Lecture 19: Imperfect Competition and Monopoly

Clicker Question
Perfect and Imperfect Competition

- Perfect Competition
  - a) One homogeneous product
  - b) Many buyers and sellers
  - c) Voluntary exchange
  - d) Perfect information
  - e) Rational self-interested agents

- Competition is imperfect when one or more of these features doesn’t apply.

- Various forms/degrees of imperfect competition can be defined as a) to e) are modified in different ways.

Imperfect competition from a small number of sellers or from product differences.

- Monopoly (one dominant firm)
  - De Beers diamonds (in the 1980’s)

- Duopoly (two dominant firms)
  - Soft drinks: Coke and Pepsi
  - Credit Cards: Mastercard
  - Visa
Oligopoly (a few firms)
   ♦ Automobile market – a few firms:
      Honda, Toyota, Chrysler, Ford, GM, etc..

Monopolistic Competition
   (many firms with differentiated products)
   ♦ restaurants
   ♦ hair stylists
   ♦ hardware stores

These firms can raise prices above the competitive equilibrium.
Adverse Selection: bad products or bad customers that cannot be identified.

Moral Hazard: customers who can’t be supervised buy too much (or behave badly) when others are paying.

Example: Used cars
- Used cars often have hidden problems [adverse selection].
- So worried buyers have low WTP.
- Equilibrium market prices are low.
- Owners won’t sell good cars.
- Vicious circle—market works poorly.
Example: Health Insurance

- Buyers of health insurance tend to be less healthy than average. *adverse selection*.

- Insured people may see the doctor too often and get too many medical tests *moral hazard*.

- Insurance companies respond with high prices.

- Healthy people don’t want to buy insurance.

- Vicious circle—private market works poorly.

Imperfect competition in markets with less-than-voluntary exchange:

- college textbooks

- healthcare
Imperfect competition in markets with irrational consumers:
- wishful thinking
- temptation
- stupidity

These imperfections can lead to high prices or inefficiency or both.

Market Power

- A firm has *market power* if it can raise its prices without losing *all* of its customers.
- This happens when no other firm is producing the same (or very similar) product.
Differences in products (real or apparent) that create market power often come from:
- minor product characteristics
- location
- customer service
- marketing

Most real-world firms obtain some degree of market power through a deliberate strategy of \textit{product differentiation}.

Firms with market power can raise prices and increase profits.
Monopoly

- A firm is a **monopoly** when it is the only firm producing a given product.
  - i.e. when no other firm produces a good substitute for its product.
- Because the monopoly is the only firm in the market,…
- …the monopoly faces the entire market demand curve.
- The monopoly can create an **artificial scarcity** and obtain **economic rents** by restricting production.
- Then, the monopoly can move up the demand curve and charge a higher price *(as we shall see)*.

What factors allow monopolies to exist?

- Patents and Copyrights
  (Intellectual Property Rights)
  - **Product Patents**: New products
    —Post-it notes, medicines
  - **Process Patents**: Production processes that lower costs—e.g. Kevlar
  - **Copyrights**: Protects the expression of an idea—novels, works of art
Control over important inputs
- De Beers (in the 1980’s)

Government Licenses and Franchises
- Yosemite Concession Services Corporation

Decreasing Costs (Natural Monopolies)
- Cost per unit keeps dropping as more output is produced up to the quantity demanded.
  - Electricity, Amtrak

Network economies
- Microsoft Windows Operating System
- Apple OS X

Monopoly: Restricting Production
- The monopoly faces the market demand curve, and its MC curve is the market MC curve.
- Social surplus would be maximized by producing \( Q^* \) and setting price \( P^* \).
- But by restricting production,
  - the monopoly can sell at a higher price, and obtain *monopoly rents* (taken from \( CS \)).
  - The monopoly loses some \( PS \) (and consumers lose some \( CS \)) because of reduced production,
  - but at \( P_M \) and \( Q_M \), monopoly rents are larger than the lost \( PS \).
Monopoly and Social Surplus

- When monopolies raise price and restrict production,…
  - consumer surplus is transferred to the monopoly in the form of monopoly rents,…
  - but the output reduction decreases total social surplus.

- Monopoly behavior also affects surplus in other more important ways.

- These behaviors will be analyzed in the next lecture.

Clicker Question
Marginal Revenue and Market Power

- **Total Revenue (TR)** is the money a firm obtains by selling its output.

- **Marginal revenue (MR)** is the additional revenue obtained from selling another unit of output.

In a perfectly competitive market,
- a firm’s output does not affect the price,…
- so a competitive firm obtains the same added revenue (the price) for each additional unit sold.
- Therefore, \( MR = P. \)

But any firm with market power (including a monopoly), faces a downward-sloping demand curve.

Suppose the firm cannot price-discriminate (charge different prices to different consumers).
- Then, if it lowers the price of an additional unit in order to sell it,
- it must lower its price for ALL units that it sells.
- To find the marginal revenue, you start with the price it receives for the additional unit…
- and then subtract the revenue loss on its other units caused by the price drop.
- Therefore, \( MR < P. \)
Marginal Revenue

- Suppose a firm facing demand $D$ produces $q - 1$ units.
- If the firm produces one more unit...
- it cannot sell it for more than price $p$,...
- so revenue increases by $p \times 1 = p$.
- But the price on the other $q - 1$ units drops by $\Delta p$,
- so revenue drops back by $(q - 1) \Delta p$.
- Therefore, $MR = p - (q - 1) \Delta p$.

[For those who like calculus:]

If goods are perfectly divisible, we can use calculus and write,

$$MR = p - q \frac{dp}{dq}$$

Example: Monopoly Profit Maximization
(with no price discrimination)

<table>
<thead>
<tr>
<th>Price (P)</th>
<th>Quantity (Q)</th>
<th>Total Revenue (TR=PxQ)</th>
<th>Marginal Revenue (MR)</th>
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<tr>
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</tbody>
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- How many units should the firm sell if the cost ($MC$) of each additional diamond is $150$?  
- At what price?
Clicker Question

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