Microeconomics in 25 Slides or Less

Professor Michael Gibbs

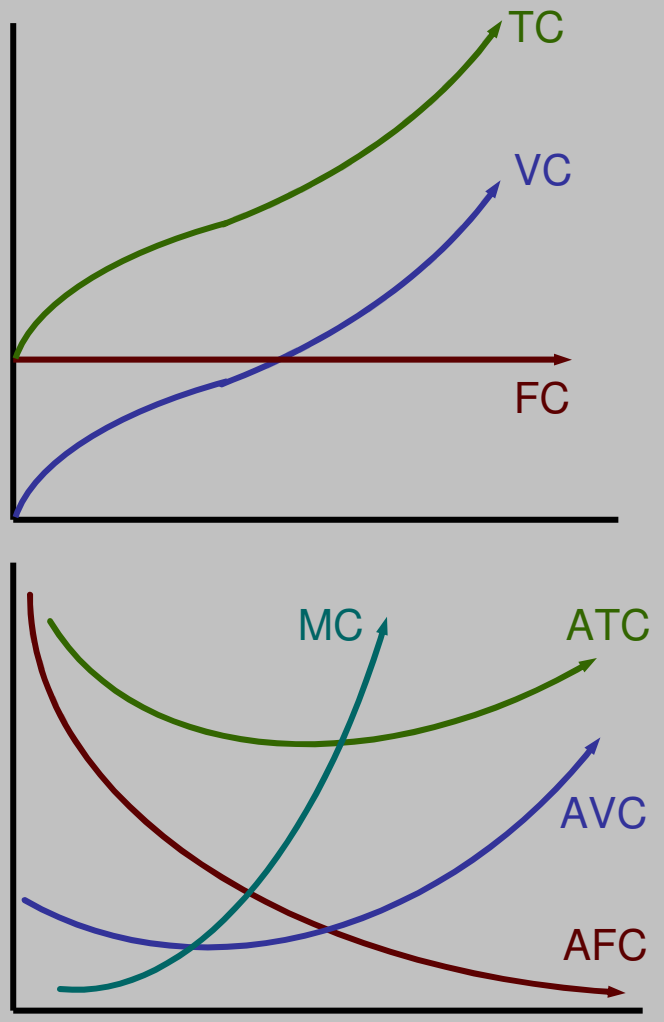
Overview

- Tools
  - supply & demand curves
- Industry Types
  - perfect competition, monopoly, oligopoly, monopolistic competition
- Advanced Topics
  - pricing strategies
  - network effects & lock-in
- Notes
- http://gsbwww.uchicago.edu/fac/michael.gibbs/teaching/micro.htm

Capitalist Tools

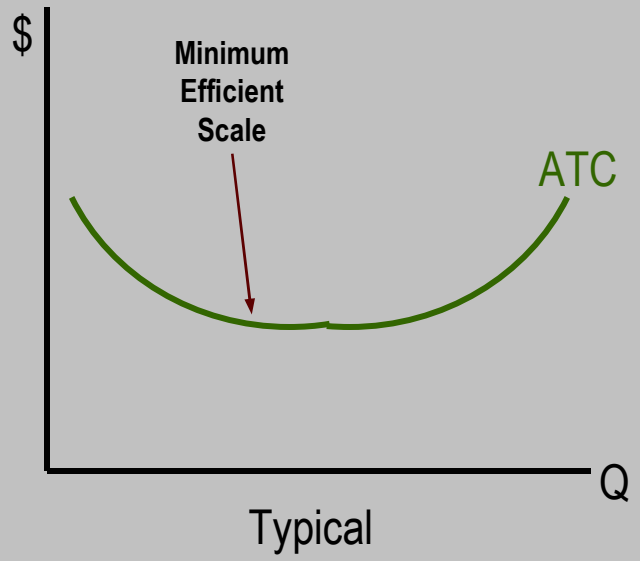
Cost Curves

- TC = FC + VC
- ATC = TC/Q = AFC + AVC
- MC = ΔTC/ΔQ = ΔVC/ΔQ
  [= dTC/dQ = dVC/dQ]
  - MC generally rising in Q
  - MC intersects ATC & AVC at their minimums

