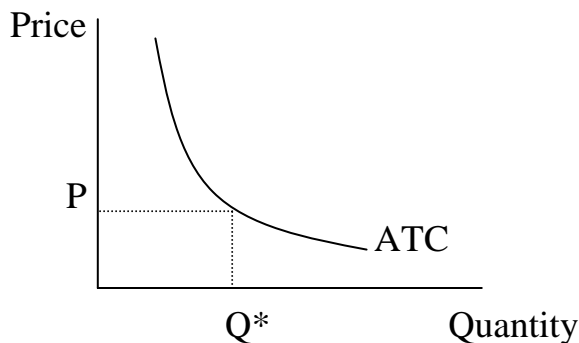Ch. 11 outline

Competitive Price Searcher Markets with High Entry Barriers

What causes high entry barriers?
There are four reasons for the barriers to entry to be high.
1. Economies of scale – when a firm faces declining ATC over the entire range of output that consumers are willing to buy, we call this economies of scale

This is a graphical representation of economies of scale. Consumers only want to purchase Q* (they never want to purchase more than Q*). So the firms in this industry face declining ATC over the entire range of output that consumers are willing to buy. When this happens, the larger the firm is the smaller its per-unit costs are. Because of this feature, it is difficult for small firms to enter the market since they face high per-unit costs. Thus a single firm will emerge in the industry.

2. Government licensing – government licensing means that a firm is guaranteed the right to be the sole producer of a good by the government; no other firms can enter the market because of this restriction

3. Patents – patents are laws that protect the property rights of an inventor when he develops a new product
   A. Benefits – patents increase the number of inventions because people know that if they invent a product and get it patented, other people cannot steal their ideas (legally). The theory is that if you were an inventor without patent protection, why would you invent if someone could steal your idea? Example: Suppose you are a regular person with no substantial money for investment. You develop a great idea for a revolutionary can-opener. You begin to market your product only you cannot produce very many can-openers. Donald Trump

comes along and decides that you have a good idea and that this can-opener business will make money. Since he has enough money to open a can-opener factory, he does. All he needs to do is buy one of your can-openers, find a technician to see how it works, and then start mass-producing your can-opener without ever giving you anything more than $39.95 for the one can-opener he bought from you. With a patent system, he cannot do this unless he buys the patent from you or you commission him to produce the can-openers. Either way it would cost Trump much more than $39.95 to get the blueprint for the can-opener from you. Now I ask you, if you are a regular person, under what system would you be more inclined to invent? One where you get $39.95 for Donald Trump to steal your idea or one where you can sell your idea to a Donald Trump type person and possibly get hundreds of thousands of dollars?

B. Costs – unfortunately there are costs to the patent system. The main cost of the patent system is that it limits competition. If one person has the sole right to produce revolutionary can-openers other firms cannot legally produce revolutionary can-openers. We have already seen in chapter 10 that competitive price searcher markets (a market where barriers to entry are low) cause higher prices and reduced quantities. If the barriers to entry are high and limit competition then the market may have even higher prices and lower quantities.

4. Control over a central resource – if one firm owns the entire (or a great percentage of the) resource needed to produce a final good, it creates a barrier to entry because where else are you going to buy the resource from

Monopolies, the ultimate price searcher

A monopoly exists when there is one firm selling a well-defined product for which there is no good substitute in a market that has high barriers to entry. The actual case of a monopoly is quite rare. It is the exact opposite of the competitive price taker market, and just about as hard to find in the real world. Nonetheless, it is an important concept, and if you know chapter 10, it is easy to understand.

Monopolists act like all other price searchers in that they set MR = MC. The graphical representation is identical to the graphical representation of a competitive price searcher from chapter 10.

