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ECON 202—Montgomery College

TOPIC 20: MONOPOLY I

I. What is a monopoly?
   a. A monopoly is a firm with *market power*—or the ability to keep price above average total cost in the long run. They do this be restraining production, causing people to buy higher amounts of product.
   b. This can be sustained because all monopolies use some form a barrier to entry. To understand how, let us turn to long run costs.

II. Long run costs
   a. In the long run, all costs are variable costs. We can imagine this because over a period of years firms can add factories just as they can add workers. We call this the long-run average cost (LRAC).
      i. The LRAC is roughly U-shaped, but instead of focusing on one given amount of capital (for a given amount of fixed cost), we can look at the whole possibilities of scale of production.
      ii. *Economies of scale* mean average costs fall as output expands.
      iii. *Constant returns to scale* mean average costs stay the same as output expands.
      iv. *Diseconomies of scale* mean average costs increase as output expands.

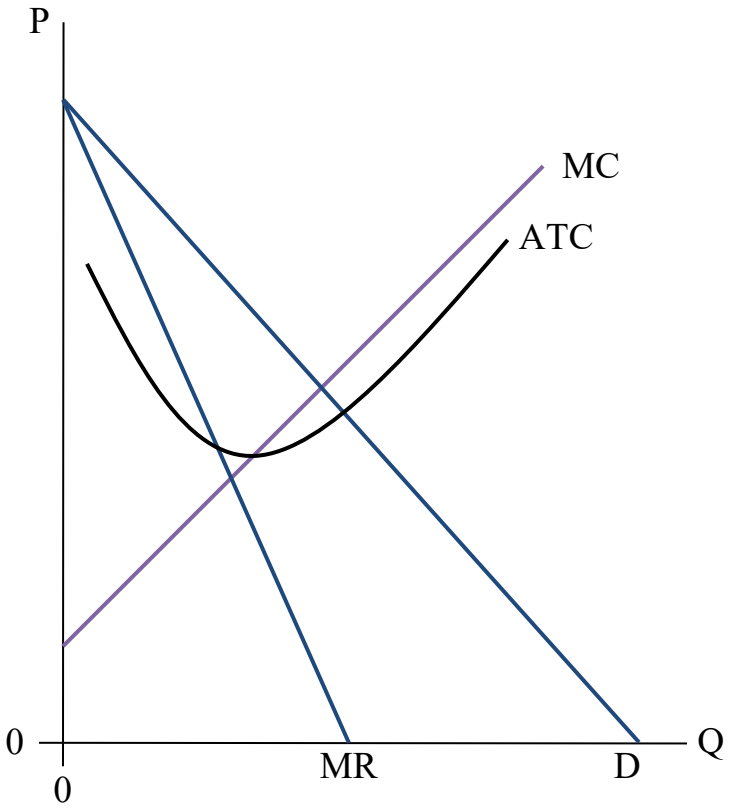
III. Where do monopolies come from?
   a. *Legal* (laws prevent entry)
      i. There's a large variety of barriers government has erected to prevent various new comers to the market.
   b. *Natural* (economies of scale makes entry unprofitable)
      i. One firm can provide for the whole market while still under economies of scale.
   c. *Input control* (only one company controls a vital input)
      i. The firm has some sort of control over an input that's crucial to production.

IV. Monopolistic competition
   a. The monopoly profits are tremendously alluring and so it is not surprising that companies actively seek them out.
   b. Firms often compete in a world of *monopolistic competition*, where companies produce similar products with some differentiation. One firm discovers a unique edge and enjoys monopoly profits until competitors copy the innovation.

        i. Ex: Streaming services, smartphones
    c. Are monopolies always bad?
        i. Note these monopolies also have barriers to entry, captured in the time it takes to replicate, but the barriers are relatively easy to overcome in the long run.
        ii. A lack of competition does not mean the monopoly should be eliminated. The presence of the *threat* of competition is a much better indicator.
        iii. Perhaps a little bit of extra profit isn't so bad. While it creates deadweight loss, it also provides incentives to innovate and try new ideas. If Bill Gates knew Microsoft could never get to the position it's in, all operating systems might be much worse than they are now.

