Chapter 20
Antitrust Law and Regulation

Laws and regulations touch nearly every aspect of our lives. Most states require children to wear a helmet when riding a bicycle.[1] The US Department of Agriculture requires that your "cheese pizza" contain no more than 11% of a cheese substitute. Food containing more than one ingredient can be labeled "organic" only if at least 95% of its contents are organic.[2] Your power company cannot raise its rates without regulatory approval.

To live safe and prosperous lives, we need the state or government to define the rules of the game and establish institutions that promote socially desirable outcomes using socially acceptable means. We also need a court system to settle disputes. Government involvement is minor in a free market and pronounced in a regulated market or for a publicly owned firm. We have seen that when an ideal set of conditions are met, free markets are efficient.[3] Markets fail, however, when public goods, externalities, uncertainty, and market power are present. When this happens, government intervention can improve social welfare. Interventions include laws, which define illegal individual and business activities, and regulations, which give a government agency control over firm behavior.

From a normative perspective, we want government policies to promote the interests of society, which is called the **public-interest theory** of law and regulation. There are two major concerns with this view of government. First, the evidence shows that our political representatives do not always pursue the goals of society at large. Politicians have their own agendas, such as getting reelected, and respond to the interests of their constituents and the lobbying efforts of special

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[1] For a detailed list of helmet laws by state, see the Web page of the Bicycle Helmet Safety Institute at http://www.bhsi.org/mandator.htm.

[2] This means that it must be produced without chemical fertilizers, insecticides, chemical herbicides, or given growth hormones or antibiotics. For a discussion of US Department of Agriculture (USDA) regulations, see http://www.fsis.usda.gov and http://usda-fda.com.

[3] Although we focus primarily on efficiency issues in this chapter, as discussed in Chaps. 1 and 19 both equity and efficiency are important to society.

V.J. Tremblay and C.H. Tremblay, *New Perspectives on Industrial Organization*, Springer Texts in Business and Economics, DOI 10.1007/978-1-4614-3241-8_20,
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interest groups. Lobbying by large corporations is especially common, because they frequently have much at stake when a government policy is enacted or rescinded. Based on these concerns, the **interest-group theory** was developed, which states that government officials respond in a self-interested way to the demand for new laws and regulations that derive from individual firms, voters, and interest groups. When policy is driven by special interest groups, "government failure" may result.

The second concern with the public-interest approach is that it ignores the cost of government. When a particular market failure costs society \$1 billion but the most effective government policy to correct it costs \$1.1 billion, government action is not socially worthwhile. In this case the market outcome, although imperfect, is the most desirable outcome possible. As a result, proper policy analysis requires a comparative institution approach (Demsetz 1969).[4] That is, we should compare a real market outcome with a real alternative that takes into account all benefits and costs of government intervention. We would then enact the government policy that produces the greatest net gain for society.

Proper policy analysis requires that we follow three steps. First, we should evaluate the effect of the policy on static efficiency. Second, we should evaluate the expected long run effect of the policy on dynamic efficiency. This would include all possible gains or losses from product and process innovations. Finally, we should estimate the cost of implementing and enforcing the policy. If efficiency is the only criterion, then the policy should be implemented only when (static plus dynamic) efficiency gains outweigh the cost of the policy. Existing policies that fail this test should be rescinded. In practice, this is a difficult task given that we are talking about expected future benefits and costs of a government policy. As a result, we will frequently consider the expected benefits of a policy and ignore the cost of government (i.e., we consider steps one and two but ignore step three). We can think of this as the beginning of a more complete analysis of a policy that identifies necessary conditions to make a policy worthwhile.

The range of topics involving legal and regulatory policies is too broad to cover in a single chapter. In fact, we could devote a whole book to each topic. As a result, we focus on just four main themes. First, we briefly discuss law and economics, outlining several philosophical underpinnings of the law, evaluating the relative efficiency of the common and civil law systems, and identifying factors that influence the evolution of a legal system. Second, we describe the major US antitrust laws and review major court cases that have helped shape their evolution regarding monopoly, collusion, and mergers. Third, we discuss the economics of regulation/ deregulation, focusing on the regulation of a firm's primary strategic variables: price, output, and advertising. These issues are associated with market power due

[4] Comparing market outcomes with and without a government policy that ignores the cost of government is called the "nirvana" approach to public policy analysis by Demsetz (1969). Noll (1989a, b) argued that ideally (1) a corrective policy is enacted only when genuine market failure exists and after an optimal policy is identified; (2) the policy is rescinded once it is no longer socially beneficial.

to imperfect competition, a fundamental concern in industrial organization. We also consider behavioral tendencies and regulatory issues in relation to product safety.[5] Finally, we briefly discuss social regulations, those that address issues related to the environment and consumer welfare.

20.1 An Introduction to Law and Economics

The disciplines of law and economics are more closely linked than you might think. Laws that regulate corporations can affect market supply by changing firm behavior and the cost of doing business, and laws affecting consumers can influence market demand. Poor business performance can lead to new legislation designed to correct market imperfections. The great recession or financial crisis of 2008–2009 provides one example, where excessive risk taking in the financial sector led to stiffer government regulations regarding lending. We begin this chapter with a brief discussion of the field of law and economics.[6]

20.1.1 The Philosophy of Law[7]

Every country has a legal system that consists of a set of rules that influence market outcomes and govern the behavior of individuals and (public and private) institutions. A legal system has three important characteristics. First, it is a social phenomenon. Laws are unnecessary if you live alone on an island. With more and more people, social interaction occurs, some of which will be undesirable. Typically, this leads a community to establish laws that protect individuals and their property from harm. Second, law is authoritative. That is, a law establishes rules that are taken seriously because sanctions ensure that they are obeyed.

The third characteristic of law is that it serves a particular aim. We can think of this from a positive or a normative perspective. For centuries, social philosophers have debated the appropriate goal of law. For example, **natural law** theorists view the law from a normative perspective. They argue that law should be a rational standard, should promote the common good, and should be created by those who care for the community.[8] This assumes an absolute moral standard in which

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[5] When discussing public policy, we restrict our attention to issues involving antitrust and regulation. We do not discuss "industrial policy," which is aimed toward supporting domestic firms in one or more key sectors of the economy to gain a strategic advantage over foreign competitors.

[6] For those interested in further discussion of law and economics, see Cooter and Ulen (2012) and Harrison and Theeuwes (2008).

[7] Discussion in this section derives from Wacks (2006), Murphy (2007), Cooter and Ulen (2012), and Harrison and Theeuwes (2008).

[8] These include Aquinas (1225–1274), Rousseau (1712–1778), and Finnis (1949-).

to guide and judge the law. It is paternalistic and can lead to morals legislation. Christian natural law theorists such as Aquinas (1225–1274), a Catholic theologian, argued that human law should conform to God's divine law. Secular natural-law theorists argue that certain actions are intrinsically wrong, even if not originating from God.

Alternatively, **legal positivists** take a more relativist position, arguing that the law derives from social norms. Bentham (1748–1832) thought that an appeal to an absolute moral standard is invalid because it is nothing more than private opinion. Societies with different histories and cultures are likely to have different laws and legal systems, each of which is equally valid. Kelsen (1881–1973), an extreme positivist, argued that ultimate authority resides with the state. His legal order is built on a hierarchical set of norms, with each norm drawing its validity from a higher norm. The ultimate norm, the *Grundnorm*, is taken to be a given or universally accepted fact, such as a country's constitution. Once a state constitution is established, this philosophy gives the state monopoly lawmaking power.

In contrast, **political liberalism** defends the rights of the individual over the rights of the state. John Stuart Mill's *On Liberty* (1859) best illustrates this viewpoint. In it he expresses concern with a state's monopoly control of the law, arguing that state intervention should be constrained by what is now called Mill's Principle (or the harm principle): each individual has the right to act as he or she wants, as long as this action does not directly harm others. This substantially limits the role of the state to achieve the common good, as it implies that the only acceptable laws that limit individual freedom are those that protect others.

Mill also had concerns with democracy, because the majority could limit the rights of the minority.[9] This concern provides further support for placing a high value on individual freedom. It also motivates a political system that has checks and balances designed to limit the power of any one branch of government.

There are abundant examples of government abuse of power throughout history. Under Hitler in Nazi Germany, the government killed an estimated 6 million Jews and 5 million other "undesirables" (i.e., Gypsies, political opponents of Nazism, etc.). Records show that in the American South, more than 2,500 African-Americans, including 50 women, were lynched between 1889 and 1918 (Wacks 2006, 57). By order of President Roosevelt, US citizens of Japanese descent were placed in internment (i.e., concentration) camps from 1942 to 1945 during World War II. Japanese-American citizens not only lost their liberty but lost much of their property as well (Higgs 1978). These violations of basic human rights raise the classic question, "who should monitor the monitors" in a society?

Mill is not the only one to voice concern with the state's inability to enact socially desirable laws. For example, the Marxist view is that the law is enacted to benefit those with economic and political power. Moreover, legal realists express

[9] Horowitz (2009) argued that a similar problem exists on college campuses. He is concerned that the majority of college professors are liberal, which makes it difficult to hire conservatives and leads to a lack of intellectual diversity.

concern with both the law and its enforcement, especially when applied to women, minorities, and the poor. We will see that those in power can shape the evolution of government regulation of business. Thus, studying laws (and regulations) from a normative and a positive perspective can be useful.

20.1.2 Arrow's Impossibility Theorem

When choosing among a set of policies (laws or regulations), you might ask whether there is a rule we can use to make such decisions and maximize social welfare. Kenneth Arrow (1951) addressed this issue. His goal was to identify a social welfare function that can be used to make such decisions. According to Arrow, it should meet the following conditions:

- The social welfare function should satisfy the same general properties as a utility function. That is, it should be complete, transitive, and monotonic.[10]
- If everyone prefers alternative x (a basket of goods or a particular legal option) to alternative y, the social welfare function should rank x ahead of y.
- The social rank of x and y should not depend on the social rank of another alternative z. This is called the independence of irrelevant alternatives assumption.
- The social welfare function should not reflect the preference of just one member of society (i.e., a dictator) but should reflect the preferences of all members of society.

What Arrow was able to prove is that no such function exists. In addition, a function that meets the first three requirements must be dictatorial. This is called **Arrow's Impossibility Theorem** or the Dictator Theorem.[11]

The theorem explains why no political system is perfect and why social decisions are made by a political process that has been rather messy throughout history. Simple voting rules fail to meet all of the conditions above. Thus, democracies need not produce socially optimal results. In theory, a benevolent dictator could produce a social optimal outcome, but because power corrupts, dictators are rarely benevolent. Thus, the best we can expect is a system that allows for an open dialogue about the merits of a policy, gives limited power to voters, politicians, and the courts in making and enforcing policy, and enables policies to be rescinded when they are no longer socially desirable.

[10] When considering two alternatives x and y (e.g., different baskets of goods or different legal options), preferences are complete when they clearly identify whether x is preferred to y, y is preferred to x, or that x and y are equally valued. When we add a third alternative (z), preferences are transitive when the following condition holds: if x is preferred to y and y is preferred to z, then x is preferred to z. Monotonicity implies welfare does not decline with the increase of a good.

[11] For an excellent summary of welfare economics and of Arrow's Impossibility Theorem, see Varian (2010, Chap. 33).

20.1.3 Legal Systems and the Evolution of the Law

In the western world, two main systems are used to make social decisions and establish laws, the common law and civil law systems. The **common law system** derives from England where disputes were originally decided by a king's court and were based on social norms, decrees from the king, and previous decisions (judicial precedent). This system gives the court a certain degree of discretion and the power to change law through the establishment of a new precedent. The set of such decisions is called "the common law" because it is said to derive from the common norms of the people. Today, the legal systems of countries that were colonized by England are based on the common law tradition, including the USA, Australia, Canada, Ireland, New Zealand, and parts of Africa and Asia.

Civil law, sometimes called Roman law, derives from the Corpus Juris Civilis ("The Body of Civil Law"). It was compiled in 528–534 AD by order of the Emperor of the Eastern Roman Empire, Justinian I, and included a collection of fundamental works on Roman and other law. The main characteristic of this system of law is that decisions over disputes are based on a comprehensive set of statutes and codes (i.e., rules), leaving less room for judicial discretion. This tradition spread to most of continental Europe through France. With the French Revolution at the end of the eighteenth century, revolutionaries thought that judges as well as the king were corrupt. Thus, the people killed the king, ousted his judges, and destroyed the common laws of France. In its place, France adopted a system of civil law which set up well defined codes and gave judges little discretionary power. Conquests by Napoleon and later French colonization spread this system to much of Europe, Central and South America, and parts of Asia.[12]

This demonstrates how historical events influence a country's legal system, but other forces are also important. Early authors used efficiency arguments to explain the evolutionary path of a legal system.[13] In its simplest form, the **evolution to efficient laws hypothesis** says that (1) a legal system will be established once the benefits exceed the costs of doing so and (2) specific laws, regulations, and government institutions are selected and evolve in ways that produce more efficient outcomes.

Coase's (1960) theorem provides one mechanism by which laws may evolve for efficiency reasons. It implies that if transaction costs are zero and property rights are well defined, lobbying by affected parties will cause legislators to adopt efficient laws and regulations, eliminating market failure. With market frictions, however, the evolution to efficient laws can take time. The evolutionary process may occur as follows. Once a law is established, affected parties are more likely to challenge it in

[12] We do not want to over generalize, however. As Cooter and Ulen (2012) pointed out, US states have adopted a set of codes for commercial business (the Uniform Commercial Code), which is in keeping with civil law. In addition, La Porta et al. (2008) pointed out that French courts have gained greater discretion over time.

[13] For example, see Demsetz (1967), Alchian and Demsetz (1972), Priest (1977), Rubin (1977), and Posner (1980). For a summary of this argument, see Harrison and Theeuwes (2008).

court if it turns out to be inefficient. The potential gains are greater from overturning a law that is inefficient. In addition, most violations of efficient laws are settled out of court. Thus, judges are more likely to rule and set a new precedent in a case involving an inefficient law. Even if only half of all judges support a more efficient ruling, the law will eventually evolve through a series of court precedents in an efficient direction.

Alchian and Demsetz (1973) provided an example in support of this theory, regarding the development of (private property) land laws in thirteenth century England. Before that time, much of the grazing land for sheep was a common property resource.[14] Initially, this was an efficient system because the population was low and only a few sheep grazed on the land. Thus, the grass grew faster than the existing sheep could consume it. With a rising population, more sheep were put on the land. This ultimately made grass scarce and created a negative externality: the more grass that my sheep consume the less grass for your sheep, a cost I will ignore if I am a profit maximizer. This led to overgrazing and an inefficient use of grazing land. One way to deal with the externality is to create private property rights by converting public lands into private property. With this right, each owner can exclude others by putting up a fence, thus eliminating the externality. According to Alchian and Demsetz, this is what happened in thirteenth century England during the "enclosure movement" when the benefits began to exceed the costs of defining and enforcing private land rights.

Although this theory appears to explain why private land laws developed in England, it does not explain why the common law system and the civil law system have existed for so long and continue to this day. If one is more efficient than the other, it should eventually become the dominant legal system.

A number of scholars suggest that the evolution of a legal system is driven by forces other than efficiency alone. Stigler (1971) proposed that government officials respond to the lobbying efforts of special interest groups which pressure for (demand) new laws and regulations that benefit these groups. Thus, legislation is driven by the power and influence of these special interest groups. This is similar in some ways to the viewpoints of Marxists and legal theorists.

Roe (1996) argued that historical accidents and specific circumstances play an important role in shaping a legal system. For instance, initial conditions associated with the French Revolution explain why France suddenly favored a system that emphasized rules over government/court discretion. Given different starting points, it is not surprising that the British and French systems took different evolutionary paths. Efficiency may still be relevant, however, and one would expect one country to change to another legal system if it is clearly the efficient thing to do. If switching costs are sufficiently high though, neither country will switch. In other words, different starting conditions and high switching costs preserve the status quo, allowing both systems to coexist even if one is more efficient than the other. Thus, history matters, especially when the cost of change is high.

[14] Recall that this means that everyone could use the land, and no one could be excluded from use.

An emerging literature evaluates the relative efficiency of different legal systems, **legal origins theory**. Research shows that the historical origin of a legal system can affect the way a country relies on rules versus discretion in dealing with social and economic issues. This in turn influences economic regulation and performance.[15] La Porta et al. (2008) surveyed the evidence and found that there are different strengths and weaknesses associated with the common law and civil law systems.[16] Their survey shows the following distinguishing characteristics:

- Although judges in both the common and civil law systems are limited by the rules of law, judges have greater discretion in the common law system. Thus, the common law system is somewhat more flexible than the civil law system.
- In response to market failure, common law systems tend to add regulations that buttress markets. Civil law systems are more likely to restrict markets.
- The common law system provides better contract enforcement and better protection to stockholders and creditors, giving greater security to contracts and private property.[17]

These differences suggest that a common law system is more consistent with market-focused capitalism, while a civil law system is more consistent with state-centered capitalism (or socialism).

Which system will be more efficient in the real world? Is court discretion or fixed rules better from society's perspective? The main advantage of the strict rules approach is that it provides better clarity, which reduces uncertainty and the transactions costs of reaching a legal decision. The trade-off is that it can lead to serious errors when change is warranted. The reverse is true with a discretionary legal system. It promises fewer errors by allowing the courts to review the extenuating circumstances of a case, but it comes at the cost of greater uncertainty and higher transaction costs.[18]

Thus, each legal system has its advantages and disadvantages. Generally, when the political-economic environment is stable, fixed rules associated with a civil law system will be more efficient. In a more dynamic setting, discretion is valuable because it enables judges to shape the law in response to new circumstances and social problems.[19] This suggests that a civil law system will be more efficient in a

[15] The literature is too extensive to list here. For a review of the evidence, see Dam (2006), La Porta et al. (2008), and Roe and Siegel (2009).

[16] Not all agree with the simple interpretation and with La Porta et al.'s argument that the common law system is more flexible than the civil law system today. For alternative viewpoints, see Dam (2006), Fairfax (2009), and Roe and Siegel (2009).

[17] Glaeser and Shleifer (2002, 1194) concluded that "[o]n just about any measure, common law countries are more financially developed than civil law countries."