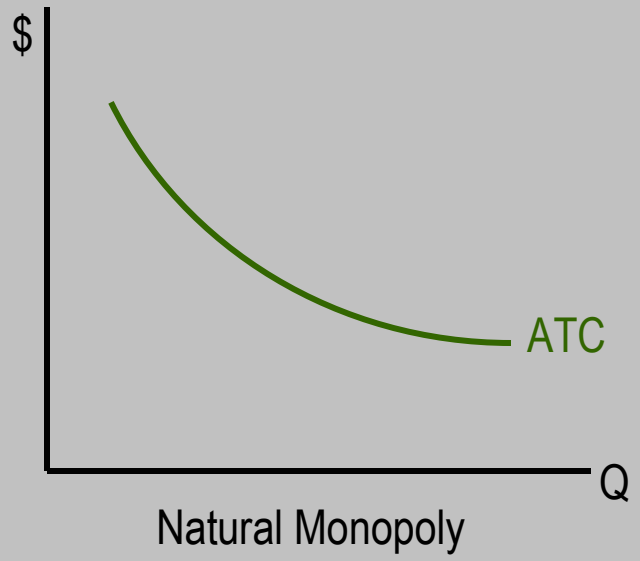


Economies of Scale

- *Economies of Scale:* ATC declining with Q
- *Dis-economies of Scale:* ATC rising with Q
- EOS are driven primarily by FC
- EOS determines efficient size of firm
  - extreme EOS can lead to oligopoly or "natural" monopoly



Typical

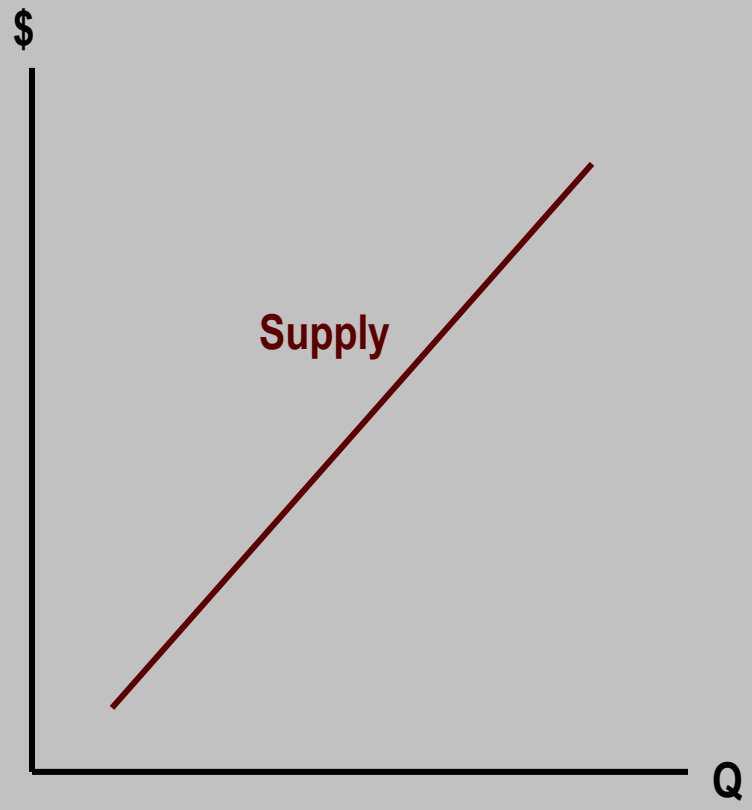


Natural Monopoly

Economies of Scope

- *Economies of Scope:* producing one good lowers costs of producing another ("synergies")
- When a firm has economies of scope, it is often optimal to produce both goods
- What can drive economies of scope?
  - sharing assets or management (esp. support functions)
  - sharing customers or distribution
  - related knowledge / expertise
  - production by-products

