

Chapter 19

Efficiency, Equity, and Corporate Responsibility in Imperfect Competition

A crucial objective in industrial organization is to evaluate whether or not imperfectly competitive markets perform well from society's perspective. As discussed in Chap. 1, we focus on three dimensions of market performance: static efficiency, dynamic efficiency, and equity. Up to this point, we have spent most of our time discussing efficiency issues. We now begin this chapter with a review and assessment of what we have learned regarding imperfect competition and different types of inefficiency—market power (i.e., allocative inefficiency), X-inefficiency, rent-seeking behavior, and technological change (i.e., dynamic efficiency).

As members of society, however, we are concerned with more than just efficiency. Most of us do not want to live in a world where individuals and firms behave efficiently but unfairly. Although discussion of social justice, fairness, and morality pushes us into the realm of value judgments and normative issues, current research is underway that addresses economic justice from a positive perspective. The emerging evidence shows that many values are universally shared, such as honesty and fairness, and are important to us in both our social and economic interactions.

Social philosophers have long known that morality is a necessary ingredient of a successful market economy. In the words of Zak (2008, xi), “modern market exchange is inconceivable without moral values.” No one will continue to do business with companies that routinely break contracts and make deceptive claims about the quality of their products. Corporate and political corruption will limit market activity and economic growth. Thus, one goal of this chapter is to assess whether or not corporations behave in a socially responsible way.

In this chapter, we first review what we have learned regarding efficiency and then discuss equity and corporate responsibility. This evidence will be used to motivate and guide policy analysis in Chap. 20. There we will investigate the appropriate rules of the game, that is, the socially desirable laws and regulations that are needed to assure socially desirable market performance and firm behavior.

19.1 Efficiency

As we discussed in Chap. 5, there are four broad concepts of static efficiency: technical, economic, allocative, and productive. A firm is technically efficient when it uses the minimum quantity of inputs to produce a given output. In other words, inputs are not being wasted and the firm is operating on (not above) its isoquant. Economic efficiency means that firms minimize costs—the firm chooses the combination of inputs that produces a given output at minimum cost. When economically efficient, the firm is producing on (not above) its cost function (i.e., its frontier cost function). Economic efficiency requires technical efficiency, but technical efficiency need not imply economic efficiency.¹

The two other types of efficiency apply to the industry, not the firm. Allocative efficiency is reached when an industry produces the socially desirable quantity of output. This means that resources are allocated among the various uses in a socially efficient manner. If we look at one industry separate from all others, allocative efficiency occurs when price equals marginal cost. Finally, productive efficiency is reached when a given level of industry output is produced at minimum cost for the industry as a whole.²

From a theoretical perspective, the perfectly competitive model serves as the benchmark for static efficiency.³ Goods are private, externalities are nonexistent, and there are no frictions due to a lack of information. Cost minimization is met, because firms are assumed to be profit maximizers. Allocative efficiency is achieved because the equilibrium price equals long-run marginal cost. Productive efficiency is met because all firms produce at minimum long-run average cost. If all markets were like this and there were no other imperfections, the price in each market would reflect the true social cost of producing the last unit of output and resources would be allocated to their most efficient (i.e., highest valued) use.

Of course, these ideals are rarely met in the real world. We do not usually see markets that are “perfectly” competitive. In most markets, market power, externalities, and imperfect information are present to a certain degree. Even if

¹ In other words, a firm is technically efficient when operating anywhere on its isoquant and is economically efficient when operating at a point where its isocost function is tangent to its isoquant (Varian, Chap. 20).

² Recall that economic efficiency need not imply productive efficiency. In a duopoly market with two economically efficient firms, for example, firm 1 may produce in the region of scale economies and firm 2 in the region of scale diseconomies. This is not productively efficient, because industry costs would be lower if firm 1 were to increase production and firm 2 were to decrease production.

³ There are imperfectly competitive models that also produce allocatively efficient outcomes, but only under very restrictive conditions. For instance, the Bertrand and Cournot–Bertrand models produce the competitive outcome when products are homogeneous, there are constant returns to scale, and firms are symmetric [see Chap. 10 and C. Tremblay and V. Tremblay (2011a)]. Another example is the perfectly contestable market (Baumol et al., 1982), which assumes that sunk costs of entry are zero and entry is instantaneous (see Chap. 5).