[18] For further discussion of these trade-offs as they relate to antitrust enforcement, see Beckner and Salop (1999) and Baker and Bresnahan (2008).

[19] For example, Heart (1994) argued that discretion is especially valuable in the "penumbra," or grey areas of the law, where a judge may use the entire body of legal knowledge to make a decision and set a precedent.

stable world, and a common law system will be more efficient in a dynamic setting. From an equity perspective and assuming an uncorrupt court system, a certain degree of discretion may be worthwhile if each case involving issues of fairness has a unique set of circumstances. Such a system is said to allow an individual to "throw oneself at the mercy of the court."

Empirical evidence regarding the relative efficiency of these legal systems is just emerging. The evidence reported by La Porta et al. (2008) indicates that countries with common law systems are associated with better economic outcomes in terms of economic growth, unemployment, and education. If these results hold up to continued scientific scrutiny, the common law system would appear to be better at promoting efficiency; sufficiently high switching costs may explain why both systems continue to survive, which is consistent with Roe's (1996) viewpoint.

Without perfect foresight, it is difficult to say which legal system will be best in the future. A change in the economic environment could make the civil law system more efficient. Civil law countries may anticipate greater stability in the future, making it unwise to switch. In addition, in an uncertain world, there may be less risk to the world economy with a diverse set of legal systems.

Nevertheless, the legal origins theory has important implications for the type and extent of market intervention we would expect to see in countries that have a common law system like the USA. For example, when a change increases the benefits of deregulation, one would expect that the USA would be more likely to deregulate than a country under a civil law system. One would also expect to see considerable change in the enforcement of US antitrust law over time. These are issues we take up in subsequent sections.

Before leaving this topic, we want to emphasize that the empirical evidence regarding the legal origins theory is preliminary. It is difficult to test the theory, because it is hard to control for all of the political, social, and economic forces at work. Further, the relative efficiency of common versus civil law systems may vary over time with changing economic circumstances. This is an issue that future scholars will need to address.

In any case, government response to the financial crisis of 2008–2009 provides some insights into the validity of the legal origins theory. Fairfax (2009) argued that the US response was legislative and executive rather than judicial, which is more in keeping with a civil law system. However, this may simply imply that a legislative response is appropriate, regardless of the legal system, when dealing with a crisis. In any case, Fairfax showed that the response was designed to shore up (banking and automobile) markets rather than nationalize them, which is in keeping with legal origins theory.

20.2 Antitrust Law

A review of US antitrust cases allows us to see how one set of laws has evolved over time. In principle, antitrust legislation is designed to promote competition and limit the negative effect of market power. Typically, the legislature establishes

rather general antitrust principles, and the courts are expected to fill in the gaps. Court precedents modify the law, causing it to evolve toward efficiency in many cases. In this section, we summarize major legislation and court precedents that help to define antitrust enforcement today.

20.2.1 Antitrust Legislation

Public interest in antitrust legislation began in the late nineteenth century when railroads opened up new markets in the west, large-scale corporations began to flourish, and the formation of business "trusts" became common. A trust is another word for a cartel, which consists of a group of firms in a single industry that come together to increase profits through collusion. In response to the growing power of these emerging trusts and larger corporations, the antitrust laws were enacted.

As we saw in Chap. 1, the first law was the **Sherman Act (1890)**, as amended in 1975. The Sherman Act has two important provisions:

Section 1: "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among several states, or with foreign nations, is declared to be illegal."

Section 2: "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce. . .shall be deemed guilty of a felony."

Section 1 is relatively straightforward and is taken to mean that any cartel agreement that reduces competition is illegal. However, Section 2 fails to provide a precise meaning to the words "conspiracy" and "monopolize," leaving final interpretation to the courts. In addition, enforcement was limited because Congress provided the Department of Justice (DOJ) with no additional funding in 1890 to enforce this new law.

It did not take long before concerns were raised that the Sherman Act failed to challenge various kinds of unreasonable business practices. This led to passage of the Clayton Act and the Federal Trade Commission Act in 1914. There are three key sections in the **Clayton Act (1914)**.

Section 2 makes price discrimination illegal where the effect may be "to substantially lessen competition or tend to create a monopoly." The provision does allow for price differences that reflect differences in costs and to meet the low price of a competitor.[20]

Section 3 makes market restrictions such as exclusive-dealing contracts and tying contracts illegal where the effect is "to substantially lessen competition or tend to create a monopoly."

[20] The Robinson-Patman Act (1936) amended Section 2 and gave greater protection to small retailers who were battling the growing chain-store movement in the USA.

Section 7 makes mergers illegal where the effect may be "to substantially lessen competition or tend to create a monopoly."

The original Section 7 had a loophole that allowed mergers by asset acquisition, but the loophole was later eliminated in the **Celler–Kefauver Act (1950)**.

The **Federal Trade Commission Act (1914)** set up a commission of 5 members who were appointed by the President, each to a 7-year term. They, along with members of DOJ, were charged with interpreting and enforcing the antitrust laws. The Act also contained an important provision (Section 5), which states that "the Commission is hereby empowered and directed to prevent persons, partnerships, or corporations. . .from using unfair methods of competition in commerce." This gives the Federal Trade Commission (FTC) a broad mandate, because it can apply to almost any business activity. The intent of the Act was to bring together a group of experts to address policy issues related to antitrust and business behavior.

20.2.2 Enforcement Procedure and Remedies

In most cases, the antitrust process begins with an investigation by either the FTC or the Antitrust Division of the DOJ. A DOJ case proceeds through the federal court system, from the lower (District and Circuit) courts to the Supreme Court. A decision is rendered by a District Court, but a ruling can be appealed to one of 11 Circuit Courts. Once a Circuit Court makes a ruling, an appeal can be made to the Supreme Court. Cases can also be investigated by the FTC. In general, the case is heard by an administrative law judge who then makes a ruling. The decision can then be appealed to the Circuit Court and the Supreme Court if desired. Finally, private parties that are damaged by violations of the antitrust laws can file suit. Of the three, private suits are the most common, accounting for 94.7% of all antitrust suits in 2009.[21]

When a firm loses an antitrust case, several penalties and remedies are possible. The four main remedies are:

1. **Treble damages**: A plaintiff that can prove harm due to a violation of an antitrust law receives three times the value of damages incurred (plus court costs and legal fees). This provision is designed to encourage private enforcement of the law and discourage antitrust violations.
2. **Fines and jail**: Fines have increased significantly since the Sherman Act was enacted. The original Act set a maximum fine of $5,000 per violation. According to the Antitrust Criminal Penalty Enhancement and Reform Act (2004), the maximum fine per violation is now $100 million for corporations and $1 million for individuals; the maximum jail time for an individual is 10 years per violation.

[21] This information is obtained from Andrew E. Ebere, "Private Antitrust Cases Decreased in 2009," Princeton Economics Group, available at http://econgroup.com/peg_news_view.asp?newid=40&pageno=1, accessed October 13, 2010.

3. **Injunctions**: An injunction forbids some specific future business behavior without penalizing the defendant for past behavior. For example, after attempting to merge with a small brewery in Florida in 1960, the Anheuser-Busch Brewing Company was ordered to refrain from purchasing another brewery for 5 years (*U.S. v. Anheuser-Busch*, 1960).
4. **Structural changes**: This is the most dramatic antitrust weapon, as it can be used to split guilty firms into 2 or more independent units. Because it is so difficult to carry out successfully in practice, this remedy is rarely used today.[22]

20.2.3 Important Antitrust Cases and Precedents

With well over a century of enforcement, there are too many antitrust cases to summarize here.[23] Instead, we discuss the most influential cases, those that give you a feel for the ebb and flow of antitrust enforcement and for current antitrust enforcement. Consistent with Roe (1996) and Stigler (1971), historical events and political forces appear to have shaped current enforcement of the law. We will see that political trends and social norms have played a role, especially during the Great Depression when many workers lost their jobs and support waned for free market capitalism.

In the last 40 years, court decisions have been influenced by economic analysis of antitrust enforcement. Beginning in the 1960s, the "Chicago School" began to make headway in its criticism of US antitrust enforcement. Recall from Chap. 1 that the Chicago School represents a philosophy that tends to favor market over government solutions to economic problems. Government policy is thought to be costly to administer and can produce unexpected and socially undesirable consequences, making market failure the lesser of two evils (Wright 2009). Critics of antitrust enforcement include Williamson (1968) and Demsetz (1973, 1974), who identified previously ignored benefits associated with mergers and high levels of concentration. Another concern, expressed by Hayek (1945), is that free markets react more quickly than government to information about changing demand and technological conditions. Finally, Stigler (1971) and Peltzman (1976) questioned the motives of government agencies, arguing that government officials are more likely to promote their own interests than the interest of society.[24]

[22] For example, Elzinga (1969) investigated 39 cases involving divesture and found that only 25% were successful.

[23] Reviews of important antitrust cases, including those discussed in this chapter, can be found in Asch (1983), Waldman (1986), Breit and Elzinga (1989), Scherer and Ross (1990), Posner (2001), Hovenkamp (2008), Sherman (2008), Blair and Kaserman (2009), and Kwoka and White (2009).

[24] This new Chicago critique is clearly expressed by Milton Friedman, a leader of the Chicago School, who said: "Because we all believed in competition 50 years ago, we are generally in favor of antitrust. . . . We've gradually come to the conclusion that, on the whole, it does more harm than good. [Antitrust laws] tend to become prey to the special interests." This quote is taken from an interview for the *Wall Street Journal* by Sieb (1998).

At times, early antitrust enforcement responded to the demands of populists who favored protection of small business. The Chicago School opposed this goal because it could lead to an inefficient outcome, arguing instead that antitrust policy "should" be guided by economic efficiency alone. Over time, this position began to be taken seriously, which led to more permissive enforcement and a greater emphasis on efficiency.

In addition, studies conducted by economists outside and within the Chicago school have shown that narrowing the scope of antitrust enforcement can be socially beneficial. According to Kwoka and White (2009, 1–5) and Crane (2009), this narrower focus has led to a substantial reduction in challenges related to vertical mergers, price discrimination, and conglomerate mergers. The financial crisis of 2008–2009 appears to be changing this focus, leading to greater scrutiny of free markets, especially in the financial sector of the economy. Even before the crisis, a recent series of papers in Pitofsky (2008) presented evidence that the Chicago School "overshot the mark" in the area of antitrust.[25]

Our focus in this section will be on the antitrust cases that have had the greatest effect on the economy, those that involve monopolization, collusion, and mergers. Cases against collusive behavior are reasonably clear and distinct. We will see that monopoly and merger concerns are more difficult to identify: the law does not clearly define what is meant by monopoly, and future consequences of a merger are difficult to predict. We will also see how enforcement has changed over time.

20.2.3.1 Monopolization

Antitrust cases involving monopolization are some of the most dramatic in history, because they involve the largest corporations that have the most to lose from an antitrust conviction. Initial antitrust enforcement proved difficult, given that Section 2 of the Sherman Act failed to define what is meant by the terms "monopolize" and "attempt to monopolize."

The first lawsuit of importance was *Standard Oil of New Jersey v. U.S.* (1911), undoubtedly the most famous antitrust case in history. Standard Oil was owned by the Rockefeller brothers, who grew the company's market share to 90% by the late 1800s. This was accomplished by purchasing more than 120 competitors, foreclosing competitor access to its pipelines and allegedly using localized price cuts[26] to drive some of its toughest rivals out of the market. The Supreme Court ruled against Standard Oil, ordering it to be broken up into such oil companies as Exxon (Standard Oil of New Jersey), Mobil (Standard Oil of New York), Chevron

[25] Furthermore, Posner (2009), a Chicago economist and legal scholar, argued uncharacteristically that the recent crisis is due to insufficient government involvement in financial markets. See Wright (2009) for an alternative viewpoint.

[26] However, McGee (1958) argued that Standard Oil did not gain market share through predatory pricing tactics.

(Standard Oil of California), Amoco (Standard Oil of Indiana), and BP America (acquirer of Standard Oil of Ohio).

The significance of this case stems from the Supreme Court's articulation of the **rule of reason** in the restraint of trade. Speaking for the Court, Chief Justice White said:

> If the criterion for judging the legality of a restraint. . .is the direct or indirect effect of the acts involved, then of course the rule of reason becomes the guide.[27]

Regarding monopolization, the rule of reason came to mean two things: (1) being a monopolist need not be a violation; (2) the firm also had to behave unreasonably. This gives the courts considerable discretion in deciding a case, because the court must evaluate the direct and indirect effect of a firm's action and because reasonable people can disagree about what is unreasonable. In contrast, an action that is a **per se** violation is illegal regardless of the reasonableness or unreasonableness of its social consequences.[28] Thus, there is no legal defense of an action that is a per se violation.

For the next 30 years, subsequent court cases reinforced the rule of reason. Seminal cases include *U.S. v. American Tobacco (1911)*, which led to the breakup of the so called Tobacco Trust, *U.S. v. American Can Co. (1916)* in which American Can won because it did not behave unreasonably, and *U.S. v. United States Steel Company (1920)*. In the US Steel case, the company had gained a 65% market share through horizontal merger, but rather than using tough price competition to drive rivals out of business, US Steel set high prices, which eventually led to new entry and a loss in market share to its competition. Consistent with the rule of reason, US Steel won the case because it had not exercised its market power to harm competition. In the words of the Court:

> . . .the law does not make mere size an offense or the existence of unexpected power an offense. It . . . requires overt acts. . .[29]

Pressure to temper the rule of reason began during the Great Depression of the 1930s. With high unemployment and waning trust in free markets, President Roosevelt favored greater government involvement in business. This led to the appointment of judges who were more supportive of interventionist policies. Roosevelt also appointed Thurman Arnold to head the Antitrust Division of the DOJ in order to revitalize antitrust enforcement.

These events set the stage for the Alcoa case in which Alcoa was charged in 1937 with monopolizing the aluminum ingot market (*U.S. v. Aluminum Company of America*, 1945). By some accounts, Alcoa had market power but had not behaved

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[27] Quote taken from Breit and Elzinga (1989, 138).

[28] These are sometimes called "bright-line rules," because behavior is per se illegal when it crosses a clear and distinct line.

[29] Quote taken from Breit and Elzinga (1989, 145).

unreasonably, as defined by the rule of reason.[30] It initially gained control of the aluminum market because it held important patents. Further, Alcoa was able to take advantage of economies of scale. The only behavioral concern was the accusation that Alcoa built capacity ahead of demand, making entry more risky. To the Supreme Court, this was sufficient to rule against Alcoa.[31] The Alcoa decision was consistent with two later rulings involving the tobacco industry (*American Tobacco Co. et al. v. U.S.*, 1946) and the motion picture industry (*U.S. v. Griffith Amusement Co.*, 1948). Although these cases did not make monopolization illegal per se, they certainly invigorated antitrust enforcement.

Influence of the Alcoa precedent continued through the mid-1970s. There were no notable decisions in the 1950s and 1960s, but greater scrutiny of industry began in 1965 when the DOJ strengthened its economics staff. Subsequent DOJ studies motivated two important monopolization complaints, one against IBM and the other against AT&T. In 1969, the DOJ filed suit against IBM, claiming that the company had used unfair business practices to monopolize the computer industry. Unlike previous cases, IBM vigorously fought the government's accusations, resulting in an extremely long and expensive trial.[32] Competition in the computer industry substantially increased by the early 1980s, and the Department withdrew its complaint in 1982 because the case no longer had merit.

In 1974 the Department filed suit against AT&T for monopolizing the telecommunications industry. At that time, AT&T owned 22 local telephone companies (providers of local telephone service), Bell Long Lines Division (provider of long distance telephone service), Western Electric (a telephone equipment producer), and Bell Labs (its research division). The Department's complaint charged that AT&T had harmed competition by making purchases exclusively from Western Electric and by excluding access of competing long-distance telephone suppliers to AT&T's telephone network. The complaint recommended that AT&T retain its 22 local telephone companies and divest its other holdings. A milder penalty was imposed when the case was settled out of court in 1982.

[30] An important issue was the definition of the market for aluminum. As in all antitrust cases, a first step in determining whether or not a firm has a monopoly position is to correctly define the market. In practice, this is a difficult task, and the courts have sometimes chosen a broad definition and in others a narrow definition of the market. In the Alcoa case, the company's market share was 90% of US ingot production but only 33% of ingot and scrap aluminum production (not including aluminum retained for its own use). Thus, the company argued in favor of a broad definition and the government argued in favor of a narrow definition of the market. The courts chose a narrow definition, which implied that Alcoa had market power. See Scherer and Ross (1990) for further discussion of this issue and its effect on antitrust rulings.

[31] Alcoa was not broken up though. A final remedy was postponed until 1950 when aluminum plants built by the government during World War II and operated by Alcoa were sold at public auction. Alcoa was barred from bidding, and winning bidders formed two new competitors, Reynolds Aluminum and Kaiser Aluminum.

[32] For a detailed discussion of this case, see Fisher et al. (1983).

AT&T agreed to divest of its 22 local telephone companies, just the opposite of what the Department had originally requested.[33]

In the 1970s, new economic analysis began to influence antitrust enforcement. This was a time when a number of economists raised concerns with the social desirability of government regulation and antitrust enforcement. We have already discussed Stigler's (1971) position that government agencies will not pursue the interests of society. Regarding antitrust, Demsetz (1973) superior efficiency hypothesis provides an argument against strict antitrust enforcement.[34] According to Demsetz (1973, 3), many firms gain monopoly power by developing better products or lower cost methods of production. "To destroy such power [through antitrust enforcement] ... may very well remove the incentive for progress." In other words, penalizing a successful firm for monopolizing a market will reduce the firm's incentive to innovate and promote dynamic efficiency. This position appears to be understood by the courts. In *Berkey Photo Inc. v. Eastman Kodak Co.* (1979, 81), the Court said:

> It is the possibility of success in the marketplace, attributable to superior performance, that provides the incentives on which the proper functioning of our competitive economy rests.

The growing support for a more pro-business position is also reflected in President Reagan's appointment of William Baxter to head the Antitrust Division of the DOJ (January 1981 to December 1983). Baxter thought that antitrust laws should promote economic efficiency, a belief that undoubtedly influenced the resolution of the IBM and AT&T cases. His views also motivated a major revision of the 1968 Merger Guidelines that put greater emphasis on efficiency, an issue we will take up later in the chapter.

