed to the ore and to the surface above it. The charge for this was to be \$5.00 per acre. The miner can use the property fully as long as the uses are “reasonably incidental to

mining”. Since the miner has the right to the land, as well as the minerals, this includes cutting timber and grazing cattle. They have the right to remove the minerals and are not required to make any payments to the United States government, who officially “owns” the land! So, for example, in 1988 a large mining company (American Barrick) discovered a tremendous amount of gold in Nevada. Their discovery was made on public land, managed by the Bureau of Land Management (part of the Interior Department). The company has been extracting minerals worth an estimated \$4 billion a year. But they have paid no royalties to the Bureau of Land Management and they bought the right to mine the land at \$5 per acre.

The result of the hardrock law has been major environmental damage in the West. Water and soil have been contaminated with acid, heavy metals, and arsenic --- an estimated 50 billion tons of waste. This has affected an estimated 12,000 miles of rivers and streams as well as 180,000 acres of lakes and reservoirs. Earth moving equipment has also degraded soils. Mining is carried out well beyond the point that is socially desirable as a result of a very old law.

### **Private Property Rights**

A fourth, and perhaps the most important, government rule involves *property rights*. "I own my car." What does this mean? It certainly does not mean that I can do anything I want with my car. I cannot, obviously, drive it in the space you happen to be standing. But, of course, I can do certain things with my car. When we discuss property rights, there are usually three rights mentioned. First, there is my **exclusive right to use my property** (that is, my car). This includes the right to transform or even destroy it. And I can prevent you from using my car (this would be "stealing" or "breaking and entering"). Second, there is my **right to earn income** from my property. I have the right to use my car in a business. Third, there is my **right to transfer ownership rights** over the property (i.e., to sell my car) to another person. One function of government is to specify what my rights are and what my rights are not. (I have the right to paint my car any color I wish but not to drive it faster than 65 miles per hour.)

To bring-about socially desirable results, property rights need to have at least the following characteristics. *First, the rights need to be clearly specified.* This means that the owner and other individuals potentially interested in the property have full knowledge of the rights involved with its ownership. In reality, information about these property rights might be difficult (i.e., costly) to obtain. Government acts to provide greater knowledge of them. For example, I cannot sell my home without a test for termites nor without tests to see that the plumbing and wiring meet a specified standard. And if I buy a car, I have a right to know how many miles it has been driven previously. The point is that, if ownership rights are to be transferred, both buyer and seller know exactly what it is that is being transferred. *Second, property rights must be exclusive.* This means that all of the benefits and all of the costs from owning an asset must accrue to the owner, and to no one else. The key here is that **private property rights make one accountable for the results of one's actions.** If I manage my property poorly, I am the one who will suffer. *Third, property rights must be transferable.* Transferability forces the owners to consider the full opportunity cost of the property. If my car is worth more to someone else than it is to me, that person will buy it from me. In this way, property is transferred to the person who has the most highly valued use. *And, fourth, property rights must be*

**enforceable.** There are many cases of people creating and enforcing property rights privately. (For example, in California, land was taken from Mexico and brought under American law in 1850. But the United States passed no law on mining until 1866. In 1849, gold was discovered, making mining rights very valuable. Despite there being no law preventing each miner from trying to take all that he could, the miners peacefully adopted property rights over the deposits of each mine. They would have meetings and determine who had the rights to a mine by majority vote. These meetings would also be used to settle disputes.) However, enforcing property rights privately is not typical. For most private property rights, the coercive power of the government is used to determine and enforce them. ***If these four conditions noted above are met, the owner of the asset will have a strong incentive to use it efficiently because any decline in value of the asset would represent a personal loss.***

To illustrate the importance of well-specified private property rights, let us examine the opposite. **"Common property"** represents property that is not exclusively controlled by anyone. It would better be called an **"open access resource"**; since access to these resources is not restricted, they are exploited on a first-come, first-served basis. There are many examples. Air and water are common property resources. So are fish, birds, and some animals. For example, the American bison was treated as an open access resource -- owned by no one. Put differently, bison were available so that anyone could hunt as much as was desired. Each hunter would have an incentive to hunt up to the quantity at which the marginal benefit equaled the marginal opportunity cost and to do so quickly. If one did not hunt quickly, others would do so. There might be little left if one chose to hunt later. In the 1880s, bison hides became valued due to a technological change that lowered the cost of tanning and due to a wider market that resulted from the extension of the railroad. Bison hides were best found at times when the herds were large. Large herds lowered the marginal cost of hunting. Because of this increase in the marginal benefit and decrease in marginal cost, hunting became excessive and the population of bison began to shrink greatly. This did not hurt any one hunter in particular, since no one owned the herd. The result was that no one hunter had an incentive to restrict hunting in order to preserve the herd. (If I hunt less and no one else does, the herd will shrink anyway. And I will not have the bison. So I might as well hunt as much as I otherwise would.) As a result, the number of bison on the Great Plains fell from between 20 and 30 million in 1800 to 2,000 by 1890. **Unrestricted access destroys the incentive to conserve.** It is not surprising that bison, elk, and some fish are facing extinction, but not horses, cows, or chickens. The problems resulting from open access resources can be solved by a proper specification of property rights. **The one who controls rights to hunt must be hurt if the amount hunted is excessive and threatens the population.** (This is the second condition for proper specification of property rights, noted above. It does not require that the property be privately owned. Today, there are approximately 350,000 bison, 250,000 of which are in privately owned herds.)

### **Case on Private Property Rights: Fisheries**

The classic example of the problems resulting from common property has been ocean fishing. Until the mid-1970s, most countries claimed control over the oceans up to

three miles offshore. While waters within that boundary were state property, all ocean waters beyond the limit were common property. Each fisher would catch fish up to the point where the marginal benefit was equal to the marginal opportunity cost. As time has gone on, technological advances such as refrigeration and on-board processing have raised the marginal benefits from fishing. The world's fishing fleet doubled between 1970 and 1990. Drift nets, 40 miles long with hundreds of hooks, trawl nets large enough to engulf 12 jumbo jets, and the use of sonar have lowered the marginal opportunity cost. The catch of fish rose from 20 million tons in 1950 to 85 million tons in the mid-1980s. As more fishing occurred, the stock of fish declined. Knowing that the stock of fish would decline, each fisher had an incentive to get there first. The results are predictable: all major coastal fisheries in the United States (and 70% of those in the world) are being fished at rates that exceed the ability of the fish to reproduce. Just in California alone, the number of winter chinook salmon migrating up the Sacramento River to spawn is 1% of the number in 1969. Catches of thresher shark have fallen by 80% and catches of sea bass, Atlantic cod, tuna, shrimp, haddock, and flounder among others. Because of the common property, **there are too many people and too much capital in fishing. Society would be better off if there were fewer people and less capital.**

Beginning in 1976 with the passage of the Magnuson Fishery Conservation and Management Act, there has been an attempt to reduce the area of common property. Most countries, including the United States, have extended territorial limits to 200 miles (called **exclusive economic zones or EEZs**). This converted common property to state property. Eight regional councils were established and charged with the management of fisheries. The regional councils have acted to reduce entry into the fisheries as a way of controlling fishing. They did this first by requiring licenses to be able to fish in a given area. The fishers responded by increasing the size of their boats, allowing fewer boats to catch as much as before. The result is that this change was not effective in reducing the fishing catch to levels that would be sustainable.