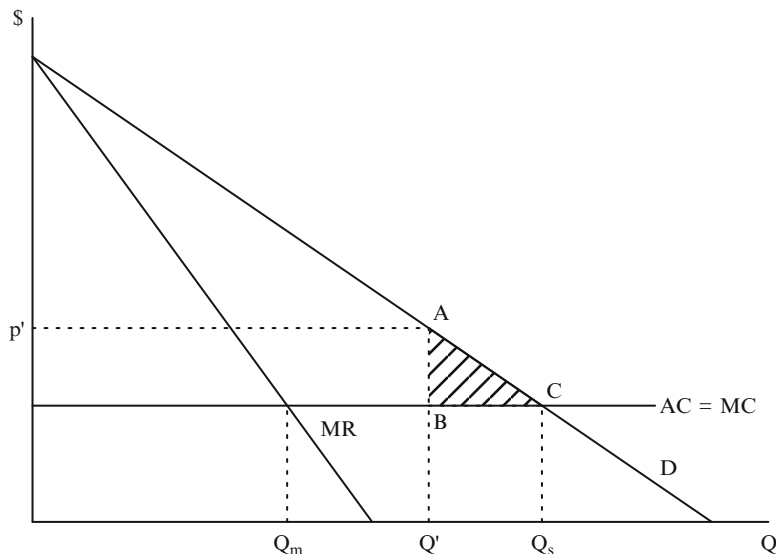


Fig. 19.1 Deadweight (efficiency) loss due to market power

all markets were statically efficient, we saw in Chap. 17 that they may not generate the optimal level of technological change and, therefore, need not be dynamically efficient. When it is socially worthwhile to give up static efficiency today to gain lower costs and better products tomorrow, dynamic efficiency trumps static efficiency. In this section, we review possible inefficiencies associated with imperfectly competitive markets. Policy issues are addressed in the next chapter.

19.1.1 *Static Allocative Inefficiency*

In most models, static allocative inefficiency is the norm in imperfectly competitive markets. In both monopoly and monopolistically competitive markets, price exceeds marginal cost. In oligopoly models, price exceeds marginal cost except under special conditions in the Bertrand and Cournot–Bertrand models.

The economic consequence of allocative inefficiency is illustrated in Fig. 19.1. It depicts a market demand curve (D) and a marginal revenue curve (MR). Industry costs are linear, so that long-run average cost (AC) equals long-run marginal cost (MC). In this case, the allocatively efficient level of output occurs where price equals marginal cost and output equals Q_s . Monopoly output is at Q_m where $MR = MC$, but most oligopoly markets with market power produce output that is between Q_m and Q_s . If this occurs at Q' , then price (p') exceeds marginal cost and the efficiency loss due to market power equals the shaded area of triangle ABC in Fig. 19.1. Recall that this is called the efficiency or deadweight loss (DWL) due to market power.

We saw in Chap. 12 that a common way of measuring market power is with a Lerner index, defined as $\mathcal{L} = (p - MC)/p$. When $\mathcal{L} = 0$, the market is allocatively efficient; when $\mathcal{L} > 0$, market power exists and the market is allocatively inefficient.

Estimates of the cost of market power for various industries and for the economy as a whole were discussed in Chaps. 9 and 12. Three general conclusions can be gleaned from these results. First, the degree of competition and market power varies widely across industries. In general, market power is relatively low for agricultural commodities and is relatively high in manufacturing and service industries (see Table 12.2). Second, an increase in the number of competitors generally leads to lower prices. As we saw in Chap. 9, cartels are much more likely in concentrated than unconcentrated industries. Finally, the magnitude of the efficiency loss caused by imperfect competition in the overall economy remains uncertain. Estimates range between 0.1% and 6.0% of GNP (gross national product, defined as the dollar value of all goods and services produced in the economy). Perhaps the most reliable estimates were obtained by Masson and Shaanan (1984) who estimated the efficiency loss to be 2.9% of GNP. More recent estimates are unavailable but would likely be lower since more rigorous foreign competition has undoubtedly increased efficiency (Caves and Barton, 1990).

19.1.2 Other Sources of Static Inefficiency

Unfortunately, DWL is not the only type of inefficiency associated with imperfectly competitive markets. Two additional factors can push up the social cost of market power: rent-seeking behavior and X-inefficiency.

Recall from Chap. 6 that rent seeking occurs when firms make investments to obtain and maintain government support for market power. For example, a firm may lobby or bribe government officials to create barriers that reduce foreign competition. Rent seeking is socially wasteful, as it is costly and raises or maintains market power. Thus, the social cost of market power must include the cost of rent seeking along with the traditional DWL.⁴ Available evidence suggests that the social cost of rent seeking can be quite high. Posner (1975) estimated that up to 30% of industry revenues are spent on rent seeking in such industries as automobiles, physician services, and oil. In a study of the cellular phone industry, Hazlett and Michaels (1993) found that approximately 50% of monopoly rents were spent on rent-seeking activity.

The presence of X-inefficiency adds further to the social cost of market power. As we discussed in Chap. 6, X-inefficiency exists when production costs are elevated above their cost-minimizing levels. We would expect to see cost minimization in competitive markets, because firms that let their costs creep up will go out of

⁴One could view this as a simple transfer from monopolies to politicians. Nevertheless, rent-seeking behavior is costly and may increase market power, which raises the deadweight loss associated with monopoly.

business in the long run. But this natural selection argument requires a sufficient degree of competition. Without it, cost minimization may not be needed for survival. In this setting, utility-maximizing owners/managers may be willing to give up some profit for greater leisure (i.e., less effort). As Hicks (1935, 8) said, “the best of all monopoly profits is the quiet life.” Managerial slack such as this causes costs to rise and X-inefficiency to result.

In his extensive review of the literature, Frantz (1997, 146) concluded that the evidence is varied but generally supports the presence of X-inefficiency.⁵ One notable example is a study by Aiginger and Pfaffermayr (1997) who estimated the DWL and X-inefficiency due to market power in the European cement and paper industries. They found that the DWL was 2–3% of GDP, which is consistent with the Masson and Shaanan (1984) estimate. The added cost due to X-inefficiency pushes the social cost of market power to about 10%.