The final case of interest involves the monopolization of the market for PC operating systems by Microsoft Windows. Not only did the case receive a great deal of national attention, it highlighted a trend toward settling antitrust cases out of court. The suit was filed by the DOJ in 1998 when Windows had a market share in excess of 90%. There were concerns that Microsoft used predatory tactics to drive its competitors out of the market. For example, Microsoft bundled Windows with its Internet browser, Internet Explorer, thus giving Internet Explorer away for free. This put competing browser companies such as Netscape at a tremendous marketing disadvantage. On the other hand, it greatly benefited consumers. An important issue in the case was the presence of network externalities, which thrust Microsoft into a winner-take-all situation, where only the most dynamically efficient firm is likely to survive in the long run.

The courts initially decided to break up the company into two parts, one that produced Windows and the other that produced all other software. Microsoft challenged the decision, and at the end of 2001 the DOJ and Microsoft reached

[33] This led to the creation of seven regional phone companies, or "baby bells": NYNEX, Bell Atlantic, Bell South, Ameritech, Southwestern Bell, US West, and Pacific Telesis.

[34] For similar views, see Brozen (1971) and McGee (1971).

an agreement that required Microsoft to refrain from its anticompetitive marketing practices and to reveal much of its computer code to competing software developers. The Microsoft example illustrates what a difficult task it is to assess antitrust cases. On the one hand, Microsoft gained market power by being innovative and providing society with a superior product. On the other hand, once Microsoft had gained power its behavior hurt its competitors. Thus, the final decision may have been the most reasonable one. The company remained intact, which promoted the incentive for progress, but Microsoft's anticompetitive behavior was stopped.[35]

20.2.3.2 Collusion

One of the greatest achievements of the US antitrust laws has been to reduce cartel activity. We learned in Chap. 9 that collusion involves agreements to raise price or restrict output. These agreements increase market power and are therefore economically inefficient. Because collusive agreements are unreasonable from society's perspective, they are generally considered illegal per se today.

Two cases helped establish the doctrine against price-fixing and output restrictions. The first is *Addison Pipe and Steel Co. v. U.S.* (1899). This involved six producers of iron pipe that set up a bid-rigging scheme. The companies divided the market so that each had a regional monopoly. For example, firm 1 would be designated the low bidder in region 1. When bidding on a contract in region 1, other firms would submit fraudulently high bids. This would enable firm 1 to bid a higher price and still be guaranteed the contract. Rather than claim innocence, the companies argued that their behavior was reasonable because it was intended to avoid ruinous price competition. The Court did not accept this argument, however, and although it did not make this a clear per se violation, it made it clear that price-fixing behavior is unreasonable.

The per se doctrine was made transparent in *U.S. v. Trenton Potteries Co.* (1927). This case involved 23 companies from the vitreous pottery industry (makers of bathtubs, sinks, and toilets) that met and agreed to set minimum list prices. The defendants were convicted in district court but won their appeal in circuit court. The reversal was due to the fact that the judge had incorrectly instructed the jury that it could return a guilty verdict without considering the reasonableness of the pricing agreement. The case was then taken to the Supreme Court to evaluate whether the judge's instructions were appropriate. The Court ruled against the defendants, arguing that price fixing is prohibited by the Sherman Act, "despite the reasonableness of the particular prices agreed upon." This is a per se ruling, as it makes price fixing illegal regardless of the circumstances.

[35] For a review of the potential costs and benefits of breaking up Microsoft, see Elzinga et al. (2001). For a more detailed account of Microsoft's success and run-ins with antitrust authorities, see the Microsoft case study in Chap. 21.

Nevertheless, the dire economic circumstances of the Great Depression appear to have been sufficient to cause the Court to waiver on its view of price-fixing behavior. The US coal industry was under tremendous stress at the time, with substantial excess capacity, frequent industry losses, and persistent company bankruptcies. In response, 137 companies in the Appalachian region of the country formed Appalachian Coals Inc. as a selling agency for the group. Its sole purpose was to obtain the "best prices" possible for the 137 firms. Based on the Trenton Potteries decision, the government challenged the combination and won the case in 1932. It was overturned by the Supreme Court, however (*Appalachian Coals Inc., v. U.S.*, 1933).

Writing for the 8–1 majority, Judge Hughes argued that an "essential standard of reasonableness" was applied to Appalachian Coals because of the unusual circumstances at the time. Judge Hughes wrote that during the Great Depression:

> [t]he interests of producers and consumers are linked. When industry is grievously hurt, when producing concerns fail, when unemployment mounts . . . the wells of commerce go dry. So far as actual purposes are concerned, the conclusion of the court . . . was amply supported that defendants were engaged in a fair and open endeavor to aid the industry in a measurable recovery from its plight. . ..[36]

This decision is consistent with Roe's (1996) position that historical events and not just efficiency considerations drive court precedents. It also demonstrates how judges in a common law system have sufficient power to modify the law based on a broader set of societal norms and circumstances.

Once the impact of the Great Depression dissipated, the Court quickly reverted back and made collusive behavior illegal per se. In particular, the government won an important price-fixing case involving the oil refining industry (*U.S. v. Socony-Vacuum Oil Co.*, 1940) and a market segmentation case involving the supermarket industry (*U.S. v. Topco Associates Inc.*, 1972). Thus, the Appalachian Coals case was an aberration that had no long-term effect on cartel enforcement.

Although the legal status of collusive agreements concerning price and output are clear, they are per se illegal, enforcement is still a problem. The main difficulty, at least in more recent cases, is that the evidence is usually circumstantial. Because cartels are illegal, agreements are unwritten and kept secret. But without direct evidence of a contract, how can we be sure that a cartel agreement really exists? At times, courts have inferred guilt based on facts short of clear evidence of a conspiracy.

One piece of damaging evidence is when firms within the same industry behave in an identical way. After all, firms in an effective cartel will change their prices (or output levels) in unison and use identical marketing tactics (i.e., have identical agreements with retailers and offer the same financing options and delivery schedules to customers). When there is no proof of a conspiracy but firms behave in unison, their behavior is called **conscious parallelism** (or tacit collusion) by

[36] Quote taken from Waldman (1986, 139).

the courts and a unilateral anticompetitive effect in the Horizontal Merger Guidelines (US Department of Justice and the Federal Trade Commission, 1992, 1997, 2010).[37]

Although there will be conscious parallelism in an effective cartel, parallel behavior can occur for innocent reasons as well. In the homogeneous goods Cournot model discussed in Chap. 10, we saw that firm behavior is symmetric. That is, firms will charge the same price, produce the same output level, and respond identically to changes in demand and cost conditions. Asch (1983, 225) calls this "innocent parallelism," which is not illegal. For example, in *Theatre Enterprises Inc., v. Paramount Film Distributing Corp et al.* (1954), the Supreme Court ruled:

> . . . this court has never held that proof of parallel business behavior conclusively established agreement or . . . that such behavior itself constitutes a Sherman Act offense. Circumstantial evidence of consciously parallel behavior may have made inroads . . ., but "conscious parallelism" has not yet read conspiracy out of the Sherman Act entirely.[38]

Without direct evidence of a conspiracy, the courts appear to follow a rule of reason, where a guilty verdict requires evidence of conscious parallelism plus additional damaging evidence. This could include circumstantial evidence of an agreement or of actions that discourage price cutting. For instance, in the 1960s General Electric (GE) and Westinghouse engaged in parallel pricing behavior for their new electric turbines. In 1963, GE announced a set of prices and a price-protection agreement (i.e., a most-favored-customer clause), which guaranteed that if a customer purchases a product today and the product is discounted in the next 6 months, the customer will receive a rebate for the difference in the price. GE also eliminated the possibility of secret price cuts by opening up its books for public inspection. Within days of this policy, Westinghouse followed suit with an identical pricing policy.

There was no question that GE and Westinghouse behaved in a parallel fashion, but further evidence was needed to pursue a conspiracy conviction. One thing to remember is that a most-favored-customer clause can reduce the incentive for firms to cheat on a cartel agreement (see Chap. 9). What sealed the deal was that the DOJ uncovered company documents indicating that the price-protection agreement was intended to stabilize prices. Given the evidence, GE and Westinghouse agreed to a consent decree in 1976 (*U.S. v. General Electric Co. Civil No. 28, 228 E.D. Pennsylvania*, December 1976). Among other things, the consent decree prohibited them from using a price-protection plan and from making their pricing history public.

Before we proceed further, it is important to realize that not all forms of collusion are illegal or harmful to society. One case involved members of the Chicago Board of Trade who competed with each other in the buying and selling of grain contracts. Concern was raised with an agreement among members that any

[37] The Guidelines are available at http://www.justice.gov/atr/public/guidelines/hmg.htm#22.

[38] Quote taken from Waldman (1986, 152).

trade after the Board had closed must be transacted at the closing price of that day. The Board argued that the agreement encouraged that transactions only take place during regular business hours. This not only made it easier for the Board to collect and disseminate market information to buyers and sellers, but it also helped avoid a free rider problem. To compensate the Board for providing this service, it charged a small fee on each transaction. But traders could avoid the fee by trading after hours. Fixing the price on late traders imposed a cost on them and discouraged free riding. In this price-fixing case, the Court ruled in favor of the Board because the agreement "merely regulates" and promotes the efficient operation of the market (*Board of Trade of the City of Chicago v. U.S.*, 1918).

Trade associations can also facilitate cooperative behavior that is socially desirable and legal. A trade association is an organization of firms in the same industry with the goal of promoting industry interests. A trade association may collect and disseminate information about demand and technological conditions, an activity that promotes economic efficiency. It can also try to influence public policy in directions favorable to the industry. Antitrust concerns arise when a trade association is used to establish and police price-fixing agreements. Previous court cases indicate that the collection and dissemination of information, even price information, is generally permitted. However, attempts by a trade association to force adherence to a price or to restrict price-cutting behavior are illegal.[39]

Historically, sports and higher education are two markets where the application of antitrust has been both intricate and lax. In professional sports, there are many antitrust exemptions given by the Courts and Congress.[40] This began with *Federal Baseball Club v. National League* (1922), when the Supreme Court ruled that the Sherman Act did not apply to major league baseball. Although the exemption was intended to apply to professional baseball alone, and some of baseball's exemptions were reversed by the Curt Flood Act of 1968, the Supreme Court ruling led to a series of court cases that gave professional sports preferential treatment compared to other businesses when it comes to antitrust enforcement.

According to Fort (2007), the special antitrust status of professional sports is due to the fact that team cooperation is needed for the efficient operation of a sports league. Both fans and team owners benefit from an efficiently operated league, which requires cooperation on establishing the rules of the game, scheduling, and policies that assure competitive balance. Because there are social benefits from certain forms of cooperation and there is an idyllic image associated with

[39] In *Sugar Institute, Inc. v. United States* (1936), the Sugar Institute was found guilty of violating Section 1 of the Sherman Act because of the steps it took to eliminate price cutting, whereas in *Tag Manufacturers Institute v. Federal Trade Commission* (1949), the Tag Manufacturers Institute (of business tags) was found innocent of price fixing. Even though members were required to report prices, they were encouraged to set prices independently. Thus, the Institute collected market information but did not facilitate price fixing.

[40] For a complete list of antitrust exemptions that apply to many different industries, see von Kalinowski (1982).

professional sports, the Courts and Congress have also allowed teams to cooperate in ways that enhance their market power. For example, teams exploit their monopsony power by limiting a player's right to switch teams. They exploit their monopoly power by limiting the number of teams that can participate in a league. In essence, Congress and the Courts have allowed sports leagues to erect legal entry barriers.

A legal justification for such barriers stems from court decisions that treat the sports league, not an individual team, as a "single entity."[41] When this precedent holds, teams within a league are allowed to cooperate on both the actions needed for the efficient operation of a league and on actions that preserve and enhance the value of the league. The courts have allowed a league (i.e., the cartel) to limit entry of new teams into the league and player rights to switch teams. The single entity argument was effectively used by the National Hockey League to prevent the San Francisco Seals from moving to Vancouver (*San Francisco Seals, Ltd., v. National Hockey League*, 1974). Furthermore, Congress passed the Sports Broadcasting Act in 1961, giving sports leagues the right to negotiate TV contracts for all teams in the league. Clearly, these actions would be antitrust violations in any other industry.[42]

The evolution of antitrust precedents in sports makes it clear that if the law evolves in efficient directions at all, it does so very slowly. Consistent with Roe's (1996) position, *Federal Baseball Club v. National League* (1922) led the evolution of sports law down a different path than other industries. Considerable antitrust immunity led to collusive behavior that increased market power as well as efficient league operation. Although players have gained limited free agency rights since the 1950s, Johnson (1979) and Fort (2007) argued that the political power of owners has enabled leagues to preserve the status quo and their favored antitrust status. This is consistent with the interest-group theory. It remains to be seen whether this special treatment will deteriorate in the future.

Like owners of professional sports teams, presidents at MIT and the elite Ivy League schools have also argued for special antitrust treatment.[43] This issue came to a head in 1989 when the DOJ began a price-fixing investigation of these universities, called the "Ivy League Overlap Group." For 35 years, members of the Overlap Group had agreed to award scholarships based solely on need and used a common financial-aid formula to ensure that a student who applied to any of these schools received a uniform financial aid offer from each school. In essence, they colluded to prevent scholarship competition for the brightest students.

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[41] For a review of court precedents on the decision to view a league as a "single entity", see Lehn and Sykuta (1997).

[42] For a discussion of similar antitrust issues involving college athletics, see *NCAA v. University of Oklahoma*, 1984.

[43] For a more detailed discussion of this case, see LaFraniere (1991) and Austin (2006). The Ivy League schools are Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, Princeton University, the University of Pennsylvania, and Yale University.

The Overlap Group gave two reasons for its behavior. First, members argued that because they were nonprofit institutions, their actions should not be viewed as per se illegal. This sentiment was aptly put by a spokesperson for Dartmouth College, "Schools like ours should not be seen as competitors in the same way that toaster manufacturers are."[44] Second, the purpose of their agreement was to meet an important social goal: to fairly distribute scholarship funds to students with the greatest need for financial aid. Thus, they argued that based on a rule of reason, the action of the Overlap Group was not an antitrust violation.

The DOJ disagreed, however, arguing that the Overlap Group agreement illegally eliminated competition for students. According to Attorney General Thornburgh, "The revered stature of these institutions does not insulate them from the requirements of the antitrust laws." As a result, the members from the Ivy League agreed to a consent decree that prohibited future price fixing. MIT took the case to court, but eventually agreed to a similar consent decree in 1993. Although not all cooperative behavior among nonprofit organizations is per se illegal, the behavior of these institutions was viewed as unreasonable. Unfortunately, this remedy has not translated to higher average financial aid awards to students (Carlton et al. 1995; Hoxby 2000).

One mechanism that antitrust authorities use to identify collusion is to promise antitrust immunity to the first firm to come forward and report the illegal activity to antitrust authorities. According to Pate (2004) of the Antitrust Division of the US Department of Justice, "Because cartel activities are hatched and carried out in secret, obtaining the cooperation of insiders is the best and often the only way to crack a cartel." As we discussed in Chap. 9, this first to come forward policy is what brought down the international vitamin cartel in the 1990s.

20.2.3.3 Mergers

We saw in Chap. 18 that mergers can have both desirable and undesirable effects. Society benefits from mergers that lower costs, but mergers that raise market power are socially undesirable. The government uses a rule of reason when evaluating the legality of a merger. Because the market power effects of vertical and conglomerate mergers are generally small, we focus on antitrust issues involving horizontal mergers.

The original antitrust laws were not very effective at preventing potentially anticompetitive mergers. Section 2 of the Sherman Act (1890) could be used to stop a merger, but only if it led to the monopolization of a market. To remedy this limitation, the Clayton Act was enacted in 1914, but this legislation was flawed because it banned only those anticompetitive mergers that involved stock acquisitions. In *Thatcher Manufacturing Company v. Federal Trade Commission* (1926), the Supreme Court

[44] LaFraniere (1991, A3).

ruled that the Clayton Act did not apply when one firm purchased the assets of a competitor. This loophole made the Clayton Act ineffective at stopping the merger wave of the 1920s, the so-called merger for oligopoly wave that we discussed in Chap. 18. To close the loophole, Congress passed the Celler–Kefauver Act in 1950, which launched a relatively strict, perhaps too strict, antimerger enforcement campaign.

The first major case under the new law was *U.S. v. Bethlehem Steel Corp.* (1958), which involved a merger between Bethlehem Steel and Youngstown Steel. At the time of the merger, Bethlehem was the second largest steel producer in the USA, with a market share of 15.4%. Youngstown was the sixth largest producer, with a market share of 4.7%. Industry concentration was high; the four-firm concentration ratio of 60%.

Two issues were relevant in the Bethlehem-Youngstown case. First, Bethlehem-Youngstown defended the merger by claiming that they operated in separate geographic markets. Bethlehem operated primarily on the east and west coasts, while Youngstown operated primarily in the center of the nation. The district court rejected this defense, defining the market as national in scope. Second, the firms argued that the merger would be pro-competitive, because the combined firm would be a more formidable competitor with the industry leader, US Steel. This argument was also rejected. In the opinion of Judge Weinfeld, "[T]he argument does not hold up as a matter of law. If the merger offends the statute in any relevant market then good motives and even demonstrable benefits are irrelevant and afford no defense."[45] As a result, the decision went against Bethlehem and Youngstown. A significant aspect of the decision was the court's reliance on market share and industry concentration data, which is consistent with the Structure–Conduct–Performance approach to industrial organization that gained acceptance at the time.

The Bethlehem–Youngstown steel precedent was solidified by *Brown Shoe Co. v. U.S.* (1962). The case involved a merger between Brown Shoe and Kinney Shoe. The companies were each vertically integrated, with each producing shoes and owning retail outlets. Brown's main activity was production, while Kenney's was primarily retailing. In addition, both the production and retail markets for shoes were highly competitive. Brown and Kenney had low market shares in production and in retailing. Thus, the merger would have little effect on competition at either stage of production. In spite of these facts, the Supreme Court ruled against the merger. The Court's argument, called the "incipiency doctrine," was that even in competitive markets horizontal mergers should be banned to prevent an increase in concentration. The doctrine virtually says that horizontal mergers are per se illegal.