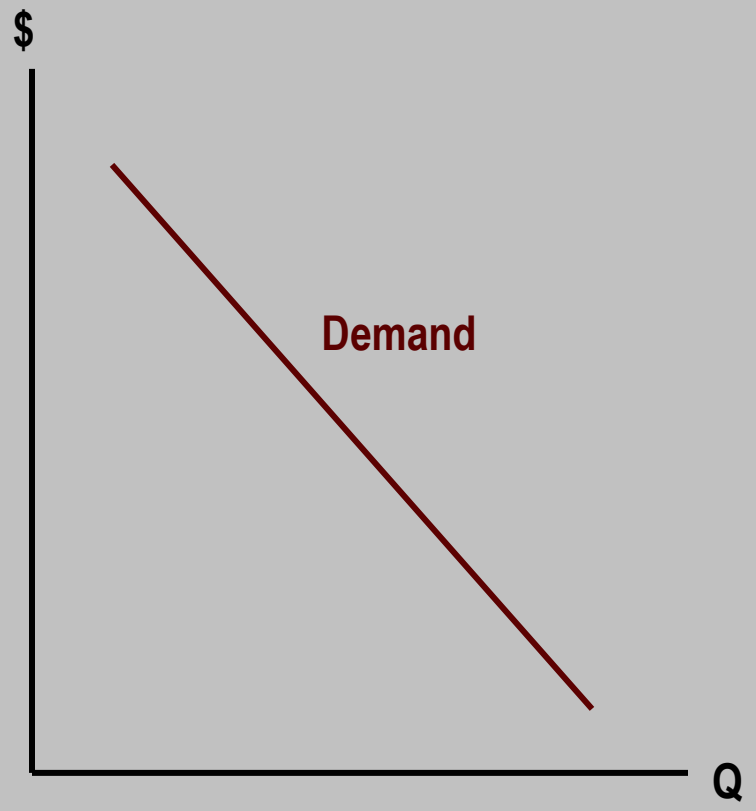
Supply Curves



- In competitive industries, firms are price takers
- Firm should only produce if
  - P ≥ min AVC in short run (FC "sunk" in short run)
  - P ≥ min ATC in long run
- Continue selling if P > MC
  - since MC is typically rising, produce *until* P = MC
  - thus MC = supply curve

Demand Curves

- DC's plot what someone is willing to pay for each unit purchased
  - or how many can be sold at each price
- *Always slope down* (why?)
- 2 useful properties
  - elasticity
  - consumer surplus



Elasticity of Demand

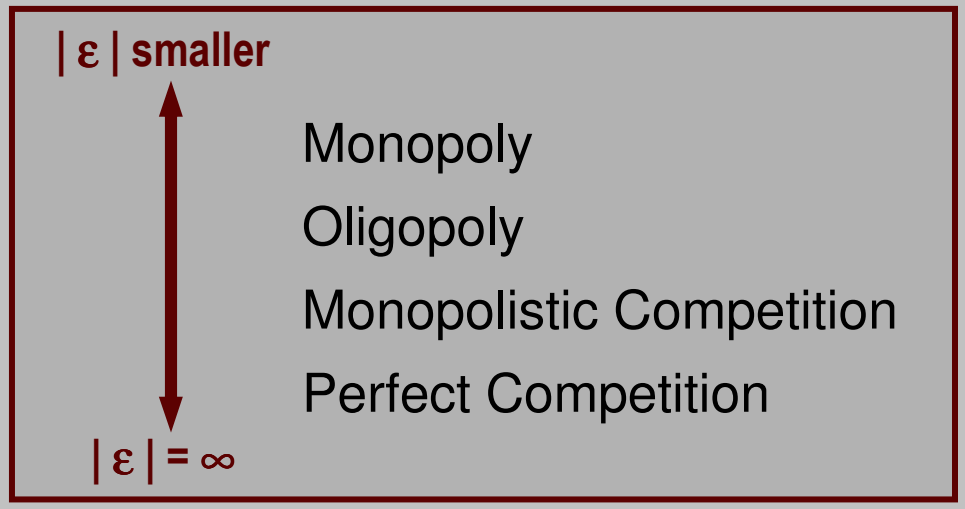
- $\varepsilon = \%\Delta Q/\%\Delta P = (\Delta Q/Q)/(\Delta P/P) = (\Delta Q/\Delta P)(P/Q)$
  $[= (dQ/dP)(P/Q)]$
- Intuitively
  - % change in sales for a given % change in price
  - measures price sensitivity of your customers
- A units-free measure of how sales vary with price
  - always negative; often referred to informally in absolute value terms
    - » *inelastic* demand: "small" elasticity close to zero
    - » *elastic* demand: "large" elasticity approaching $-\infty$

