Monopoly

Monopoly occurs when there is a single seller of a good or service. Despite this simple definition that is usually given in textbooks, we must criticize it a bit. Monopoly occurs when there is a single seller of a good or service and there are no close substitutes. Even here we must be careful since consumers can always elect to save. Thus, saving may easily serve as the substitute good sapping a monopoly of its strength. Strong and long lasting monopolies are those that sell products that have no good substitutes and for which saving is not a long-term option.

How do monopolies become a single seller with no close substitutes? There are three possible ways this can happen. First, it may be that a firm owns an extremely scarce resource for which there are few substitutes. Its exclusive ownership of the resource makes it a monopoly. Second, it may be that the government grants the firm monopoly rights (either by preventing competition from domestic and foreign sources or by granting patents, copyrights, etc. or by nationalizing the industry) Third, monopolies may occur if the LRAC is profoundly downward sloping and possible competitors face very high startup costs. In most cases, monopolies occur because of government action. Therefore, it is extremely important for government to guard against providing such protection to a single business and instead ensure there is sufficient competition in the economy. Clearly, using outside firms to open markets and provide competition will be controversial and unpatriotic to the domestic audience. This patriotic excuse is often given to protect a domestic monopoly from foreign competitors. But, providing competition is done precisely to protect consumers from a potentially anti-social domestic monopoly.

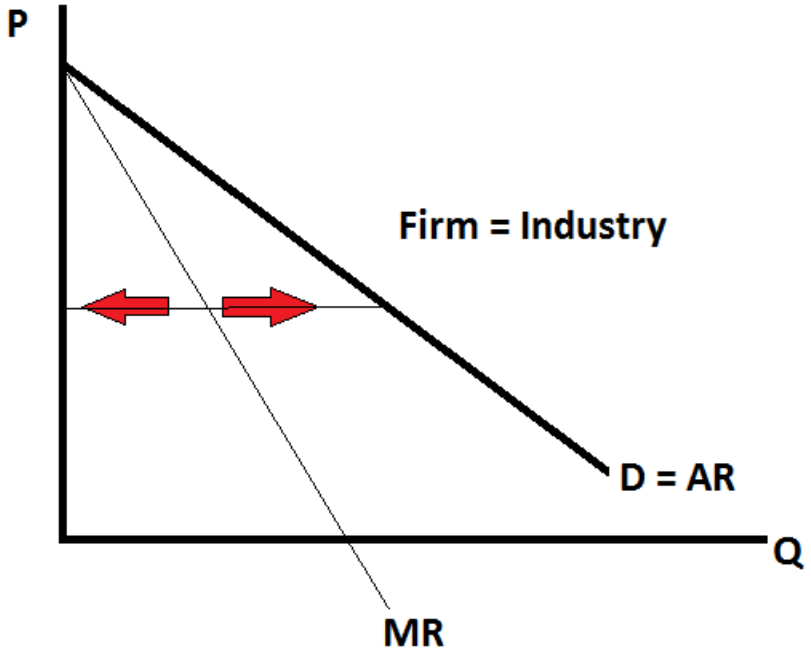
Monopoly may at times be beneficial to society, even though we strongly believe that competition leads to lower prices-larger quantities, whereas monopoly leads to higher prices-lower quantities. Still, monopoly might be good, if it manages a scarce exhaustible resource like oil. The relatively higher prices and lower quantities due to monopoly will leave more oil in the ground for future consumers and therefore may increase society’s total utility, where we are measuring utility both now and in the future. Monopolies may also be beneficial if there is an overwhelming national security issue at stake. A market with many producers may be one that is relatively easy to penetrate by hostile foreign entities. Having one producer substantially reduces the policing costs of the government and its immediately control in the time of war may be important. Despite these benefits, most economists do not like monopolies and feel competition is essential for an industry to grow and innovate.

Because there is no competition in a monopolized industry, the firm can experience long run above normal profitability. It does this by securing a barrier to entry by other firms. Thus, monopolies are certainly more profitable than firms facing competition. This is an important reason why that industries having a few firms tend to collude and "act" as though they are one firm. The lure of higher profits (even when shared) is always a strong incentive to conspire and cheat by reducing competition and price fixing. When several firms collude

together we call this a *cartel*. It is not a monopoly, but its behavior can seem very close to that of a monopoly.

