

Chapter 10

Monopoly

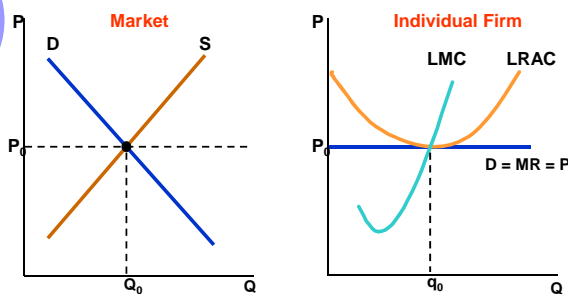
Review of Perfect Competition

- $P = (\quad)$
- Normal profits or zero economic profits in the long run
- Large number of buyers and sellers
- Homogenous product
- Perfect information
- Firm is a (\quad)

Chapter 10

2

Review of Perfect Competition



Chapter 10

3

Monopoly

- Monopoly
 1. (\quad) - many buyers
 2. One product (no good substitutes)
 3. Barriers to entry
 4. (\quad)

Chapter 10

4

Q: Decision Making of Owner-managed Business

- Suppose you are running a small business.
 - What is your objective?
 - What are you supposed to decide?
 - What is profit?
 - How can you make your profit max?

Chapter 10

5

Monopoly

- The monopolist has complete control over the amount offered for sale.
- Monopolist controls price but must consider consumer demand
- Profits will be maximized at the level of output where marginal revenue equals marginal cost.

Chapter 10

6

Average & Marginal Revenue

- The monopolist's **average revenue**, price received per unit sold, is the market demand curve.
- Monopolist also needs to find **marginal revenue**, change in revenue resulting from a unit change in output.

Chapter 10

7

Average & Marginal Revenue

- Finding Marginal Revenue
 - As the sole producer, the monopolist works with the market demand to determine output and price.
 - An example can be used to show the relationship between average and marginal revenue
 - Assume a monopolist with demand:

$$P = 6 - Q$$

Chapter 10

8

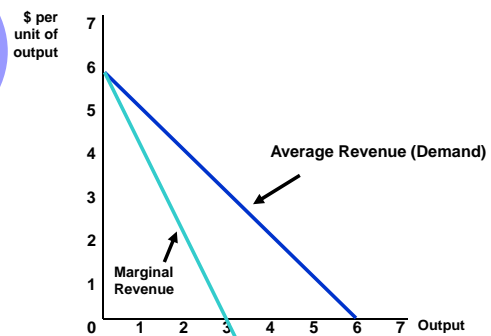
Total, Marginal, and Average Revenue

Price (P)	Quantity (Q)	Total Revenue (R)	Marginal Revenue (MR)	Average Revenue (AR)
\$6	0	\$0	—	—
5	1	5	\$5	\$5
4	2	8	3	4
3	3	9	1	3
2	4	8	-1	2
1	5	5	-3	1

Chapter 10

9

Average and Marginal Revenue



Chapter 10

10

Monopoly

- Observations
 1. To increase sales the price must fall
 2. ()
 3. Compared to perfect competition
 - $MR = P$

