

# Principles of Microeconomics: Chapter 6

## Industrial Organization: Market Structure and Market Outcomes

### I. Industrial Organization

There is a sub area of microeconomics called “industrial organization” that studies why different industries behave differently, they may have prices that are more or less above marginal cost, they may innovate at different rates, they may have more entry and exit, they may employ different kinds of persons and capital goods.

Here one might consider the “old fashioned” (pre internet) industries of steel, automobiles, electronics, retail sales, medical services, military equipment, etc. Or some of the newer computer-based firms such as Microsoft, Google, and Facebook.

One of the main differences among industries (and regions) is the number of firms and/or consumers. Some industries have far fewer firms (are more “concentrated”) than others. Sometimes, purchasers (customers) are less numerous (more concentrated) than others or differ in important respects. For example, military products are sold principally to governments.

In this chapter, we’ll take a look at three or four types of market structures that are less competitive than the market types that we’ve previously examined. These are market structures in which the “price taking” characteristic of firms and/or consumers is unlikely to hold.

At this point in the course, we have discussed both Marshallian and Ricardian theories of competitive markets where the primary difference was in assumptions about firms. Marshall assumes that they are all identical, Ricardo assumes that they are all a bit different although they all produce the same products. Another difference is Marshall’s emphasis on entry and exit to clear markets in the long run, whereas this process is less important in the Ricardian version of very competitive markets. In Marshall’s long run equilibrium all

firms earn just the “ordinary” rate of return on their investments. In Ricardo’s version, profits will vary among firms because of differences in their production costs associated with differences in the talents of their owners, location, and workforce.

The main focus of this chapter is on less competitive markets in which firms can no longer be modeled as price takers.

Perhaps surprising, it is the least competitive market types reviewed in this chapter that are easiest to model with our neoclassical tools are monopoly (one seller), monopsony (one buyer), and monopolistic competition.

And this is where we’ll focus most of our examination of market structures.

Other intermediate cases require other tools to analyze and have less “sharp” predictions about prices, outputs, and efficiency. Those require game theory, and we’ll give those less attention—partly because the results are less clear cut.

The number of firms and consumers in an industry is partly endogenous. That is to say, it is often a consequence of demand, the technologies of production, network economies, opportunities for risk sharing, and informational limits. It is also partly a matter of firm strategies.

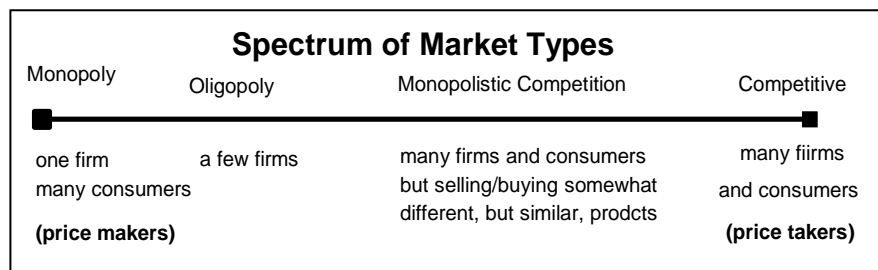
The degree of market concentration is also affected by economic regulation (patents, licensing, and antitrust laws), and efforts by firms to coordinate their pricing and output decisions (cartels).

A useful **rule of thumb** is that as the **number of rivals** shrinks, the **degree of price and quality competition falls**. As a consequence, prices no longer equal marginal production costs as they do in

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competitive markets. As numbers of rivals fall, it also becomes easier for firms to form **cartels**.



Of course, in practice, more than the number of firms is important, but as a first approximation, the number of firms can be used to represent the degree of monopoly power held by suppliers.

**The rule of thumb is “The more firms, the less price setting ability an individual firm tends to have.”**

However, it should be acknowledged that there are exceptions to this rule. Sometimes even markets with just a few firms generate very competitive markets. The types of entrepreneurs matter—if each attempts to maximize market share by providing lower prices, higher quality, or better service, then the result may resemble that of competitive markets (with prices approximately equal to marginal cost—e.g. no monopoly markup).

## II. Monopoly

The easiest type of market to model is one in which there is a single firm that produces a unique product or service that sells to many consumers of its goods or services. In this case, a monopoly firm completely controls the supply of its product and so can price and produce and price its output anyway that it wants.

However, a monopolist still wants to maximize its profits. Thus, a monopolistic firm will not sell its output at the highest possible price or produce the maximum or minimum quantities that it can, but it will produce the quantity and sell it at the price that maximizes profits.

A. The geometry of maximizing profits looks a bit different for a monopolist than for a competitive firm, but a monopolist will still produce the output that sets marginal cost equal to marginal revenue. However, its marginal revenue is no longer a horizontal line determined by market prices. Instead, it reflects the demand for its product or services.

- Generally, a monopolist’s marginal revenue curve is a downward sloping curve or line that reflects market demand for its products—but lies below the demand curve over most of its range.
- **If the monopolist’s demand curve is a straight line (is linear) then its marginal revenue curve is also a straight line and is exactly half-way between the demand curve and the vertical axis.**
- This result is not intuitive—but rather emerges from a bit of calculus, which is undertaken below for interested students.
- For students that have not had calculus or are not interested in the math behind the shape and location of a monopolist’s MR curve, skip on to section C.

### B. The Calculus of Marginal Revenue Curves (optional)

For those who know a little calculus, **here is how one derives a marginal revenue curve** for the simple (non-discriminating) monopolist that faces a linear (straight line) demand curve.

- Suppose that demand is  $Q = a - bP$ . **This function can be rewritten to describe how a monopolist’s selling price changes with output:**

$$P = a/b - Q/b.$$

This tells the monopolist how its price changes as it produces more output.