Usually, monopolies do not need to advertise their product. They do not need to have a brand name, but they may engage in public relations to maintain good standing with the public. The monopoly may only extend to a particular geographic area, say a state or a city. Often the government will grant a monopoly to a private company and then regulate its rate of return in order to protect the interests of the public. This is especially true of public utilities. Utilities have very high fixed costs (laying wires, gas pipes, water pipes, etc.) that act as a natural barrier to entry and eliminate competition. Seeing this, the government may go ahead and grant monopoly status to one private company and then regulate the rate of return on capital. The rate of return on capital for any company is merely the after-tax profit divided by the invested capital or funds in the firm. A special commission setup by the government will decide the appropriate level for the regulated rate of return accorded the monopoly. This will not be too high, but it will be steady. Because of this, investors usually think of utilities as a safe place to place their funds during times of trouble. The commission is charged with watching the monopoly and guaranteeing that the monopoly does not use its special status to price gouge the public.

Figure 1 Demand for a Monopolist is the Industry Demand

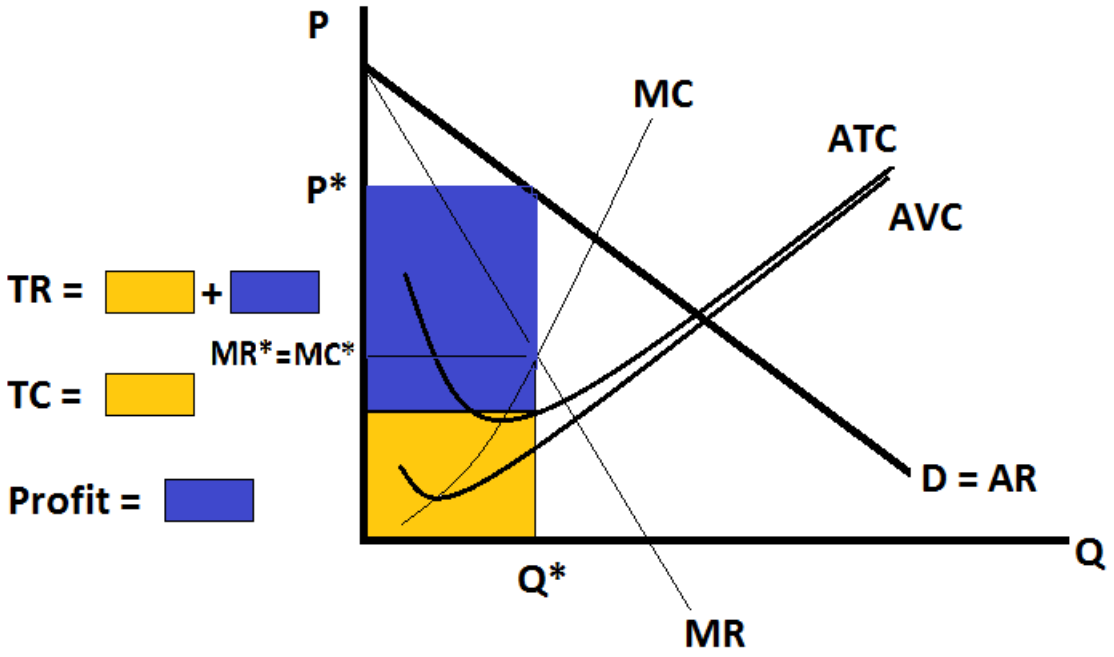


In Figure 1 above we see the demand curve that the monopolist faces. This is not controlled by the monopolist. The monopolist must accept whatever is the demand for its product. It is the only seller, but it cannot force people to buy its product. The demand curve is determined by the public, not by the monopolist. This demand is also the average revenue curve and it is the price line. However, for a linear demand, the marginal revenue will lie

exactly 1/2 the distance between the vertical axis and the demand. We can call this the "1/2 rule". This is shown in Figure 1 by the two arrows.[1]