One concern with antimerger enforcement was that the courts did not always behave consistently in defining a geographic market. In the Bethlehem–Youngstown case, a broad definition was used. In *U.S. v. Philadelphia National Bank* (1964), however, the court defined the relevant market as a single city when evaluating the legality of a merger between Philadelphia National Bank and Girard Trust.

[45] Quote taken from Waldman (1986, 91).

Similarly, the court defined the market as a single city in the merger between Von's and Shopping Bag supermarkets (*U.S. v. Von's Grocery Co.*, 1966). Finally, in *U.S. v. Pabst Brewing Co.* (1966), the courts defined the relevant market to be a single state. The case involved a merger between the Pabst and Blatz brewing companies; the market share of the combined company was 4.5% at the national level and was 24% in the state of Wisconsin. In each case, the courts ruled against the mergers.

The courts have also failed to use a consistent definition of the product market. In the Bethlehem–Youngstown case, the market was defined narrowly to include finished steel products. In contrast, in the proposed merger between the Continental Can Company and the Hazel-Atlas Glass Company, the court used a broad definition, arguing that cans and bottles are sufficiently close substitutes to be included in the same market (*U.S. v. Continental Can Co.*, 1964).

From an economic standpoint, the courts have erred when defining a market, a notion that was clearly understood by some judges. In the dissenting opinion in the Von's and Shopping Bag case, Judge Stewart wrote, "The sole consistency that I can find is that in litigation under Section 7, the Government always wins."[46] Scherer and Ross (1990, 177) suggested that these decisions represent the

> . . . consistent willingness to accept market definitions that resolve intrinsic uncertainties on the side of preventing mergers with possible anticompetitive effects. This in turn may have been no more than faithful stewardship to the will of Congress.

In any case, many economists and representatives from the business community were concerned that this inconsistency created too much uncertainty regarding what was legal and illegal. In the civil law tradition, Stigler (1955, 182) argued that the government should establish clear "bright lines" that "would serve the double purpose of giving the business community some advanced knowledge of public policy toward mergers and of achieving the important goals of the legislature."[47] This viewpoint was also expressed in a *Fortune* magazine editorial (February 1965, 228), which said that the business community does not want to "make present laws less restrictive on mergers . . . [but] would simply codify them in such a way that businessmen know what they can and can't do."

In response, the DOJ established a set of "Merger Guidelines" in 1968.[48] The Merger Guidelines reduced uncertainty and were designed to be consistent with court precedents and the economic understanding of markets at the time. The key standards are summarized in Table 20.1. They show that enforcement will be tougher on mergers between firms in highly concentrated industries, where the four-firm concentration ratio (CR_4) exceeds 75%. The Merger Guidelines also provide some discretion. A stricter standard applies in markets where concentration

[46] Quote taken from Scherer and Ross (1990, 177).

[47] Similarly, Bok (1960, 299) argued that "there is much to be said for a simple standard which can at least be fairly and inexpensively administered in a fashion that is understandable to the businessman contemplating merger."

[48] The 1968 Guidelines are available at http://www.justice.gov/atr/hmerger/11247.htm.

Table 20.1 Summary of the 1968 Horizontal Merger Guidelines

1. Once a market is defined, the following "structural standard" is applied.

   A. Where the four-firm concentration ratio is 75% or more, the market is defined as highly concentrated and the government "will ordinarily challenge" mergers between firms with the following market shares:

Acquiring firm	*Acquired firm*
4%	4% or more
10%	2% or more
15% or more	1% or more

   B. Where the four-firm concentration ratio is less than 75%, the government "will ordinarily challenge" mergers between firms with the following market shares:

Acquiring firm	*Acquired firm*
5%	5% or more
10%	4% or more
15%	3% or more
20%	2% or more
25%	1% or more

2. The Guidelines also list several "exceptional circumstances or additional factors" that may require a departure from the structural standard above. The Guidelines state:

   A. The structural standards may be ignored for *industries being significantly transformed* (by technological change, for example), since market boundaries may be uncertain.

   B. A stricter standard will be applied to markets where there is a *significant trend toward concentration*.

   C. The government will not allow the acquisition of an *important* (disturbing, disruptive, or unusually competitive) *rival* in the market.

   D. The government will allow the acquisition of a failing firm if the *failing firm* does not have a reasonable prospect for survival and there are no other buyers that would better promote competition.

   E. An *efficiency defense* will be accepted but only in exceptional circumstances.

   F. A more lenient standard will be applied for *market extension mergers* (i.e., firms selling similar products in different regions of the country).

Source: US Department of Justice, *Merger Guidelines*, Washington, DC, May 30, 1968, available at http://www.justice.gov/atr/hmerger/11247.htm

is rising, and a more lenient standard applies when one of the firms is clearly failing. An efficiency defense is possible, but only in exceptional circumstances.

The consideration of an efficiency defense was an important turning point in antimerger enforcement. The law and previous court precedents did not allow for an efficiency defense. For example, in *Federal Trade Commission v. Procter and Gamble Company* (1967), the court held that "Possible economies cannot be used as a defense to illegality."[49] Yet, recall from Chap. 18 that Williamson (1968) showed that the social gain from a relatively small cost reduction can offset the social cost of increased market power from a horizontal merger. Thus, it makes economic sense to consider the efficiency gain generated by a merger.

[49] Quote taken from Breit and Elzinga (1989, 170).

The last important piece of antimerger legislation enacted in this era is the Hart–Scott–Rodino Act (1976). It required firms of a minimum size to notify the DOJ and the FTC of their intention to merge.[50] The government then has 30 days to collect and study the evidence before making a decision whether or not the merger is an antitrust concern. When a merger is formally opposed, the government can seek an injunction to temporarily stop the merger or the case can go to trial. Today, in most cases the government works with the firms involved to reach a negotiated settlement. Advanced notification led to a dramatic drop in antimerger litigation, as Hart–Scott–Rodino effectively made the DOJ and the FTC antimerger regulators (Beuttenmuller 1979; Johnson and Smith 1987).[51]

There are many examples where firms interested in a merger have worked with the government to find a way to purge the socially undesirable aspects of the merger. One was the proposed merger between the Miller Brewing Company and the Stroh Brewing Company in 1999. To gain approval from the DOJ, a portion of Stroh's brands and assets were sold to the Pabst Brewing Company and to the Yuengling Brewing Company.[52] Given the high cost of a trial, this regulatory approach has improved the efficiency of antimerger enforcement. Since 1976 no major merger case has worked its way to the Supreme Court.

This is not to say that all cases avoid a legal challenge. For example, the DOJ formally challenged the 2003 merger between the Oracle Corporation and PeopleSoft Inc. These were companies that supply specialized software to businesses.[53] The case hinged on the definitions of the market and of appropriate potential entrants. The government identified the market to be national in scope and used a product definition that implied a market with three dominant firms: Oracle, PeopleSoft, and SAP American. Thus, the merger would convert the market from a triopoly to a duopoly. Oracle's defense was that the market was much broader: it was international and included a number of potential competitors, such as Microsoft. In 2004, a California district court judge, Judge Walker, accepted the broader definition of the market and found in favor of the merger, a decision that was not appealed by the DOJ.

The Merger Guidelines have been revised several times since 1968. The first set of revisions occurred in 1982 and 1984. A substantive change in the revisions was that they gave even greater weight to the efficiency defense.[54] According to the 1984 Guidelines (at 26,834):

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[50] Additional information on this premerger notification program can be found at http://www.ftc.gov/bc/hsr/index.shtm.

[51] Given the high cost of a trial, this is socially desirable as long as government enforcement is consistent with the law and court precedent. The National Association of Attorneys General Antitrust Enforcement (1993) questioned the desirability of giving so much power to the DOJ and the FTC, claiming that they put too much weight on efficiency and too little weight on consumer welfare and the incipiency precedent.

[52] For further detail of this complex agreement, see V. Tremblay and C. Tremblay (2005).

[53] For a more complete discussion of this case, see McAfee et al. (2009).

[54] The main difference between the 1982 and 1984 Merger Guidelines is that the 1984 Merger Guidelines clarify the efficiency defense.

Table 20.2 Summary of the Horizontal Merger Guidelines, 1982 and 1984

1. The 1982 and 1984 Merger Guidelines continue to use a structural standard but replace the four-firm concentration ratio with the Herfindahl–Hirschman Index (HHI) to measure industry concentration.

   A. A market is defined as highly concentrated when HHI is above 1,800. A merger that increases HHI by 100 points or more will likely be challenged. A merger that increases HHI from 50 to 100 points will be investigated.
   B. A market is defined as moderately concentrated when HHI ranges from 1,000 to 1,800. A merger will be investigated when HHI increases by 100 points or more.
   C. A market is defined as unconcentrated when HHI is less than 1,000. A merger in an unconcentrated market is unlikely to be challenged.

2. The 1982 and 1984 Merger Guidelines propose a "5% test" to define a market. That is, if a hypothetical firm increases its price by 5%, the market is defined to include all existing competitors that consumers would turn to within one year and all new competitors that would enter the market within one year if all existing firms increased their prices by 5%.
3. Like the 1968 Guidelines, the 1982 and 1984 Merger Guidelines consider other factors, such as the rate of technological change, the rate of industry growth, and the ease of entry. They also provide for a failing firm and an efficiency defense.
4. The 1984 Guidelines revise the 1982 Guidelines by clarifying and strengthening the efficiency defense. The 1984 Guidelines state (p. 26, 834): "The primary benefit of mergers to the economy is their efficiency-enhancing potential, which can increase the competitiveness of firms and result in lower prices to consumers. . .. [T]he Guidelines will allow firms to achieve available efficiencies through mergers without interference from the Department [of Justice]."

Source: US Department of Justice, *Merger Guidelines*, Washington, DC, June 30, 1982, available at http://www.justice.gov/atr/hmerger/11248.htm, and June 29, 1984, available at http://www.justice.gov/atr/hmerger/11249.htm

> "The primary benefit of mergers to the economy is their efficiency-enhancing potential, which can increase the competitiveness of firms and result in lower prices to consumers. . .. [T]he Guidelines will allow firms to achieve available efficiencies through mergers without interference from the Department."

The main details of the 1982–1984 revisions of the Merger Guidelines are presented in Table 20.2.[55] Besides giving greater weight to the efficiency defense, there are two additional differences of substance between the 1968 Guidelines and the revisions. First, in the revisions the Herfindahl–Hirschman Index (HHI) replaces CR_4 as a measure of industry concentration, reflecting the realization that HHI may be a better measure of concentration (as discussed in Chap. 8). In the revision, industries are categorized into three groups rather than two:

- Unconcentrated, which occurs when $\text{HHI} < 1{,}000$.
- Moderately concentrated, which occurs when $1{,}000 \leq \text{HHI} \leq 1{,}800$.
- Highly concentrated, which occurs when $\text{HHI} > 1{,}800$.

[55] The 1982 Guidelines are available at http://www.justice.gov/atr/hmerger/11248.htm; the 1984 Guidelines are available at http://www.justice.gov/atr/hmerger/11249.htm.

Table 20.3 Summary of the Horizontal Merger Guidelines, 1992 and 1997

1. The 1992 and 1997 Merger Guidelines use the same structural standard as the 1982 and 1984 Guidelines.
2. The 1992 and 1997 Guidelines define a market using the rule of a "small but significant and nontransitory" increase in price (SSNIP). Like the 1982 and 1984 Guidelines, this will be a 5% increase in price in most cases. If a hypothetical firm increases its price by 5%, the market is defined to include all existing competitors that consumers would turn to for supplies within one year. The 1992 and 1997 Guidelines also offer a more detailed discussion on how entry conditions will be considered when defining the market.
3. The 1992 and 1997 Guidelines elaborate on how a merger may diminish competition and how the government will evaluate the potential harm that may result from a merger.
4. Like the 1982 and 1984 Guidelines, the 1992 and 1997 Guidelines provide for an efficiency defense and a failing firm defense.
5. The 1997 Guidelines revise the 1992 Guidelines regarding the efficiency defense. The revision makes clear that efficiency gains can be an important justification for a merger but more clearly defines what evidence is necessary to substantiate such a defense.

Source: US Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, Washington, DC, April 2, 1992 and April 8, 1997, available at http://www.justice.gov/atr/public/guidelines/hmg.htm#22

As indicated in Table 20.2, a merger that increases HHI by 100 points or more will likely be challenged in a highly concentrated industry and will be investigated further in a moderately concentrated industry.[56] A challenge is unlikely in an unconcentrated industry. To compare these breaks with corresponding values of CR_4, note that if firms are of equal size, then $CR_4 = 40\%$ when HHI $= 1{,}000$, $CR_4 = 72\%$ when HHI $= 1{,}800$, and $CR_4 = 75\%$ when HHI $= 1{,}875$.

The second key difference between the 1968 Guidelines and the revisions is that the newer Guidelines provide a more precise definition of the market, an improvement over previous case law and the 1968 Guidelines. The newer Guidelines used the so-called "five-percent test" to identify a market. That is, a firm's competitors include (1) all firms that buyers would switch to if the firm raised its price by 5% and (2) all potential competitors that would be expected to enter the market within one year if all existing firms raised their prices by 5%.

The next set of changes occurred in 1992 and 1997 when the DOJ and the FTC worked together to make minor revisions to the Guidelines.[57] They both use the same structural standard as the 1982–1984 Guidelines (see Table 20.3), but the 1992 and 1997 Guidelines further refine the definition of a market and elaborate on how entry conditions will be considered. The only differences between the 1992

[56] Recall from Chap. 18 that when firms 1 and 2 are in the same industry and have respective market shares of ms_1 and ms_2, their merger will cause HHI to increase by $2 \cdot ms_1 \cdot ms_2$. For example, consider a market with 4 firms, 1 through 4, that have the following market shares in percent: $ms_1 = 5$, $ms_2 = 20$, $ms_3 = 40$, and $ms_4 = 45$. If firms 1 and 2 merge, this increases HHI by 100 points $(2 \cdot 5 \cdot 10)$. That is, before the merger HHI $= 3{,}750 = 5^2 + 10^2 + 40^2 + 45^2$, and after the merger HHI $= 3{,}850 = 15^2 + 40^2 + 45^2$.

[57] The 1992 and 1997 Guidelines are available at http://www.justice.gov/atr/hmerger/11251.htm.

Table 20.4 Summary of the Horizontal Merger Guidelines, 2010

1. The 2010 Merger Guidelines use a new structural standard and classify markets differently.
   A. A. A market is defined as highly concentrated when HHI is above 2,500. A merger that increases HHI by between 100 and 200 points will be investigated. A merger that raises HHI by more than 200 points will likely be challenged.
   B. A market is defined as moderately concentrated when HHI ranges from 1,500 to 2,500. A merger that increases HHI by 100 points or more will be investigated.
   C. A market is defined as unconcentrated when HHI is below 1,500. A merger in an unconcentrated market is unlikely to be challenged.
   D. A merger involving an increase in HHI by less than 100 points is unlikely to be challenged.
2. The 2010 Guidelines is considerably more nuanced than previous Guidelines. The 2010 Guidelines place less weight on the possible link between market share and economic performance. Instead, it assesses something called "upward pricing pressure" or whether the merger is likely to lead to an increase in prices of the merged firms' products. This avoids the need to define the market and serves as a simple screening device. In addition, greater attention is given to nonprice effects, including innovation and entry conditions.

Source: US Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, Washington, DC, August 9, 2010, available at http://www.justice.gov/atr/public/guidelines/hmg-2010

and 1997 Guidelines is that the latter include a more detailed description of the evidence required to justify an efficiency defense.

A more substantial revision was made in 2010.[58] As seen in Table 20.4, the 2010 Merger Guidelines have a more lenient structural standard and place less weight on the possible link between market share and economic performance. They also consider a broader set of factors when assessing the competitive effects of a merger (Farrell et al. 2010). A new screening device is whether or not a proposed merger is likely to generate net upward pricing pressure (UPP). A merger that reduces competition will put upward pressure on price, but a merger that increases efficiency will put downward pressure on price. When the net effect is an expected price increase, a merger is likely to be challenged.[59] The UPP criterion avoids the need to define the market and identify market shares and concentration, which is especially difficult in markets with product differentiation.

As expected with a common law system, the Guidelines and antimerger enforcement have changed considerably over time. Baker and Shapiro (2007) argued that enforcement fluctuated cyclically with the political climate of the country, being too leniently enforced during the 1980s and 2000s when Ronald Reagan and George W. Bush were presidents. Alternatively, Kovacic (2009) argued that a review of the history of antimerger enforcement over the last 50 years reveals a more rational

[58] The 2010 Guidelines are available at http://www.justice.gov/atr/public/guidelines/hmg-2010.html.

[59] For a discussion of the methods of measuring UPP, see Farrell and Shapiro (2010). For further discussion, see Schmalensee (2009), Carlton (2010), Epstein and Rubinfield (2010), and Willig (2011).

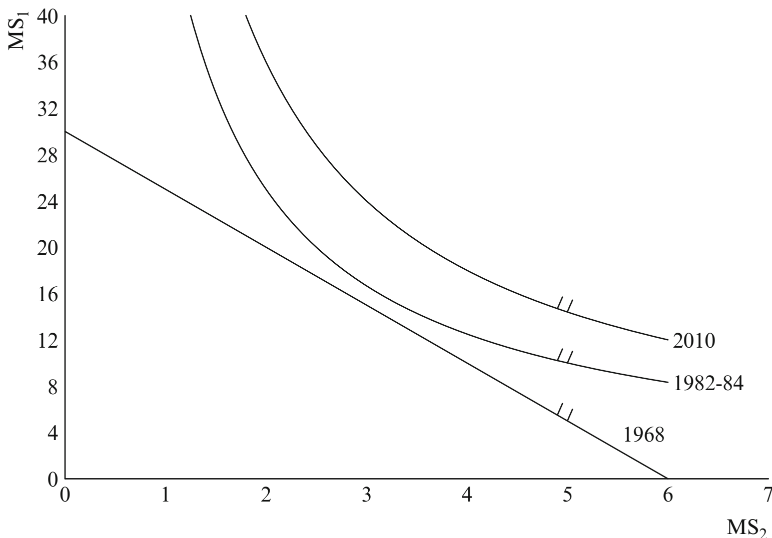

Fig. 20.1 The antimerger constraint in 1968, 1982–1984, and 2010 for a highly concentrated industry

evolution of law enforcement, one that is in keeping with the evolution to efficient laws hypothesis. That is, the Merger Guidelines and court precedents steadily progressed to produce more efficient outcomes. We take up these issues next.