- The firm’s total revenue,  $R$ , is  $PQ$ , which in this case can be written as

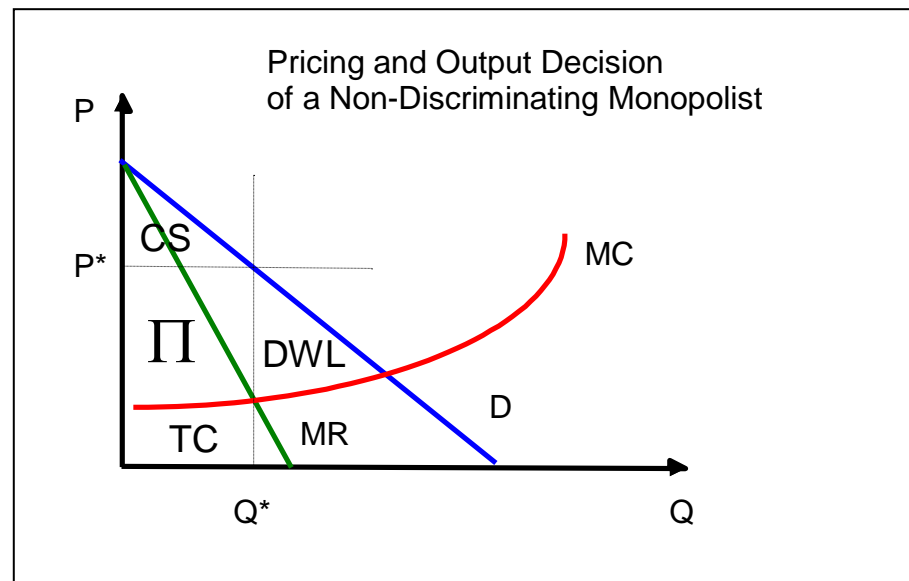
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$$R = PQ = (a/b - Q/b)Q = aQ/b - Q^2/b$$

using the pricing equation that we derived from the monopolist's demand curve.

- Differentiating  $R$  with respect to  $Q$  gives us the firm's marginal revenue function or curve, which is  $dR/dQ = a/b - 2Q/b$ .
  - Note that this is a straight line. It starts at the same point on the vertical axis ( $a/b$ ) but falls twice as fast as the demand curve we started with,  $-2Q/b$  instead of  $-Q/b$ .
  - So, the marginal revenue curve is exactly halfway between the demand curve and the vertical axis.
- C. The figure below illustrates the geometry of the profit-maximizing output and price for a monopolist.
- **Note that the monopolist still produces the output where  $MC=MR$ , because it is this output that maximizes profits.**
  - **However, its price is not equal to marginal revenue at that quantity. Instead, the price at which  $Q^*$  units can be sold is found by looking at the demand curve at  $Q^*$ .**
  - That price is greater than its marginal revenue.



- Note that it can sell all  $Q^*$  units of its product at price  $P^*$ , which is the price implied by the demand curve.
  - At a price of  $P^*$ , consumers will want to purchase  $Q^*$  units.
  - The areas for consumer surplus and profit can be calculated in the usual way. CS is smaller than in competitive markets and profits are larger.
  - Deadweight loss occurs because there are unrealized gains to trade at the monopolistic equilibrium. Thus, social net benefits are smaller than they would have been in an equivalent competitive market. (This plays an important role in economic support for anti-trust policy, which is taken up later in this chapter.)
- D. Nonetheless, the quantity supplied equals the quantity demanded in equilibrium, as in competitive markets.
- E. Overview of differences between competitive and monopolistic markets.
- For example, prices no longer equal a firm's marginal cost of production at  $Q^*$ . Nor is price equal to the firm's marginal revenue.
  - Monopolists charge a price higher than marginal cost, because such

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prices increase their profits. The difference between marginal cost (at  $Q^*$ ) and the selling price is called the **monopoly mark up**.

- The output level chosen no longer maximizes social net benefits.
- There is now a dead weight loss. Social net benefits are maximized where the MC curve (SMC) crosses the demand curve (SMB), but a monopolist's output is a somewhat less than that.
- Consumer surplus is smaller, and profits are larger than they would have been in a competitive market with a price equal to the marginal cost at the point where the MC curve crosses the demand curve (at  $Q^{**}$ ).

As an exercise, draw several monopoly diagrams with different slopes for the demand curve. Find the implied MR curve, output level, and price. Then label the consumer surplus and profits associated with the Monopolist's output and pricing decision.

Next, analyze the social net benefits that could have been realized at the point where  $SMB = SMC$ . (Hint: assume that Demand is SMB and the firm's MC curve is SMC.)

Discuss: is the area labelled DWL. Would it be better labelled as "un-realized gains to trade?"

### III. (Optional) Monopoly Markets with Price Discrimination

The above model and all of our previous models have assumed that all consumers pay the same price for their goods and services: the same price for every unit of the service sold.

However, firms can sometimes charge different prices to different consumers and/or different prices for different units of output sold to the same customer, profits can often be increased by doing so.

- Selling the same product at different prices is called **price discrimination**.

A **perfectly discriminating monopolist** would sell every single unit of its output at the highest price possible—which is to say at the highest price that a consumer is willing to pay.