Let's now add the average cost curves to figure of the monopolist's demand. This is shown below in Figure 2. Maximum profit for the monopolist occurs where MR = MC, the golden

Figure 2 Short Run Equilibrium for the Monopolist



rule for profit max. The profit, given by the blue color, is where TR – TC is largest. The monopolist will operate (not shutdown) and will make a positive, above normal profit. Because the monopolist does not face competition, this profit can be earned even in the long run. The short run is where the monopolist cannot change the scale of his factories. But, in the long run, the monopolist can buy more equipment and expand the size of the firm. This will be reasonable if the rate of return on capital is above the long-term interest rate. Then it makes sense to borrow money, invest in new equipment, produce and make a profit, all while covering the interest charges on the money borrowed. Note that we are not regulating the monopolist's prices and profit in Figure 2. The graph makes it look like the monopolist is making much more profit than its costs. This is just the way we have drawn

[1] Suppose (inverse) demand is equal to $P = \alpha - \beta Q$. Then $TR = PQ = \alpha Q - \beta Q^2$. Therefore, $MR = \Delta TR/\Delta Q = \alpha - 2\beta Q$. Now, at P = MR we have $\alpha - \beta Q_{AR} = \alpha - 2\beta Q_{MR}$ which implies at P = MR we must have $Q_{AR} = 2Q_{MR}$. This proves that for a linear demand curve the marginal revenue curve lies half way between the demand and the vertical axis, as shown in Figure 1. We should also point out that there is no general rule for demands that are not linear. For example, if demand is $Q = Ae^{-\alpha P}$ then $Q_{AR} = eQ_{MR}$ and even more unusual cases are possible for other types of nonlinear demands. Therefore, apply our "1/2 rule" above only when talking about linear demands.

things. We could easily draw the graph so that total cost is many times larger than profit. Do not be fooled by this drawing. For most monopolists, profit is a small fraction of the total costs of producing that output. Also, we have drawn the diagram so that the monopolist earns a positive profit. It may be that it earns a loss. In fact, it can be the case that the monopolist must shut down. You are asked to show these two cases in the exercises below.

It is easy to understand why that some economists claim that a monopolist will never operate where point price elasticity is less than 1. That is, it will never operate in the inelastic region of demand. This is because in that region of demand, the marginal revenue curve becomes negative. For such a case, it will always be possible to lower quantity and raise price so that costs fall and revenue rises. Profits must be maximized in the elastic region of demand. This assertion assumes (i) that there is no government regulation of the monopoly and (ii) that the monopoly has the single goal of maximizing profit.

Economist believe that monopolies are inefficient (i.e. monopolies are wasteful). This is because society values the cost of the resources being used to produce the very last unit of output at MC^* whereas the monopolist is charging the public $P^* > MC^*$. The public is paying more for the last unit of output than it values it. In fact, it is paying more than the marginal cost over the whole range of output, Q^*. When price is greater than marginal cost we know that the public wants and expects ***more*** output to be produced and sold at a lower price. Moreover, it is actually possible to produce it and sell it at a lower price. The monopolist can restrict output and sell it at a higher price because there are no competitors who are willing to produce additional output and sell at a lower price. As we have pointed out, if competition were opened up, prices would fall and more would be produced. This is one of the big problems of monopolies. Another big problem is that monopolies become complacent. They do not strive to improve their product. They are content to distribute their profits to the stockholders and ignore research and innovation. Monopolies are slow to change with the times.

Problems

(P1) Is it true to say that monopolies are always very large firms?

(P2) Do monopolies always sell nationally or can they be local?

(P3) Why is the monopoly's demand the same as industry demand?

(P4) How are monopolies created?

(P5) Why don't monopolies have brand names and advertise?

(P6) Why is MR = MC so important to the monopoly?

(P7) The monopolist can choose price or quantity, but not both. Explain why this is true.

(P8) What does it mean to regulate a monopoly?

(P9) Are all monopolies private or can the government run a monopoly?

(P10) Monopolies are thought to be inefficient. Explain why economists believe this.

(P11) Formosa Plastics is many times bigger than Taiwan Power Co. Yet, Taiwan Power is a monopoly and Formosa Plastics is not. Explain why.