One needs to be cautious when evaluating studies such as these, however. A firm may expect to minimize cost *ex ante* but fail to do so *ex post* due to unforeseen circumstances.⁶ For example, a grocery store may substantially increase its inventory of soft drinks in anticipation of high demand over the 4th of July weekend, but bad weather may reduce demand and leave the store with an excess inventory of soft drinks.⁷ This represents bad luck rather than X-inefficiency; X-inefficiency should only include inefficiency due to systematic management error and lack of effort. Bad luck cannot be helped, but systematic cost overruns are a policy concern because they are wasteful and can be avoided.

The appropriate approach would investigate the effect of competition on systematic cost inefficiency. In his summary of the evidence, Frantz (1997) concluded that there is considerable support for the hypothesis that increased competition and openness to international trade lead to less X-inefficiency. Primeaux (1977, 1978) provided a good example of this approach. He estimated firm costs in the US electric utility industry. By comparing costs in markets with a single firm with markets that have two competitors, he was able to determine the effect of competition on costs. He found that unit costs were more than 10% lower in markets served by two firms, *ceteris paribus*. Berger et al. (1993) reviewed a series of studies of the banking industry and concluded that X-inefficiency due to a lack of competition is responsible for a 20–30% increase in costs. Nickell (1996) studied firm efficiency in the UK and found that greater competition led to gains in technical efficiency and productivity growth (a dynamically desirable outcome).

⁵ Unfortunately, the empirical evidence does not always distinguish between X-inefficiency and other types of inefficiency. For a survey of the evidence on X-inefficiency, see Frantz (1997). For a discussion of the methods used to distinguish among these various types of inefficiency, see Färe et al. (1985, 2008).

⁶ For further discussion of inefficiency that has two components, one due to bad luck and the other due to systematic error, see Schmidt (1985–1986) and Greene (2008).

⁷ If a firm had perfect foresight and could always correctly anticipate fluctuations in demand, an efficient firm would never have too much or too little inventory or productive capacity.

If these estimates of the cost of allocative inefficiency, rent-seeking behavior, and X-inefficiency are correct, then the market power associated with imperfect competition may be a serious policy concern. At the same time, market power may result from superior efficiency and promote dynamic efficiency.

19.1.3 Dynamic Inefficiency

Recall from previous chapters that analyzing market power in dynamic markets is considerably more complicated than in static markets. As we discussed in Chap. 12, evidence that price equals marginal cost does not necessarily imply an absence of market power in markets where demand or cost functions are connected over time. As an example, cigarette companies have given away free samples to increase the number of (addicted) consumers, which can allow them to raise price and earn higher profits in the future. Similarly, when there is the potential for learning-by-doing, a firm will increase production (lower price) today to lower marginal cost in the future. Firms that set price equal to or less than marginal cost today may be making costly investments to increase market power tomorrow. Thus, special care must be taken when estimating inefficiency in dynamic settings, such as markets where addiction, product durability, and learning-by-doing are prominent features.

Two notable studies control for dynamic effects when analyzing issues of market power. In the first, Jarmin (1994) developed and estimated a dynamic model of learning-by-doing for the US rayon industry from 1911 to 1938. His evidence was consistent with learning but inconsistent with both collusive and perfectly competitive behavior, suggesting that the market was imperfectly competitive. Zulehner (2003) estimated market power in the semiconductor industry from 1974 to 1996, where learning-by-doing was also important. She extended Jarmin's model to allow market power to vary over time. Zulehner's results showed that market power was high until the mid-1980s and remained low thereafter.

The one saving grace of concentrated industries is that they may generate greater innovation. Market power may be necessary for technological change. If so, policy implications shift, because a substantial invention can quickly outstrip the efficiency loss due to static market power. Thus, a policy that maintains static efficiency period after period need not be dynamically efficient. In other words, it may be socially beneficial to tolerate market power today if it produces sufficient technological change tomorrow.

Discussion of technological change and its connection to market structure was presented in Chap. 17. In terms of theory, anything is possible. Arrow's (1962) model predicts that competitive firms are more likely to be innovative than firms in imperfectly competitive markets. Alternatively, Schumpeter's (1942) theory predicts greater innovation from large firms in highly concentrated industries. Finally, causality can also run in the other direction, with technological change affecting market structure. From Demsetz' (1973) superior efficiency hypothesis, superior firms that discover lower cost methods or better products will promote dynamic efficiency even though they cause concentration and profits to rise.

There has been a considerable amount of empirical research on technical change, as discussed in Chap. 17. The main results are summarized as follows. Clearly, technological opportunities⁸ and government policies encourage research and development spending and technological change. The literature also suggests that the process that drives technological change is industry specific, which may reflect the fact that technological opportunities vary across industries. Furthermore, there is strong evidence that technological change can dramatically affect market structure, but empirical studies are unclear regarding the effect of market structure on technological change. Finally, the empirical evidence is unable to shed light on the big question—whether or not our current political-economic system is dynamically efficient. Data limitations and the complexity of the forces that shape technological change make it difficult to obtain answers to some of these fundamental questions.

This is not to suggest that technological change does not have negative as well as positive consequences. From Chap. 17, we know that technological change may lower production costs and create new and better products, but it can also raise market power. Furthermore, the process of creative destruction can put some workers out of a job, at least in the short run.⁹ New technologies can also produce greater pollution and more powerful weapons of mass destruction, which lowers the physical and psychic health of many of us. As a society, trade-offs must be made. Policies should be designed to encourage the positive and discourage the negative consequences of technological change.