- If it can actually do this, this implies that the demand curve is its marginal revenue curve.
- **Recall that** the market demand curve can be thought of as the marginal benefit curve for all consumers in the market; marginal benefit curves plot the highest prices that consumers are willing to pay for a particular unit of a good; so, the highest price that can be gotten for each successive unit of the good to be sold is captured by the demand curve.
- (In the non-discriminating case, the demand curve is the **average revenue curve** rather than the marginal revenue curve. [Explain why].)
- If a monopolist can perfectly discriminate, the firm will sell the output level where its MR curve (now the demand curve) crosses its MC curve.
- Note that this is the social net benefit maximizing quantity.
- However, notice also, **that consumers gain no consumer surplus in this extreme case**.
- In this limiting case, all the net benefits are captured by the perfectly discriminating monopolist.
- Fortunately—at least to this point—such an equilibrium is informationally impossible. The monopolist would have to know the reservations prices of each of its potential customers.

### IV. Natural Monopolies

Monopoly markets can occur for many reasons, including innovation, distance, patent rights, regulation, and luck.

**What economists call "natural monopolies" occur when the market is too small to support more than one efficiently sized firm.**

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This may occur, for example, when MC slopes downward over the range of interest (out to beyond the point where MC and the demand curve cross).

In Ricardian markets, entry stops when no firm exists that can profitably enter this market. This condition is pretty similar to that of entry in the Marshallian model, but the Ricardian case allows for variation in the types of firms in a market or industry. Generally, in Ricardian markets, entry requires a new firm to have a technological (cost) advantage over the least profitable firm already in the market.

If a firm's mc is sufficiently downward sloping, the market would tend toward natural monopoly from the Ricardian perspective, and also from the Marshallian perspective. Such markets will support just one efficient firm.

These sorts of monopolies are fairly common in many rural areas where only a single gas station, grocery store, church, or pub can be supported by local demand.

At the state, national, or world level, natural monopolies are less common, but a few exist. For example, it can be argued that Microsoft's operating system and Google's search engine come close to those conditions for the U.S. and for much of the world.

As an exercise draw a monopoly price and output diagram for a natural monopolist. (Remember that MC is downward sloping over the entire range of the market demand for natural monopolists.)

Note prices, outputs, profits, and deadweight loss.

Are such monopolists always profitable?

In a separate diagram, show that a natural monopolist would run at a loss if it priced its output at marginal cost.

Think about how a monopolist might price its services if it was worried about entry. It is quite likely that a monopolist would lower its price if it was concerned about entry, which would reduce the DWL associate with such monopolies.

Natural monopolies are often said to exist in electricity and telephone (land line) services.

To increase consumer surplus, such local monopolists are often **regulated** by state utility commissions, who set prices that can be charged for electricity, which has the effect of making monopolists price takers.

As an exercise, show how price regulations may increase outputs and consumer surplus in monopoly markets, although they tend to reduce profits. Note that this case is different from price regulation in competitive markets.

(George Stigler, the winner the 1982 Nobel prize in economics, argued that **regulators tend to be "captured"** by those who they regulate. In that case, regulation would not change the natural monopoly outcome. Explain why this could be the case.)

#### V. Artificial Monopolies: Cartels and Regulatory Monopolies

Of course, not all monopolists are "natural." A group of firms may organize a "pricing club," cartel, or trust and try to coordinate pricing and output decisions, rather than compete with each other for customers. OPEC is an example of an international cartel of producers of petroleum (oil).

A **perfectly organized cartel** would function as if were a monopolist and its members would coordinate their production decisions to obtain the monopoly price for the output sold.

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However, such cartels are difficult to organize because firms have incentives to “cheat” on their cartel agreements by producing more than their allowed output and/or by trying to sell their output at a price below that set by the cartel.

Explain why that might be profitable for a cartel member.

Another artificial source of monopoly is **patent laws**. Patent law gives inventors a temporary monopoly (14 years) as a reward for inventing something of value.

This, of course, tends to produce a deadweight loss in the short run, but the monopoly profits spur inventions and other innovations, which generate dynamic benefits that are greater than the static costs.

Whether this is always true is sometimes debated. A sufficiently broad patent may block a good deal of independent innovation that otherwise would have occurred. It is possible that patents have different effects in different kinds of markets.

In some markets, patents spur innovation, but in others it simply tends to produce lucky monopolies.

Discuss why this could be true. (This may be easier to do after the next chapter is covered.)

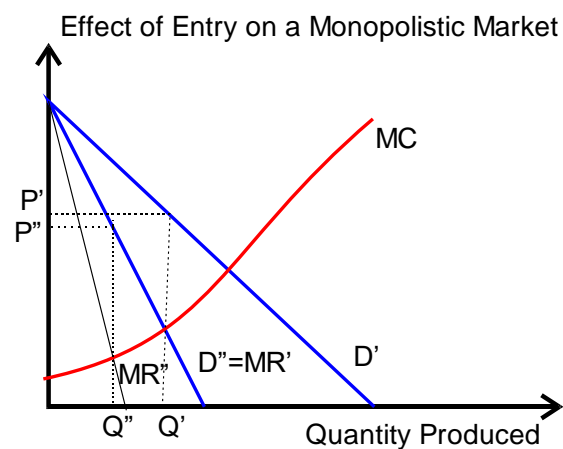
#### VI. Can there be monopolists in the long run?

Both the Ricardian and Marshallian models of competitive markets implies that firms will try to enter and compete with monopolists-- unless the market is a natural monopoly (because of economies of scale) or is protected by a governmental regulation (patent).

Except in those cases, monopoly markets tend to be temporary phenomena.

The effect of entry is to gradually alter the market structure towards the competitive ones studied in the first half of the course.

As firms selling similar (but not necessarily identical products) enter the market the demand for this general type of product is shared by more and more firms. Demand curves may become flatter, or the original demand curve may simply be divided up among more firms. In either case, profits and prices tend to fall as entry takes place.