To rectify this, within their zones, countries developed fishing quotas. The quota is a property right that allows the fisher that holds it to catch a specified weight of a specified type of fish. But, to improve the specification of this property right, **these quotas are transferable**. They are called **individual transferable quotas (ITQs)**. Because of the transferability, the fish will be caught by those with the lowest cost. This is so because they will have the desire and the means to buy the quotas from the other fishers. ITQs also allow inefficient producers to get out of the industry with some funds, instead of being completely bankrupted. But they do raise the fears that only a few producers will control production. ITQs are only beginning to be used extensively in the United States so we do not yet know if they can reduce the problem of over-fishing.

### **Case on Private Property Rights: Water Problems in the West**

An example of the results of improper specification of property rights involves water in the West. As stated above, the early gold miners held that those who first used a body of water had a property right to its continued exclusive use (called **the prior appropriations doctrine**, and still in use today). However, users of water can own water only after they remove it from the stream or river. **In the stream or river, the water is an open access resource**. The ones with the right to water generally have not been able

to transfer their rights without government approval. Remember that property rights must be transferable in order to lead to the greatest benefits to society. **In this case, the owner has the right of use but not the right to transfer.** And, to be able to keep the right to water, they must use it. This is the "*use it or lose it*" principle. A farmer's rights to water often are worth as much as the farm itself. As a result, we see farmers in California use water for rice, cotton, and pasture. These are low value uses that should make no sense in the arid West. **They are done merely to maintain the water right.** Since farmers consume 80% to 85% of all water in California, much of the water problem in the West results from this inefficient use of water by farmers. As a result of these policies, rivers are sucked dry. This sucks ocean water into the San Joaquin Delta, bringing salt to fresh water areas. The salt deteriorates soil quality in the agricultural San Joaquin Valley.

A related example applies to **groundwater**. In this case, the property rights are not clearly specified. Under American law, rights to groundwater are assigned to those owning the land above the groundwater. They may do as they wish with the water found under their land. But the groundwater flows freely under the ground. If Person A draws water from an underground aquifer, the water will flow toward Person A's property and away from Person B's property. This will make it more costly for Person B to draw water, since the costs increase as the water level is lowered. The result is that both person A and Person B have incentives to draw water as quickly as possible, as the cost of doing so will be paid by the other person. With all people having incentives to draw water ahead of the others, it is hardly surprising that the amount of underground water has decreased greatly all over the West. (The same analysis can be applied to an oil field.)

### **Test Your Understanding**

In the 1860s, the Homestead Act was passed. This granted land in the West to people who would settle it (up to a limit of 160 acres). In 1891, the Forest Reserve Act was passed, allowing the government to buy up land for the protection of trees. But much of the West is hot, dusty, and rocky. It has been called "the land that nobody wanted". Settlers did not claim the land because its productivity was low. The federal government did not want the land because it was not forested and was not especially spectacular. Thus, this land was not private property and was not regulated by the government.

The land did, however, have value as marginal grazing land. From the 1850s until 1934, people grazed their cattle and sheep on this land that they did not own. They did so with no government regulation. Use the principles discussed in Chapter 10 to explain what would result on this land and why it would result in the situation that has been described.

Some people have proposed that these lands be sold to the highest bidder. The bidder could be ranchers, environmentalists, or any other group of people interested in these lands. The lands would then be private property. Name some advantages to society and also some disadvantages to society if this were done.

## **2. Promote or Maintain Competition**

A second function of government is to **promote or maintain competition**. If we are going to "let it be", what prevents the gasoline station from charging you \$10 per gallon. The answer, of course, is that they have competition. A station charging \$10 per gallon would have few, if any, customers, as people will buy elsewhere. But, of course,

competition is not good for the competitor. Who wants to compete if one doesn't have to? As Adam Smith put it more than 200 years ago, "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some diversion to raise prices." The laws to promote or maintain competition are called the *antitrust laws*. In the United States, they date to the passage of the Sherman Act of 1890. They are enforced by the **Anti-trust Division of the United States Department of Justice and by the Federal Trade Commission**. The American anti-trust laws are quite simple and brief. Because they were written so simply, they have required much interpretation by the courts over the years. Let us examine the American anti-trust laws, as they exist as of the end of the 20<sup>th</sup> century.

### **The American Anti-Trust Laws**

The main anti-trust law of the United States is the *Sherman Act*, named for Senator Sherman of Ohio and passed in 1890. The Sherman Act is short and vague. There are just two sections. **Section 1** says basically the following:

"Every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal."

In this statement, the word "**conspiracy**" has a very clear meaning in law. To enter into a conspiracy, one must actually meet with another person in some way and plan to do someone illegal. The conspiracy doctrine is unique to the law of countries that had been colonized by Britain. In this doctrine, the act of conspiring itself is a crime; the people involved do not actually have to commit the crime. But what exactly does "in restraint of trade" mean? And if a practice is "illegal", what are the penalties? For the answers to these questions, the Sherman Act deferred to the Courts.

For the first 20 years or so after the passage of the Sherman Act, the Courts found that very little was "in restraint of trade". Finally, in 1914, Congress passed an amendment to the Sherman Act called the *Clayton Act*. The Clayton Act specified that certain practices were to be seen as "in restraint of trade" and were therefore illegal. The Clayton Act also prescribed penalties. The main practice that was declared illegal was *price fixing*. Price fixing is another name for a cartel. Under the law, two or more companies that meet in order to raise prices have committed a felony. (A **felony** is a serious crime, punishable by a jail sentence of more than one year, in contrast to a **misdemeanor**, which is a less serious crime punishable by only a fine or short jail sentence.) Under the civil law, price fixing was also made subject to **triple damages**. This means that, if you are damaged by a price fixing conspiracy, you may sue the companies involved for three times the amount they overcharged you. We shall examine some cases involving this part of the Clayton Act below. The Clayton Act also made some other practices illegal. Buying stock in a competitor's company (called a **merger**) is illegal if the purpose is to substantially reduce competition. Merger policy will be considered in more detail below.

**Section 2 of the Sherman Act** was also short and vague. It said the following:

“Every person who shall monopolize, or attempt to monopolize, ... shall be deemed guilty of a misdemeanor.”

In other words, monopoly is illegal. The law has been interpreted as saying that it was the attempt to become a monopoly that was illegal. In other words, I would have to do something to deliberately destroy my competitors in order to have committed a misdemeanor. Being a monopoly by itself is not illegal. However, if one company sells a very high percent of the total sales of a given product, it knows there is a good chance that the government will bring an anti-trust case against it. **The penalty for being a monopoly has been that the company is broken up into several companies who are required to compete with each other.** With this background, let us examine some of the most important anti-trust cases of the 20<sup>th</sup> century in order to illustrate the ways by which the anti-trust laws have functioned in the United States.