It is clear that the Guidelines have become progressively more lenient since 1968. Figure 20.1 plots the antimerger constraints that would apply for highly concentrated industries under the structural standards of the 1968, 1982–1984, and 2010 Merger Guidelines.[60] The vertical and horizontal axes identify the market shares of two firms that are considering a horizontal merger, and the area above a curve identifies the pairs of market shares that would likely be challenged under each set of Merger Guidelines. For example, if a buyer's market share is 28% and a seller's market share is 1%, the merger would be challenged under the 1968 Guidelines but not under the 1982–1984 and 2010 Guidelines. A merger between firms with respective market shares of 28% and 2% would be challenged under the 1968 and 1982–1984 Guidelines but not under the 2010 Guidelines. Finally, a merger between firms with respective market shares of 28% and 3% would be challenged under all three Guidelines. Other changes also appear to have relaxed antimerger enforcement. For instance, Fisher and Lande (1983, 1,683) argued that

[60] The 2010 structural standard for a highly concentrated industry is that HHI cannot increase by more than 200 points. However, because the cutoff for a highly concentrated industry differs (is 1,800 in the 1982–1984 Guidelines and 2,500 in the 2010 Guidelines), the 2010 constraint is reduced by 38.9% for consistency. This implies that a merger would be challenged in 2010 if HHI increases by more than 144 points, 200·(1,800/2,500).

the 5% test in the 1982 Guidelines yields a broader market definition and "probably loosened merger enforcement standards far more than the change due to the different numerical [structural] standards."

As mentioned previously, some experts contend that the more lenient 1982–1984 Merger Guidelines are the result of President Reagan's appointment of William Baxter to head the Antitrust Division of the DOJ in 1981.[61] The evidence suggests, however, that this trend began in the middle 1970s with the appointment of more conservative Supreme Court justices. For example, the Supreme Court allowed a merger between General Dynamics and Material Service Corporation, principal rivals in the coal industry (*U.S. v. General Dynamics Corporation*, 1974). According to Waldman (1986, 99), "[t]he General Dynamics decision signaled that a more conservative Supreme Court would no longer automatically side with the government in all section 7 cases [of the Clayton Act]. . .." In any case, even though the new Merger Guidelines were more lenient, the government opposed several horizontal mergers during the Reagan administration. These include proposed mergers between Jones & Laughlin Steel and Republic Steel, between Mobil Oil and Marathon Oil, and between the Schlitz and Heileman brewing companies.

Baker and Shapiro (2007) argued that antimerger enforcement was too lenient during President Bush's administration. A striking example is DOJ approval of the Whirlpool and Maytag merger in 2006. Nevertheless, the Clinton administration allowed a similar merger between Boeing and McDonnell Douglas in the aircraft industry (Kovacic 2009).

One reason for the evolutionary drift in antimerger enforcement has been the emerging evidence that there can be substantial net benefits to a horizontal merger. As we have discussed, Williamson (1968) found that a merger that produces a small cost reduction can be socially beneficial even when it increases market power. In addition, Demsetz (1973, 1974) showed that more efficient firms tend to grow in size and that stifling this growth will reduce the incentive for progress. Finally, Bork (1978) and Landes and Posner (1981) spread these ideas to legal scholars. Ultimately, contributions from the new learning led the antitrust authorities to deemphasize the simple structural approach to antitrust that was associated with the Structure–Conduct–Performance paradigm and place greater emphasis on the potential benefits of a merger.

Ghosal (2007) tested for the influence of the short-run political climate and the long-run trend toward milder antimerger enforcement in the USA from 1958 to 2002. He found little support for the hypothesis that there are fewer merger challenges when there was a Republican president in office.[62] However, he did find that there was a general weakening of antimerger enforcement over time, which is consistent with the evolution of the Merger Guidelines.

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[61] For example, see Meadows (1981), Adams and Brock (1988), Krattenmaker and Pitofsky (1988), and Baker and Shapiro (2007).

[62] Although there is no support for the political cycle using merger cases, Ghosal (2007) did find support for the political cycle when the sample includes all civil cases.

Table 20.5 Antimerger enforcement and major horizontal mergers in the US Brewing

Year	Buyer	Seller	MS_B	MS_S	CR_4	HHI	ΔHHI	Successfully challenged
1957	Lucky	Fisher	2.02	0.11	24.0	272	0.4	Yes
1958	A-B	American	8.20	0.22	25.1	293	3.6	Yes
1958	Pabst	Blatz	2.99	2.00	25.1	293	12	Yes
1961	Schlitz	Burgermeister	6.42	0.81	27.4	359	10	Yes
1964	Schlitz	Lucky	8.30	1.77	32.0	432	29	Yes
1965	Falstaff	Narr.	6.23	0.76	34.5	487	9.5	
1965	Rheingold	Ruppert	4.17	0.79	34.5	487	6.6	
1965	Pittsburgh	Duquesne	0.88	0.68	34.5	487	1.2	Yes
1972	Heileman	Associated	2.73	1.89	50.8	857	10	
1978	Pabst	Carling	9.29	2.01	65.2	1,345	37	Yes
1982	Heileman	Pabst	8.11	6.87	75.8	1,909	111	Yes
1982	Heileman	Schlitz	8.11	7.98	75.8	1,909	129	Yes
1982	Stroh	Schlitz	3.41	7.98	75.8	1,909	54	
1989	Coors	Stroh	9.65	10.0	86.5	2,707	194	Yes
1999	Miller	Stroh	21.1	7.48	93.4	3,093	316	Yes
2008	Miller	Coors	21.3	12.9	94.4	4,329	549	

A-B represents Anheuser-Busch, and Narr. represents Narragansett. A firm's market share is for the closest year for which data are available. A successful challenge means that the case was successfully challenged in the courts or that the merger was abandoned due to antitrust concerns
Source: V. Tremblay and C. Tremblay (1988, 2005) and *Beer Industry Update* (2009)

Another approach is to investigate the drift in antitrust enforcement in a single industry over time. We choose the US brewing industry because rising concentration motivated close scrutiny of the industry and because some of the earliest court cases based on the Celler–Kefauver Act involved mergers in brewing.[63] Table 20.5 lists the major mergers that were investigated by the DOJ. It identifies the important characteristics of the merger, including the firms involved, the market share of the buyer (MS_B), the market share of the seller (MS_S), the four-firm concentration ratio (CR_4), the Herfindahl–Hirschman index (HHI), the change in HHI (ΔHHI), and whether the merger was successfully challenged by the government.

Evaluating these mergers based on structural standards alone, you can see that the antimerger laws have become much more lenient over time. None of the mergers before 1980 violate the simple structural standards of the 1982–1984 and the 2010 Guidelines. One reason for this tough stance is that industry concentration was rising rapidly.[64] For example, from 1950 to 1980, HHI (CR_4) rose steadily from 132 to 1,549 (22–66%). Another reason was that the incipiency doctrine was in effect, at least through the 1960s, and the courts took a tough stance against

[63] For a more complete discussion of antitrust enforcement in brewing, see Elzinga and Swisher (2005, 2011), V. Tremblay (1993), and V. Tremblay and C. Tremblay (2005).

[64] Another factor that complicated the analysis is that the beer market was regional in scope until the 1970s.

horizontal mergers to stem the tide of rising concentration. The mergers involving Heileman, Pabst, and Schlitz in 1982 that were successfully challenged would be viewed as acceptable today.

The recent case involving the Miller and Coors brewing companies involves a joint venture between the second and third largest beer companies in the USA. Based on the structural standard, it would be unacceptable, even according to the 2010 Guidelines. Nonetheless, the joint venture was approved because of the continued internationalization of the industry and the expected efficiency gains due to reduced transportation and marketing costs (Fillion 2008; C. Tremblay and V. Tremblay 2011b). Thus, additional factors come into play when scrutinizing a horizontal combination.

Evidence from brewing industry mergers demonstrates two things. First, antimerger enforcement has become more lenient over time. Early mergers that were successfully stopped would have been allowed today, and a merger allowed today would be successfully challenged in the past. Second, current enforcement puts less emphasis on the structural standard (i.e., measures of market share and concentration) and greater emphasis on other factors in deciding whether or not to challenge a horizontal merger.

In summary, it seems clear that the antimerger laws were too strict during the 1950s and 1960s. The revisions of the Merger Guidelines are in keeping with the hypothesis that (antimerger) laws evolve to improve efficiency. The 1968 Guidelines provided the business community with a more transparent structural standard. The 1982–1984 revisions added a more precise definition of the market and allow for an efficiency defense. Although there is some evidence that enforcement is influenced by the political climate of the country, the 1968 Merger Guidelines and the 1982–1984 revisions appear to be consistent with the evolution to efficient laws hypothesis. They deter the most damaging mergers and direct the DOJ and FTC to investigate mergers that are most likely to have negative social effects. The requirement that firms must notify the government of intent to merge has resulted in many cases being resolved by negotiation, avoiding the high social cost of going to court. The 2010 Guidelines relax further the antimerger constraint but also give greater weight to other factors. It remains to be seen whether or not the 2010 Guidelines are an improvement over the past.

20.2.3.4 Antitrust Assessment

It is clear from our discussion that antitrust enforcement has not remained constant. Court decisions have been influenced by politics and dramatic economic events. The most striking trend is that enforcement has become less restrictive since the inception of the antitrust laws, a trend that is supported by both theory and evidence. Theoretical research over the last several decades demonstrates that mergers and high concentration may bestow greater economic benefits than previously thought, especially in dynamic markets where technological change and international competition are common.

Although data are limited, the empirical evidence confirms that antitrust enforcement has not been cost effective, except in collusion and major merger cases. In their review of the evidence, Crandall and Winston (2003, 24) concluded that until better evidence becomes available, "[T]he Federal Trade Commission and the Department of Justice should focus on the most significant and egregious violations, such as blatant price fixing and merger-to-monopoly and treat most other apparent threats to competition with benign neglect." Although this assessment may undervalue potentially important benefits, such as the deterrent effect of antitrust enforcement that is difficult if not impossible to measure, it suggests that strict, broad-based antitrust enforcement may not be socially desirable. It also appears that the trend toward more lenient enforcement is consistent with the evolution to efficient laws hypothesis. It does not appear that further relaxation of the antitrust enforcement is warranted, however.

20.3 Regulation and Deregulation

The government enacts regulations and establishes regulatory agencies to promote a number of social goals. Some protect public safety. For example, the Food and Drug Administration of the Department of Health and Human Services regulates food safety and drug safety and effectiveness. The Occupational Safety and Health Administration of the Department of Labor is responsible for the safety and health of workers. After the 9-11 terrorist attack in 2001, the Transportation Security Administration of the Department of Homeland Security was established to improve airport security. Other agencies are set up to protect the environment, such as the Environmental Protection Agency and the Department of the Interior.

Some agencies and regulations address economic issues associated with particular industries. Regarding the banking industry, the financial crisis of 2008–2009 spawned new legislation that expanded the powers of the Federal Reserve, the Department of the Treasury, and the Federal Deposit Insurance Corporation (FDIC). One contributing factor to the crisis was that the FDIC insured most bank deposits against bank failure but failed to adequately monitor the riskiness of bank loans. Federal insurance and little oversight created a moral hazard problem, causing banks to accept too many risky loans.[65] This increased their probability of failure. The impact of loan defaults for particular banks extended further because banks form a financial network; a financial network is a public good that provides liquidity which serves as a lubricant to the overall economy. In this case, the failure of several large banks generates a negative externality. Once the recession began, a substantial number of borrowers began to default on their loans (primarily because the housing bubble burst) and banks began to fail. This diminished financial liquidity

[65] Moral hazard is the tendency of firms and consumers to exert less effort and diligence when their investments are insured against loss, damage, or theft.

(lubrication) in the economy, which contributed further to the recession. That is, individuals and companies could no longer obtain loans which further constrained demand for consumer and producer goods. To avoid this problem in the future, new legislation limits home buyers and banks from taking excessive risk and forces banks to set aside greater financial reserves to cover potential losses.[66]

There are several different types of regulations. In this section, we discuss price/output regulation that is designed to address market failure due to market power. Joskow and Rose (1989) called this "economic regulation." This is distinct from "social regulation," which is designed to protect the environment and the safety of consumers and workers, a topic we take up later in the chapter.

20.3.1 The Role of Industry Regulation

The US Constitution gives Congress the power to "regulate commerce . . . among the several states." Yet, government regulation of business did not begin until the late nineteenth century when technological change gave a cost advantage to large enterprises and increased their market power. This was especially problematic in the railroad industry, where price discrimination was common. Farmers in sparsely populated areas called for government intervention because many faced monopoly railroad providers and high prices. In addition, even though the railroads formed a cartel in the 1880s, many consumers and producers were more concerned about price instability, as this was a period when frequent price wars destroyed cartel pricing (Porter 1983).[67] In response, the Interstate Commerce Act (1887) was passed, which established the Interstate Commerce Commission to regulate railroad rates.[68]

A pivotal step in the evolution of government regulation was the landmark case of *Munn v. Illinois* (1877). This case involved a dispute over the right of the state of Illinois to set prices charged by grain elevators and warehouses. The court ruled that states have the right to regulate the prices of private firms when it promoted the "common good." This precedent was strengthened by the Supreme Court ruling in

[66] These agencies were also given greater power to oversee or regulate consumer loans, bank executive bonuses, and the percent of their investments in derivatives and hedge funds. The Federal Reserve Bank is also given the power to break up excessively large financial institutions. For additional discussion, see Davidson et al. (2010), Gordon (2010), and Paletta and Hitt (2010).

[67] Recall that cartels were legal until 1890. Porter found that railroad companies used a trigger strategy to support collusion. Given the cost of detecting cheating, collusion occasionally broke down, resulting in a temporary punishment phase of tougher competition. In addition, railroads have very high fixed costs, causing them to compete in price during periods of low demand to reduce excess capacity and help cover these costs. Thus, prices were unstable.

[68] This was amended by the Motor Carrier Act of 1935 to regulate bus lines, trucking, and common carriers.

Nebbia v. New York (1934), a case that revolved around New York's right to regulate the price of milk. The majority opinion in the case indicated that "... a state is free to adopt whatever economic policy may reasonably be deemed to promote the public welfare, and to enforce that policy by legislation adapted to its purpose."

Since then, much of the regulation of business has involved industries with demand and cost characteristics that render perfect competition impossible. On the cost side, the presence of substantial scale economies gives a cost advantage to a larger producer. This is common with public utilities, such as a water, sewer, or power company, where there are scale economies in distribution. On the demand side, the presence of network externalities, where consumer value increases with the number of users, gives a revenue advantage to larger producers. Traditional (i.e., land line) telephone service provides one example, where each consumer benefits from having more and more people connected to a company's phone network. In the extreme, these conditions make a monopoly structure the most productively efficient but also the most allocatively inefficient. This is called a natural monopoly.

Government regulation is a common response to this form of market failure. Ideally, we want a regulatory agency to promote the interests of society, which is consistent with the public-interest theory of regulation. As prescribed by the Supreme Court in *Nebbia v. New York* (1934), this is both a legal and a desirable goal of regulation.

Although the primary aim of this section is to identify regulatory policies that improve social efficiency, there is evidence to show that regulators do not always act in this way. In fact, much of the empirical evidence shows that regulation has been pro-business.[69] This led to the **capture theory of regulation** which argues that regulation serves the industry either because it is set up in response to the industry's demand for regulation (that creates legal barriers to entry) or because regulators come to be controlled by the industry over time (Bernstein 1955). This theory appears to explain transportation and public utility regulation. The airline industry provided an ideal experiment, because airfare regulation applied to interstate but not intrastate travel. A comparison of airline rates for flights of comparable distances within the state of California and across state lines revealed that regulation led to considerably higher fares. For example, in the mid-1970s Pacific Southwest Airlines (PSA) offered service within California at about half the price of interstate flights offered by airlines that were subject to regulation (Breyer 1982). Nevertheless, the capture theory does not explain all forms of regulation: social regulation has generally lowered industry profits.

The failure of the public-interest and capture theories to fully explain regulatory behavior led economists to seek a better theory. The most prominent is the interest-group theory, discussed at the beginning of the chapter, which emphasizes political and economic causes of regulation.[70] Developed by Stigler (1971), Posner (1974),

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[69] Since the seminal work by Stigler and Friedland (1962), there have been hundreds of studies on the economic effect of government regulation. For a review of the evidence, see Jordon (1972), Joskow and Rose (1989), Winston (1993, 1998), and Viscusi et al. (2005).

[70] See Noll (1989a, b) for a review of the political causes of regulation.

Peltzman (1976), and Becker (1983, 1985), the theory consists of three important parts. First, government has the power to control the supply of regulation, which transfers wealth among members of society. Second, the behavior of government officials is driven by a desire to remain in office. In other words, their goal is to maximize their political support or political capital. Third, business and other interest groups demand legislation which favors their interests. The end result is that regulation need not be efficient. It will favor interest groups that are more influential, are better organized, and have more to gain from a particular piece of legislation. *Ceteris paribus*, legislation will favor groups (1) with more political power, (2) with fewer numbers, because a smaller group is easier to organize, and (3) that have much at stake.[71]

How these political forces play out depends on the relative importance of these factors but also on the structure of the market. Producers in competitive industries have more to gain from regulation that raises price and limits entry, while consumers have more to gain from the regulation of monopolies. Thus, we would expect to see more regulation at the extremes of market structure, competitive and monopoly markets. Nevertheless, in many markets there are more consumers than producers, and an individual firm typically has much to gain from regulation compared to an individual consumer. When this happens, regulation will be established to favor producers and at the expense of consumers and may reduce total surplus.

Although the interest-group theory is an important advancement, it is still incomplete and not always consistent with the evidence. For one, it ignores the role of the courts. For instance, deregulation of the airline and telecommunications industries in the 1970s and 1980s did not have the support of Congress but moved forward because of judiciary approval (Ladha 1990). In addition, deregulation of trucking in 1980 appears to be inconsistent with the interest-group theory. The industry and its unions were earning large rents from regulation, and consumers of trucking services had not gained political power during the time of deregulation. Thus, the motives for regulation and deregulation are not fully understood.

