Economic Analysis
1. Point A - Before change
2. ∆ (Delta) = Change
3. Point B - After change

Scarcity & Choice

The Economic Problem
* Resources (also called Factors of Production or Inputs) are scarce.
  Resources | Incomes
  land (natural) | earn
  labor | wages
  capital | interest
  entrepreneurship | profits
  * Peoples’ wants and needs for Goods and Services (Outputs) are unlimited.

Scarcity & Choices

Two Choices are Trade-Off’s

Economic Analysis
1. Allocative efficiency (Pf = MCf)
2. ∆ - cold winter
3. B - short run give up gasoline to get heating oil ⇒ new allocative efficiency (P2 = MC2)

Demand and Demand Elasticity

A Change in Price causes a change in Quantity Demanded. Move along curve. ΔP = ΔQD

Law of Diminishing Marginal Utility—The more of a good a consumer already has, the lower the extra (marginal) utility (satisfaction) provided by each extra unit. a util = a unit of satisfaction

A Change in Anything but Price causes a change in Demand. Shift the curve. ∆ Determinant = ∆D

Elastic Demand's slop: ΔQ/ΔP = flatter
Perfect elastic-horizontal lines

Elasticity Coefficients based on percent of change (%Δ)

Price Elasticity of Demand Formulas
* E = %ΔQD / %ΔP
* E = ΔQD / ΔP

Elasticity & Total Revenue Test
Elastic >1 if P = TR = opposite
Unit elastic =1 if ΔP = Δ TR
Inelastic <1 if P = TR = same direction

Why the demand curve slopes downward—What causes the inverse relationship between price and quantity demanded? Move along the curve.

1. The Law of Diminishing Marginal Utility
2. Income Effect—a lower price has the effect of increasing money income ⇒ buy more of other things
3. Substitution Effect—a lower price cause people to switch to the purchase of the "better deal".
4. Common sense—buy more if price is lower

Elastic Demand's slop: ΔQ/ΔP = steeper
Perfectly inelastic-vertical lines

Cross Elasticity Income Elasticity

E_Y = %ΔQ_D / %ΔY
E_Y = %ΔQ_D / %ΔY

Prompt: Refinery EM produces 33 gal. gasoline or 30 gal. heating oil per barrel of crude oil. Refinery ST produces 32 gal. gasoline or 24 gal. heating oil per barrel of crude oil. Should they specialize & trade?

Sally Dickson, Austin, TX
**Supply & Supply Elasticity**

A Change in Price causes a change in Quantity Supplied.

\[ \Delta P \rightarrow \Delta Q_S \]

**Eco Analysis**
1. \( A \rightarrow P_1, Q_1 \)
2. \( \Delta \) Price of coffee \( \Rightarrow \) Quantity supplied
3. \( B: \) \( P_2 \uparrow, Q_2 \uparrow \)

Cups of Coffee

**A Change in Anything but Price causes a change in Supply.** Shift the curve.

\[ \Delta \text{Determinant} \rightarrow AS \]

**Typical Determinants or Ceteris Paribus conditions**
- \( \Delta \) resource (factor) prices
- \( \Delta \) technology or technique
- \( \Delta \) taxes/subsidies
- \( \Delta \) price of other goods \( \Rightarrow \) production substitution
- \( \Delta \) Price expectations
- \( \Delta \) Number of sellers

**Elasticity of supply**
- **Slope of Curve**
  - *No TR test* All resources can change Elastic supply
  - **Horizontal, flat**

\[ P \rightarrow S \]

**Efficiency Loss = Dead Weight Loss**
- Govt. taxes or regulations or monopoly power
- reduce consumer and/or producer surpluses below society's allocative efficiency.

**Supply / Demand Equilibrium – Product Markets (Industry)**

**iPod’s**

\[ P \rightarrow S \]

**Eco Analysis**
1. \( A \rightarrow P_1, Q_1 \)
2. \( \Delta \) greater popularity (\( \Delta \) preferences) \( \Rightarrow \) \( Q_1 \uparrow \)
3. \( B: \) \( P_2 \uparrow, Q_2 \uparrow \)

**iPod’s**

\[ P \rightarrow S \]

**Eco Analysis**
1. \( A \rightarrow P_1, Q_1 \)
2. \( \Delta \) faster, smaller chips (\( \Delta \) technology) \( \Rightarrow \) \( Q_1 \uparrow \)
3. \( B: \) \( P_2 \downarrow, Q_1 \uparrow \)

**Surplus / Shortage – Disequilibrium**
- **Excess Quantity Supplied**
  - \( Q_S > Q_D \)
  - **Excess Supply**
- **Excess Quantity Demanded**
  - \( Q_S < Q_D \)
  - **Excess Demand**

**Consumer & Producer Surplus**
- **Consumers’ surplus** is the difference between that paid (\( P_e \)) and what one would have paid based on utility (\( P_d \)).
- **Producers’ surplus** is the difference in the price charged (\( P_e \)) and the price a seller could sell for based on costs (\( P_c \)).
Perfect Competition – The Firm

Characteristics
- **Very large number of firms**
- **Standardized products**
- **Price takers**
- **Easy entry into and easy exit from market**
- **No non-price competition (advertising)**
  - **Ex: Agriculture**

Profit Maximization Rule
- **MR=MC, P>AVC**
- **Short run Loss Minimization**
  - MR=MC, P>AVC
  - SHUT DOWN DECISION
  - Long Run Equilibrium
  - MR=MC, P>AVC

Monopoly – THEORY OF FIRM

Characteristics
- **One firm=industry**
- **Unique product with no close substitutes**
- **Price maker**
- **Many barriers, entry blocked**
  - **Little advertising except for public relations**
  - **Ex: local utilities, patented drugs**
- **Why Demand and MR aren’t the same:**
  - MR<P b/c to sell Q↑,
  - Monopolist P↑ on all units⇒TR↑ in elastic range
- **Profit Maximizing Rule**
  - MR=MC
- **Regulated Monopoly**
  - *Typically Natural Monopolies with Economies of Scale*:
    - **Fair-Return Price**: P=ATC ⇒ monopolist breaks even
    - **Socially Optimal Price**: P≤MC ⇒subsidies to monopolist ⇒ allocative efficiency
- **Price Discrimination**
  - The practice of selling a product at more than one price not justified by cost differences.
    - Due to monopoly power,
      - *Economizes* segregation market,
        - *buyers can’t resell product.*
        - Examples: airlines, movies

Monopoly becomes Competitive

Characteristics
- **MR>D**
- **Profits above ATCxQm**
- **Pm>MC**
- **Pm>MC**

Regulated Monopoly
- *Typically Natural Monopolies with Economies of Scale*:
  - **Fair-Return Price**: P=ATC ⇒ monopolist breaks even
  - **Socially Optimal Price**: P=MC ⇒subsidies to monopolist ⇒ allocative efficiency

Industry and Firm in an Expanding Industry

Analysis
1. A. Industry at P↑, Q↑ equilibrium ⇒ firm price taker at p↑, MR=MC at q↑, earns economic profits (p↑,d,ATC)
2. Δ—Other producers see profits and enter the market⇒number of firms ↑⇒industry supply ↑⇒ to S2
3. B–P∗, Q↑ (industry) ⇒ firm price taker at p=MC =MR at q∗ (allocative efficiency), no economic profits p∗= min. ATC (productive efficiency)