The figure above illustrates the case where the demand curve is simply divided up. If the original market structure was monopolistic, the new demand curve facing the original monopolist was its former MR curve (e.g. the new demand curve is halfway to the vertical axis from the original demand curve, because its new rival has taken half of the market (by assumption)).

This implies a new MR curve halfway between the new demand curve and the vertical axis,  $MR''$ . Which in turn (given an upward sloping MC curve) implies a lower price.

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The lower price implies greater consumer surplus for the entire market and somewhat lower profits for the industry as a whole. As entry continues, a temporary monopoly may be replaced with a competitive market, if the market is large enough to support a large number of efficient firms.

Labeling the areas for consumer surplus and profit is left as an exercise. It is essentially the same as in the original monopoly diagram for each of the two demand curves,  $D'$  and  $D''$ , and marginal revenue curves,  $MR'$  and  $MR''$ .

**VII. (Optional) Monopoly Buyers: Monopsonists**

The effects of monopoly power on the buyer side of the market resembles that of the classic monopoly price and output decision.

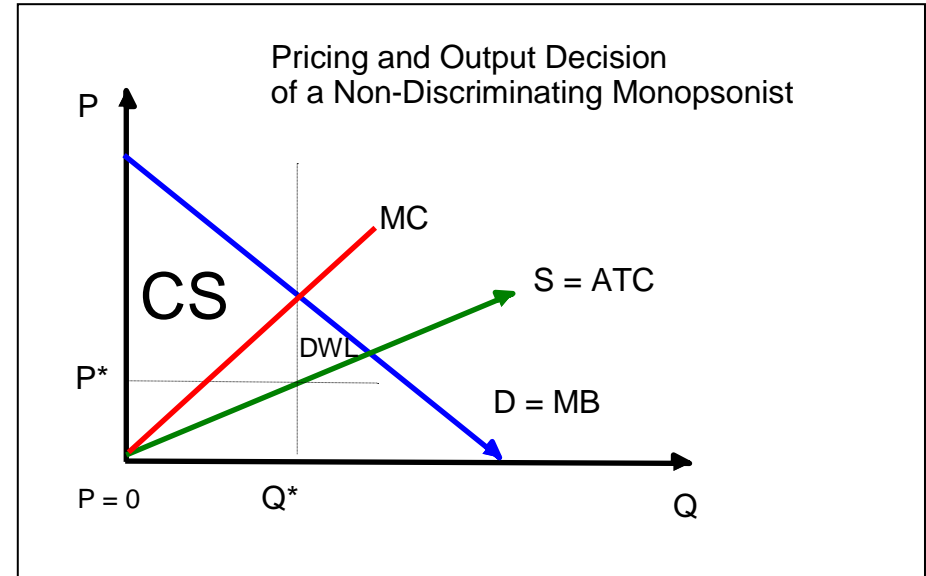
A **monopsony buyer** will want to purchase the output level that sets his, her or its marginal benefits equal to its marginal costs. But it will realize that its purchase decisions will affect market prices and take that effect into account.

A monopsonist's MC curve can be derived as follows. Suppose that supply is simply  $Q = aP$ . This can be rewritten as  $P = Q/a$ .

Total cost for a buyer is  $C = PQ = Q^2/a$ .

Marginal cost is the derivative of the total cost function with respect to  $Q$ , which in this case is  $MC = 2Q/a$ .

Note that the monopsonist's MC curve rises twice as fast as the supply curve that it faces.



Note that the monopsonist also first identifies the net benefit maximizing quantity to purchase given its upward sloping MC curve and downward sloping MB curve.

Given the quantity, it offers to pay just the amount that will induce this quantity to be supplied by firms in the industry. This maximizes buyer net benefits, although it does not maximize social surplus (why?).

- A non-discriminating monopsonist will produce a deadweight loss similar to that of a monopolist.
- Some potential gains to trade will go unrealized.

As with monopolists, there can be “natural” or “unnatural” monopsonists, and, as with sellers, again “price clubs” or cartels of purchasers may be useful ways to increase buyer net benefits.

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And again, price discrimination may be useful for buyers and may reduce social net losses.

#### VIII. Monopolistic Competition

The idea that monopolists might compete with other firms who produce similar but not identical products was proposed and analyzed by Edward Chamberlin in 1933. It is a far more common market structure today than it was back in the 1930s.

Chamberlin's idea (monopolistic competition) refers to markets where several firms, perhaps dozens, sell similar but not identical products, as true of many contemporary producers and retailers.

The products in monopolistically competitive markets are good, but not perfect, substitutes for one another.

The availability of substitutes changes both the slope and the extent of the demand curves faced by firms in this industry. Demand curves are flatter (more price elastic) than they were in the original monopoly case, which tends to make the market resemble a competitive market, because "mark ups" (the extent to which  $P > MC$ ) tend to be smaller and profits decline toward "normal" rates of return.