With this caveat in mind, we proceed by using what Demsetz (1969) called the nirvana approach to public policy. That is, we identify regulatory solutions to problems of market failure, ignoring the cost of government. In the case of a natural monopoly, for example, this means that our goal is to identify a policy that reduces the deadweight loss due to monopoly power, ignoring the direct cost of regulation. We will, however, briefly discuss the unintended side effects of regulation and the benefits of deregulation later in the chapter. The nirvana approach serves as a useful starting point for policy analysis by identifying potentially desirable solutions to a particular problem. Again, a complete analysis would require a comparison of all benefits and costs of alternative regulatory options.

[71] In other words, individual consumers and voters have little influence on the political process. As Noll (1989, 1263) notes, “The central problem of a citizen in dealing with government is powerlessness.”

20.3.2 Natural Monopoly Regulation

A valid argument for the economic regulation of an industry is the presence of a natural monopoly, which exhibits large-scale economies relative to the size of the market. Such a situation is illustrated in Fig. 20.2, where D is demand, MR is marginal revenue, AC is long-run average cost, and MC is long-run marginal cost. As we saw in Chap. 6, a natural monopoly exists when it is productively efficient for there to be just one producer in the industry.[72] That is, a single firm produces at lower unit cost than two or more firms in an industry. Unfortunately, a single producer will set the monopoly price, which is allocatively inefficient. That is, a profit maximizing monopolist will produce where marginal revenue equals marginal cost, at output (q^*) and price (p^*) in the figure. This creates a deadweight loss equal to area AEC. There is a clear trade-off, because fewer firms improve productive efficiency but lower allocative efficiency, making it a prime candidate for government regulation.

What regulation would be optimal? Assuming a single output producer, allocative efficiency requires that price equal marginal cost. Thus, one solution is for the regulatory authority to use a **marginal-cost pricing rule**. This sets price equal to marginal cost (p_{MC}) and requires the firm to supply all that is demanded at that price (q_{MC}). Notice that with this rule the firm is losing money because the price is below its average cost of production at q_{MC}. The firm will either exit the market or it will need to be subsidized. It is certainly undesirable for the firm to exit the market. In addition, to finance the subsidy requires government taxation in the form of a sales tax on other goods or an added income tax on consumers or firms. Thus even though marginal-cost pricing produces an ideal or first-best solution from society's perspective, it is not considered a viable solution to the natural monopoly problem.[73]

A more practical solution is to regulate the price so as to maximize total surplus (or minimized the deadweight loss due to monopoly) subject to the constraint that profits are not negative. This is called **Ramsey pricing** (Ramsey 1927). For a single product producer as in Fig. 20.2, Ramsey pricing implies setting price equal to average cost at the point where it crosses the demand function (p_{AC}) and requiring

[72] This does not mean that there must be economies of scale throughout the entire region of market demand. It simply means that industry costs are minimized when there is just one producer. When this occurs, the cost function is said to be subadditive (Baumon 1977; Braeutigam 1989; Viscusi et al. 2005, 404–408).

[73] Along similar lines, Robinson (1933) proposed the following solution. Much like a Piguovian tax (Pigou 1920), the regulatory authority provides the monopolist with a per-unit subsidy sufficient to induce the firm to produce the socially optimal level of output. This eliminates the deadweight loss. To prevent the monopolist from profiting from the subsidy, the regulatory authority imposes a lump-sum tax that is sufficient to reduce the firm's profit to zero. The drawback with such a policy is that it requires knowledge of the appropriate subsidy and tax. An alternative solution would be for the firm to engage in perfect price discrimination. This too would eliminate all deadweight loss but would favor the producer over the consumer (Braeutigam 1989).

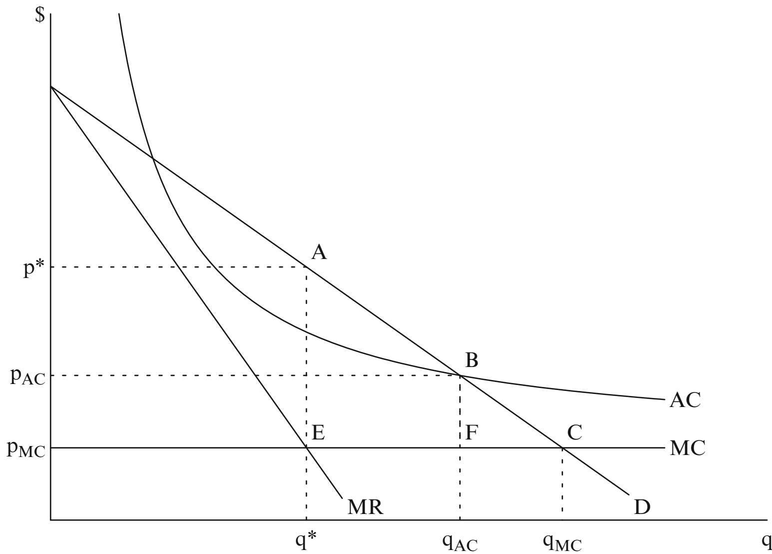

Fig. 20.2 Natural monopoly and price regulation

the firm to produce all that is demanded at that price (q_{AC}).[74] This is an **average-cost pricing rule**, which is a second-best solution. Although some deadweight loss still remains (equal to area BFC), it avoids the need to subsidize the firm.

Second-best pricing is more complicated when the firm is a multiproduct producer. When the firm produces a variety of products or markets a single product in a variety of locations, the Ramsey pricing rule for product *i* becomes,

$$\frac{p_i - \mathrm{MC}_i}{p_i} = \frac{k}{\eta_i}, \tag{20.1}$$

where η_i is the absolute value of the price elasticity of demand for product *i* and *k* is a positive constant that ranges from 0 to 1.[75] Note that setting $k = 1$ produces the unregulated monopoly solution, and setting $k = 0$ eliminates all deadweight loss due to monopoly (i.e., $p_i = \mathrm{MC}_i$). A Ramsey pricing rule requires that the monopoly markup over marginal cost in each market be scaled down by *k* until profits are zero.

The Ramsey pricing rule has been used for many years in the railroad industry, where it is called "value of service" pricing. It is common for rail rates per pound to be relatively low for products with elastic demand functions (i.e., high η_i), such as

[74] Demsetz (1968) showed that this outcome could also be reached if there was competitive bidding to serve the market, with the winner being the firm that offered to serve the market at lowest price. Sufficient competition would then drive the winning bid to average cost.

[75] We derive this rule in Appendix 20.A.

gravel and potatoes, compared to products with more inelastic demand functions, such as liquor and electronics equipment. The main weakness with using this approach to regulate prices is that it requires estimates of the price elasticity of demand for every product.

Another method that has been commonly used in public utilities is to regulate the firm's rate of return. For a firm that produces m products, this approach is based on the following accounting equation:

$$\sum_{i=1}^{m} p_i q_i = \mathrm{OE} + r \cdot B, \tag{20.2}$$

where OE is the firm's operating expenses, B is the value of the firm's investment capital (i.e., its base), and r identifies the firm's rate of return on its investment. Given OE and B, under **rate-of-return regulation** the regulatory agency or commission decides on the rate of return on the firm's investment and on a set of output prices so that the equality in (20.2) holds. Assuming that the regulatory agency acts in the interest of society, it will choose a "fair" rate of return, one which earns the firm zero economic profit. In the 1980s, for example, the Federal Communications Commission (FCC) identified a fair rate of return at $r = 12.2\%$ (Viscusi et al. 2005).

Once r is chosen, rate hearings are held between representatives of the firm and the regulatory commission to decide on prices. Assuming a single product producer, the price will be set so that the firm earns a fair rate of return (zero economic profit), which is identical to the Ramsey price. For a multiproduct producer, there are a variety of price combinations that satisfy (20.2), not all of which are consistent with Ramsey pricing.

Rate-of-return regulation creates serious incentive problems because it is basically a cost-plus form of regulation. With a guaranteed rate of return, X-inefficiency may result as there is little incentive for the firm to minimize costs. If the firm behaves irresponsibly, resulting in a cost increase, the right-hand side will exceed the left-hand side of (20.2). To avoid a fall in the firm's realized rate of return, the firm can simply make a request to increase price(s). Of course the regulatory commission can deny the increase if it believes that the firm's request is motivated by X-inefficiency. However, most requests to increase prices are approved.

Another way of looking at this issue is to realize that rate-of-return regulation is designed to encourage the firm to reduce its profits by increasing its output (i.e., lower its profit by choosing a higher level of output and lower price). This is socially desirable because it reduces deadweight loss. But the firm can also reduce its profit by wasting inputs, assuming it can get away with it. Averch and Johnson (1962) showed that not only does the firm have little incentive to minimize its use of inputs but rate-of-return regulation also encourages it to use too much capital relative to other inputs. This overcapitalization result is called the **Averch–Johnson effect**.[76] Although there is limited evidence that there has been overcapitalization in the

[76] For a more complete discussion, see Takayama (1969) and Sherman (1992).

electric utility industry, there is general agreement that rate-of-return regulation tends to increase costs.[77] For this reason, regulators in the USA have been moving away from this form of regulation.

Some economists recommended deregulation while others looked for better ways to regulate. Regulatory refinements began with Littlechild (1983) and Sappington (1983). These are called **incentive regulations**, which identify policies that reduce deadweight loss and encourage the regulated firm to minimize cost (increase innovation and improve quality). Here, we focus on the most popular type of incentive regulation, price cap regulation.[78]

Price-cap regulation requires that the regulatory commission set a maximum price, which is recalibrated on periodic intervals, usually several years, according to a specific formula. The price-cap formula is based on the expected inflation rate and the expected cost reduction due to technological change in the industry during the period. By severing the link between prices and costs, the firm can now keep any profit gained from a cost reduction. Thus, it has an incentive to minimize costs.[79]

The main difficulty with price-cap regulation is determining the expected cost reduction for the regulatory period. Setting the cost reduction factor too high will put undue financial stress on the firm. Setting it too low creates excessive deadweight loss. What is generally done is to look at historic productivity growth plus an adjustment factor based on current and expected future circumstances.

In March 1989, the FTC approved the right of states to replace rate-of-return regulation with price-cap regulation in the telecommunications industry. Table 20.6 shows that price-cap regulation has come to replace rate-of-return regulation over time. Although change has been gradual, it is consistent with the evolution to efficient laws hypothesis discussed previously, because incentive regulation is more efficient than rate-of-return regulation.

20.3.3 Economic Deregulation

A deregulation movement began in the late 1970s and continues to have a dramatic effect on the US economy. Legislation to deregulate began in the transportation sector, which included airlines (Air Cargo Deregulation Act, 1977, and Airline Deregulation Act, 1978), trucking (Motor Carrier Act, 1980), and railroads

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[77] To review the evidence, see Stevenson (1982), Jones and Biases (1983), Joskow and Rose (1989), Winston (1993, 1998), and Viscusi et al. (2005).

[78] A number of types of incentive regulations have been proposed, with some being more practical than others. For a review of the literature, see Vogelsang (2002), Viscusi et al. (2005), and Sherman (2008).

[79] This idea derives from Baumol (1967), who observed that a regulatory lag (i.e., the lag between the time in which a regulated price can change) creates an incentive for the firm to minimize its costs. During the period between regulatory meetings, any cost reduction leads to higher profits which will persist until the next regulatory meeting.

Table 20.6 Number of US states using different regulations in the telecommunications industry

Year	Rate-of-return regulation	Price-cap regulation	Other
1985	50	0	0
1990	23	1	26
1995	18	9	23
2000	7	40	3

Source: Sappington (2002)

(Staggers Act, 1980). The movement soon carried over to banking, cable TV, natural gas, oil, radio, and telecommunications. Viscusi et al. (2005) provided a summary, identifying over 40 pieces of deregulation legislation from 1971 to 2000. Moreover, the percent of GDP produced by fully regulated industries fell from 17% in 1977 to just 6.6% by 1988.[80] Whinston (1993, 1263) called this "one of the most important experiments in economic policy of our time."

Several reasons are given for the deregulation movement in the USA. According to political scientists Derthick and Quirk (1985, 36), economic deregulation "would never have occurred" if not for the convincing criticism of regulation by academic economists. Theoretically, the capture and interest-group theories of regulation questioned whether a regulatory commission could promote the interest of society. In addition, contestable market theory, which was developed in the 1970s, showed that there will be no market power in a natural monopoly when sunk costs are zero (Baumol et al. 1982). This is a dubious assumption, but the contestable market model provided additional impetus for deregulation (see Chap. 5). As discussed previously, the empirical evidence shows that regulation often promoted the welfare of industry or special interest groups over society. Noll (1989a) added that another motive for deregulation was a change in the political climate of the country, as it was becoming more supportive of free enterprise. The deregulation movement actually started with President Carter, a Democrat, and continued with President Reagan, a Republican.

In any case, the general effect has been positive. Winston (1993, 1998) reviewed the evidence in transportation, communications, finance, and energy. Table 20.7 provides a summary of his findings, listing the degree of public support for a particular type of deregulation and the benefits to consumers and producers.[81] It indicates that there was considerable public support for deregulation of the airline and telecommunications industries, consistent with evidence that the annual gain to

[80] It is important to realize, however, that although there was a general trend toward deregulation, government restrictions on business persisted to varying degrees throughout the economy. Not only did antitrust enforcement continue, but there has also been a trend toward increased social regulation of health, safety, and the environment (Gruenspecht and Lave 1989). In addition, Gattuso (2010) reported that the Obama administration has increased government regulation and red tape dramatically in response to the 2008–2009 financial crisis.

[81] These estimates ignore the additional benefit that would occur if unregulated markets were to behave optimally.

Table 20.7 Public support and annual welfare effects of deregulation (billions of 1990 dollars)

Industry	Consumers	Producers	Total	Public support for deregulation
Airlines	(8.8, 14.0)	4.9	(13.7, 19.7)	69%
Railroads	(7.2, 9.7)	3.2	(10.4, 12.9)	n.a.
Trucking	15.4	−4.8	10.6	n.a.
Telecommunications	(0.73, 1.6)	0	(0.73, 1.6)	52%
Cable television	(3.7, 1.3)	0	(0.37, 1.3)	47%
Brokerage	0.14	−0.14	0	n.a.
Total	(32.6, 43.0)	3.2	(35.8, 46.2)	

Note that the numbers in parentheses indicate a range of estimates, and n.a. means not available. Public support for deregulation is in response to the question: has deregulation generally worked in or against the public's interest?
Source: See Winston (1993). In addition, Winston (1998) found that regulation caused operating costs in banking to decline by 8% and operating and maintenance costs in the transmission and distribution of natural gas to decline by 35%

society has been large, at least \$36–\$46 billion. This translates to a 7–9% improvement in productivity in these areas of the economy.[82] The success of deregulation in the USA led to a deregulation movement in Japan and among some members of the European Union. As Noll (1989b) cautioned, however, the case for deregulation is industry and regulation specific. The evidence should not be taken to mean that society gains from all forms of deregulation and for every industry. A prime example is the excessive deregulation of the financial sector, which began in the 1990s and contributed to the financial crisis of 2008–2009.

In any case, given evidence of the social gains in certain sectors of the economy, you might ask why deregulation in these industries did not occur sooner. One reason is that many academic economists did not become convinced of the benefits of deregulation until the 1960s. It may have taken additional time for policymakers to become sufficiently persuaded that the benefits outweighed the costs of deregulation. Under the public-interest theory of regulation, Noll (1989a, 1260) pointed out that deregulation will occur when it becomes apparent that "the costs of regulation exceed . . . the cost of repealing it plus the costs of the remaining market failure." In addition, Joskow and Rose (1989) noted that regulatory systems respond slowly to new economic and political environments.

Unfortunately, we are unable to determine conclusively whether the deregulation movement in the USA favors the public-interest over the special-interest theory of regulation/deregulation. Given lags in awareness of the substantial gains from deregulation, the deregulation movement is consistent with the public-interest theory. However, Peltzman (1989) argued that the evidence is not inconsistent with the special-interest theory either. First, consumers clearly benefitted from deregulation, and consumers became better organized in the 1970s under such consumer advocates as Ralph Nader. Second, many, although not all, producers

[82] According to Noll (1989a, b) and Winston (1993), the evidence also shows that labor generally benefited from deregulation.

benefited from deregulation; Peltzman argued that many industry leaders began to realize that regulation had become excessively burdensome. Thus, there was diminished interest group support and, therefore, political support for regulation.

We can draw two final conclusions from the US deregulation movement. First, the success of deregulation shows that society's interests were well served by economists' recommendation to eliminate certain types of regulation. Second, the movement clearly improved economic efficiency, which is consistent with the evolution to efficient laws hypothesis.

20.4 Social Regulation

Most of our attention has been devoted to issues of static and dynamic efficiency. However, as we discussed in previous chapters, issues of fairness and concerns with the environment are also important social goals. For example, a technological change can lead to greater wealth but also to higher levels of pollution and an increased risk of war. As a society, we must make trade-offs between economic growth and regulations that address a broader range of social concerns. In this section, we limit our discussion to regulations that are designed to curb firm behavior that is detrimental to consumers, issues that are most relevant to the field of industrial organization.[83]

Evidence from behavioral economics shows that consumers do not always make decisions that are in their long-run best interest. We have seen that some consumers make systematic errors, are influenced by context and inertia, and have self-control problems. One of the main goals of this book has been to show how rational firms exploit these weaknesses. This opens the door to policies or social regulations that are designed to help consumers make better decisions. It is in the area of consumer policy that behavioral economics has been most valuable.

A serious weakness of the Sherman and Clayton acts was that they failed to address unfair business practices that can harm consumers. We saw in Chap. 19 that some firms have made false claims and engaged in fraud, actions that clearly harm consumers. To correct this policy shortcoming, the Federal Trade Commission Act (1914, as amended by the Wheeler–Lea Act in 1938) was enacted, making it illegal for a firm to engage in fraud, deception, and unfair business practices. In addition, the consumer movement, which gained steam in the 1960s (Nader 1973), led to increased legislation to protect consumers.