Many of you may be wondering why a monopolist only produces where MR = MC. Suppose at the point where MR = MC the monopolist (Bill G.) chooses to produce a quantity of 300,000 revolutionary can-openers and a price of $39.95. Why doesn't Bill G produce 8 trillion revolutionary can-openers? And why doesn't Bill G set price to be $299.99 per can-opener instead of $39.95? Wouldn't Bill G profit more under this plan? The answer is no.
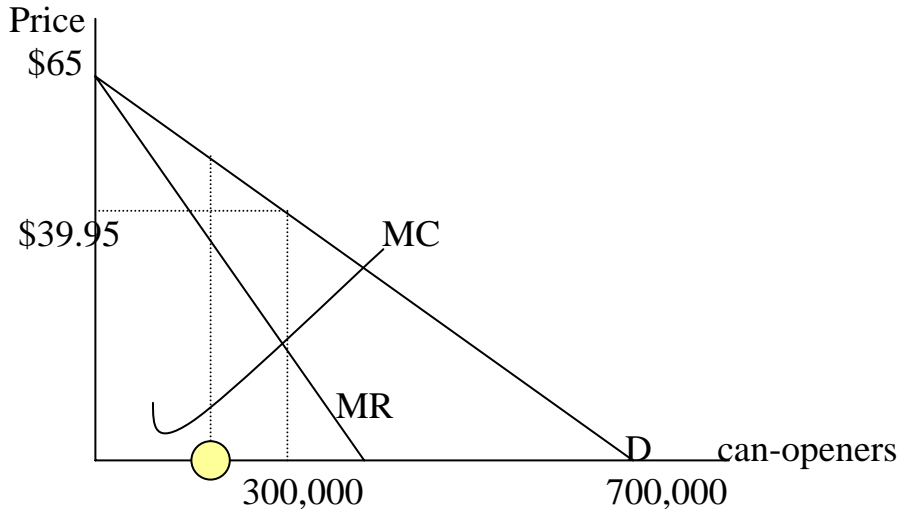
   Now, why doesn't Bill G produce 8 trillion can-openers and sell them at $299.99? Based on this graph neither one is within the range of demand. The highest price Bill G can charge is $65 and the highest quantity Bill G can sell is 700,000 can-openers. So why doesn't Bill G charge $65 and produce 700,000 can-openers to sell? Because the demand for can-openers is zero at $65 so Bill G won't sell any can-openers. Likewise if Bill G produces 700,000 can-openers he will practically have to give them away. What do we learn from this? We learn what was taught in chapter 3. If you choose a quantity, you have to go to the demand curve to find the price. Or if you choose a price, you have to go to the demand curve to find the corresponding quantity. Now if we use this result from chapter 3 and find price/quantity pairs, why doesn't Bill G choose a different price/quantity pair that corresponds with the demand curve? For the same reasons that the competitive price searchers chose MR = MC. Because it maximizes profits. If Bill G chooses to produce less than 300,000 he is now producing a number of can-openers given by the yellow dot. At this point his MR is greater than his MC. So if Bill G was producing at yellow dot he could increase his profit by producing more can-openers because MR > MC. Similarly, if he is at red dot his MC is greater than his MR. So it is costing him more to produce that extra can-opener than he is able to get back in

revenue. (If MC = $7 then it costs Bill G $7 to produce the 350,000th can-opener. If MR = $6 then Bill G only gets $6 from producing that 350,000th can-opener. Thus Bill G is losing $1 from producing that 350,000th can-opener. And we all know that Bill G doesn't want to lose money.)

One other note about monopolists is:
1. When high barriers to entry are present they protect the monopolist from outside competition. Thus the profits that a monopoly earns (remember that this is a competitive price searcher that earns profits) do not attract competitors because the entry costs are too high. So price is not driven down to the point where economic profits = zero.

Oligopolies, or those guys who keep driving gas prices up

An oligopoly is a market structure that has few firms and high barriers to entry. Common examples of oligopolies are the auto industry, the steel industry, the breakfast cereal industry, and OPEC (Organization of Petroleum Exporting Countries) or those guys who keep driving gas prices up.