V. Patent buyouts
    a. Patents are a major source of monopoly. As suggested, they are often needed to encourage people to invent.
    b. But any patent creates a monopoly. Can't we have our cake and eat it, too?
    c. Economist Michael Kremer (and 2019 Nobel laurate) suggests the government should buy the patent from inventor and then rip it up. The revenue from the government would incentivize innovation, but without creating the monopoly.
    d. This is particularly nice since many inventions follow from one another, requiring new technology to get license agreements from old technologies.

VI. Monopoly Model
    a. In competition, we used a perfectly elastic demand curve to illustrate that each firm is a price taker.
    b. Now, that is not the case. Monopolies have *price setting power*, they can influence the price by altering how much they produce.
    c. Thus, we make a demand curve downward sloping (the previous price line is technically a demand curve that is perfectly elastic).

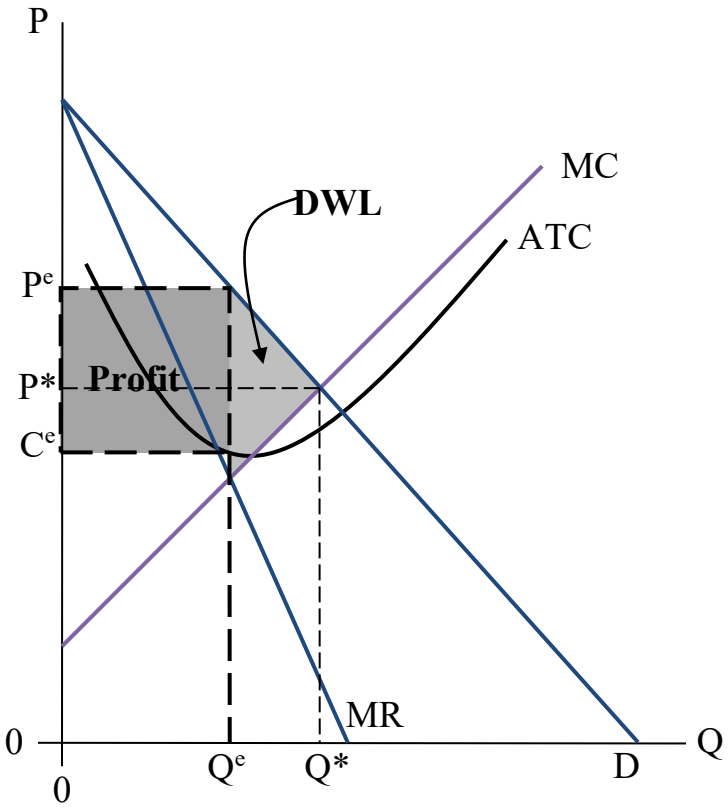


   i. The MR curve always bisects the demand curve.[1] This makes all the difference in a monopoly.

d. How do we proceed? We start the same way we always do.
   i. Find where MR=MC; that's how much we produce (Q^e or equilibrium quantity).
   ii. Now see how much we get to charge but seeing what the demand curve is willing to pay at that quantity (since before the price was the same thing as the demand curve which was the same thing as marginal revenue, this step happened automatically). Let's call this P^e (equilibrium price).
   iii. Check how much this production is costing us by referencing ATC. Call this C^e (equilibrium costs).

e. Recall when we did quotas and the constraint on quantity created deadweight loss. We have the same story here (recall another way to think of demand is the sum of marginal benefits).

[1] How do we know this? Math. Marginal revenue is the same thing as "change in total revenue" which is the same thing as a derivative. The demand curve can be expressed as $P=a-bQ$; total revenue is then $PQ=aQ-bQ^2$. To find marginal revenue, take the derivative with respect to Q: $P=a-2bQ$. Note that the slope is twice as much as the demand curve, bisecting the angle the demand curve makes.


P
MC
DWL
ATC
Pe
P*
Profit
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0
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