A monopoly exists when there is only one firm in the market for a good. That firm is called a monopolist.

A monopolist has market power. This means that this firm’s actions can influence the price. By producing less, the firm can raise the equilibrium price. Not a price taker.

An example of a monopolist: Microsoft. Microsoft has a monopoly in the market for Windows. It owns a copyright for the production of Windows.

The price of Windows is about $100. Marginal cost of an additional copy is only a few dollars.

For a monopoly, price need not equal marginal cost.

However, monopolies cannot charge any price they want. If Microsoft charged too high a price for Windows, fewer people would buy it. Profits of monopolies are not unlimited, though they can be higher than profits for competitive firms.

Main reason for monopoly: Barriers to entry.

Causes of barriers to entry:

1. key resource owned by single firm (such as Microsoft)

2. government gives single firm right to produce good or service

3. Costs of production make a single producer more efficient than large number of producers
   1. Suppose in a small town there is only one well. No other source of water. The owner of the well has a monopoly on water.

   Since water is a necessity, high prices could be charged even though marginal cost is low.

   This case is rare. Resources usually owned by many agents.

DeBeers diamond monopoly

A monopoly that did arise from single ownership of a resource.
South African diamond company, founded by Cecil Rhodes in 1888.

Owned and merged two of biggest mines in South Africa. Bought many mines with his profits from original mines.

Now DeBeers owns 80 percent of world’s diamond production.

Amount of market power DeBeers has depends on how market defined. To what extent are other gemstones close substitutes for diamonds? In order for people to view diamonds as unique, without close substitutes, DeBeers spends much money on advertising.

Government-created monopolies

Kings used to grant exclusive business licences to their allies.

US government gives a monopoly to Network Solutions, Inc. to maintain the database of .com, .net and .org addresses. Justification: need to centralize overview of these addresses.

Patents, copyrights. Due to positive externalities of research. If firms did not get to enjoy benefit of their discoveries, would engage in less research, hurting everyone.

Thus government allows firms to patent drugs, etc. and become (for a time) monopolists in the production of their good.

Similarly writers given copyright over their writings. This allows them to become monopolists in the sale of what they have written, encourages them to write more.

Natural Monopolies

When average total costs of a firm decrease over the entire relevant range. Firm has economies of scale over the relevant range of output.

Then a natural monopoly arises. It is more efficient for one firm to produce a large amount than for several firms to produce smaller amounts.

Example: Water distribution. Each firm that provides water must build a network of pipes. These cost a significant amount to set up.
After those are set up, the marginal cost of providing water to an additional person is very low. So the average total costs decrease over a large range of output.

If two or more firms wanted to provide the water service, they would each have to build a network of pipes. Water can be provided at a much lower cost if only one firm builds the water lines.

Any good that is not rival in consumption but excludable is provided most efficiently by a natural monopoly.

Example: An uncongested bridge. People can be excluded from using it if a toll is set up at the entrances to the bridge. But not rival as long as not congested.

A fixed cost of building the bridge, but a negligible cost of letting an additional user travel across it. So average costs decrease as the number of users increase.

It would be very inefficient for another firm to build another bridge right next to the already existing bridge (as long as there is not that much use).

A natural monopoly does not need ownership of a key resource or government help in maintaining its monopoly.

If another firm entered, it could not get the same low costs that the original firm had because after the market divided between the two firms, each will be producing less and the costs will be higher.

This deters other firms from entering.

Sometimes size of market may determine whether industry is natural monopoly or not.

When population small, bridge across river may be natural monopoly – uncongested.

When population grows, another bridge may be necessary.

Thus a natural monopoly can change into a competitive market.

Difference between monopoly and competition: A monopolist can influence price by increasing or decreasing output. Competitive firm can’t.
This is because the demand curves faced by monopolist and competitive firm are different.

For a competitive firm, demand curve is a horizontal line at the price. Nothing the firm does can change the price; it can sell any amount at the going price.

Because the competitive firm’s product has many perfect substitutes, the demand curve it faces is perfectly elastic.

Monopolist’s demand curve is the whole market demand curve. Therefore it is downward-sloping. If monopolist raises price, fewer people buy the good. If monopolist reduces output, price rises.

Market demand curve constrains monopolist’s ability to make profit. It would like to sell a lot at a high price. But to raise price, it must lower quantity sold.

Monopolist can choose a point on the demand curve. However it can’t choose a point off the demand curve.

How does monopolist determine what quantity to produce? Like competitive firm, it chooses $Q$ to maximize profit, which is revenue minus cost.

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Notice that for quantity sold to increase, price has to decrease. Thus the total revenue begins by increasing at a decreasing rate, then falls.

Average revenue is total revenue divided by quantity. For all quantities except zero, this is just the price. Marginal revenue decreases as quantity increases due to the fact that total revenue is increasing at a decreasing rate. When total revenue decreases with output, marginal revenue is negative.