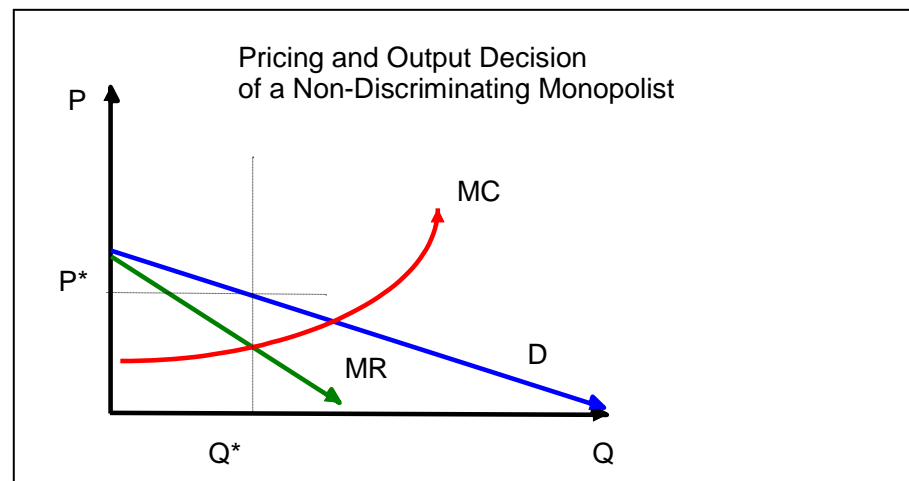
In old town Morgantown, for example, there is one Japanese, one Chinese, and one Tai restaurant. They are good substitutes for one another, but not perfect substitutes, so each has some monopoly power, but it is limited by the prices and products of its competitors.

A. Each firm's monopoly power depends on the extent to which other firms produce goods that consumers regard to be similar--that is to say, good substitutes.

- Entry into a monopolistically competitive market occurs by firms

producing different, but similar products.

- As the available substitutes become better (that as more close substitutes become available, demand curves shift down and become "flatter" and monopoly power falls (although not to zero).
- (Note that the flatter is a firm's own demand curve, the more his situation resembles that of a firm in a perfectly competitive market.) As better and better substitutes for one's own product are produced and sold, the market becomes more and more like perfectly competitive markets.
- Monopolistic competition is very common in today's commercial societies, because firms often produce somewhat different products that are substitutes for others sold by other firms, but no perfect substitutes, because consumers care about the differences.



- In long run equilibrium, there are enough firms producing similar, but different products, that no new entrant can join the market and obtain enough sales to be profitable.
- This condition sometimes relies upon fixed costs to produce an equilibrium, but this is not really necessary. U shaped long run MC curves can achieve this as well.



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Draw a zeros profit monopoly outcome as an exercise. Hint: this will require a J-shaped MC curve.

- **The main point, however, is that with monopolistic competition each firm's demand curves is "lower" and "flatter" (more price sensitive), so firms in monopolistically competitive markets have less monopoly power (less ability [or interest] in charging consumers more than the marginal cost of production).**
- In the linear case, the markup may still be 2 to 1, but the selling price is closer to MC in dollars than a similar demand curve with a steeper slope would have been.

B. Both monopolistically competitive markets and monopoly markets have persons or organizations in them who can directly determine prices.

- This differs from perfectly competitive markets where all persons are price takers. (And there are no price makers.)
- Nonetheless, **the comparative static results are similar to those found for competitive markets.**
- Prices tend to rise if MC increases or if Demand increases.
- Prices tend to fall if MC decreases or Demand decreases.
- Voluntary exchange still requires mutual gains from trade: consumers realize consumer surplus and firms realize profits.

C. Many of the qualitative results from "demand and supply" based analysis will apply to monopoly markets as well, although monopolists tend to realize (on average) somewhat greater average profits than competitive firms do, because they are no longer selling (the last unit of) their output at marginal cost.

$MR=MC$  at  $Q^*$  (the profit maximizing output)

[An exception to this rule of thumb occurs when a monopolist is able to engage in perfect price discrimination, in which case the

last unit sold will have a price equal to MC, although all other units will be sold at above MC].

How much greater price is than marginal cost depends on the slope of the demand curve. The less price sensitive demand is (the steeper it is), the more prices will be above marginal cost (in dollars per unit).

(Other dynamic considerations, and price discrimination will also affect pricing decisions, but these are neglected in this summary.)

### IX. Antitrust Law: Using the Law to Block Shared and other Unnatural Monopolies and Monopolistic Practices

Concern with monopoly firms emerged in the 19th century as industrialization occurred and as national transportation networks allowed single firms or small groups of firms (often organized as cartels or "trusts") to dominate production of important goods and services such as steel, aluminum, and railroads, etc.

Prior to the nineteenth century, most monopolies were created by governments and sold off as a revenue sources. These state monopolies were also of concern, but fewer were created after mass protests in the seventeenth century.

In the nineteenth century, as production became more capital intensive (e.g. used larger machines and factories), fewer efficient sized forms could be supported by even national markets, which made it easier for firms to meet and attempt to coordinate their pricing and output decisions.

It did not, however, make such agreements binding (they were not enforced by common law), and so economists debate the extent to which cartels actually were able to realize monopoly profits, because members of a cartel face strong temptations to produce more

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than their “quota” established by their cartel.

- A. **The first national antitrust law adopted in the US was the Sherman Antitrust Act of 1890.** (Named after senator John Sherman, an Ohio Republican, who was the main author of the bill.)

The Sherman Act essentially makes cartels and other methods of monopolization illegal.

“Section 1 prohibited contracts, combinations, and conspiracies in restraint of trade.

Section 2 prohibited monopolization and conspiracies and attempts to monopolize.

Other provisions of the act imposed criminal sanctions for its violation but also authorized injunctive suits by the Justice Department and treble-damage suits by private parties.”

The current (amended) wording of the Sherman Act can be found at: <http://www.antitrustupdate.com/statutes/shermanact/st-sherman1-4.html>

- B. Like most new areas of public law, how the law should be applied was not initially entirely clear. So, it was left up to the courts to work out how to apply the law to specific cases.

**Thus, antitrust law is partly a product of the legislature and partly a product of court decisions,** a few of which we’ll look at in this last major section of Chapter 6.