The characteristics of an oligopoly market structure are:
1. A small number of rival firms.
2. Interdependence among oligopolistic firms
3. Substantial economies of scale
4. Significant barriers to entry

Interdependence among oligopolistic firms means that what one firm does affects another firm as well as the entire market because each firm supplies a large share of the market (as opposed to monopolists who supply all of the market and price takers who supply an insignificant amount of the market). This set-up causes decision-making in an oligopoly structured market to be difficult.
Substantial economies of scale means that the industry can only support a few cost efficient firms. Remember from the monopolist that economies of scale means that the larger the firm is the more cost efficient the firm is.
Significant barriers to entry restrict other firms from entering the market. Economies of scale is probably the main reason barrier to entry because it is difficult for a small firm to come into the market and sustain losses until it has enough market share to minimize average cost.

So how do we get oligopolies in the first place? Example: Way back in the early part of the 1900's the auto industry was probably much more competitive than it is today. Some people decided that these new "autos" were a good idea. So they began to produce them. Successful firms prospered and caused unsuccessful firms to go out of business. The successful firms then became so large that it was nearly impossible for any small firms to compete with them so we get an oligopoly in the United States 100 years later.

Price and output for oligopolies

Oligopolists have the most difficulty in choosing price/quantity pairs. If you are a monopolist or a price taker you (or your hired economist) can attempt to estimate market demand and your firm's cost conditions. However, if you are in an oligopoly there are problems. One of the factors that determines the demand facing an oligopolistic firm is predicting the behavior of a close rival. So what's different when attempting to predict here than in the other cases?   Predicting the action of one individual or firm in the marketplace is a very difficult task. It is much easier to make predictions on how groups of people (as a whole) will react than it is to predict how one person will react. As a case in point, Dr. Fabricant told me at the beginning of the semester that he predicted the class average on the first test would be around a 77 and that the class average on the second test would be around a 73. He was right on both accounts. How successful do you think he would have been in predicting your own personal test grade on the first test without knowing much about you? This is the problem that oligopolists face. So what do we as economists predict in the oligopoly market? We can give a range of prices over which we expect oligopolists to produce.

What is this range of prices? Economists predict that oligopolistic firms will produce a quantity between the points where MR = MC (a type of "monopoly" strategy) and where the point where Long-Run Average Total Cost (LRATC) crosses the demand curve (a type of "competitive price searcher" strategy). These quantities will also give a range of prices that the oligopolies expect to face.

Price

MC

P_m

P_c ━━━━━ LRATC

MR   D

Q_m Q_c Quantity
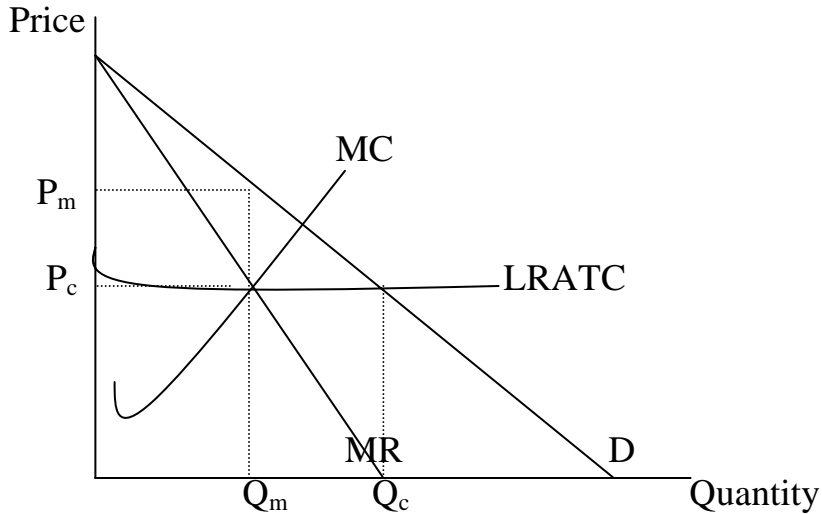
The quantity that the oligopolistic firm will produce is somewhere between Q_m and Q_c with prices between P_m and P_c. In order for the oligopolistic firms to produce Q_m they would have to form an agreement to act as one monopoly firm. This is called collusion. To produce at Q_c the firms would have to act like they are in perfect competition (price taker market) with each other. What happens in the real world? The firms neither collude nor perfectly compete, so the quantity falls somewhere in between Q_m and Q_c.