Chapter 10

11

Monopolist's Output Decision

Profits is maximized at the output level where $MR = MC$

$$\pi(Q) = R(Q) - C(Q)$$

$$\Delta \pi / \Delta Q = \Delta R / \Delta Q - \Delta C / \Delta Q = 0$$

$$\text{or } MC = MR$$

Chapter 10

12

Monopoly: An Example

$$\text{Cost} = C(Q) = 50 + Q^2$$

$$MC = \frac{\Delta C}{\Delta Q} = 2Q$$

$$\text{Demand} : P(Q) = 40 - Q$$

$$R(Q) = P(Q)Q = 40Q - Q^2$$

$$MR = \frac{\Delta R}{\Delta Q} = 40 - 2Q$$

Chapter 10

13

Monopoly: An Example

$$MC = MR$$

$$2Q = 40 - 2Q$$

$$4Q = 40$$

$$Q = 10$$

$$P(Q) = 40 - Q$$

$$P(Q) = 40 - 10$$

$$P(Q) = 30$$

Chapter 10

14

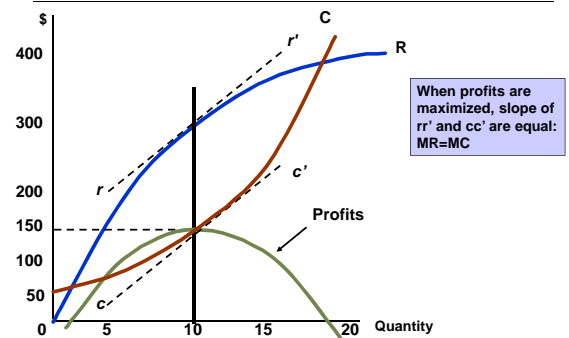
Monopoly: An Example

- By setting marginal revenue equal to marginal cost, we verified that profit is maximized at $P = \$30$ and $Q = 10$.
- This can be seen graphically by plotting cost, revenue and profit

Chapter 10

15

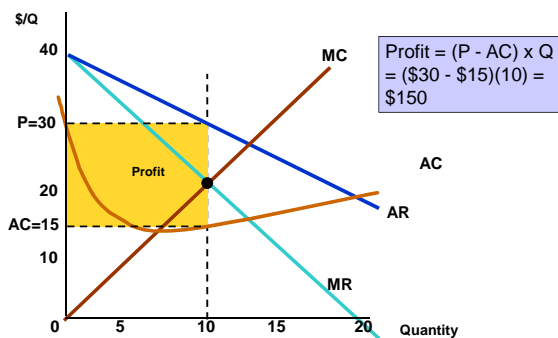
Example of Profit Maximization



Chapter 10

16

Example of Profit Maximization



Chapter 10

17

Monopoly

- Monopoly pricing compared to perfect competition pricing:
 - Monopoly
 - ()
 - Perfect Competition
 - ()
 - Demand is perfectly elastic so $P=MC$

Chapter 10

18

Monopoly Power

- Pure monopoly is rare.
- However, a market with several firms, each facing a downward sloping demand curve will produce so that price exceeds marginal cost.
- Firms often produce similar goods that have some differences thereby differentiating themselves from other firms

Chapter 10

19

Measuring Monopoly Power

- Measure monopoly power by the extent to which price is greater than MC for each firm
- () of Monopoly Power
- $L = (P - MC)/P$
 - The larger the value of L (between 0 and 1) the greater the monopoly power.

Chapter 10

20

The Social Costs of Monopoly Power

- Monopoly power results in higher prices and lower quantities.
- However, does monopoly power make consumers and producers in the aggregate better or worse off?
- We can compare producer and consumer surplus when in a competitive market and in a monopolistic market

Chapter 10

21

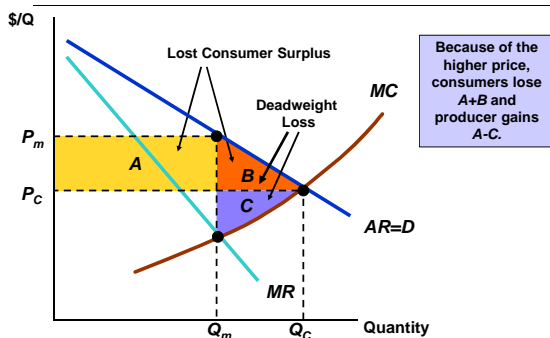
The Social Costs of Monopoly

- Perfectly competitive firm will produce where $MC = P \rightarrow P_C$ and Q_C
- Monopoly produces where $MR = MC$, getting their price from the demand curve $\rightarrow P_M$ and Q_M
- There is a loss in consumer surplus when going from perfect competition to monopoly
- A deadweight loss is also created with monopoly

Chapter 10

22

Deadweight Loss from Monopoly Power



Chapter 10

23

The Social Costs of Monopoly

- Social cost of monopoly is likely to exceed the deadweight loss
- Rent Seeking
 - Firms may spend to gain monopoly power
 - ()
 - ()
 - Building excess capacity

Chapter 10

24