19.2 Equity and Corporate Responsibility

For the greater part of the last two centuries, ethical issues associated with equity (i.e., that which is just, fair, and impartial) were thought to be outside the domain of economics because they involve value judgments and cannot be analyzed scientifically. It was felt that normative issues such as these should be left to religious leaders and social philosophers. In the last two decades, there has been a growing interest among economists in issues of justice.¹⁰ For example, in the 1970s publications reported in *EconLit* on “efficiency” outnumbered publications on “justice” or “fairness” by 16 to 1.¹¹ By the 1990s, this ratio had fallen to 4.4 to 1.

⁸ Recall that an increase in technological opportunities means that there are greater expected benefits from investing in research and development.

⁹ This can be devastating financially to displaced workers. In the long run, unemployment will be mitigated for the economy as a whole but not necessarily for the individual. And, as John Maynard Keynes said, “we are all dead in the long run.”

¹⁰ This discussion of economics and social justice borrows from a survey by Konow (2003) and from Zak (2008).

¹¹ *EconLit* is the American Economic Association’s search engine for publications in economics.

A new line of research is emerging that looks at economic equity or justice from a positive perspective.¹² At issue is whether there is a universal theory of justice on which all or most of us can agree. Evidence regarding this question derives from survey and experimental evidence where subjects are asked to identify fair outcomes to a set of vignettes or hypothetical situations. To illustrate, consider the following hypothetical proposed by Konow (2003, 1197):

Mike and Bill are identical twins who were reared in an identical family and educational environment. They are the same in terms of physical and mental abilities, but Mike is more industrious than Bill. For that reason, after they begin their careers Mike ends up earning more than Bill. Please indicate whether you view such a difference in their earnings as: Fair or Unfair.

This question addresses attitudes about effort and earnings. In his survey of 150 individuals, Konow found that 99% felt that a difference in salary was fair. Answers to similar types of questions indicate that people feel that it is equitable to give greater reward to those who contribute greater effort, *ceteris paribus*.

Research in this area is leading to a unifying theory of distributive justice that incorporates three competing elements: needs, just deserts, and efficiency. In terms of distributive justice, the “needs principle” requires that more is provided to those who have greater needs, *ceteris paribus*. For instance, if a child from a poor family that is without health insurance needs a life saving operation, justice requires that the child receive the operation. This principle provides for the least well off members of society. The “just-deserts principle” requires that greater compensation be given to those who put forth greater effort, *ceteris paribus*.¹³ Finally, the “efficiency principle” advocates maximizing total surplus or wealth.

Unfortunately, there are trade-offs among needs, just deserts, and efficiency. In his classic work on the efficiency-equality trade-off, Okun (1975) argued that placing greater emphasis on equality comes at the expense of those who put forth greater effort.¹⁴ Placing greater emphasis on equality can cause the economic pie to grow more slowly and lower dynamic efficiency. This is certainly true if we ignore other dimensions to equity and take it to simply mean an equal division of income and wealth. A more complete theory of equity or social justice calls for a multicriterion approach, which requires that we identify socially acceptable weights

¹² Recall from Chap. 1 that positive economics refers to the study of “what is” as opposed to normative economics which is the study of “what ought to be”.

¹³ One can think of the needs and just-deserts principles as being elements for the “golden rule”—do unto others as you would have them do unto you. According to Flew (1979), the golden rule has roots in a wide range of cultures and religions. For example, Jesus (Matthew 7:12) is quoted as saying, “always treat others as you would like them to treat you.” The needs principle is consistent with Karl Marx (1875) who wrote “from each according to his ability, to each according to his needs,” which was first proclaimed by Louis Blanc, a utopian socialist (Capaldi 2004). This is also consistent with St. Paul (Acts 2: 44–45) who wrote that “the faithful all lived together. . . and shared out the proceeds according to what each one needed.”

¹⁴ Okun (1975, 120) said that “the conflict between equality and economic efficiency is inescapable.” For a less pessimistic view of this trade-off, see Blank (2002).

for needs, just deserts, and efficiency. Unfortunately, surveys and experimental evidence suggest that such weights vary depending on the particulars of the context that is associated with the issue in question.¹⁵ Nevertheless, this line of research is noteworthy for identifying the elements that people view as important to justice and fairness.

Equity is essential to a market economy because exchange and a stable political-economic system cannot flourish in an unjust society.¹⁶ Trade is not possible without sufficient trust and honesty. Businesses that behave unfairly will perish in the long run as customers patronize more trustworthy competitors. Corrupt governments face citizen revolt. The French Revolution at the end of the eighteenth century provides one example. Before the Revolution, harsh economic conditions placed undue strain on the lower classes, with people experiencing bread shortages and a severely regressive tax system that favored the rich, nobility, and clergy. This coupled with an indifferent French monarchy led the people to kill the King, eliminated the monarchy, and establish a new legal system. Even animals are known to rebel and discontinue cooperation with their group if treated inequitably (Brosan 2008).

Next, we address two issues that pertain to justice and fairness in imperfectly competitive markets. First, we discuss issues of corporate responsibility. Second, we are interested in determining the effect of market power on the distribution of income and wealth.