Collusion

Collusion is agreement among firms to avoid competitive practices.

Why would firms collude?

If you look at the graph above, collusive firms produce at the point where MR = MC. We know from previous experience that this is the point where profits are maximized. Therefore, the best that the oligopolistic firms can do is collude and maximize their profits.

Why do they cheat on collusive agreements or why don't firms collude?

Firms cheat on collusive agreements for one main reason. By colluding, a price is set where MR = MC. Suppose that there are 6 collusive firms that each supply 30 gallons of petroleum at a price of $20 a gallon. The revenue for each firm would be $600. Suppose that their costs are $10 times however many gallons of petroleum they produce. (If they produce 30 gallons their costs are 30 x $10 = $300. If they produce 31 gallons their

costs are 31 x $10 = $310, etc.) Their profits are TR – TC. Under the collusion without cheating their TR = $600 and their TC = $300, so they make a profit of $300. What if one firm produced one more gallon of gasoline and sold it at the $20 per gallon price? That firm now has a TR = $20 x 31 = $620. It's TC = $10 x 31 = $310. It's profits = $620 -- $310 = $310. The firm has now made an extra $10 by cheating on the collusive agreement and producing an extra gallon of gasoline. All firms in this industry have the incentive to cheat, which makes collusion difficult.

Obstacles to collusion

1. Collusion is less likely to occur as the number of firms in the oligopoly increases. This is because it is difficult to get a large number of people to abide by any agreement (not only in oligopolies but in general).
2. When it is difficult to detect price cuts of rivals, collusion does not work. How can you collude if you cannot keep an eye on your rival and make sure that he abides by the collusive agreement?
3. Low entry barriers are an obstacle to collusion. If anyone can enter your market, then they can price lower than the colluding firms and steal the market. Or the colluding firms would have to allow them into the agreement – and then the number of firms in the collusive agreement is growing so we go back to obstacle number 1.
4. Unstable demand conditions are an obstacle to collusion. Unstable demand leads to different views by oligopolists about what is best for their market. If Ford, Chrysler, and GM all had different viewpoints on what strategy to take in the market then they would be less likely to form a collusive agreement.
5. Vigorous antitrust action increases the cost of collusion. If the colluding firms feel that they are in great danger of being caught colluding, then this increases the danger of colluding and makes colluding less likely. After all, the oligopolists do not want to collude only to be caught and then have to pay out money in a legal settlement.

Defects of markets with high barriers to entry

1. A reduction in the competitiveness of a market limits the options available to consumers. The market for electricity is a monopoly. How many other good substitutes (not candles or flashlights) do you have for the City of Tallahassee's electric power? Not many. There is a lack of competitiveness in the market and not many options.

2. Reduced competition results in allocative efficiency. Remember what allocative efficiency means – that the per-unit price of the good = the per-unit cost of the good. It means that no firms are earning economic profits. And by looking at the graphs of monopolists and oligopolists we can clearly see that they are earning economic profits.
3. With high entry barriers, it becomes more difficult for consumers to get producers to serve their interests. If there are only a few firms in the industry and it is difficult for other firms to enter, these firms have little to fear if they use resources inefficiently or price items highly. They know that consumers cannot turn to other options. Look at gas prices recently. Has OPEC shown much interest in what we (the American consumers) have to say? No, because they know that we do not have many other options so they do not serve our interests.
4. Government grants of monopoly rights will encourage rent seeking: resources will be wasted by firms attempting to secure and maintain grants of market protection. Those firms with monopoly rights will waste "resources" (resources being money paid to people to lobby government and to do consulting work to show that this firm needs special protection). Those "resources" could be put to better use.