**[The Sherman Antitrust Act was initially applied to all manner of market cooperation aimed at controlling prices or that created “unfair” marketing practices—including efforts by unions and farm cooperatives.]**

- C. Concerns over whether the Sherman Act was being applied in a reasonable (politically reasonable?) manner led to two additional anti-trust acts: The **FTC** (Federal Trade Commission) **Act** of 1914, and the **Clayton Act** also in 1914.

“Under this Act, the Commission is empowered, among other things, to (a) prevent unfair methods of competition, and unfair or deceptive acts or practices in or affecting commerce; (b) seek monetary redress and other relief for conduct injurious to consumers; (c) prescribe trade regulation rules defining with specificity acts or practices that are unfair or deceptive, and establishing requirements designed to prevent such acts or practices; (d) conduct investigations relating to the organization, business, practices, and management of entities engaged in commerce; and (e) make reports and legislative recommendations to Congress”

- D. **The FTC act of 1914 created a new federal agency and gave it responsibility for enforcing antitrust law.** It forbade “unfair methods of competition” including “tie in” sales and “exclusive” dealing.

The FTC acts **exempts** banks, airlines, common carriers, from its rules. (why?)

FTC decisions were to be final unless appealed to the Supreme Court.

The amended text of the FTC act can be found at: <http://www.stolaf.edu/people/becker/antitrust/statutes/ftc.html>

- E. **The Clayton Act of 1914** forbade price discrimination, stock acquisitions, and interlocking directorships, which could be used to coordinate pricing and output decisions but were neither monopolies nor trusts.

- **The Clayton Act, like the Sherman Act, also allows those harmed to sue for damages, and actually recover triple damages.**
- Sec 17 of the Clayton Act **exempts labor unions and (non-profit)**

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**farm cooperatives** from antitrust suits.

- **(Baseball was exempted after a 1922 Supreme Court decision.)** See <http://www.nytimes.com/1994/12/24/sports/baseball-antitrust-exemption-history.html> for a nice overview of that decision.
- The amended text of the Clayton Act can be found at: <http://www.sto-laf.edu/people/becker/antitrust/statutes/clayton.html>

#### F. **These three antitrust laws remain the main legislative basis for antitrust lawsuits and criminal actions in the United States.**

Others followed but were relatively less important. For example, in 1950, these three acts were augmented by the **Celler-Kefauver Act**, which addresses mergers that may reduce competition.

- Antitrust acts after 1914 were often formally amendments of the Sherman, FTC, or Clayton Acts and so normally appear in the text of the contemporary (amended) texts of these acts.
- The main civil remedy in the first anti-trust laws was the provision for **triple damages** for a firm that successfully wins an anti-trust case.
- Triple damages create strong incentives for damaged (and other) firms to launch civil suits charging monopoly practices.
- (This provision could be “efficient” in the sense of the punitive damages of tort cases, if only a fraction of monopoly damages is every brought to court, otherwise it simply encourages more lawsuits.)
- **During the 1955, 1974, and 1990, the various criminal penalties (fines) for anti-trust law violations were increased**, although the triple (treble) damages provisions were kept.
- Such **criminal proceedings could be initiated by the FTC or the Department of Justice.**

#### G. Richard Posner’s book on Anti-trust law includes a table that list the number of anti-trust cases brought by the Department of Justice. See his Table 1.

- That table shows that after the Sherman Act was adopted, relatively few cases were brought by the Justice Department (aka DOJ), just 15 in the

first ten years, 42 in the next ten years, and 126 between 1910 and 1919.

- **More and more cases were brought each decade except during the Great Depression, peaking in the 1980-1989 period** (Reagan Presidency) with 741 cases, followed by 609 cases in 1990-1999 (Clinton Administration).
- The cases are roughly 2-fifths civil cases and 3-fifths criminal cases.

Average fines have been increasing through time in nominal terms, rising from about 20K during the 1910-1929 period to about 325K in the 1970-1989 period, and then rising dramatic during the 1990s to nearly 5 million dollars. (See Posner’s table 2).

#### APPENDIX I: Some Famous Antitrust Cases

Antitrust law evolved through a long series of court decisions, especially ones made by the Supreme Court.

There are essentially two lines of argument.

- (1) First, that some practices and levels of concentration are “**per se**” in violation of the antitrust acts and so illegal.
- (2) Second, that only practices that “**unreasonably** constrain competition or restrain markets” are illegal. These vary case by case according to what is “reasonable” for firms in the market of interest. Generally, “reasonable” monopoly power tends to increase, rather than decrease, consumer surplus.

**Both interpretations came to be more and more influenced by economic arguments**, with the result that the central issue often became (i) the extent of market concentration and (ii) whether a particular practice increased or diminished competition (and/or consumer net benefits.)

- **Richard Posner (2010-10-22). Antitrust Law, Second Edition Provides a lengthy defense of the “reasonable practices” view of proper applications of anti-trust law.** [Posner is a law professor at the University of Chicago and a judge on the 7th US Court of Appeals in

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Chicago.]

- [Economists who specialize in “industrial organization” often earn large fees to appear in monopoly cases as “expert witnesses.”]

This is not to say that the court always gets it right (economically), but it is to say that the trend is toward a “reasonability” standard (anti-competitive standard), rather than a per se standard.

Other economists and lawyers support “per se” laws because they are clearer and less subject to manipulation in court. “Per se” rules have recently made a comeback within the Biden administration.