19.2.1 Corporate Social Responsibility

A concern raised by critics of free markets is that by focusing primarily on the bottom line, corporations will behave in a socially irresponsible way. One example derives from the “Hail Mary” strategy used by failing firms that we discussed in Chap. 13. According to Aron and Lazear (1990), a failing firm may pursue an unconventional and potentially socially undesirable strategy in a desperate effort to survive.

V. Tremblay and C. Tremblay (2005, 2007) document numerous cases where brewing companies have used sexually provocative ads in an attempt to save a failing brand. Examples include the “Nude Beer” brand of the Eastern Brewing Company in the 1980s, where each can contained the picture of a nude woman who is concealed by a scratch-off covering. In 2005, the Pabst Brewing Company used a “Swedish Bikini Team” (consisting of women in blond wigs and bikinis) to market their Old Milwaukee brand. In 2002–2003, the Miller Brewing Company

¹⁵ Attitudes about justice are dependent on how a problem is framed and whether an outcome is reached by just means.

¹⁶ Of course, virtuous behavior can be a good thing in and of itself. Socrates said that his virtuous behavior was ultimately self-interested, as it was “for the good of his soul” (Solomon, 2008, 24).

introduced its so-called cat-fight ads to promote its Miller Lite brand. These ads featured two young women arguing over whether Miller Lite is “less filling” or “great tasting,” an argument that ends with them in a fight ripping off each other’s clothes in a water fountain. Rance Crain (2003), editor-in-chief of *Advertising Age*, called the Miller ads “blatant sexism and exploitation of the female body.”

Many consumer advocates argue that if left unchecked, some firms will use unfair business practices and even risk injury to consumers as long as it is profitable to do so. This viewpoint is reflected in the titles of the early critiques of business behavior in the 1970s when the consumer movement began. For example, Ralph Nader’s (1973) book on corporate responsibility and contains such chapters as “Selling Death” (on cigarette advertising) and “The Burned Children” (on flammable clothing).¹⁷

There are numerous examples of corporate callousness throughout US history. A particularly shocking example is the case of the Ford Pinto. In 1977 critics alleged that the Pinto had a poorly designed gas tank, which increased the risk that a rear end collision would cause a deadly fire. A controversy ensued when internal corporate documents became public, revealing that Ford knew of the problem and decided that it was not cost effective to fix it. It was felt that the \$11 cost of the repair was not worth the monetary value of the lives it would save. A company memo titled “Fatalities Associated with Crash-Induced Fuel Leakages and Fires” stated that the total cost of the repair was about \$137.5 million but the estimated value of saved lives was only \$49.53 million.¹⁸ Once this information surfaced, public outcry led the National Highway Traffic Safety Administration to pressure Ford to recall the Pinto in 1978.

Alarming levels of fraud in the financial sector (along with ineffective government regulations and bad decisions by home buyers) precipitated the recession of 2008–2009. As an example, in 2007 managers at Bear Stearns deceived investors by painting a sunny picture of the future of their hedge funds and concealing the fact that the funds were down 18%. At the same time, top managers at Bear Stearns were pulling their own money out of the funds, leading to the arrest of two fund managers, eventual losses of \$1.6 billion, and the demise of Bear Stearns.¹⁹

¹⁷ For a more recent critique of business behavior, see Friedrichs (1996) and Mitchell (2001). The following Web page provides a list of dozens of consumer organizations: <http://www.infoplease.com/ipa/A0002120.html>, accessed July 12, 2011.

¹⁸ For a complete account, see Birsch and Fielder (1994). The cost of fixing the problem was 12.5 million vehicles times \$11, equaling \$137 million. The expected benefit of fixing the problem was 180 saved lives valued at \$200,000 each plus 180 saved burn injuries valued at \$67,000 each plus 2,100 saved cars valued at \$700 each, equaling \$49.53 million. The value of a life was estimated to be \$200,000 in 1970 by the National Highway Traffic Safety Administration. The US Department of Transportation estimated the value of a life to be \$3 million in 2004 (Ashenfelter 2006).

¹⁹ Bear Stearns was purchased by JPMorgan Chase in spring of 2008. For further discussion, see Thomas (2008) and *The Economist* (November 14, 2009).

Another type of fraud involves deceptive claims by manufacturers regarding product effectiveness. Recent examples of false claims that were investigated by the Federal Trade Commission (FTC) include the following:

- From 2003 to 2004, Window Rock Enterprises claimed that its CortSlim tablets cause users to lose up to 4–10 pounds a week and lose weight specifically in the stomach and thighs. The ads were particularly insidious because the company used infomercials designed to look like independent television programs.²⁰
- From 2005 to 2009, POM Wonderful claimed that its POM Wonderful 100% Pomegranate Juice and its POMx supplements prevented or treated heart disease and prostate cancer.²¹
- In 2009, Dutchman Enterprises claimed that its Hydro-Assist Fuel Cell would double fuel mileage. One magazine ad claimed that it boosted a 2007 Honda Civic's mileage from 35 to 85 miles per gallon.²²

Such statements are patently false, which is why the FTC successfully forced these companies to cease and desist making these dishonest claims.²³

As we saw in Chap. 16, deception such as this is frequently associated with advertising. Although the concept of truth may seem black and white, the concept of false and deceptive advertising is not quite as clear. For an ad to be a violation of the law, it must clearly mislead a “reasonable” consumer. Ads that are obvious exaggerations or “puffing” are acceptable from a legal standpoint. This applies to claims that are not easily measurable and that use adjectives such as best, perfect, exceptional, original, and wonderful. As we discussed in Chap. 16, examples include: Apple Computers, “The Power to be Your Best”; Coke, “It’s the Real Thing”; and Minute Rice, “Perfect Rice Every Time.”