In this section, we review examples where firms have used unfair practices to exploit consumers and describe various public policy responses. We begin by addressing issues that are directly related to consumer protection. Next, we address social concerns with deception and advertising.

[83] For a more complete discussion of the economics of social regulations, see Asch (1988), Gruenspecht and Lave (1989), Greer (1992), Viscusi et al. (2005), and Sherman (2008).

20.4.1 Pricing and Packaging Behavior

An early concern with firm behavior was pricing policies designed to confuse the customer. Friedman's (1966) study clearly illustrates the problem. In 1965, he asked 33 college students to pick out the most economical packages of 20 grocery store items. To get a feel for how difficult it was to be a cost-minimizing shopper in the early 1960s, you need to realize that consumers might face the following set of prices for boxes of detergent: 25 jumbo ounces for $0.53, 1 pound for $0.59, or 28½ full ounces for $0.57. In spite of their above average education, the average student in Friedman's study had difficulty identifying the lowest price option and spent 9.1% more than they should have spent. This is not surprising given the use of weight and volume for the same commodity, the use of fractions to measure quantities, and no clear definition of the adjectives "jumbo" and "full." By making it so costly to find the lowest priced item, firms are exploiting people's bounded rationality to benefit themselves at the expense of consumers.

These labeling tactics led to the passage of the **Fair Packaging and Labeling Act (1966)**.[84] It requires that the net quantity be clearly labeled and expressed in a unit of measure that is appropriate for the product. In addition, many states have unit-pricing laws, which require supermarkets to indicate not only the price of a packaged good but also the price per unit of weight or volume.[85] For example, at a local store a 16 ounce box of Captain Crunch breakfast cereal sold for $6.29 and a 13.5 ounce box of Special K sold for $4.39. The different container sizes make it difficult to tell which is cheaper per ounce. Unit-pricing laws require stores to also list the price per ounce, which is $0.393 for Captain Crunch and $0.325 for Special K. If cost is the only consideration, Special K is the better buy.

Similar concerns led to the **Truth in Lending Act (1968)**, which promotes the informed use of consumer credit. To minimize cognitive errors, it requires lenders to disclose the terms of a loan and to define the cost of a loan as an annual percentage rate (APR). Thus, a lender cannot offer you a loan for an interest rate of 1.5% per month, hoping that you will not realize that it is a very high rate of interest on a yearly basis, an APR of over 16%.

20.4.2 Behavioral Economics and Credit Cards

Bar-Gill (2004) used evidence from behavioral economics to make a case for greater regulation of the credit card industry. Bar-Gill argued that the abuse of credit cards gets many people into financial trouble because of a variety of cognitive

[84] In addition, since 1994 the Food and Drug Administration has required firms to list basic food facts on their labels. The Nutrition Labeling and Education Act (1990) extended labeling requirements to dietary supplements.

[85] To see the details of state laws, see http://ts.nist.gov/WeightsAndMeasures/pricinglaws_guide.cfm.

weaknesses. Many consumers have imperfect self-control, leading to excessive borrowing. This abuse is compounded for those who behave in a time-inconsistent manner or are prone to overestimate their willpower in the future (i.e., they consequently underestimate their future borrowing). Another problem is that some people simply forget to pay their bills on time, causing them to incur late fees and interest charges.

To exploit these weaknesses, credit card companies have devised a number of strategies. They offer unsolicited cards to high risk consumers with annual fees, reward programs, and low initial interest rates. They also levy expensive late charges and high interest rates once the promotional period expires. Thus, forgetful consumers pay high late charges, and consumers with self-control problems pay much higher interest rates than they would with a traditional bank loan.

Concern that credit card issuers exploit the most vulnerable consumers coupled with the financial crisis of 2008–2009 led to the passage of the **Credit Card Act (2009)**.[86] Provisions of the Act include:

- Requiring greater transparency in terms of interest rates and late charges.
- Reducing spending rewards and requiring higher up-front charges and annual fees.
- Giving consumers clearer due dates and more time to pay their monthly bill before incurring a late fee.
- Substantially limiting credit cards for consumers under 21 years of age.

These provisions address many of the concerns with the credit card industry that are raised by behavioral economists.[87]

20.4.3 Behavioral Economics and Libertarian Paternalism: Framing and Inertia

When searching for a policy solution to the behavioral weaknesses of consumers, we must remember that there can be a trade-off with paternalistic protection. Both protection and liberty are valuable, but greater protection generally means less freedom. Thus, social philosophers continually debate where policy lines should be drawn. For example, Mill's Principle implies that laws that limit individual freedom should be

[86] For a more complete discussion, see the White House Fact Sheet, *Reforms to Protect American Credit Card Holders*, available at http://www.whitehouse.gov/the_press_office/Fact-Sheet-Reforms-to-Protect-American-Credit-Card-Holders/.

[87] For a discussion of concerns with the behavioral policy approach, see Wright (2007), Werden et al. (2010), and Salinger (2010). Wright argues that paternalism will reduce learning and the incentive to behave rationally, which makes for less effective consumers in the long run.

enacted only to protect harm to others, not to protect us from ourselves. This principle is based on the belief that individuals know better than the state what is best for them. At the same time, evidence from behavioral economics suggests that too much freedom can be harmful.

In response to these concerns, Thaler and Sunstein (2003, 2008) made a strong case for paternalism that corrects behavioral errors while minimally constraining freedom. They call this "libertarian paternalism." To illustrate, they consider the problem that every elementary school administrator (or manager of a large corporation) faces: how food should be arranged in the cafeteria. School officials might face the following options:

1. Place fruit first and dessert last on the cafeteria line.
2. Randomly arrange food along the cafeteria line.
3. Place dessert first and fruit last on the cafeteria line.

If people were fully rational, their choices would not be affected by how food items are placed. However, behavioral economics shows that framing effects do matter; we choose more fruit and less dessert under option 1. Given the obesity problem in the USA, the first option is best for students and society in the long term. A decision to choose option 1 is paternalistic, because it is designed to influence student behavior in a way that makes them better off. Moreover, it is a form of libertarian paternalism because it does not coerce anyone to do anything. Students are free to buy as much dessert as they want under each option. Thus, Thaler and Sunstein argued that not even a libertarian like Mill would object to this type of paternalistic policy.

A high stakes example involves employee choice of a pension plan. When employees become eligible to participate in a 401k pension plan, companies may offer one of two different default options: (1) Employees are not automatically enrolled in the plan. To participate, they must fill out a form to enroll. (2) Employees are automatically enrolled in the plan. If they do not want to be a part of the plan, they must fill out a form to opt out. Given problems with procrastination and inertia, most people stay with what is automatically set up for them. Madrian and Shea (2001) found that enrollments in 401k plans were 49–86% higher for option 2 than option 1. This research and the work by Thaler and others led to the **Pension Protection Act (2006)**, which encourages companies to set up pension plans using defaults that are better for employees.[88]

The behavioral approach also justifies laws that require a cooling-off period before certain contracts or purchases can be finalized. Such rules are based on the idea that a consumer who makes a purchase in an emotionally hot state would not do so in cooler or more rational state. For example, people who are shopping for a

[88] Thaler and Sunstein (2008) argued that this approach applies to all consumer decisions that are complex. For example, they advocate that if senior citizens are required to enroll for a drug benefit program, they should be given a limited number of options and the default should be a sensible one.

new car and are susceptible to a forceful sales pitch may end up making a purchase that they later regret. Knowing this tendency, a shopper may decide to bring along a knowledgeable friend who can dampen the emotional heat generated by the salesperson. One cannot use this strategy when a door-to-door salesperson comes to your home unannounced, however. These behavioral issues are addressed by cooling-off laws, which give consumers three days to cancel a purchase that was made in your home or when you purchase real estate, insurance, or a security.[89]

20.4.4 Behavioral Economics and Asymmetric Paternalism: Selectively Limiting Choices

To address different policy concerns that are relevant to behavioral economics, Camerer et al. (2003) proposed something called "asymmetric paternalism." A policy that is asymmetrically paternalistic constrains uninformed or cognitively challenged consumers from making mistakes without constraining the choices of rational and informed individuals. Classic examples include laws that constrain the consumption opportunities of children but not adults. Because children are cognitively developing and are frequently uniformed, it is illegal for children to buy alcohol and cigarettes. Similarly, to legally drive a car you must be of a certain age and pass both a written and a driving test.

As Camerer et al. (2003) and Thaler and Sunstein (2003, 2008) pointed out, however, paternalistic policies are always problematic. Restrictions that go beyond libertarian paternalism raise the question of where to draw the line and who should draw it. Mill would be more worried about protecting us from the state than from ourselves. Even if we could trust the state with this task, we would still need to ask whether the benefits exceed the costs of government involvement.

There is particular concern with asymmetric paternalism, because it treats people differently and opens the door for the majority or the state to levy unacceptable restrictions on certain groups. For example, in the nineteenth century married women were deemed incapable of entering into contracts on their own (Camerer et al. 2003, 1213). For over a century, various rationales were used to justify unfair and asymmetric treatment of African-Americans. During World War II, the law was changed to take away the freedom and property of American citizens of Japanese descent. Of course, such restrictions are inconsistent with our view of asymmetric paternalism today. Nevertheless, fairness considerations require careful scrutiny of any asymmetric treatment of individuals.

[89] For further discussion, see the FTC's statement on the cooling-off rule at http://www.ftc.gov/bcp/edu/pubs/consumer/products/pro03.shtm.

20.5 Social Concerns with Advertising

As we discussed in previous chapters, the welfare effect of advertising hinges on a number of factors. Advertising that is honest and informative is beneficial to consumers and helps markets perform more efficiently, while that which is dishonest, deceptive, or offensive is harmful to consumers and society. Moreover, advertising that encourages unhealthy behavior, such as smoking, excessive alcohol consumption, and poor dietary habits, is undesirable. These varying benefits and costs make policy analysis of advertising rather difficult. Another facet of advertising is that it is a form of communication, and as such, any restriction on advertising raises the issue of freedom of speech. In this section, we begin by reviewing what we learned about social concerns with advertising, and then we discuss advertising regulations.

20.5.1 Advertising and Social Responsibility

In Chap. 4, we learned how advertisements that are salient, particularly those with emotional content and appeal to biological needs, would be most effective at generating sales. Unfortunately, such ads may be socially offensive. In many consumer goods industries, firms use romance and sexually provocative ads to increase sales. We saw in Chap. 16 that the 1911 advertising for Woodbury soap featured a young woman in the company of several handsome youngmen with the caption, “Skin You Love to Touch.” In addition, recent Calvin Klein perfume ads and Paris Hilton’s ads for Carl’s Jr. have been sexually charged.

To attract the attention of a targeted audience, we saw in Chaps. 16 and 19 that some ads use stereotypes that promote sexism, racism, and ageism. In the 1950s, the spokesperson for Aunt Jemima pancakes was an African-American woman who was depicted as a servant. In the 1960s, the spokesperson for Frito corn chips was the “Frito Bandito,” a Hispanic cartoon character depicted as a criminal. In 1992, the Heileman Brewing Company introduced “Crazy Horse Malt Liquor,” a name that offended Native American people because Crazy Horse is another name for Tasunke Witko who is a revered defender of the Lakota Sioux people.[90] In 2006, Sony introduced a white version of its PSP game system to complement its black version with an ad that featured a blond white woman dominating a subordinate African-American woman with the caption “PlayStation Portable White is Coming.”

[90] For a more complete discussion of the politically incorrect marketing actions of US beer companies, see V. Tremblay and C. Tremblay (2005, 2007).

Supporters of advertising claim that these ads simply reflect the cultural norms in our society and do not promote or reinforce racism and sexism. Nevertheless, such ads remain a policy concern if they are contributing factors.

Advertising is also a social concern when it is false and deceptive. In Chap. 19, we presented many examples where firms have used deceptive business practices to exploit consumers. These included false claims about the effectiveness of diet pills and devices to boost the gas mileage of your car. In most of these cases, it is uneconomic for consumers to obtain complete information about product characteristics before purchase.

But even in case of false claims, Posner (1973) argued that no government involvement is necessary. His position is based on the argument that competition among firms and the response by rational consumers will deter firms from behaving deceptively. That is, profit maximizing firms will consider the fact that fully rational consumers will boycott dishonest firms, an especially effective form of discipline when repeat purchase is common. If the future is sufficiently important, a firm will want to treat its customers fairly. Although it may be profitable today to water down quality (because it lowers current costs) or make false claims (because it raises current demand), it will reduce repeat purchases, which lowers demand and profits tomorrow. As a result, reputable firms will not cheat their customers. Instead, they will develop quality name brands and guarantee their products in response to these information problems.[91] Thus, honest firms succeed and dishonest firms fail in the long run.

However reasonable Posner's argument sounds, there are two counterarguments to his position. First, a firm that is planning to go out of business or that cares little about the future will benefit financially from cheating customers. As we discussed in Chap. 14, consumers are not always able to avoid fly-by-night companies, because such companies can be difficult to identify.

The second counterargument to Posner's position derives from behavioral economics evidence. Even when the future matters to firms, confirmation bias may cause a sufficient number of consumers to ignore negative outcomes, which can delay the dissemination of information about deceptive business behavior. Nagler (1993) showed that businesses offering bad deals can survive because it frequently takes time for deception to become apparent, and once apparent some consumers are psychologically unwilling to admit to themselves and others that they were deceived. In this case, accurate information about deceptive marketing tactics may not be spread throughout the market, allowing deception to persist for a considerable period of time. Furthermore, Salop and Stiglitz (1977) demonstrated that firms offering bad deals can survive in markets with informed and uninformed consumers as long as there is a continuous supply of uniformed consumers.

Much of the discussion about deception involves a firm's use of advertising. Clearly, ads that make false and deceptive claims benefit the firm at the expense of consumers in the short run. This is why the Federal Trade Commission Act (1914,

[91] For the remainder of the chapter, we will discuss problems associated with information and advertising. For those interested in issues of product safety, see Asch (1988).

as amended by the Wheeler-Lea Act in 1938) makes fraudulent, unfair, and deceptive ads illegal. Unfortunately, defining what is false and deceptive can be tricky. As we saw in Chap. 16, three conditions must be met for an ad to be deemed false and deceptive from a legal standpoint. First, it must present or omit information that is likely to mislead consumers.[92] One example is the "bait and switch" tactic where a seller entices customers to a store with a low price offer that the firm has no intention of honoring. Once in the store, customers are told that the advertised product is sold out and are persuaded to buy a higher priced substitute. Another example is when a firm fails to disclose to consumers a product defect that is known to the seller.

Second, the ad must be viewed as deceptive from the viewpoint of a targeted group or "reasonable consumer."[93] As we discussed in Chap. 16, this concept is a bit nebulous. For example, it can be very difficult for a reasonable consumer to identify a domestic car, because not every part in a domestic car derives from the USA. To avoid deception, the FTC requires that to market a car as domestic, all "significant parts and processes" must be of US origin ("Complying with the Made in the USA Standard," at http://www.ftc.gov/). On the other hand, a reasonable consumer is expected to realize that a French pastry is simply a French style pastry that is made locally. Thus, marketing it as a French pastry is not illegal. The evidence from behavioral economics raises the concern that consumers who fall below the reasonable consumer standard may be deceived, however.

A reasonable consumer is expected to see through ads that use puffing as a marketing ploy. As we saw in Chap. 19, this applies to claims that are not easily measurable and frequently use adjectives such as best, perfect, exceptional, original, and wonderful. A classic puff is Minute Rice's claim of "Perfect Rice Every Time." The reasonable consumer principle played a prominent role in deciding the case involving Listerine mouthwash, which was said to "Kills germs by millions on contact" and "For general oral hygiene, bad breath, colds, and resulting sore throats." The FTC effectively argued that these statements would mislead a reasonable consumer into believing that Listerine could prevent colds and sore throats, and the "colds, and resultant sore throats" phrase had to be removed from all marketing materials.

The last condition that must be met for an ad to be viewed as false and deceptive is "materiality." Information regarding the purpose, safety, and price of a product would be considered material. If a deceptive claim is not expected to cause consumers to make a different choice, then it is considered immaterial and would not be challenged by the FTC.

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[92] Failure to disclose relevant information can be just as misleading as providing false information. For example, if a used car salesperson knew that a car needed new brakes within the next month and failed to disclose this information to a buyer, this would be considered deceptive.

[93] Targeted groups could include the terminally ill or children. Regarding ads targeted at children, a higher standard is used because of the "limited ability of children to detect exaggerated or untrue statements" ("The ABCs at the FTC: Marketing and Advertising to Children," at http://www.ftc.gov/).

20.5.2 Advertising Bans and Regulations

In spite of these concerns, the legislature and the courts are reluctant to vigorously regulate advertising given First Amendment protection of freedom of speech.[94] In an early decision in *Valentine v. Chrestensen* (1942), the Supreme Court ruled that certain classes of speech could be exempt from First Amendment protection and added commercial speech to the list that already included obscene, libelous, and insulting (i.e., fighting words) speech. A clear interpretation of the protection of commercial speech did not occur until 1980 with the decision in *Central Hudson Gas v. Public Service Commission* (1980). In essence, the precedent set by this case made government regulation of advertising or commercial speech permissible when (1) advertising is misleading, (2) there is substantial gain from the regulation, (3) the regulation directly advances the interests of society, and (4) the regulation is not more extensive than is necessary. Given this relatively high standard, there are few government regulations on advertising.

The few that have been imposed involve products that generate negative externalities, particularly alcohol and tobacco products that are addictive. In markets such as these, the government generally imposes excise taxes and advertising restrictions to reduce consumption and mitigate the resulting externalities.[95] Restrictions on alcohol ads have not been supported by the Supreme Court, however. For example, the Supreme Court overruled the Federal Alcohol Administration Act of 1935 [section 5(e)(2)], which prohibited beer labels from displaying alcohol content (V. Tremblay and C. Tremblay 2005). Similarly, in 1996 the Supreme Court overturned a 1956 Rhode Island law that made it illegal to advertise the price of alcoholic beverages (Milyo and Waldfogel, 1999). In both cases, the Court based its ruling on the fact that such laws were "more extensive than necessary" and that the goal of reducing consumption could be reached more directly through higher taxes.

The most extensive set of advertising restrictions have been imposed on the US cigarette industry. Convincing medical research linking cigarette smoking to various health risks became apparent by the early 1950s. As continued research confirmed these negative health effects, the federal government instituted a number of policies that were designed to reduce cigarette demand. We discuss these in detail in Chap. 21 and focus on advertising restrictions here.