**See Dennis Mueller (1996) for a somewhat less optimistic take on US antitrust law that favors using “per se” rules in most cases.**

- A. The Sherman Act changed antitrust law from traditional common law practices. A good illustration of this is evident in the **Appeal to the Supreme Court in the Standard Oil Case**. [Source [http://www.law.cornell.edu/supct/html/historics/USSC\\_CR\\_0221\\_0001\\_ZS.html](http://www.law.cornell.edu/supct/html/historics/USSC_CR_0221_0001_ZS.html) ]

**B. The following are excerpts from the majority opinion.**

The debates in Congress on the Anti-Trust Act of 1890 show that one of the influences leading to the enactment of the statute was doubt as to whether there is a common law of the United States governing the making of contracts in restraint of trade and the creation and maintenance of monopolies in the absence of legislation.

While debates of the Congress enacting it may not be used as means for interpreting a statute, they may be resorted to as a means of ascertaining the conditions under which it was enacted.

**The terms "restraint of trade," and "attempts to monopolize," as used in the Anti-Trust Act, originated in the common law, and were familiar in the law of this country prior to and**

at the time of the adoption of the act, and their meaning should be sought from the conceptions of both English and American law prior to the passage of the act.

**The original doctrine that all contracts in restraint of trade were illegal was long since so modified in the interest of freedom of individuals to contract that the contract was valid if the resulting restraint was only partial in its operation and was otherwise reasonable.**

At common law, monopolies were unlawful because of their restriction upon individual freedom of contract and their injury to the public and at common law, and contracts creating the same evils were brought within the prohibition as impeding the due course of, or being in restraint of, trade.

**The early struggle in England against the power to create monopolies resulted in establishing that those institutions were incompatible with the English Constitution.**

At the time of the passage of the [Sherman] Anti-Trust Act, the English rule was that the individual was free to contract and to abstain from contracting and to exercise every reasonable right in regard thereto, except only as he was restricted from voluntarily and unreasonably or for wrongful purposes restraining his right to carry on his trade. *Mogul Steamship Co. v. McGregor*, 1892, A.C. 25.

- C. **Standard Oil** (the appeal brief is available at: [http://www.law.cornell.edu/supct/html/historics/USSC\\_CR\\_0221\\_0001\\_ZS.html](http://www.law.cornell.edu/supct/html/historics/USSC_CR_0221_0001_ZS.html))

J. D. Rockefeller created Standard Oil in 1870 and largely through that firm became the world’s richest man and America’s first billionaire by cornering the US market for refined oil products and also through large oil and pipeline holdings. He also managed to obtain preferential rates for railroad shipping. In 1890, it controlled 88%

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of the refined product market, and continued to increase its share of production and sales.

Rockefeller and his major partners invested a good deal of their dividends in Railroad stocks, which may account for his ability to gain preferential rates for shipping relative to other refined oil producers.

The company began in Ohio, where the first American Oil boom occurred.

In 1885, SO moved from Ohio to NY and then on to NJ, because of its more lenient corporate law.

**SO produced so much refined product, that it exceeded US demand and created major export markets and SO outlets in Europe and Asia.**

**In 1909, the US Justice Department sued SO and ordered it to be broken into 34 companies.**

"Rebates, preferences, and other discriminatory practices in favor of the combination by railroad companies; restraint and monopolization by control of pipe lines, and unfair practices against competing pipe lines; contracts with competitors in restraint of trade; unfair methods of competition, such as local price cutting at the points where necessary to suppress competition; [and] espionage of the business of competitors, the operation of bogus independent companies, and payment of rebates on oil, with the like intent."

"The evidence is, in fact, absolutely conclusive that the Standard Oil Company charges altogether excessive prices where it meets no competition, and particularly where there is little likelihood of competitors entering the field, and that, on the other hand, where competition is active, it frequently cuts prices to a point which leaves even the Standard little or no profit, and which more often leaves no profit to the competitor, whose costs are ordinarily somewhat higher."

In May 1911, the US Supreme Court upheld the lower court judgment and declared SO to be an "unreasonable monopoly," and ordered it to be broken up into 34 firms.

Among the larger firms created are the present-day Exxon, Chevron, Amoco, and Mobil Oil.

SO (ESSO) continues to operate in Europe and many other parts of the world.

**(Surprisingly, total share prices rose after the breakup, making Rockefeller even richer!)**

By the time of the **breakup SO's share of refined product production had fallen** from around 90% in 1900 to around 65% in 1911.

#### D. US Steel

US Steel was founded in 1901 in Pittsburgh by Andrew Carnegie, JP Morgan, Charles Schwab, and E. H. Gary. It was essentially a conglomeration of steel and steel product producing companies.

It grew to be the world's first company worth more than a billion dollars. Mergers and acquisitions continued, and it began to look to many as if US Steel completely dominated the market for steel and steel products.

US Steel built the town/city of Gary Indiana in 1906, the site of one of the world's largest steel mills.

During its formative period the company was dominated by Gary (its CEO), who exercised influence throughout the American steel industry through his famous "Gary dinners," attended by the heads of major steel producers; out of the meetings came agreements on cooperative pricing and marketing that stabilized a once wildly fluctuating market. Gary opposed "unreasonable" competitive practices as well as labor organizers. (Brittanica.com)

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From its inception it was the dominant steel producer in the US, with a market share of well over 50%. Its market share remained more or less flat or shank somewhat between 1901 and 1911, although industry output increased by 25% during that period. (A. Cotter 1916: 224)

In 1911, the **department of justice began antitrust proceedings** against US Steel.

In 1920, the US Supreme Court decided that US Steel **was not** a monopoly and so its conduct did not come under the Antitrust laws.

Held that the power attained by the United States Steel Corporation, much greater than that of any one competitor, but not greater than that possessed by them all, did not constitute it a monopoly.

The fact that a corporation, alleged to be an illegal combination, during a long period after its formation, persuaded and joined with its competitors.