Another example of a deceptive tactic is something called “reference price advertising” (Lindsey-Mullikin and Petty, 2011). This is where a retailer advertises a sale price for its product that is substantially below a reference price, typically the “manufacturer’s suggested list price,” which is much higher than the price charged at most stores. Thus, consumers are deceived into believing that the deal is a better bargain than it really is. Reference price advertising can discourage consumer search for lower priced outlets and lead to higher prices overall.

²⁰ For a more complete review of this case, see <http://www.ftc.gov/opa/2004/10/windowrock.shtm>.

²¹ For a more complete review of this case, see <http://www.ftc.gov/opa/2010/11/pom.shtm>.

²² For a more complete review of this case, see <http://www.ftc.gov/opa/2009/02/dutchman.shtm>.

²³ This is a common remedy. In extreme cases, the FTC has ordered a company to spend 25% of its previous year’s ad budget on corrective advertising, which corrects the misinformation created by the false claim. In *ITT Continental Baking Co.*, 79 FTC 248 (1971), the ITT Continental Baking Company marketed its Profile brand of bread as a diet bread. Although each slice of Profile was lower in calories than a slice of most other brands of bread, this is because it was sliced thinner. As a result of this deception, the FTC required ITT Continental Baking to use corrective ads to inform consumers that Profile is not a diet bread. See Pitofsky (1977) for further discussion and additional examples. These issues will be discussed more fully in Chap. 20.

When firm actions of this nature cross the line of social responsibility, the primary source of market failure is imperfect and incomplete information. It would be uneconomic for firms to use deceptive or false claims if consumers had full information about the products they purchase. Even with incomplete information, such problems would not occur for search goods, because consumers can determine whether or not a claim is false before purchase. Information problems are more problematic for experience and credence goods where not all product characteristics are apparent before purchase. This is a growing concern in a modern society where products have become increasingly complex. For this reason, deceptive and fraudulent actions that are “materially damaging” to consumers are illegal, an issue that we discuss in some detail in Chap. 20.

In spite of these examples, not all corporations behave irresponsibly. After all, life is full of risks, and it may not be cost effective from society’s perspective to make all products perfectly safe. In addition, firms that value consumer loyalty and future sales have an economic incentive to behave in a socially responsible manner. That is, socially beneficial behavior today builds up a corporation’s reputation, which enhances long-run profits. This motivates successful firms to supply consumers with quality products at competitive prices. Of course, there may be owners of firms who behave responsibly out of a sense that it is simply the “right thing to do.” Thus, ethical behavior can survive in a marketplace when firms care about repeat sales and when there are generally accepted moral values.

Hafner and Deutsch (2005) document corporate donations made to victims of Hurricane Katrina. Wal-Mart donated \$17 million, as well as 100 truckloads of goods, to the Gulf Coast. Amgen, a biotechnology company, donated \$2.5 million to help cover medical costs. General Electric donated a portable power plant. Even companies that did not do business in the south and would not benefit directly from donating have contributed funds to disaster victims.

It is clear from this discussion that both socially desirable and undesirable behaviors are observed in the marketplace. The important policy question is what factors encourage desirable behavior and discourage undesirable behavior. One way to think about this is to consider the firm’s problem from a game theoretic perspective. A firm that plans to be in business for many years will value its reputation. Such a firm will behave in a socially responsible manner today because it values repeat customers and future sales. Firms that are more likely to behave irresponsibly are those with managers who are myopic and place little value on the future. These would include the fly-by-night companies that we discussed in Chap. 15. We can also expect to see more irresponsible behavior in markets where it takes time for consumers to learn about firm deception. This would be more likely in markets with credence goods, goods that are complex, and goods that are purchased infrequently. The Ford Pinto fits this description. It is policy issues such as these that we discuss in the next chapter.

19.2.2 Market Power and the Distribution of Income and Wealth

Previous research suggests that one element of distributive justice is the principle of just deserts in which those who put forth greater effort and make greater investments in the future receive greater compensation. But what about income and wealth that derive from market power or pure luck?²⁴

Many of the richest Americans received their wealth from inheritance. Being born into the right family is one way to end up rich. For instance, five of the richest 136 Americans in 2010 inherited their wealth from Sam Walton of Wal-Mart.²⁵ Canterbury and Nosari (1985) report that inheritance accounts for a large share of the wealth among the richest 400 Americans.

Another concern is that some of the richest Americans derived their wealth from market power.²⁶ After all, the wealthy are more likely to benefit from the profits associated with market power than the poor. For example, Bill Gates was the wealthiest American in 2010, with a net worth of \$54 billion. Most of this wealth derived from profits earned by Microsoft, a near monopoly seller of computer operating system software. Although a portion of his success is due to innovative genius and hard work, Gates himself admits that his success is partially due to luck (Manes and Andrews, 2002). We discuss Microsoft in more detail in Chap. 21.