Given public concern that cigarette companies used advertising to attract underage smokers and used public relations efforts to confound consumers about the health risks of smoking, two pieces of legislation were enacted to reduce cigarette demand. First, the Federal Communication Commission required television networks to air one antismoking ad for every three prosmoking ads by cigarette companies, effective July 1967 through 1970, under what is called the "fairness

[94] For a more complete discussion of regulatory issues involving advertising, see Pitofsky (1977).

[95] Unfortunately, the evidence shows that higher taxes lead to higher prices and less alcohol consumption but not less alcohol abuse (V. Tremblay and C. Tremblay 2005; Cooper and Wright, 2010).

doctrine." Second, Congress passed the Public Health Cigarette Smoking Act (1970), which banned all (prosmoking and antismoking) advertising from television and radio, effective January 1, 1971.[96]

Unfortunately, the broadcast advertising ban proved ineffective. First, it did not significantly reduce the market demand for cigarettes. Second, it had the unintended consequence of increasing industry profits (Eckard 1991; Farr et al. 2001; Iwasaki and V. Tremblay 2009). This evidence is consistent with combative-type advertising and explains why the industry did not oppose the ban (Hamilton 1972; Pollay 1994).

The history of marketing regulations in the cigarette industry provides a dramatic example of both market and government failure. On the one hand, cigarette companies failed to behave responsibly when marketing their product. On the other hand, the government enacted marketing restrictions that proved ineffective at reducing cigarette demand. In fact, the evidence shows that the broadcast advertising ban benefitted the industry more than the public at large (Farr et al. 2001). At the same time, this is not to say that all government policies have been ineffective. The evidence shows that higher taxes and clean indoor air laws have reduced cigarette demand without redistributing wealth from consumers to cigarette producers (Keeler et al. 1993; Evans and Farrelly 1998; Farr et al. 2001).

20.6 Summary

1. From a normative perspective, laws and regulations ought to promote the interests of society. This is consistent with the **public-interest theory**. Unfortunately, not all laws and regulations meet this high standard. As a result, they set up laws and regulations in response to their constituents, consisting of the public, firms, and special interest groups. This can lead to a form of government failure.
2. When a market fails to produce an ideal outcome, laws and regulations may increase social welfare. However, appropriate public policy requires a comparison of the market outcome with a real alternative outcome, one that takes into account the cost of implementing a government fix and the possibility of government failure.
3. A legal system has three important characteristics: it is a social phenomenon, it is authoritative, and it serves a particular goal or aim.

[96] In addition, the Master Settlement Agreement of 1998 between the tobacco industry and most state governments prohibited most outdoor and transit advertising and the use of cartoon characters in cigarette ads (Chaloupka 2007). In 2009, Congress passed the Family Smoking Prevention and Tobacco Control Act, which required that warning labels cover the top 50% of the front and back panels of the package. See Curfman et al. (2009) for a discussion of the law. The complete transcript can be found at http://www.govtrack.us/congress/bill.xpd?bill=h111-1256.

4. **Arrow's Impossibility Theorem** states that a social welfare function (or rule) that meets certain regularity requirements and is nondictatorial does not exist. This implies that simple voting rules will not lead to socially optimal solutions. Dictatorships fail because dictators are rarely benevolent. Thus, a decision process that allows for an open dialogue and has sufficient checks and balances is perhaps the best we can do.
5. There are two main systems of law, the **common law** and the **civil law** systems. In general, a common law system gives judges more discretion than does a civil law system. This suggests that the common law system would be more efficient in a dynamic setting. The empirical evidence typically shows that countries with common law systems have better economic outcomes than civil law systems, at least in the recent past.
6. There are several forces that help shape our legal system. According to the **evolution to efficient laws hypothesis**, laws will evolve to produce more efficient outcomes. Stigler (1971) and others have proposed that laws are influenced by special interest groups. Roe (1996) added that historical events and circumstances play an important role. When faced with a problem that requires a legal remedy, differing circumstances may cause a different law to be implemented, and the law may not evolve toward efficiency if switching costs are sufficiently high.
7. In principle, antitrust laws are designed to promote competition and limit the negative effect of market power. Key legislation includes:
   - **The Sherman Act** (1890), which makes collusion (Section 1) and monopolization (Section 2) illegal.
   - **The Clayton Act** (1914, as amended by the Celler–Kefauver Act of 1950) makes price discrimination (Section 2), exclusive dealing and tying contracts (Section 3), and mergers (Section 7) illegal when the effect is to reduce competition or create a monopoly.
   - **The Federal Trade Commission Act** (1914, as amended by the Wheeler–Lea Act of 1938) created the Federal Trade Commission to enforce the antitrust laws. The Act also made it illegal for firms to engage in fraud, deception, and unfair business practices.
8. In practice, both the Department of Justice and the Federal Trade Commission pursue antitrust cases. Antitrust violations can result in fines, jail time for managers, injunctions, and the breakup of the firm.
9. Some business practices are always illegal and are said to be **per se illegal**. For others, a **rule of reason** applies, because they are illegal only under certain circumstances.
10. Regarding the monopolization of a market, the courts have generally followed a rule of reason. That is, to be guilty of Section 2 of the Sherman Act, a firm must have a sufficiently large market share and be guilty of behaving unreasonably toward its competitors. Conviction can have dire consequences, as it can result in the breakup of the firm. Prominent examples include the breakup of Standard Oil of New Jersey, American Tobacco, and AT&T.

11. Unless cooperation promotes the efficient operation of a market, collusion is per se illegal under Section 1 of the Sherman Act. But by their nature collusive agreements are kept secret, making it difficult for government agencies and the courts to be sure that a cartel agreement actually exists. Without direct evidence of a conspiracy, the courts follow a rule of reason. That is, a guilty verdict requires there to be parallel behavior, called **conscious parallelism**, plus additional evidence such as market segmentation.
12. A loophole made the original antimerger laws ineffective at preventing anticompetitive mergers. The Celler–Kefauver Act (1950) closed the loophole, and the courts began to take a tough stand against horizontal mergers. A problem in implementing the Act was that the courts frequently used inconsistent definitions of geographic and product markets. Given concern among economists and within the business community that the law was unclear, the Department of Justice developed a set of **Merger Guidelines** in 1968 that identified which mergers would likely be challenged by the Department of Justice. The Guidelines have been revised in 1982–1984, 1992–1997, and 2010. Revisions allow for an efficiency defense and provide a clearer definition of a market.
13. A review of the history of antitrust court cases reveals three observations:

    1. The courts have modified the law to address the particular circumstances of the times, such as weighing equity and the welfare of labor more heavily during the Great Depression. This is what one would expect in a common law system.
    2. Economics research has influenced the application of the antitrust laws. For example, the work by Williamson (1968) influenced the decision to consider a static efficiency defense when evaluating mergers. Demsetz's (1973) superior efficiency hypothesis, which says that a firm may gain monopoly power from innovative activity as well as from anticompetitive firm behavior, led to greater consideration of dynamic efficiency issues.
    3. Enforcement of the antitrust laws has changed considerably over time. In response to economic arguments and empirical evidence, the courts have generally placed greater emphasis on efficiency since the antitrust laws were instituted. The one exception is in the sports industry, which has had an antitrust exemption. At best, there is weak evidence that enforcement is influenced by the political-economic views of the president.

14. There are two types of business regulations. The first is social regulation, which is designed to protect the environment and the safety of consumers and workers. The second is economic regulation, which addresses problems of market failure. In this chapter, we focus on the economic regulation of a firm's price, output, and advertising decisions and social regulation involving unfair business practices.
15. There are three theories of regulation. The first is the **public-interest theory of regulation** in which a regulatory agency or commission chooses the best policy to serve society. The second is the **capture theory of regulation**, which proposes that the regulatory commission serves the interests of the industry it is supposed to be regulating. Finally, there is the **interest-group theory of regulation**, which posits that the regulatory commission behaves in its own self

interest and responds to those groups that have the most power over the commission. The evidence shows that the capture theory best explains railroad and public utility regulation and that special interest groups have considerable power in our political system. These theories are incomplete because they ignore the role of the courts and poorly explain the social regulation movement.

16. In a natural monopoly, the presence of substantial scale economies means that a monopoly structure is required for productive efficiency. If unregulated, the firm will set the monopoly price, which produces allocative inefficiency. As a result, these firms are generally regulated. Common regulatory schemes are the following:

    - The first-best solution is to regulate the price at marginal cost and require the firm to produce all that is demanded at that price. This is called a **marginal-cost pricing rule**. It is an impractical solution, because the firm earns negative profits. Either the firm will go out of business or will need to be subsidized.
    - It is more common for the regulatory commission to set price equal to average cost. The **average-cost pricing rule** minimizes the deadweight loss associated with monopoly, given no subsidy to the firm. When the firm produces a single product, this is consistent with **Ramsey Pricing**. With Ramsey Pricing for a multiproduct monopoly, the Lerner index will be proportional (but not equal) to one divided by the price elasticity of demand.
    - Another regulatory solution is **rate-of-return regulation**, such that the firm's prices are regulated so that the firm earns zero economic profit or a normal rate of return.
    - The main problem with these pricing rules is that they create serious incentive problems. That is, if prices are set to just cover costs, the firm does not have an incentive to minimize costs. This observation led economists to develop new policies, called **incentive regulation**. The most common example is **price-cap regulation**, where the regulatory commission sets the maximum price, which remains unchanged for a particular period of time and is based on a formula that depends on expected changes in inflation and productivity. Because this formula is not a function of costs, the firm can retain any gains resulting from a cost reduction. Thus, the firm has an incentive to innovate and minimize its costs.

17. The deregulation movement began in the 1970s. According to Derthick and Quirk (1985), motivation for the movement came from the research of academic economists which pointed out the merits of deregulation. Economic deregulation resulted in dramatic efficiency gains in such industries as airlines, railroads, trucking, telecommunications, and cable television. Thus, the deregulation movement is consistent with the evolution to efficient laws/regulations hypothesis.
18. To protect consumers, the Federal Trade Commission Act (1914, as amended by the Wheeler-Lea Act in 1938) makes fraud, deception, and unfair business practices illegal. In addition, the **Fair Packaging and Labeling Act (1966)**, requires that packages be labeled in a way that makes it easier for consumers to make unit price comparisons across brands.

19. Contributions from behavioral economics have led to new regulations to protect consumers, such as (1) the **Pension Protection Act (2006)**, which encourages companies to set up retirement pension plans and use defaults that are better for employees and (2) the **Credit Card Act (2009)**, which provides greater protection to credit card users who tend to make behavioral errors.
20. Thaler and Sunstein (2003, 2008) made a strong case for a type of paternalism that corrects behavioral errors while minimally constraining liberty. They call this "libertarian paternalism." One example is a policy that requires employers to make enrollment in its pension plan the default and requires employees to formally indicate if they opt out of the pension plan. This will lead more employees to enroll in the plan. It is paternalistic because it is designed to influence behavior in a way that makes individuals better off. Yet, it preserves liberty because it does not limit individual choice.
21. There are many cases where free markets fail to provide socially beneficial advertising. Firms may push the boundaries of social responsibility by using derogatory stereotypes to appeal to a target audience. In addition, they may use false and deceptive ads to fool customers and gain an advantage over their competitors, at least in the short run. The FTC serves as the watchdog of the advertising practices to ensure that they are honest and fair.
22. Because advertising is a form of speech and freedom of speech is highly valued, the government can restrict advertising only if the restriction is clearly beneficial to society and is not more limiting than necessary. One regulation that was allowed is the broadcast advertising ban on cigarettes, which was intended to reduce smoking and improve public health. Unfortunately, the ban has been ineffective at reducing the market demand for cigarettes and actually raised industry profits by facilitating coordination in advertising. This is one example where government policy produced unintended consequences.

20.7 Review Questions

1. Appropriate policy analysis requires one to analyze when markets fail and when government fails to generate socially desirable outcomes.

   A. Briefly describe what is meant by market failure and by government failure.
   B. Briefly describe what Demsetz (1969) meant by the nirvana approach and the comparative institutional approach to public policy analysis. Why do we frequently use the nirvana approach as a starting point when discussing the merits of an economic policy?
   C. In general, do you think it would be socially more costly to correct a government policy that places too many restrictions on a market than a policy that places too few? Explain.

2. Briefly describe the public-interest, interest-group, and capture theories of law and regulation.

3. Regarding the philosophy of law:

   A. Identify the three characteristics of a legal system.
   B. Compare and contrast the concepts of natural law and legal positivism.
   C. Briefly describe John Stuart Mill's concerns with government power and democracy.

4. Regarding the common law and civil law systems:

   A. Describe the key features of the common law and civil law systems. What are the prominent strengths and weaknesses of each system?
   B. What are the primary forces that cause laws to evolve and change over time?
   C. According to research on legal origins theory, which system has been more efficient?
   D. Discuss the main ways in which a dictatorial legal system would differ from common and civil law systems. Would you expect a dictatorial system to be more or less efficient and socially desirable than common and civil law systems (Arrow 1951; Sen 1970)? Explain.

5. In antitrust law, firm behavior can be evaluated according to a *rule of reason* or it can be considered *per se illegal*. Explain.
6. Regarding the Sherman Act:

   A. Section 1 makes collusion illegal. Is this socially desirable? Are there any conditions where collusion is socially desirable? Explain.
   B. Section 2 makes it illegal for a firm to attempt to monopolize a market. Is this socially desirable? Are there any conditions where such an attempt is socially desirable? Explain.

7. Explain how Section 7 of the Clayton Act (as amended by the Celler–Kefauver Act) can prevent market power.
8. In principle, the antitrust laws are designed to promote competition and improve market efficiency. Given the work by Williamson (1968) and Demsetz (1973), explain why these laws may fail to promote dynamic efficiency.
9. Regarding the evolution of the antitrust laws:

   A. Briefly discuss how the application of the antitrust laws has evolved over time in relation to long-term trends and political cycles.
   B. Does the evolution of the Merger Guidelines tell us anything about the long-term trend in antimerger enforcement? Explain.
   C. Are your answers above consistent with the evolution to efficient laws hypothesis? Explain.

10. One reason for the economic regulation of industry is to address the unique economic problems associated with a natural monopoly.

    A. Briefly explain what is meant by a natural monopoly.
    B. How is a natural monopoly efficient in one way but inefficient in another?

   C. Discuss two ways in which a regulatory commission could eliminate the inefficiency associated with a natural monopoly.
   D. Do your answers in part C meet the incentive regulation criteria? Explain.

11. Regarding deregulation:

   A. Explain what is meant by economic deregulation.
   B. Much of the empirical evidence shows that deregulation has improved efficiency. How is this possible?

12. Regarding behavioral economics and social regulation:

   A. How has research in behavioral economics contributed to new and better social regulations?
   B. By definition, social regulations limit individual freedom and are paternalistic. Explain how a policy that is consistent with libertarian paternalism minimizes limits on freedom.

13. Posner (1973) argued that unfair business practices will not be a problem in the long run, because rational consumers will quit buying products from firms that behave irresponsibly. Provide two reasons why Posner may be wrong.
14. Regarding advertising bans:

   A. Assume the government imposes an advertising ban on a monopoly firm. How will this affect firm costs? Would your answer be the same if the government imposed a ban on the firm's use of labor? Explain.
   B. Assume the government imposes an advertising ban on an industry with two firms. Use a payoff matrix to show how this can facilitate coordination and higher profits for firms. In this case, is advertising likely to be a strategic complement or substitute?
   C. Assume the government imposes a marketing ban on an industry with two firms. Use a payoff matrix to show how this can lower firm profits. In this case, is advertising likely to be a strategic complement or substitute?
   D. Given the evidence from behavioral economics, in what types of markets will it be most likely that advertising restrictions are socially beneficial?

Appendix A: The Ramsey Pricing Rule

The derivation of the Ramsey (1927) pricing rule makes use of constrained optimization techniques (Simon and Blume 1994). Consider a single product monopolist. The social goal is to maximize total surplus, defined as the area under the inverse demand function $[p(q)]$ minus total cost (TC) or $p(q)\mathrm{d}q - \mathrm{TC}(q)$, subject to the constraint that total revenue $[p(q) \cdot q]$ equals total cost. To solve this constrained

optimization problem, we first define the Lagrangian function: $\mathcal{L} = \int p(q)\mathrm{d}q - \mathrm{TC}(q) + \lambda[p(q)q - \mathrm{TC}(q)]$, where λ is the Lagrange multiplier. The first-order conditions are

$$\frac{\partial \mathcal{L}}{\partial q} = p - \mathrm{MC} + \lambda\left[p + \frac{\partial p}{\partial q}q - \mathrm{MC}\right] = 0, \quad \text{(A.1)}$$

$$\frac{\partial \mathcal{L}}{\partial \lambda} = p(q) \cdot q - \mathrm{TC}(q) = 0 \text{ or that } p = \frac{\mathrm{TC}}{q} \equiv \mathrm{AC}. \quad \text{(A.2)}$$

The second equation implies that price must equal average cost, TC/q, which guarantees zero profit. The first equation can be rearranged as follows:

$$\frac{p - \mathrm{MC}}{p} = -\lambda\left[p\left(1 + \frac{\partial p}{\partial q}\frac{q}{p}\right) - \mathrm{MC}\right]/p,$$

$$\frac{p - \mathrm{MC}}{p} = -\lambda\left[p\left(1 - \frac{1}{\eta}\right) - \mathrm{MC}\right]/p,$$

$$\frac{p - \mathrm{MC}}{p}(1 + \lambda) = \lambda\left(\frac{1}{\eta}\right),$$

$$\frac{p - \mathrm{MC}}{p} = \frac{\lambda}{1 + \lambda}\left(\frac{1}{\eta}\right) = \frac{k}{\eta}, \quad \text{(A.3)}$$

where $k \equiv \lambda/(1 + \lambda)$. Note that if the profit constraint is not binding, $k = \lambda = 0$, and price equals marginal cost. Otherwise, λ and k are positive and price exceeds marginal cost.

For a detailed mathematical derivation of the Ramsey pricing rule for a multi-product monopolist, see Brown and Silbey (1986) and Braeutigam (1989).