Policy alternatives when entry barriers are high

1. Control the structure of an industry to assure the presence of rival firms. Ask Bill G. and Microsoft about this one.
2. Reduce tariffs and other artificial barriers to trade. If there is a law restricting trade (which in turn limits competition) the easiest way to increase competition is to lift the trade restriction.
3. Supply the market with goods produced by a government firm. We all know how efficient the government is so we should just let them produce in a market with high entry barriers. (To be honest with all of you I (Artie) am not sure why this is in the book. Just know that it is one of the alternatives that the book lists in case you get a multiple-choice question about the policy alternatives when entry barriers are high.)
4. Regulate the protected producer. This is the most interesting policy alternative. We know that a price searcher wants to have MR = MC and then go to the demand curve to find the corresponding price. However, we, as consumers, would like producers to produce a quantity where the MC curve intersects with the demand curve. This would be a point that maximizes our (consumers) welfare because MC = MB (marginal benefit) for us. Will this work? Let's look at a graph.

Suppose we were to regulate this monopolist at MC = D.
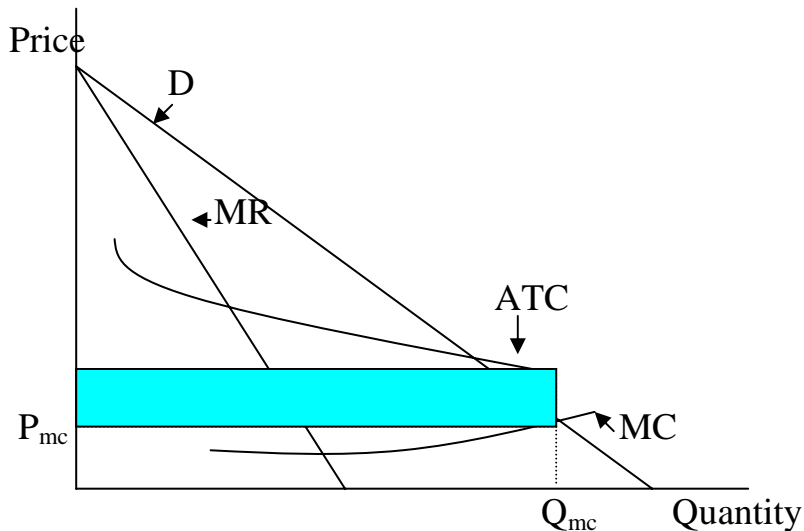
If regulated at MC = D (marginal cost pricing), the monopolist would produce Q_{mc} and face a price of P_{mc}. However, notice that the ATC curve is still above the MC curve. This means that the monopolist is running a loss equal to the size of the blue rectangle. The monopolist cannot stay in business if the government attempts to regulate at this point. The other option that the government has is to allow the monopolist to price at ATC = D (average cost pricing). This will allow the monopolist zero economic profit, which means that the monopolist can stay in business.

Problems with regulation

1. Lack of information. Do we know what the ATC, MC, and D curves look like? Of course not. So regulatory agencies attempt to use the normal (economic) profit rule (in essence, ATC pricing). However, we all know that this would increase the incentive for firms to use "creative accounting techniques" which would decrease the amount of profit that a government that any government official would see.
2. Cost shifting. If a normal profit rule is instituted there are no incentives for the regulated firm to cut costs since they are essentially guaranteed to make a normal profit. They can, however, increase the firm's costs by allowing more fringe benefits for managers and employees. Think about it. You are a regulated firm. You know that you are guaranteed a normal rate of return. Why not fly first class to your next business meeting? Why don't you take your clients out to the best restaurant in town instead

of McDonald's? Just put it on your business tab and it will show up as a business expense that will be taken into account when that government official shows up to impose a normal profit rule. (Oh gee, I see that your costs increased by $50,000 this year because of the clients you entertained. I guess we should raise your rates for next year so that the rates take into account this new business expenditure.)

3. Special-interest influence. Usually monopolists are powerful people. If you are a government official opposed to a monopolist chances are you will not be in office again. The monopolist will use some resources to see that you are no longer in office. So, since government officials want to be reelected they will usually tend to see things the monopolist's way – which means little, if any, regulation.