### Some Important Anti-Trust Cases

There have been many famous court cases involving the rule against price fixing. One such case began in the late 1950s when several major **electrical appliance companies**, including General Electric, Westinghouse, and Sylvania, conspired to rig their bids to the government for government contracts. They would agree which company would win the bid to sell products to the government. They would also agree as to how much money that company would get from the government. That company would bid the agreed upon amount and all of the other companies would bid a higher amount. The companies would rotate as to who would win the contracts from the government. To make their conspiracy less obvious, the winner of the bid would be determined by the position of the moon on the date of the bid! The companies were caught in this conspiracy. Some top executives of these companies served short prison sentences. The companies were also fined (believe it or not, these fines are tax deductible as business expenses!). Another famous price fixing case involved **Levi Strauss**. Levi Strauss was convicted of a violation of the Clayton Act under the civil law. This means that it was sued, not that it was involved in a crime. The case involved a **class action suit**. This means that one person sued on behalf of all of those people who were hurt by the actions of Levi Strauss. The recovery of **triple damages** came to \$2.00 for every pair of blue jeans that Levi Strauss produced between certain dates. Once the money was recovered, it had to be distributed to those who were damaged. Of course, no one keeps records as to how many pairs of blue jeans one buys. So people were asked to simply report how many pairs of blue jeans they had bought. I filled out the form and estimated a number of blue jeans that seemed reasonable (with, perhaps, some exaggeration). Needless to say, the total reported by the public was many, many times the number of blue jeans that the company had produced. I expected to receive \$2.00 for each pair I had reported. I never received a penny. Still another famous price fixing case involved the **airlines**. The eight major airlines were convicted of conspiring to raise prices through their reservation system. The airline companies would announce their prices on the reservation system. They understood that their competitors would not charge lower prices on flights that were in direct competition. If a competitor did lower its prices, the airline would signal to them. The signal was telling them that, if they continued with the lower prices, that airline would cut its own prices so low that the competitor would not be able to compete. The signal that was used by the airline was to

change the code number on the flight in question to begin with the letters FU. The airlines were caught in this conspiracy. Those people who could prove that they flew on one of these airlines between January of 1988 and June of 1992 received triple damages. American Airlines was hit again in 1999 with a charge that it lowered prices in and out of Dallas-Fort Worth to try to keep competitors out of that hub. But this case was thrown out of court. There are many other such cases. Some years ago, **Chevron, Mobil, and Shell** agreed to pay \$77 million to settle price fixing claims that dated back to the 1960s. The six largest makers of compact discs were accused, in a class action suit brought by an individual, of being in a price fixing scheme to keep CD prices artificially high. Those companies that sell computer monitors were convicted of price fixing. People who had bought computer monitors between 1991 and 1995 received a \$13 rebate (triple damages) on their next such purchase. The giant food company **Archer-Daniels-Midland** was fined over \$100 million for being part of cartels in citric acid and lysine. The pharmaceutical company **Hoffman-LaRoche** was fine \$500 million for its part in the price fixing of vitamins. The art auctions house of **Christies and Sotheby's** have paid fines and have had their former chairmen indicted. The **NASDAQ securities dealers** were charged with limiting competition by only quoting NASDAQ stocks in even eighths, ensuring that their spreads could not be smaller than one-fourth. (To settle this case, they agreed to change this practice.) **Mastercard and Visa** were charged with dual governance. This means that the banks in control of Visa also act to control Mastercard. Banks that are members of Visa or Mastercard are not allowed to issue credit cards from Discover or American Express. A decision on this case is still pending as of this writing. Even the nation's sixty largest **colleges and universities** were charged with collusion in their setting of tuition fees.

There have also been several important **cases regarding Section 2 of the Sherman Act** – the provision that makes it illegal to be a monopoly. The most famous case regarding Section 2 was the case against **Standard Oil Company**. Standard Oil refined over 90% of the oil in the United States at the beginning of the 20<sup>th</sup> century. Standard Oil Company was owned by John D. Rockefeller. In 1911, it was convicted under the Sherman Act of behaviors specifically designed to eliminate all competition. The penalty was that the company was broken-up. Part of the company became Standard Oil Company of New Jersey. Another part became Esso. (Later, these two merged together to form Exxon.) A third part of the company became Standard Oil Company of New York (Socony). This later merged with a gasoline retailer called Mobil. Recently, Exxon and Mobil merged into Exxon Mobil. A fourth part of the company was spun-off to create Standard Oil Company of Ohio (SOHIO), later bought by British Petroleum (BP). A fifth part of the company was spun-off to create Standard Oil Company of Indiana (AMOCO). These two later merged to form BP-AMOCO. Another part of the company was spun-off to create Standard Oil Company of California. In the 1930s, this merged with a gasoline retailer called Chevron. In all, 32 companies were formed from the original Standard Oil.

Another case based on Section 2 was the 1945 case against the **Aluminum Company of America (ALCOA)**. While Standard Oil had been guilty of specific behaviors designed to eliminate all competition, ALCOA had not committed any of these behaviors. Instead, it had expanded before any competitors had had a chance to enter the aluminum

market. And it had kept its aluminum prices low to prevent entry by competitors. By doing this, ALCOA sold all of the aluminum in America. The courts ruled that ALCOA must be broken up. Part of ALCOA was spun-off into a separate company, called Reynolds.

Yet another case based on the Sherman Act began in 1969 when the government brought a suit against **IBM**. IBM sold 72% of all computers at that time. The government claimed that this constituted monopoly power. The government also charged IBM with certain unfair practices designed to eliminate competition. IBM claimed that the government had not defined the market properly. The market, the company argued, should include all information processing products. In a broader market, IBM's share would be much lower. IBM also defended its practices. The case went on for thirteen years yet never went to court. IBM spent over \$100 million and submitted tens of millions of pieces of paper in its defense. In 1982, the government dropped the case. IBM ultimately won the battle. But the case was to have profound influence on subsequent events. In 1981, IBM was coming out with its first personal computer (PC). Bill Gates, head of an unknown company called Microsoft, offered to sell the DOS operating system to IBM for \$75,000. At the time, IBM was arguing in its anti-trust case that it did not control the computer market. It feared that buying DOS would hurt its case and ultimately lead to a government-ordered breakup of IBM. So IBM allowed Bill Gates to license DOS to IBM and to anyone else he wished. The dominance of Microsoft (and the great wealth of Bill Gates) begins with this decision. The government's case against Microsoft, which we will consider below, is similar to the case against IBM.

One last significant case brought under Section 2 of the Sherman Act was the case against **AT&T**. Until 1982, AT&T was a regulated natural monopoly. It controlled most of the long-distance market, the local telephone market, and the production of telephones. By the late 1970s, the presence of new competitors was making it obvious that AT&T was no longer a natural monopoly, at least in the long-distance part of its business. The government brought an anti-trust case against AT&T in 1978, charging that AT&T was not allowing its long-distance competitors reasonable access to its telephone network. The case was settled in 1982 with an agreement to break-up the company. The local operating companies were split into separate companies. So, Pacific Telephone, once part of AT&T, was split into a new and separate Pacific Bell. AT&T kept its long-distance division but had to allow reasonable access to its network to competitors such as MCI and Sprint. The result is that there are now more than 800 long-distance telephone companies! AT&T was freed by the settlement to enter new activities. Its hope was to enter the computer industry, but that attempt was largely a failure. But AT&T has been able to successfully move into wireless communications as well as Internet access provision. The part of AT&T that provides the communications equipment was also split-off into a separate company, Lucent Technologies, in 1995.

These cases are by far the most important cases under Section 2 in the 20<sup>th</sup> century. But there certainly have been others. For example, in 1999, the government brought a case against **AMR (owner of American Airlines and AMR Eagle)** for monopolizing airline passenger service at the Dallas/Fort Worth International Airport. At the time of writing, this case was still being considered.