Its efforts, **at times successful and at times not, to fix and maintain prices in violation** of the Anti-Trust Act, does not warrant present relief against it if the illegal practices were transient in purpose and effect, were abandoned before the suit was begun because of their futility and not for fear of prosecution, and have not since been resumed, and if no intention to resume them or dangerous probability of their resumption is shown by the evidence. Pp. 251 U. S. 444 et seq.

Purpose and effect of the Steel Corporation's acquisition of control of the Tennessee Coal & Iron Company considered in the light of President Roosevelt's prior approval of the transaction and his testimony concerning it. P. 251 U. S. 446.

Upon the question whether the power possessed by the Steel Corporation operated per se as an illegal restraint, held that testimony of its officers, its competitors, and hundreds of its customers to the

effect that competition was not restrained and that prices varied or remained constant according to natural conditions must be accepted as clearly outweighing a generalization advanced by government experts that constancy of prices during certain periods evinced an artificial interference. P. 251 U. S. 447.

**An industrial combination short of a monopoly is not objectionable under the act** merely because of its size -- its capital and power of production -- or merely because of a power to restrain competition, if not exerted. Pp. 251 U. S. 447, 251 U. S. 450 et seq.

#### E. Alcoa

Was founded as the Pittsburgh Aluminum Co by a group of young entrepreneurs (Hall, Cole, Hunt, and others) in 1888, shortly after Charles Hall discovery of a new method for recovering Aluminum from Bauxite ore in 1886, based on a patent for the process (finally issued in 1889.)

It expanded its operations to include fabrication as well as recovery of aluminum from ore in 1890.

**Between 1888 and 1897, the price of aluminum fell from 8\$/lb to 36 cents/lb.** ([http://www.alcoa.com/usa/en/alcoa\\_usa/history.asp](http://www.alcoa.com/usa/en/alcoa_usa/history.asp))

Because of its patent on innovations in both production and fabrication, Alcoa had **a virtual monopoly** on US production and produced 60% of world output. ([http://www.alcoa.com/usa/en/alcoa\\_usa/history.asp](http://www.alcoa.com/usa/en/alcoa_usa/history.asp))

In 1907, the company was renamed the Aluminum Company of America (ALCOA).

Raising funds for expansion required selling shares, and the Mellon family gradually became the largest shareholder--controlling about a third of Alcoa's shares.

**In 1937, the FTC launched an antitrust suit against Alcoa.**

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The Justice Department believed that Alcoa had violated the **Sherman Act on three counts**: making restrictive covenants, engaging in alleged acts of unfair competition and participating in foreign cartels. ([http://www.alcoa.com/usa/en/alcoa\\_usa/history.asp](http://www.alcoa.com/usa/en/alcoa_usa/history.asp))

The FTC believed Alcoa tried to monopolize bauxite, attempted to monopolize the waterpower of the world, dominated and controlled the foreign market for aluminum in the US, and engaged in injurious price cutting.

Alcoa won the trial on all 130 counts.

**But the Government won the appeal.**

Review by the Supreme Court was impossible, since four of the justices had been involved in prior antitrust suits against Alcoa.

A special act of Congress was necessary to give the 2nd Circuit Court of Appeals the weight of a Supreme Court opinion in this matter.

In 1944, the court found Alcoa controlled over 90% of the US market for aluminum ingot. This proportion alone was sufficient to support a violation of the Sherman Act, regardless of intent to monopolize.

The decision was made by **Judge Learned Hand**, included the following:

**“It was not inevitable that it [Alcoa] should always anticipate increases in the demand for ingot and be prepared to supply them. Nothing compelled it to keep doubling and redoubling its capacity before others entered the field. It insists that it never excluded competitors; but we can think of no more effective exclusion than progressively to embrace each new opportunity as it opened, and to face every newcomer with new capacity already geared into a great organization,**

**having the advantage of experience, trade connections and the elite of personnel.”**

“90 percent is enough to constitute a monopoly; it is doubtful whether 60 to 64 percent would be enough; and certainly, 33 percent is not.”

[Some lawyers and economists regard this characterization to be the **“per se” rule as opposed to the “rule of reason” interpretation** of monopoly as “unreasonable restraint of trade or competition.” The debate between the “per se” rule and the “rule of reason” approach played an important role in antitrust suits for the rest of the 20th century.]

In 1947, Alcoa made the argument to the court that there were two effective new entrants into the aluminum market – Reynolds and Kaiser – as a result of demobilization after the war and the government's divestiture of defense plants. In other words, the problem had solved itself and no judicial action would be required.

On this basis, the district court judge ruled against divestiture in 1950, but the court retained jurisdiction over the case for five years, so that it could look over Alcoa's shoulder and ensure that there was no re-monopolization.

#### F. ATT

Graham Bell invented the telephone in 1875 and received two patents on the telephone in 1876.

These were used to launch the Bell Telephone company in 1877.

Service expanded fairly rapidly with the first calls between Chicago and NY occurring in 1892, and the first transatlantic calls in 1927.

Because of its near monopoly over telephone service in the US, AT&T was the target of many antitrust actions over the decades, although settlements of various kinds were normally worked out, which left the company in one piece.

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In 1974, the Department of Justice launch an antitrust suit against AT&T, which was finally decided in 1984, and caused the breakup of the “Bell System” into 7 different regional telephone firms and a long-distance provider (AT&T).

**The breakup led to a surge in competition in both long-distance service and in telephone technology.**

(However, many of the new firms were allowed to merge 15-20 years later, which reduced the 7 to two or three by 2012.)

See my law and economics website for more on antitrust law.