We might consider the distribution of income and wealth an issue of social concern for two reasons. The first is based on the growing trend towards greater inequality in income and wealth in the USA and on the egalitarian principle, which advocates the elimination of economic inequality among individuals.

The second reason why distributional issues may be of social concern is that rewards that derive from luck and static market power are not consistent with what most people consider to be fair. Such rewards cannot be fully justified by the three criteria that are emerging from the unifying theory of distributive justice. That is, there is no need-based rationalization for such rewards. Neither are these rewards entirely attributable to greater effort. Thus, allowing individuals to gain from market power and to pass along an inheritance to others may not be needed to encourage hard work and improve static efficiency.²⁷ On the other hand, individual gains from market power that promote dynamic efficiency may be justified. Regarding luck, experimental work by Johansson-Stenman and Konow (2009) indicates that most people believe that it is fair to redistribute from lucky to unlucky

²⁴ Buchanan (1986) identifies four determinants of income and wealth: effort, choice, luck, and birth.

²⁵ For a list of the richest 400 Americans in 2010, see *Forbes*, October 11, 2010 at <http://www.forbes.com/wealth/forbes-400/list?page=1>, accessed July 23, 2011.

²⁶ Siegfried et al. (1995) and Hazlett and Siegfried (1997) estimate that market power is responsible for about a third of the greatest fortunes in Australia, Great Britain, New Zealand, and the USA.

²⁷ Alternatively, one could argue that individuals may work hard to provide their children with an inheritance and should be free to do so in a society that values liberty.

risk takers. At the same time, most people also believe that the socially productive risk taker should receive a larger share of the economic pie.

Two common indices that are used to describe income and wealth inequality are the concentration ratio and the Gini coefficient. In this context, a concentration ratio measures the total income (or wealth) held by various income groups. The Gini coefficient derives from the Lorenz curve and equals 0 when there is perfect equality and equals 1 when there is maximum inequality.²⁸ Since the late 1960s, both measures indicate a trend towards greater concentration of income and wealth in the USA. The Gini coefficient of household income rose from 0.40 to 0.47 from 1967 to 2008 (Smeeding and Thompson, 2010). From 1989 to 2007, the concentration of income earned by the richest 10% of the population rose from 67.2% to 71.2% (Kennickell, 2009). Concentration of wealth is even more pronounced, with a Gini coefficient of 0.79 in 1989 and 0.81 in 2007 (Kennickell, 2009).²⁹

There has been considerable speculation about the reasons why the rich have benefitted more than the poor from economic growth in the last several decades. Possible explanations include the fact that the rich are better able to afford a college education, technological change and free trade have benefitted white collar relative to blue collar workers, and changes in corporate tax laws have benefitted the wealthy relative to others. Another issue is whether market power benefits the wealthy more than the poor.

The little evidence that exists on this subject suggests that the wealthy benefit most from market power. Regarding income, Powell (1987) discovered that the middle class spent a larger share of their income than the rich and the poor on goods and services from high concentration industries. In addition, she found that most of the profits attributable to market power went to the wealthiest Americans.³⁰ Her analysis indicates that if concentration in highly concentrated manufacturing industries were reduced to unconcentrated levels (i.e., four-firm concentration ratios were no more than 40% and the Herfindahl–Hirschman index was no more than 1,000, as discussed in Chap. 8), the wealthiest sixth of the population would suffer a net loss in income of 1.45%. Everyone else would receive an average gain in income of between 0.3% and 0.7%.

Comanor and Smiley (1975) address a more daunting question—to what extent have monopoly (or oligopoly) profits earned from 1890 to 1962 contributed to the disparity of wealth in the USA? To answer this question, they assume: (1) the

²⁸ The Lorenz curve is a graph of the cumulative distribution function of income (wealth), with the vertical axis representing the cumulative share of people's income (wealth) and the horizontal axis representing the cumulative share of people, who are ordered from lowest to highest income (wealth) levels. With an equal distribution of income (wealth), the Lorenz curve is a 45° line. With an unequal distribution, the Lorenz curve falls below the 45° line. The Gini coefficient is defined as the area between the 45° line and the Lorenz curve divided by the area under the 45° line. For a more complete discussion of the Lorenz curve and Gini coefficient, see Wolff (2009).

²⁹ For further discussion, see Wolff (2009) and Smeeding and Thompson (2010).

³⁰ Similarly, Creedy and Dixon (1998) found that low-income households paid a larger share of the welfare loss due to monopoly power in Australia.

transfer from consumers to monopoly producers was proportional to current wealth; (2) monopoly profits were 2% of gross national product; (3) monopoly profits were distributed in proportion to current wealth; and (4) the average life of market power in a given market was 10 to 40 years.³¹ Their estimates indicate that eliminating monopoly profits would have benefited the poor relative to the rich. The richest 2.4% of the population would have experienced a reduction in wealth, falling from 40% to 32% of US wealth. The poorest 60% of the population would have experienced a gain in wealth, increasing from 8% to 13% of US wealth. More recently, Siegfried et al. (1995) found similar results, although they also showed that market power is responsible for only about a third of the greatest fortunes in Australia, Great Britain, and the USA.³²

We should keep three caveats in mind when assessing the evidence regarding market power and the distribution of income and wealth. First, increased globalization has made the economy more competitive over the last several decades, so that there may be declining gains from market power to distribute. Second, some may feel that it is inappropriate to redistribute money from the rich to the poor in a society that values freedom. Individuals who work hard to accumulate money for their children should be allowed to do so.³³ Third, a redistributive policy may negatively impact dynamic efficiency. Hopefully, renewed interest in equity issues within the profession will revive this area of research in industrial organization.