## Anti-trust Policies Dealing with Mergers

As stated earlier, the Clayton Act makes it illegal to buy the stock of a competitor when the purpose is to substantially reduce competition. Buying the stock of another company is called a *merger*. Actually, there are **three types of mergers**, depending on the relationship of the companies involved. If the companies involved in a merger had been competitors, the merger is called a *horizontal merger*. Therefore, the merger of Lucky with Albertsons, the merger of Nations Bank and Bank of America, and the merger of ABC with ESPN are examples of horizontal mergers. If the companies involved had been part of the production process, the merger is called a *vertical merger*. This means that a company either merges with another company from whom it bought materials used in production or merges with a store that sold its products. Therefore, General Motors buying Fisher Auto Body or Delco, Standard Oil Company of California merging with Chevron, and ABC merging with Disney are examples of vertical mergers. If a company merges with another company with whom there is no relation at all, the merger is called a *conglomerate merger*. Therefore, IT&T (a producer of electronic equipment) buying Hartford Insurance, Sheraton Hotels, Budget Rent-a-Car, McGraw Hill Book Publishers, and Continental Baking (Twinkies and Wonder Bread) are examples of conglomerate mergers. So would the purchase of Montgomery Wards by Mobil Oil and the purchase of NBC by General Electric. There were many conglomerate mergers in the 1960s and 1970s.

The Clayton Act deals mainly with horizontal mergers. There is some law regarding the other types of merger, but we shall not consider it here.<sup>1</sup> **Horizontal mergers are illegal if they substantially reduce competition.** The key word is “substantially”. What does this mean? In the late 1950s and 1960s, the courts interpreted this very strictly. In Los Angeles, Vons had 6% of the grocery market. It bought Shopping Bag, which had 2% of the grocery market. The combined company, called Vons and Shopping Bag, would have 8% of the Los Angeles grocery market. The government brought a suit to stop this merger. The case was settled in 1966 and the government won. Vons and Shopping Bag were forced to split into separate companies. (Generally, at that time, mergers were challenged by the government if (1) the acquiring company had a 4% market share (percent of sales) and the acquired company had at least a 4% market share, or (2) the acquiring company had a 10% market share and the acquired company had at least a 2% market share, or (3) the acquiring company had a 15% market share and the acquired company had at least a 1% market share.) Because of these policies, there were few horizontal mergers until the early 1980s. The Vons case would not have been brought under today’s guidelines.

In 1982, the Reagan administration created its *Merger Guidelines*. These have been revised only slightly since that time. The government decided to use the Herfindahl Index. **The Herfindahl Index is calculated by taking the percent of sales of each company in the industry, squaring each number, and then adding them up.** Basically, the government said that it would not challenge a horizontal merger in an industry for which the Herfindahl Index is less than 1000. If the Herfindahl Index were more than 1000 but less than 1800, the government would challenge the merger only if the merger raised the Index by at least 100 points. If the Herfindahl Index were more than 1800, the government would challenge the merger only if the merger raised the Index by at least 50

points.

On this basis, the government has allowed mergers that would have been disallowed in the past. Chevron bought Gulf Oil. Exxon bought Mobil. Bank of America bought Security Pacific Bank, only to be bought up by Nations Bank. Washington Mutual bought Home Savings. Daimler bought Chrysler. It is most likely that none of these mergers would have been allowed before the Merger Guidelines were instituted in 1982. But the Merger Guidelines did not justify all horizontal mergers. Under these Guidelines, Coca Cola was not allowed to buy Dr. Pepper and Phillip Morris (producer of 7-Up) was not allowed to sell 7-Up to Pepsi Cola. And in October of 1999, the government challenged a proposed horizontal merger between two gasoline producers BP-AMOCO and ARCO (later allowed). In 1997, the government changed the Merger Guidelines to make them more flexible, allowing companies to merge if they can prove that their merger will lead to better products or lower prices, even if they don't meet the Guidelines. As a result, many mergers in the telephone industry were approved (SBC/Pacific Bell, Bell Atlantic/Nynex and GTE, Qwest/US West). On the other hand, several well-known mergers were abandoned in the late 1990s due to government challenge: Alcoa and Reynolds, Lockheed Martin and Northrup Grumman, Worldcom MCI and Sprint, and Staples and Office Depot. Some mergers are allowed only if the companies comply with certain conditions. For example, Turner Broadcasting and Time Warner were allowed to merge only on the condition that MSNBC and Fox News be shown on Time Warner cable systems. And Albertsons and Lucky were allowed to merge as long as certain stores were sold off to Stater Brothers.

<sup>1</sup> Generally, vertical mergers (between companies and their suppliers) are opposed by the government if the supplier has a market share of 10% or more while the buying company has a market share of 6% or more. Conglomerate mergers are usually not opposed by the government.

**\*Test Your Understanding\***

1. State whether the following mergers are **horizontal, vertical, or conglomerate**:

- 1. Washington Mutual buys Home Savings Bank \_\_\_\_\_
- 2. ABC buys ESPN (A TV sports network) \_\_\_\_\_
- 3. The owner of the Fox TV network  
buys the Los Angeles Dodgers \_\_\_\_\_
- 4. Disney buys ABC \_\_\_\_\_
- 5. Albertsons buys Lucky \_\_\_\_\_
- 6. RJR, a maker of cigarettes, buys Nabisco,  
maker of cookies, crackers, etc. \_\_\_\_\_
- 7. Ralston Purina, maker of dog and cat food,  
buys Jack in the Box \_\_\_\_\_
- 8. AOL buys Netscape \_\_\_\_\_
- 9. BP (a gasoline producer) buys ARCO \_\_\_\_\_
- 10. AT&T buys TCI (a large cable company) \_\_\_\_\_

2. An industry has 10 companies with the following share of sales:

A	20%	F	10%
B	20%	G	5%
C	10%	H	5%
D	10%	I	5%
E	10%	J	5%

Under the Merger Guidelines, would companies A and B be allowed to merge? Why or why not? Under the Merger Guidelines, would companies I and J be allowed to merge? Why or why not?

### The Microsoft Case

By far the most important anti-trust cases of the 1990s have involved Microsoft, the world's largest software producer. In 1994, Microsoft attempted to buy Intuit, maker of Quicken. Quicken is the largest selling personal finance software program in the United States. In 1994, Quicken was responsible for 69% of all personal finance software sales. Microsoft produced a competitive product, Microsoft Money, which in 1994 was responsible for 22% of all personal finance software sales. In 1995, the United States government brought suit against Microsoft to stop this horizontal merger on the grounds that it violated the Clayton Act. Before the case could be decided in court, Microsoft abandoned its plan to buy Intuit. Intuit still dominates this market and is still independently owned. In 1995 and again in 1997, the United States government also sued Microsoft under the Sherman Act. Then, in 1998, the United States government and nineteen states brought a major case against Microsoft. In November of 1999, the judge, Thomas Penfield Jackson, issued a Finding of Fact. In this finding, he shocked many people by totally supporting the government's charges. Consumers, he stated, have been hurt by Microsoft's practices. Later a new judge took over the case. The case was settled with little damage to Microsoft.