Determinants of Elasticity of Demand

- Availability of substitutes
- Use with complements
- Budgets & incentives of customers

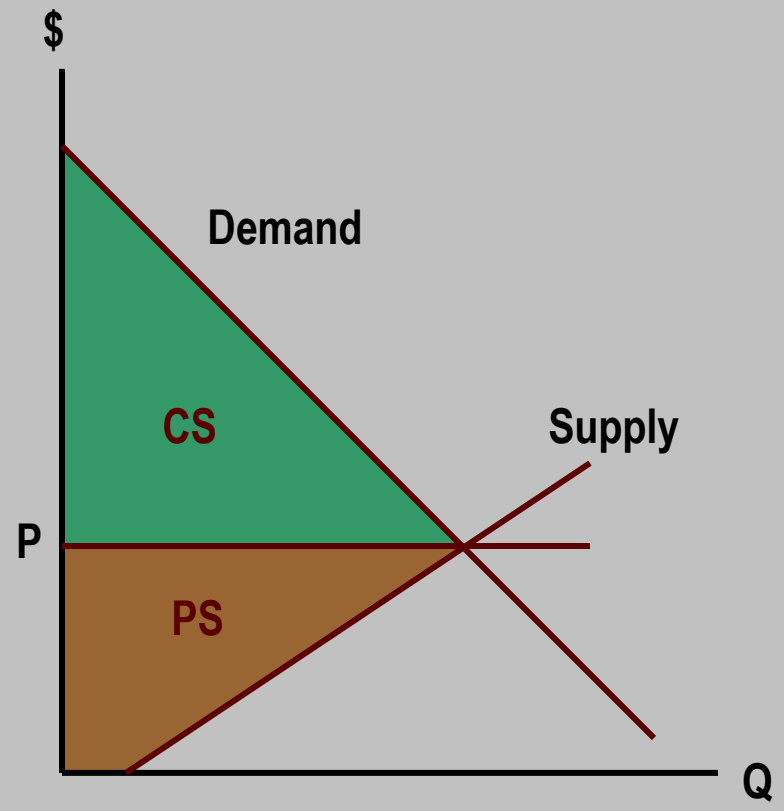
Why Elasticity is Useful

- A simple, rough measure of monopoly power



- Very important in pricing

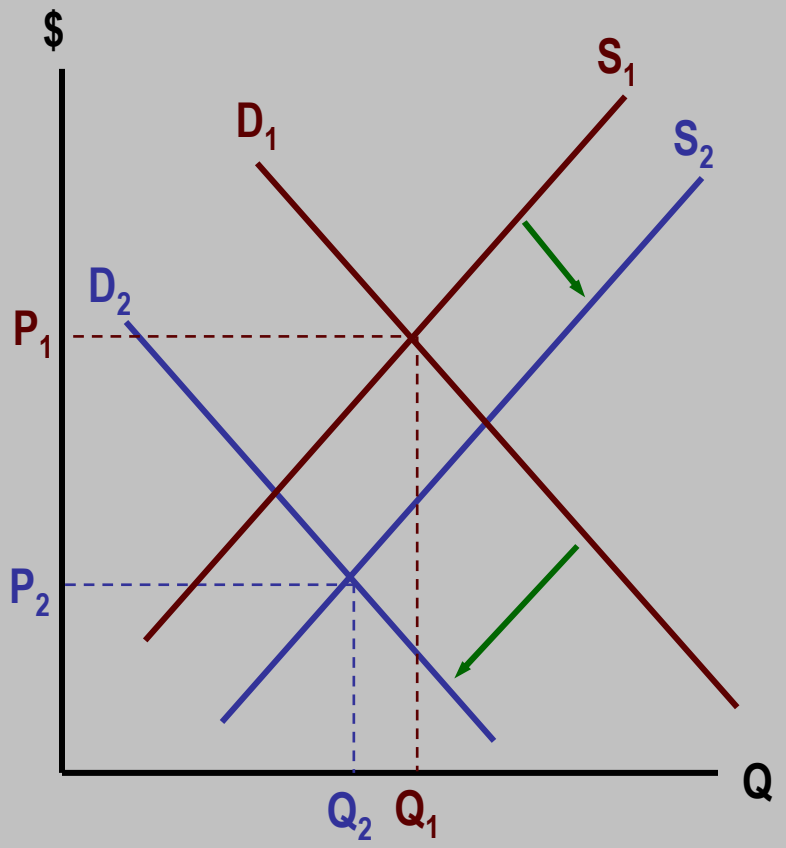
Consumer Surplus



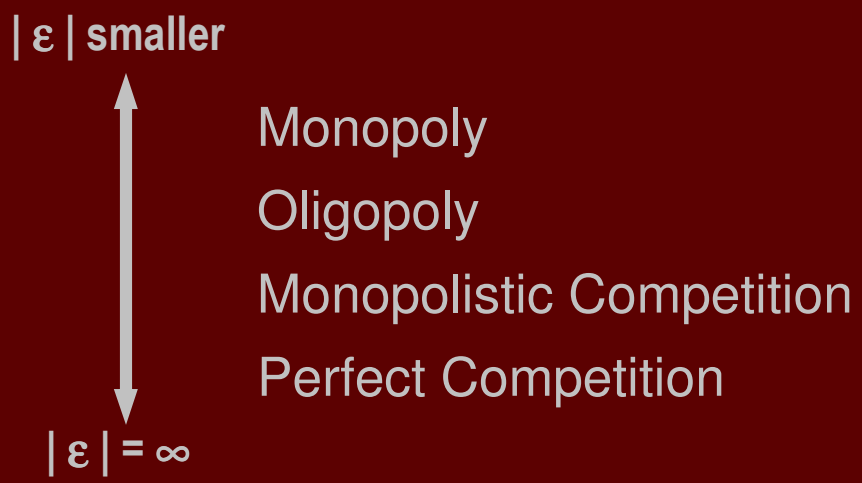
- CS = difference between:
  - maximum someone is willing to pay (height of demand curve)
  - what they actually pay (price)
- Why do we care?
  - measure of welfare
  - business opportunity!
- PS
  - area above supply, below price
  - equals profit ignoring FC
  - of less practical use

Market Equilibrium

- How does a market come to equilibrium?
- How does it adjust if S,D shift?
- What are PS, CS before & after?
- What happens if government regulates P? Q?



Industry Types



The Extremes

- Perfect competition
  - theoretical ideal that industries gravitate toward over time
  - no barriers to entry or exit; firms are price takers
  - strategy is simple
    - » short run, produce if $P \geq$ min AVC; long run, if $P \geq$ min ATC
    - » produce until MC = P
      - competition drives P to min ATC $\Rightarrow$ profit = zero
- Monopoly
  - rare outside natural monopoly
  - barriers to entry, or large EOS; not a price taker
  - strategy relatively simple
    - » protect barrier to entry
    - » produce until MC = MR
      - $P = MR(1+1/\varepsilon) \Rightarrow P < MC \Rightarrow$ profit > 0
    - » more sophisticated pricing strategies possible

Oligopoly

- Small # of firms w/ large market share
- Strategy becomes complex
  - each firm's action has large direct effects on the other
  - game theoretic intuition applies
    - » develop strategy considering competitor's strategy & likely reactions
  - considerations include:
    - » first mover advantage
    - » pre-commitment
    - » tacit collusion
    - » expectations; credibility of threats

