Monopoly and Regulation

- Pure monopoly is a situation where one firm has 100 percent of market share.
- A dominant firm is one with greater than 50 percent of market share, and no close competitor.
- A model of monopoly will assume there is a well-defined market with one single supplier.
- We’ll model this as the monopolist “setting” the price $p$ and consumers will demand the quantity $D(p)$.
- By producing $q$, we will denote costs as $C(q)$. 
We will treat the monopolists decision as selecting the optimal output level- i.e that which maximizes profit.

As we know, profit maximization occurs when marginal revenue is equal to marginal cost.

Recalling that revenue equals $pq$, and solving the first order condition, we get the elasticity rule:

$$\frac{p - MC}{p} = \frac{1}{\epsilon}$$

where

$$\epsilon = -\frac{dD}{dp} \frac{p}{q}$$

denotes the elasticity of demand.

So it follows that a monopolist sets a price-cost margin that is greater the lower is price elasticity of demand.
Dominant Firms

- Pure monopolies are very rare.
- A more common setting is where one firm has market share exceeding 50% and several small firms divide up the remainder of the market amongst themselves.
- It’s also usually the case where the dominant firm holds some competitive advantage with respect to its rivals.
- There are two important features which distinguish the dominant firm from the others:
  - One is that the dominant firm is often regulated.
  - Second, the other firms had smaller capacity but could change prices more quickly.
Dominant Firms

- In that sense we can view the dominant firm as a price leader.
- Whichever price it sets competitors would follow by pricing at the same or slightly lower.
- So suppose consumers choose the firm offering the lowest price, and the small firms are capacity constrained.
- They will set a slightly smaller price and sell up to capacity.
- In that sense the dominant firm will be faced with residual demand,
Defined as market demand minus the total capacity of the small firms.

Which shifts the market demand curve by the capacity amount.

Given this demand curve, the dominant firm’s optimal price is set in the usual way, equating marginal revenue to marginal cost.

So as long as this total capacity is small, this price is not very different from the monopolist’s price.

Suggesting our model of the monopoly is a reasonable approximation of the behavior of dominant firms.
Dominant Firms

- How do we define monopoly power?
- One way is purely by market share.
- But the problem with that it is bound to lead to problems of market definition
- and different definitions can lead to widely different measures of monopoly power.
- Therefore we’ll define the degree of monopoly power as the ability to sell at a price substantially above cost.
- So it is inversely related to demand elasticity faced by the firm.
Public policy reflects the distinction between monopoly market share and monopoly power.

This is especially true with merger policy.

In 1996, the proposed merger between Staples and Office Depot was challenged by the FTC.

The merger was eventually blocked because of evidence that prices would be substantially greater in area where the merger increase the concentration of superstore ownership.

Generally, regulators now give greater to the impact of mergers on prices than its impact on market shares.
As we mentioned on the first day, monopoly pricing leads to allocative inefficiency.

The output set by the monopolist is suboptimal.

An increase in output would increase social welfare, since MWP would be greater than marginal cost.

Competition is one way of recovering this lost efficiency.

However, if fixed costs are large competition may not be viable.
An extreme (but illustrative) setting is a “natural” monopoly. This is the case where costs are minimized with one supplier only. As we’ll see this is the case were direct regulation of the dominant firm is often the optimal solution. Since the social optimum is to set price at marginal cost, a natural solution for a regulator is to force the monopolist to set price equal to marginal cost. One problem with such pricing is that it can imply negative profits for the firm. One fix of this is to subsidize this firm by the fixed cost amount, which has its own problems.