According to the judge, Microsoft had violated the anti-trust laws in several ways. **First, Microsoft was found, under Section 2 of the Sherman Act, to have monopoly power in the market for personal computer operating systems.** Microsoft's Windows operating systems are used on over 90% of personal computers, and have been used on at least 90% of personal computers for over ten years. The judge found that Microsoft's dominance of the market is protected because there is a high barrier to entry. As a result, he stated, consumers lack a viable alternative to Windows. **Second, the judge ruled that Microsoft engaged in a number of practices designed to protect the barrier to entry and therefore enhance its monopoly power.** One of these practices involved the incorporation of the Web browser, Internet Explorer, into the operating system, Windows 98. In Windows 98, the Internet Explorer cannot be removed, even if a computer manufacturer wanted to do so. This was designed to hurt Microsoft's competitor, Netscape, by making it much less likely that users would use Netscape's Navigator as their Internet browser. This practice is known as **bundling** --- combining two products so that, if the buyers buy one, the buyers must also buy the other. **Under the Clayton Act, bundling is an illegal practice if it is used for the purpose of restricting competition.** Another practice, the judge found, was that Microsoft made deals with online and Internet service providers, such as America Online, to require the exclusive use of Internet Explorer. He also found that Microsoft threatened to stop producing its Microsoft Office suite for the Macintosh unless Apple made Internet Explorer the default browser for the Macintosh. These actions were designed to cripple, and even eliminate Netscape. There were several documents indicating that Microsoft saw Netscape's Navigator, and indeed the Internet itself, as a threat to Windows. In addition, the judge found that Microsoft altered the Java computer language that had been developed by Sun

Microsystems. Java would have allowed programs to be written that could run on any computer operating system, thus reducing the need to have Windows. The judge found that Microsoft required the Original Equipment Manufacturers (that is, the producers of computers), as a condition of acquiring a license to Windows, to adopt a uniform desktop screen. The uniform desktop screen determines which Internet browsers and which software products are offered to buyers. Needless to say, it favors Microsoft's products. The judge found that, in 1997, Microsoft pressured RealNetworks to only develop software for Microsoft's multimedia platform. Once it agreed, Microsoft invested in RealNetworks and agreed to distribute a copy of that company's media player with Internet Explorer. The judge found that Microsoft also tried to get IBM to stop producing Notes and SmartSuite, products that competed with Microsoft's Office. When IBM refused, Microsoft raised the price of its Windows 95 operating system, shipped the operating system late (too late for IBM to take advantage of holiday sales), and withheld technical support from IBM. The judge found that, in 1996, Microsoft told Compaq, its largest customer, that it would cancel Compaq's license for Windows 95 unless Compaq restored Microsoft Network and Internet Explorer to their original positions on the Compaq Presario desktop. Compaq agreed. Finally, the judge found that Microsoft has kept the code to Windows secret (a proprietary standard). In doing so, it gave its own applications producers access to the code before it went to competitors. This, it was argued, is the reason Microsoft Word replaced Novell's WordPerfect as the main word processor program. The judge wrote, "Microsoft has demonstrated it will use its prodigious market power and immense profits to harm any firm that insists on pursuing initiatives that could intensify competition against one of Microsoft's core products." He also wrote that "some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest."

Needless to say, Microsoft has been vigorous in its own defense. Many others have also defended Microsoft, arguing that the United States government should have left it alone. Microsoft has specifically denied that the allegations of the United States government are true (or at least, Microsoft argues that these allegations were not proven by the government). But the company and its defenders make several other arguments. First, they argue that the computer software industry is a very competitive industry. In the software industry as a whole, Microsoft is only a small part. To the extent that any part of that industry is dominated by Microsoft, they argue that Microsoft should be considered as part of a *contestable market*. This means that there are many potential competitors. The potential competitors force Microsoft to behave as if there already were significant competition. Microsoft's market dominance would end if it stopped improving its product or charged too high of a price. Second, they argue that this industry is characterized by an extremely rapid rate of innovation. New products constantly replace old ones. For example, there is a new operating system --- Linux. This system has posted its code for anyone to use or customize (an open standard). As a result, it is growing rapidly and is being offered by several computer manufacturers as an alternative to Windows. (Judge Jackson specifically rejected Linux as an effective alternative to Windows as of 1999.) And the Palm device, the leading hand-held computer by 3Com Corporation, has its own customized operating system. Indeed, there are now technologies that allow users to avoid operating systems altogether. The dominance of Microsoft does not seem to have

slowed innovation at all. (Some people worry that punishing Microsoft might retard innovation in the future by making innovators reluctant to become “too successful”). Third, they argue that the government’s charges were not designed to aid the consumer, but instead were designed solely to aid Microsoft’s competitors. Netscape was the main company that the government argues was injured by the practices of Microsoft. Yet, Netscape was just bought by American Online (AOL) and so is surviving well. And, they argue, Microsoft’s competitors do not need the aid of the government. For example, two economists found that, when there was anti-trust news that was favorable to the government’s case against Microsoft, the stocks of Microsoft’s competitors actually declined. Apparently, investors did not believe that the government winning its case against Microsoft would aid their companies, even though their companies compete with Microsoft. Fourth, they argue that the Internet browser is an actual part of the operating system --- they should be seen as one product. (The judge disagreed.) Fifth, they argue that the charge against Microsoft for controlling what appears on the desktop is not a serious charge. Most software products that are on the desktop are already installed on the computer. The icon on the desktop only increases the likelihood that the software product will be used. And the icon for Microsoft’s Internet Explorer does not connect anyone to the Internet. To connect to the Internet requires an Internet Service Provider. The Internet Service Provider usually provides its own browser. (Contrast this defense with the government’s charges noted above.) Sixth, they point to many products that Microsoft has produced that have not done well. For example, Microsoft Network has an icon on the desktop. Yet, Microsoft Network is still well behind American Online, which does not have an icon. And if Microsoft were out to squelch its competitors, why do Netscape and WordPerfect work well on the Windows operating system. Seventh, they argue that, if Microsoft is indeed a monopoly, it has not acted as a typical monopoly. Its prices have generally been low, not high. In fact for the word processor Microsoft Word, its prices were a bit lower in the MacIntosh market, in which Microsoft held a very high market share, than they were in the PC market, in which Microsoft competed with WordPerfect. Finally, these people argue that, regardless of how it did it, Microsoft succeeded by having products that were right for the market at the time and by marketing them well. Their competitors often made huge business mistakes that Microsoft has avoided. They are inclined to see Microsoft’s products as better than those of its competitors. (For example, Microsoft argues that Java was poorly conceived and that Microsoft’s version was a better product.) They fear that the government is punishing Microsoft just for its success.

In 2001, Judge Jackson was replaced as presiding judge. With a new judge, there was pressure to settle the case out of court. This was done in 2002. Microsoft will pay a financial penalty and will have to stop certain behaviors. But Microsoft will not be broken up.

#### **\*Internet Assignment\***

1. What are the latest developments in the case of the United States vs. Microsoft? To answer this, you might go to [http://headlines.yahoo.com/Full\\_Coverage/Tech/Microsoft](http://headlines.yahoo.com/Full_Coverage/Tech/Microsoft). You can also go to numerous other sites on the Internet (go to a search engine and type in “Microsoft Trial”), newspapers, and several magazines.
2. In 1999, several important anti-trust cases were initiated by the United States government. Go to the Department of Justice site at <http://www.usdoj.gov/atr/index.html>. Consider the

government's case against AMR, the holding company that owns American airlines. Or consider the government's case in blocking the proposed merger of ARCO and BP-Amoco. Or consider any other case of significance that was initiated in 2000 through 2003. Whatever case you chose, read the materials on the site. Then, briefly summarize the government's case. What is the company (or companies) accused of doing? What evidence does the government present to back its charge? Then, go to the site of the company involved. Is the case mentioned there? If so, briefly summarize what the company has to say about the case.

