Economics 101 – Section 5

Lecture #20 – April 1, 2004

Monopoly

Lecture overview

- Role of technology in perfectly competitive markets
- What is a monopoly
- Sources of monopoly
  - Natural monopoly
  - Intellectual property rights
    - Patents
    - Copyright
- The goals of a monopolist, profit, and loss
- Equilibrium – comparison to the perfectly competitive firm
- Price discrimination
Changes in technology

- Under perfect competition – a technological advance making production cheaper or more efficient will cause the market supply curve to shift right
  - This will result in a lower price (and likely a higher quantity traded) in equilibrium
  - Early adopters may make SR profits, but in the LR all firms will earn zero economic profit (or simply normal profit)

Figure 11  Technological Change in Perfect Competition
What is a monopoly?

- The term monopoly” often refers to exclusive access or control over some good or market.
- A monopolist (or monopoly firm) is the only seller of a good or service with no close substitutes
  - A monopsonist is the only buyer in a particular market

Sources of Monopoly

- 1) natural monopoly – exist when there are economies of scale
- 2) Intellectual property – Governments often allow for creators of new ideas and knowledge to exert some form of monopoly power over their product
  - i) patents – temporary granting of monopoly rights over a new product or discovery
  - ii) copyright – exclusive rights to sell a literary, musical, or artistic work
Goals of a monopolist

- Just like every other firm we have studied and will study in this class, the goal of a monopolist is to maximize profit.
- A monopolist will face constraints on how much it will cost to produce output and what prices it can charge for its output.
- As before – a monopolist will maximize profit where MR=MC and the MC cuts the MR curve from below.

As long as the monopolist faces a downward sloping demand curve:

1) The marginal revenue curve will always lie below the demand curve.
2) The marginal revenue will be less than the price of output.

This will be true for any firm that faces a downward sloping demand curve.

Recall that a firm in a PC market does not face a downward sloping demand curve.
Figure 1  Demand and Marginal Revenue

Number of Subscribers

Monthly Price per Subscriber

$60

50 48 38 30 20 18

5,000 6,000 15,000 20,000 30,000

Demand

Figure 2  Monopoly Price and Output Determination

Number of Subscribers

Monthly Price per Subscriber

$60 40

10,000 30,000

MC

MR

D
Monopoly

- A monopolist will never produce at a point where marginal revenue is negative
  - Recall our discussion of elasticities
    - in the elastic portion total revenue goes up as q goes up
    - in the inelastic portion of the demand curve total revenue goes down as q goes up
  - A monopolist will always produce over the range of output where demand is elastic!

Monopoly

- The monopolist will earn positive profit when P>ATC
  - The profit will be (P-ATC)*Q
Monopoly

- The monopolist will incur a loss if \( P < ATC \)
  - Loss is \( (ATC - P) \times Q \)
  - Profit will be \( (P - ATC) \times Q \) (This will be a negative number)
Monopoly

- In the long-run it is possible for a monopolist to earn positive economic profits since there are no competitive pressures
  - No threat of other firms entering the industry
- A privately owned firm which suffers an economic loss will exit in the LR just like any other firm
  - Thus in the LR the only monopolies we see operating are those making zero or positive economic profits
Monopoly

- A market with a monopolist operating will charge a higher price for output than will a competitive firm

**Figure 4**
Comparing Monopoly and Perfect Competition

(a) Competitive Market
- Price per Unit: $10
- Quantity of Output: 100,000
- Demand (D) and Supply (S)

(b) Competitive Firm
- Price per Unit: $10
- Quantity of Output: 1,000
- Marginal Cost (MC), Average Total Cost (ATC)

(c) Monopoly
- Price per Unit: $15
- Quantity of Output: 60,000
- Marginal Revenue (MR), Supply (S) = Marginal Cost (MC)
If there is an increase in demand, the monopolist will
- Charge a higher price, produce more quantity
- Earn higher profit

If there is a decrease in demand, the monopolist will
- Charge a lower price and reduce output
- Earn smaller profit
Monopoly – Price discrimination

- Price discrimination
  - Charging different people different prices

- If a monopolist can charge different prices to different groups of people they would generally like to do so.
  - Why?
    - By distinguishing between the low and high demand individuals they are better able to charge a higher price to those individuals with higher demand

- High demand groups are willing to pay more for the same quantity than a low demand group

- The monopolist will always like to price differently for these two groups since

- Also, the option to price discriminate should never make a monopolist worse off
  - More choice is always better for a firm
Figure 6  Price Discrimination

(a) Number of Round-trip Tickets

(b) Number of Round-trip Tickets

(c) Number of Round-trip Tickets

Figure 7  Perfect Price Discrimination

$30
$25
$10

$120
$80

25
10

12

160
120

10
30

20
30
60

Number of Dolls per Day

MR curve before price discrimination