19.3 Summary

1. In this book, we focus on three dimensions of economic performance: static efficiency, dynamic efficiency, and equity. The main goal of this chapter is to assess whether or not imperfectly competitive markets meet these performance standards.
2. There are four concepts of static economic efficiency. The first two apply to the firm, and the second two apply to the industry. The first is technical efficiency, which is reached when a firm uses the fewest inputs to produce a given output. The second is economic efficiency, which is reached when a firm combines

³¹ These assumptions are designed to minimize the benefit that the wealthy receive from monopoly profits. Thus, the transfer of wealth due to market power to the wealthy is biased downwards.

³² Hazlett and Siegfried (1997) find similar results for New Zealand.

³³ Another concern with inheritance taxes is that they apply to financial wealth and not inherited genes from parents. If it is fair to tax away all inheritance that is financial, it would also be fair to tax away inherited genetic gifts from parents. For example, Payton Manning and Eli Manning are successful quarterbacks in the NFL primarily because their father is Archie Manning, a former NFL quarterback. To tax away financial inheritance and not genetic inheritance would be unfair to financial inheritance recipients.

inputs to minimize the cost of producing a given output. The third type is allocative efficiency, which is met when an industry produces the socially desirable level of output. This occurs when production takes place where price equals marginal cost. Finally, productive efficiency is reached when industry output is produced at lowest cost.

3. The model that serves as a benchmark for static allocative efficiency is perfect competition. Most, but not all, models suggest that allocative inefficiency will exist in imperfectly competitive markets.
4. The empirical evidence discussed in Chap. 12 confirms that price exceeds marginal cost in many imperfectly competitive markets, particularly in markets with few competitors. The evidence seems to suggest that the cost of allocative inefficiency for the economy as a whole is less than 3% of gross domestic product.
5. Rent-seeking behavior can also be a problem in imperfectly competitive markets. This occurs when a firm lobbies government to gain or maintain its market power. A few studies tackled the difficult problem of estimating the cost of rent seeking and found that it can be substantial.
6. The presence of X-inefficiency adds further to the social cost of market power. X-inefficiency occurs when a firm fails to minimize its costs. The theory suggests that sufficient competition is required for cost minimization, implying that X-inefficiency is more likely in monopoly and oligopoly markets. There is evidence that X-inefficiency results from inadequate competition.
7. The empirical evidence suggests that the social cost of rent-seeking activity and X-inefficiency may be a policy concern over and above allocative inefficiency alone.
8. Dynamic efficiency is considerably more complex than static efficiency. In a dynamic market where addiction or learning-by-doing is present, the equality of price and marginal cost does not imply allocative efficiency. At the same time, high concentration may be associated with greater innovative activity and, therefore, dynamic efficiency. Further research is needed to determine the extent to which our political-economic system is dynamically efficient.
9. New research indicates that most people agree that distributive justice and equity depend upon three competing elements: need, just deserts, and efficiency. That is, the pie should be divided in a way that gives more to those with greater need, that gives more to those who contribute more, and that promotes efficiency.
10. Ideally, firms should behave in a responsible manner. Marketing campaigns should reflect social norms, and sellers should not defraud their customers. The evidence shows that firms have not always behaved responsibly. Nevertheless, firms have contributed large sums of money to charitable causes, even companies that would not benefit directly from these gifts. We are more likely to observe responsible behavior from companies that care about their reputations and in markets where deception is readily apparent to consumers.
11. The evidence shows that many of the richest Americans obtained their wealth from inheritance and that the wealthy have received a greater share of profits that

derive from market power. Some might view these as ill-gotten gains that should be taxed and redistributed, while others may feel that this is inappropriate in a free society. After all, if parents want to give their hard-earned wealth to their children, why should they not be allowed to do so? These are serious equity issues that may grow in importance if the wealth gap between rich and poor continues to widen in the USA.

19.4 Review Questions

1. Briefly describe the four concepts of static efficiency that are used in this book: technical efficiency, economic efficiency, allocative efficiency, and productive efficiency.
2. Distinguish between static and dynamic efficiency. Explain why it is more difficult to estimate allocative inefficiency in a dynamic market than a static market.
3. Explain how the intensity of competition affects X-inefficiency.
4. Explain the relationship between market power and rent-seeking behavior.
5. Describe the efficiency–equity trade-off. Why might equity diminish when a society places greater emphasis on efficiency, and vice versa?
6. The evidence shows that private firms do not always behave in a socially responsible manner.
 - A. Under what conditions will a profit-maximizing firm be less likely to behave responsibly?
 - B. What are the policy implications of your answer to part A above? In other words, what should be the rules of the game in business?
7. Monopoly profits tend to benefit the rich relative to the rest of society. One solution would be to tax away all excess economic profits and redistribute the proceeds in a more equitable manner. Although this may promote equity, why might it be dynamically inefficient?