### 3. Provide Information

A third function of government results from the fact that market participants need **information** to be able to make proper market decisions. If a gasoline station charges \$10 per gallon, you will leave to buy gasoline somewhere else. You can do this because you know that there are other gasoline stations selling for less. If you did not have this knowledge, you might pay much too much for gasoline. In many cases, buyers do not know much about the product. Gaining information is costly (that is, it requires the expenditure of resources). In some cases, gaining sufficient information may not even be possible. In these cases, the government informs market participants (or perhaps pressures sellers to provide this information). For example, I would not know high quality meat from poor quality meat. I have no idea what chemicals were injected into the animal and what food coloring has been used. Therefore, a government agency (the Department of Agriculture) provides information on the quality and safety of the meat. Recently, the government has forced manufacturers of food products to put nutritional information on their packages. As another example, government pressure caused the film and television show producers to "volunteer" to put ratings on their films. If I go to a film and it says "NC - 17", I have a good idea what I am going to see. If I find that kind of film objectionable, I can choose not to see that film! "Warning! The Surgeon General has determined that cigarette smoking causes cancer" is also an example of government providing information. Notice that no one is told not to smoke cigarettes; they are informed, however, what cigarette smoking can do. As a final example, one goes to a restaurant and notices a sign in the window that says "A". This means that a trained government inspector has determined that the restaurant is sanitary and that one can eat there without risking one's health. Most of us would not know how to conduct these inspections, and would not have access if we did know. There are many such examples. One that is controversial is the arts. It is argued that the arts are an "acquired taste". Consumers must experience the arts before they can come to desire them. Since most art companies lack the funds to advertise, it is argued by some that government subsidies are needed "to encourage widespread production of the arts as a way of overcoming ignorance by giving consumers firsthand experience of them."

### 4. Public Goods

For the fourth function of government, consider national defense. Imagine there is no government. Imagine also there is a real enemy (Canada). The Canadians are massed at the border ready to swoop down and conquer us all. An entrepreneur sees an opportunity for profit. People want to be defended. So the entrepreneur decides to start a business. It will be called the United States Military, Inc. There will be four divisions. Workers will

be hired, machinery will be bought, and so on. Assume that the entrepreneur then tries to sell you defense (remember that you do indeed want to be defended). The charge is the same as today's actual charge of about \$1,000 per person. Will you pay? Even though you want the defense, the answer for many people is "no". Why? You will not pay because, if others do pay for the defense and you do not, you will get it anyway. There is simply no way for me to be defended in America and for you not to be defended. Put another way, it is possible for one to be a *free rider*.

Defense is an example of what is called a *public good*. Public goods have several inherent characteristics. First, they are *non-rival*. If I have an automobile, you may not have it. But I can have as much defense as I desire without taking any away from you. Second, they are *non-excludable*. It is not possible for one who pays for the good to exclude those who do not pay (the free riders) from the benefits of that good. Third, they are *collective*. They are either provided for everyone or for no one.

There are many examples of public goods. Fire prevention, crime prevention, flood prevention, disease prevention (known as public health) would all qualify. Giving to most charities is another example. While I would very much like someone to discover a cure for cancer, I will get the benefits of that cure whether I contributed to the funding or not. There is therefore an incentive to not give to the charity. (This is a reason for contributions to charities being tax-deductible.) Public goods are common in many environmental problems. Global climate, the ozone layer, and bio-diversity are examples of public goods. If these are improved, all of us benefit whether we pay for the improvement or not.

Why are public goods provided by the government? The answer is that, *in the case of public goods, the market fails to provide what consumers desire*. People want to be defended; however, no defense will be provided in a private market because each person is waiting for the others to pay. Only the government has the legal power to force people to pay. Anyone refusing to pay for defense will find the government going into their bank account and simply taking the money plus a penalty. No private company can possibly do this. However, while public goods need to be provided by a government, many goods provided by the government are not public goods at all.

## 5. Externalities

In a market economy, as Adam Smith described it, companies have a strong incentive to provide the products that consumers desire. The price tells them all they need to know to be able to do this. They also have a strong incentive to produce efficiently, using the least possible amount of *the resources for which they have to pay*. Therein lies the problem. *The full costs generated in the production of a product are commonly much greater than the costs paid for by the producer of that product*. For example, a paper mill pays for its pulp, its workers, and its machinery. But in the process of producing paper, it releases its waste into the river, damaging the other functions of the river, such as fishing, swimming, aesthetic enjoyment, and so forth. This damage imposes costs on others --- the loss of fish hurts businesses that catered to people fishing and hurts those who like to fish for recreation while the loss of beauty hurts people who enjoyed viewing the river and perhaps also lowers property values. In addition, the production of paper

uses electricity. The electricity is likely produced from coal. Burning coal releases nitrous oxides and sulfur dioxide into the atmosphere, increasing respiratory diseases, damaging crops and trees, and adding acid to waterways. It also releases carbon dioxide, possibly contributing to climate change. These damages are called *external costs (or negative externalities)*. They are major costs resulting from the production of paper; but no part of the cost is paid by the paper mill or by the paper consumer. The result is that, from the point of view of what is best for the people in the society, **too much paper is produced**. In the language of the economist, the **market has failed to internalize** all of the costs of making paper. Put another way, companies make profits only by dumping part of their cost on others. The buyers and the sellers receive improper signals from the market. There are many examples of external costs. Air pollution and water pollution are two common examples. We could consider garbage as yet another example. When you buy packages, you consider all of the costs that you will pay. But you do not consider the costs of disposing of the packaging. You don't consider these costs because, in most cities, putting extra garbage in the can does not increase the amount you pay for garbage collection.

There are also *external benefits (or positive externalities)*. In this case, a person's actions confer benefits to the society which greatly exceed the benefits that the person receives. A good example is Research and Development (R&D). Consider the enormous benefits to society from the creation of the personal computer. Most businesses and large numbers of households have benefited. While some of the creators of the personal computer became very rich, the amount they received is very small in relation to the total benefit to the world. A similar example would come from the development of the vaccine that eliminated polio. While Dr. Salk became very wealthy as a result, the benefits to the world as a whole far exceeded any amount he received. Education is yet a second example of an external benefit. Your decision to attend college will benefit you greatly. You will likely gain a better job with higher pay. But others will benefit as well. You may learn things that you can teach to co-workers. Your children will be better educated if you are better educated. The democracy works better because educated people make better citizens. Third, there is the example of the benefits to other people that came from the decision of the Disney Company to build Disneyland in rural Orange County in 1955. And fourth, there is the example of the arts. It is argued that the benefits to the world from great literature, music, paintings, etc. are much greater than the creator could ever have been able to appropriate. (At the time of writing, there is a major political debate in the United States as to whether the arts should indeed be subsidized by government.) In the case of external benefits, **the market again fails** to send the proper signals to people. In this case, **too little is being produced** from the point of view of society as a whole. Indeed, there are probably many activities that would be very worthwhile for the society but are not presently being done at all because the benefits to the one who would do them is too small.

