Lesson 2: Market Structure 2: Monopoly

MONOPOLY

Characteristics

- There is a single seller of a highly differentiated product, which has no close substitutes.
- There are high barriers to entry.
- The firm has considerable pricing power.
- The product is differentiated through non-price strategies (e.g. advertising).

Factors that Give Rise to Monopolies

- Control over critical sources of production (e.g. De Beers in the diamond-mining industry).
- Patents or copyrights.
- Non-price differentiation leading to pricing-power (e.g. Rolex watches).
- Network effects, which result from synergies related to increasing market penetration (e.g. firms use Microsoft Word because there is no need to train employees as everyone knows how to use it).
- Government-controlled authorization (e.g. natural monopolies).

Demand Analysis in Monopoly Markets

- The demand curve faced by the monopoly is effectively the industry demand curve. It is downward-sloping.
- The AR curve is the same as the demand curve.
- The MR curve and the demand curve have the same y-intercept.
- The slope of the MR curve is two times the slope of the demand curve.
- The x-intercept of the MR curve is half of that of the demand curve.
- The MR curve is the derivative of the TR curve with respect to quantity sold.

Supply Analysis in Monopoly Markets

- The monopolist does not have a well-defined supply function that determines optimal price and output.
- The profit-maximizing output level occurs at the point where MR = MC.
- The price is determined from the demand curve (based on the profit-maximizing quantity).

Optimal Price and Output in Monopoly Markets

The profit-maximizing output level equals the quantity at which:

- MC = MR; and
- Profit is unaffected by changes in quantity: $\Delta\pi/\Delta Q_D = 0$

The profit-maximizing level of output always occurs in the relatively elastic portion of the demand curve. This is because MC and MR will always intersect where MR is positive.

Natural Monopolies

A natural monopoly is an industry where the supplier's average cost is still falling even when it satisfies total market demand entirely on its own.

- It has high fixed costs, but low and relatively constant marginal costs.
- Therefore, it is able to reduce its average costs significantly through economies of scale.
- The higher the quantity sold by a natural monopoly, the lower its average cost of production. If two firms were sharing the market, each would produce a lower output and incur higher average costs.
- Therefore, governments allow only one firm to continue to dominate the industry, and find it more effective to regulate it.
- An example of a natural monopoly is a power distribution company.

Price Discrimination and Consumer Surplus

First-degree price discrimination occurs when a monopolist is able to charge each individual consumer the highest price that she is willing and able to pay.

In second-degree price discrimination the monopolist uses the quantity purchased to determine whether the consumer values the product highly (and is therefore willing to pay a higher price per unit to purchase a larger quantity) or not so highly (and is therefore only willing to pay the lower price for a small quantity). The monopolist would then sell small quantities at the marginal price and large quantities at a higher price.

Third-degree price discrimination can occur when customers can be separated by geographical or other traits. One set of customers is charged a higher price, while the other is charged a lower price (e.g. airlines charge higher fares on one day round-trip tickets as they are more likely to be purchased by business people).

Factors Affecting Long Run Equilibrium in Monopoly Markets

An unregulated monopoly can earn economic profits in the long run as it is protected by substantial barriers to entry.

For regulated monopolies, such as natural monopolies there are various solutions:

- A marginal cost pricing structure. However, the firm must be provided a subsidy in this scenario.
- An average cost pricing structure.
- National ownership of the monopoly.
- Franchising the monopoly via a bidding war (e.g. selling retail space at railway stations and airports).