Monopolistic Competition

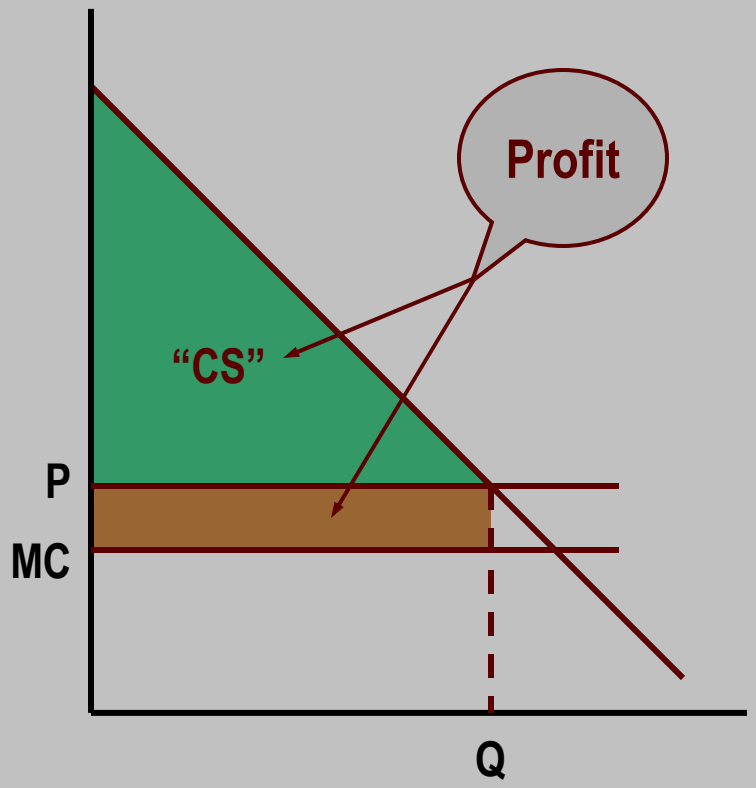
- Many firms, few if any dominate market share
  - but not perfectly competitive
    - » each firm has some monopoly power, if only a little
- Firms too small to have large effects on each other
  - game theoretic intuition not as important
- Strategy
  - product differentiation, switching costs, etc., to get (some, short run) monopoly power
  - pricing strategies

Advanced Topics

Pricing Strategies

- Offering a single price ignores 2 profit opportunities
  - CS implies some paid less than they were willing to
  - other customers didn't buy b/c price was too high
- More elaborate pricing strategies allow the firm to convert CS into PS: profits