Externalities present a role for the government. *The market fails to send the proper signals to individuals; only the government has the ability to remedy this*. In this case of external costs, the government could tax the activity or it could regulate it. Paying an automobile registration fee based on the amount of pollutants your car emits would be an example of a tax. Having to have a smog control device on your car or not being allowed

to smoke in a public place are examples of regulations. In the case of external benefits, the government would subsidize the activity. There is presently a considerable tax benefit for research and development activities. And, of course, you do not pay the full cost of attending this college! Most economists agree that externalities represent a market failure and an area for government intervention. But they disagree on two important points. **First, which externalities are important enough to warrant government intervention?** Government does not allow one to build a factory on one's residence. Some areas go further and require that your homes be a certain color and even that you cut the grass once a week. And, while government does not allow you to smoke in a public elevator, it does allow you to be on this elevator if you have not taken a bath for weeks. **Second, if the government should intervene, how should it do so?** The debate here is between those who favor regulation (known as command and control) and those who favor market-type incentives.

### Case on Positive Externalities: New Stadiums and Arenas

In November, 1998, the city of San Diego passed Proposition C, authoring borrowing to build a new baseball stadium for the San Diego Padres in downtown San Diego and to develop the area around the new stadium. In doing so, San Diego joined many other cities who have built or are building new stadiums for their baseball teams: Baltimore, Cleveland, San Francisco, Seattle, Arlington Texas, Atlanta, Milwaukee, and so forth. Between 1989 and 1997, 31 new stadiums and arenas were built (for all sports). Baseball stadiums tend to cost at least \$400 million. Cities that do not build new stadiums are threatened with the movement of the team to another city. Yet, prior to 1960, most baseball stadiums were privately owned. One of the functions of government is to promote competition. Major League Baseball presents a good opportunity to examine the results of having no competition. Here, let us focus on the stadium issue alone.

Having the taxpayer pay for a new stadium is always justified in terms of positive externalities. One way this is argued is that a new stadium creates new jobs for people not involved with baseball. This might include restaurants, bars, and hotels near the stadium, shops selling goods marketed with the logo of the baseball team (such as T-shirts), and so forth. Another way the argument is made is that having a baseball team creates free publicity. Every time the team appears on national television, the name of the city is mentioned over and over. Television shows pictures of some of the best aspects of the city. This may help attract tourists and may also attract new businesses.

Economists have studied the first of these arguments. Those who claim that a baseball team generates jobs for other people forget that baseball is only one of many ways that a consumer can spend his or her money. It is true that, because people attend baseball games, they may eat in restaurants or go to bars, creating jobs in these establishments. But had there been no baseball team, the consumer would have spent the money on something else. This spending would have led to job creation much as the spending to see a baseball game would. For example, the movement of the Rams and the Raiders out of Los Angeles has led to an increase in attendance at college football games, other sporting activities, movies, and even restaurants. Subsidizing a new baseball stadium can only be justified if more jobs created from the baseball team than would be created if the

consumer spent his or her money in other ways. Economic studies have found that this is rarely the case.

New stadiums confer upon the owners new sources of revenues. First, if the stadium is exclusively for baseball, the baseball team obtains all of the revenues from the concessions and the parking. Second, a new stadium usually has special box seats reserved for corporations (called luxury boxes). These are more expensive than other seats and are used by the corporations as a benefit to their executives and as a way woo clients so as to market their products. Third, many new stadiums sell Personal Seat Licenses, in which fans pay from \$200 to over \$5,000 for the right to be able to buy season tickets. And fourth, owners can receive considerable revenue from selling the right to name the stadium to some company. Because the stadium generates much more revenue for the owners, the owners are more willing to pay the high salaries to hire the best players. (In fact, most of the increase in revenues tends to end up in higher salaries for the players.) Teams with new stadiums tend to become much better. Because they are better, the attendance at these new stadiums has been very high. Such has been the experience in Baltimore, Cleveland, San Francisco, and Denver – but not in Chicago.

There thus tends to be two justifications for the public subsidizing a new baseball stadium. One is that it provides a large amount of free advertising and therefore brings in new tourists and new businesses. This may be especially important in cities that rely heavily on tourism, such as San Diego, Las Vegas, and Honolulu. The validity of this claim has not been studied. The other is that many people in the city just like baseball, and are willing to vote to pay to be certain of the chance to see it in person.

### **Internet Assignment**

One area where markets fail and where government action is needed involved the global climate and, in particular, the problem of global warming. Go to the site:

<http://ps.ucdavis.edu/classes/ire001/env/warming.htm>

You may use another site to find your information if you wish. If you do so, document your other sources.

1. Using the information linked to this site, explain the reasons for global warming.
2. Explain the consequences of global warming (i.e., why is it a problem?).
3. Analyze global warming as a market failure. That is, use the analysis of the chapter to explain why global warming might occur.
4. Explain what might be done to prevent global warming. Why is action by government needed?

### **Case on Negative Externalities: Highway Congestion**

Freeways provide a good example of a negative externality resulting from a common property resource. No one acts to exclude anyone from using a freeway at any time of day. At many times of day, one driving on the freeway would impose no costs on others. But during peak times, one can impose costs on others, costs that are not considered by the driver.

For simplicity, let us assume that all freeway users are traveling to or from work. When the freeway is not congested, the trip takes one half-hour. Assume also that there is an alternative to the freeway --- traveling on a side street. The trip using the side street takes one hour. (In fact, there are often no good side streets to use as alternatives.

However, even in high traffic times, between 40% and 60% of travelers are not commuting to or from work. So their alternative would be to change their travel times.) In the following table, it is assumed that up to five cars on the road (per some unspecified length of freeway), there is no congestion. Beginning with six cars, each additional car on the road slows the others down by an average of 3 minutes. **This slowing down of others is the external cost involved in this case.**

Cars	Average Travel Time	Total Travel Time	Marginal Travel Time
4	30	120	30
5	30	150	30
6	33	198	48
7	36	252	54
8	39	312	60
9	42	378	66
10	45	450	72
11	48	528	78
12	51	612	84
13	54	702	90
14	57	798	96
15	60	900	102
16	63	1008	108

In this table, the average travel time rises by 3 minutes every time there is an additional car on the road (beyond 5). The total travel time is the average travel time times the number of cars. And the marginal travel time is the change in the total travel time due to one more car being on the road. For example, the marginal cost for 6 cars (48 minutes) is the difference between the 198 minutes it takes for six cars to make the trip and the 150 minutes it would take for five cars. This involves his or her own 33 minutes plus the additional three minutes imposed on each of the other five cars.

Individuals will use the freeway as long as the benefits exceed the opportunity cost. Since the side road takes one hour, people will use the freeway as long as the travel time on the freeway is not more than one hour. In this example, 15 cars will use the freeway and the average travel time will be one hour. Notice the inefficiency that occurs with common property resources.

Freeways were built to allow people to make their trips faster. Yet, so many people will enter the freeway that the travel time will be no faster than using the side road. The 15th driver saves no time over using the side road; however, he or she slows the others down a total of 42 minutes (14 cars at 3 minutes each). These people lose while no one gains. Yet, this inefficient result will actually occur.