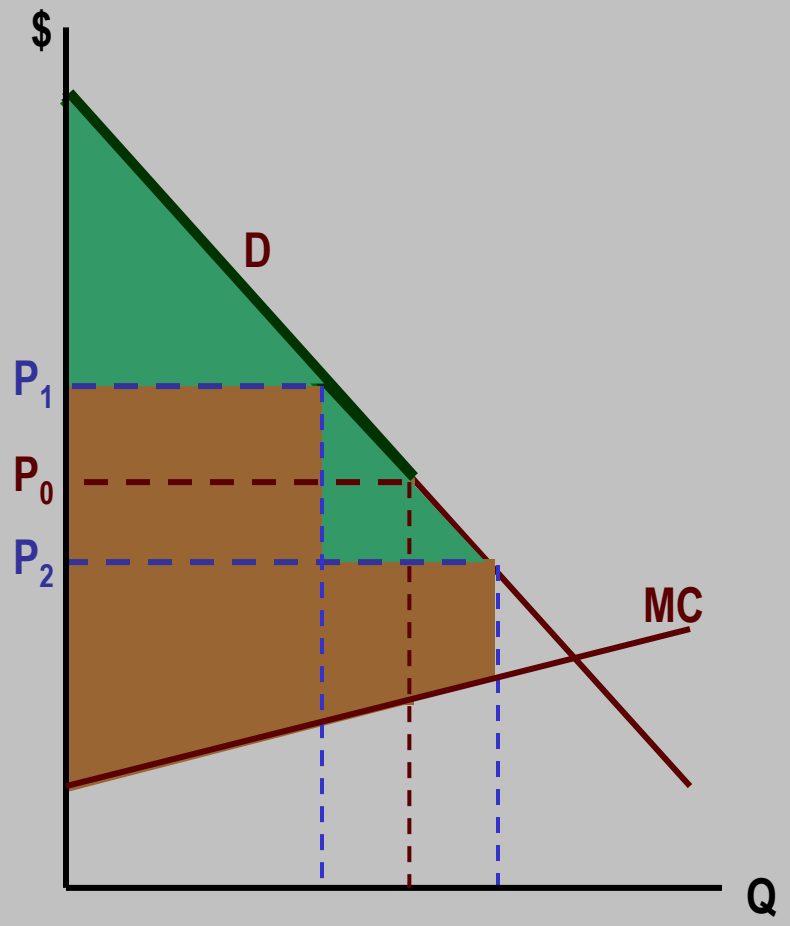
Two-Part Pricing



- One approach: charge fixed *entry fee* F, & *per-unit fee* P
  - revenue = F + P•Q
- For given P, largest possible F = "CS"
  - profit = F + (P–MC)Q – FC
- Profit max at P=MC, F="CS"
  - set P to maximize value/ usage of product to consumer
  - use F to turn CS into profit
- Problem: 2PP ineffective w/ heterogeneous customers

Price Discrimination

- Another approach: charge different prices to different customers
  - 1st degree: charge down demand curve
    - » e.g., Priceline; auctions; college aid
  - 3rd degree: segment market into groups; monopoly pricing in each (e.g., P_1,P_2)
    - » e.g., airlines
    - » $P_k = MC(1+1/\varepsilon_k) > MC$
      - markup of P_k over MC is higher, the more inelastic is segment k ($|\varepsilon_k|$ closer to 0)



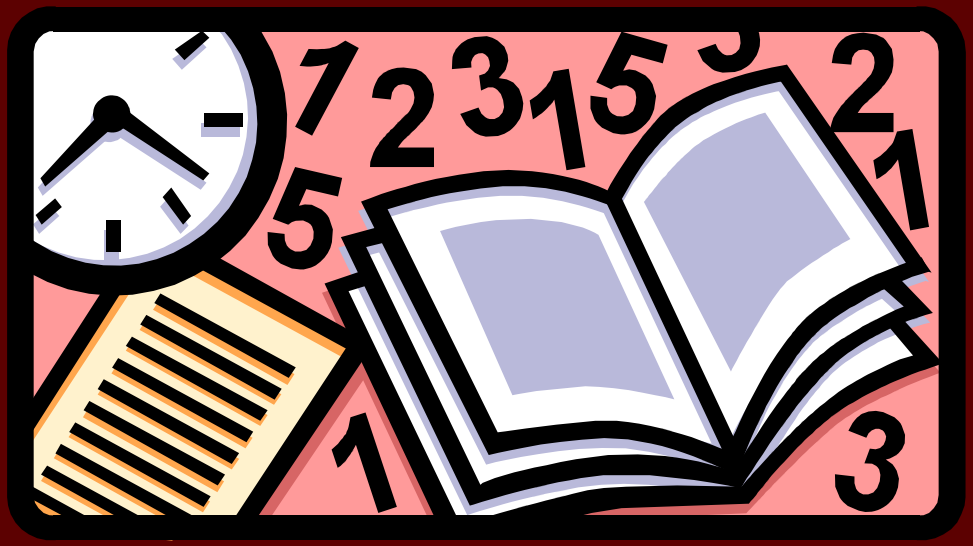
Notes on Price Discrimination

- Requires 3 conditions
  - must have some monopoly power
  - must sort customers, or get them to self-sort, by willingness to pay
    - » check IDs
    - » how much of, where, or when good is bought
    - » discounts to better informed customers
    - » bundle
  - must prevent arbitrage across segments
    - » restrict resale
    - » adulterate the product to make it less valuable to others
    - » limit purchases
- Special cases
  - quantity discounts (2nd degree)
  - intertemporal p.d.; peak-load pricing
- Closely related: quality discrimination

Network Effects

- *Network Effects* exist if a product is more valuable to consumers, the more others also use it
  - a *standard* is important
    - » how is it set?
  - if the standard is privately owned, network effects create monopoly power
- Strategic implications
  - first-mover advantage
  - price wars
  - possible “winner take all”
  - “coopetition”
- Monopoly network effects are often hyped too much
  - evidence suggests usually short term

Notes



Economic Attitude

- Opportunity cost
- What's your "market"? Think broadly!
- Competition always wins in the end, but exploit short-run monopoly power
- The Coase Theorem: Let's Make a Deal
- A little analytical thinking can go a long way

Good Luck!