Many economists have advocated charging a toll to reach the optimal result. This can be done in a virtually costless manner by having a radio transponder in each car that is read as one drives by a certain point on the freeway at certain times of day. Privacy issues can also be avoided by allowing people to pay in advance (as is now done with prepaid phone cards). The toll is either charged to one's credit card or deducted from the prepaid amount. The amount of the toll to be charged depends on the value people place on time. In this simple example, assume that drivers all earn \$6.00 per hour, or 10 cents

per minute. This creates a possible value they might place on their time. Altering the time of travel to non-congested times would save one half-hour. This would be worth \$3.00. Drivers would thus be willing to pay up to \$3.00 to drive congestion-free. If the toll were \$3.00, only five drivers would enter the freeway. The sixth would not enter because the total cost of the commute on the freeway (\$3.00 toll plus 33 minutes of time) would exceed the total cost of using the side street (60 minutes). The following table shows the demand for the freeway that results:

Toll	Number of Cars	Total Toll Collected
\$3.00	5	\$15.00
\$2.70	6	\$16.20
\$2.40	7	\$16.80
\$2.10	8	\$16.80
\$1.80	9	\$16.20
\$1.50	10	\$15.00

A private business (or a government agency) seeking to charge a toll to maximize revenues would charge \$2.10. Eight cars would be on the freeway.

It turns out that eight cars represent the optimal result for society. If nine cars were on the freeway, the gain to the ninth driver of 18 minutes (42 minutes on the freeway compared to 60 minutes on the side street) is less than the 24 minute cost imposed on others (eight cars each of which must travel three minutes longer). Drivers as a group are better off if the ninth driver does not enter the freeway. If six cars were on the freeway, the 24 minute gain to the seventh driver from using the freeway (36 minutes on the freeway compared to 60 minutes on the side street) is greater than the 18 minute cost imposed on the others (six other cars each of which must travel three minutes longer). The group as a whole is better off if this person does drive on the freeway. Only when eight cars are on the road can the group be made no better nor worse off by changing the number of cars. Notice that the optimal result means that some congestion will occur.

While the above example is highly simplified, the idea is becoming significant. This kind of pricing is already being used by a private company in Orange County, California. The company built a two-lane highway paralleling a crowded freeway. The charge ranges from \$0.25 at night to \$2.50 during rush hours (cars with three or more people or with disabled plates are free). Drivers claim they can save between 20 and 45 minutes in each direction. A similar use of tolls to relieve has just started on a privately built freeway in San Diego. Fastrak changes the toll according to demand and supply. For example, getting on the Highway 15 North high occupancy vehicle lane can cost anywhere from \$0.25 to \$4.00, depending on the time of day.

## 6. Merit Goods

There are some goods that are provided by government that fit none of the above categories. However, through a political process, we have determined that these ought to be available to people. These are called *merit goods or political goods*. One example is the beach. Another is Balboa Park. Neither is a public good, since it is possible to require that one pay to be able to enter (just as Disneyland does). Yet, we have decided

that restricting these amenities to those willing and able to pay is not acceptable. Therefore, they are made available to all without charge. In recent years, we have had an important political debate about health care. Surely, health care is a private good (one must pay for it to have access to it). But is it a right that should be provided to all citizens? Many people believe so. Others disagree. (Keep in mind that a public good is inherent in the nature of the good. If it is possible physically for one to have to pay for the good to be able to receive the benefits of the good, then that good is a private good.)

## 7. Redistribution of Income

In a free market economy, what determines the income people receive? We discussed this topic in the last classes. *People receive wages according to their contribution to the revenue of their employer.* Michael Jordan earned over \$35 million per year playing basketball because it was expected that he would increase attendance and television viewers; each of these viewers will bring in revenue for his employer, the Chicago Bulls. Similarly, Michael Jordan earned over \$45 million in the same year from advertising endorsements because it was believed that he would increase the sales of the products by at least that much. If one is paid according to the revenues one brings in for one's employer, there is a question of what to do with people who cannot bring in revenue. These are the elderly, the disabled, and so forth. Shall we just let them die? Most of us would say "no". **So, income is taken from those who earn it (i.e., they produce goods and services) and redistributed to those who cannot earn it.** The phenomenon is an old one. However, until the end of World War II, it was done mainly within families, by churches, and by private charities. It is still done by these groups today. However, it is more likely to be done through government today than was true in the past. Partly, this results from the changes in family structure brought on by industrialization and urbanization, making it harder for families to take care of those who are old or disabled. It may also be the result of the reduced role of churches or of the fact that private charities are public goods, as was shown earlier.

Most people accept that some redistribution must be done in a civilized society. But there are two main disagreements. **First, who should be able to receive income that has been earned by others?** Most accept that the elderly and the disabled should be entitled to receive (although there is a debate today about who exactly is elderly or disabled). But what about single mothers with small children? There is great controversy here. As we will see later, the trend seems to be moving in the direction that makes them less entitled to receive income earned by others. **Second, how much of the redistribution should be done through government and how much through other private agencies?** Many conservatives want the redistribution function taken over by churches and private community groups, such as the YMCA and YWCA, while many liberals are more inclined to have the redistribution take place through the government. Some of the ways that government acts to redistribute income are through *transfer payments*. In these, the government transfers income from one group of people to another group. The largest transfer payment, social security, will be discussed later.

**Test Your Understanding.**

For each of the following, state whether the particular function is acceptable under laissez faire. If so, under which of the functions is it acceptable?

1. Government provides the national parks and the national forests.
2. Government requires you to have a smog control device on your automobile.
3. Government requires warnings on cigarette packages of health dangers.
4. Government has tax deductions for contributions to charities and churches.
5. Government makes it illegal to use cocaine and marijuana
6. Government provides Social Security and Medicare for those who are age 65 and up
7. Government has a price support program for farmers
8. Government subsidizes public television and public radio
9. Government provides the court system
10. Government sues Microsoft for violations of the anti-trust laws

**Practice Quiz for Classes 17 and 18**

1. If there are 20 firms in a industry, each selling 5% of the total sales, the **Herfindahl Index** is:  
a. 5   b. 20   c. 100   d. 500   e. 1,000
2. When Kroger, a grocery company, bought Ralphs and Food for Less, grocery companies, the merger was  
a. horizontal   b. vertical   c. conglomerate

Questions 3 through 10 involve the functions of the government in a world of laissez faire. The functions are the following:

- A. Create and Enforce the "Rules"
- B. Promote or Maintain Competition
- C. Provide Information
- D. Provide Public Goods
- E. Reduce Negative Externalities (External Costs) through regulations or through taxes
- F. Subsidize Positive Externalities (External Benefits)
- G. Provide Merit Goods
- H. Redistribute Income on the Basis of Need

For each of the following, choose the letter that best describes the function of government.

3. The government determines what rights a private property owner has and then the government enforces those rights.
4. The government makes available on the Internet a list of all doctors who have been charged with malpractice.
5. The government provides for antitrust laws.
6. The government provides military defense and homeland security.
7. The government requires that homeowners only have one residence on a property that is zoned R. It does not allow homeowners to build apartments or factories on their property.
8. The government subsidizes research on curing AIDs.
9. The government makes a public park free for everyone.
10. The government has a program of TANF to provide temporary assistance to needy families

Answers: 1. D   2. A   3. A   4. C   5. B   6. D   7. E   8. F   9. G   10. H