Market

Buyers & sellers interact
Profits/losses guide firms’ decision on what/how/for whom

TWO POINTS:

* Ceteris paribus – “other things equal”
  Movement along supply, demand curves vs. shift in curves
  “Increase in demand” → shift (non-P Δ)
  “Increase in q demanded” → movement?

* Idealization – perfect competition
  - individual actions have no appreciable affect
  - shipping?
  - P = MC – efficient (no “excess” profits)

Failures (Role of Government):
  - imperfect competition (monopoly)
  - externalities → cost imposed outside markets, involuntary
Tanker Market Examples

Demand Curve

Downward sloping – why?
- substitution effect
- income effect

Shifts:
- Δ in factors other than price

Determinants:
- price
- income
- size of market
- substitutes (related goods)
- tastes / preferences

Supply Curve

Upward sloping – why
- law of diminishing returns

Shifts:
- Δ in non-price factor(s)

Determinants:
- price
- cost of production
  - technology costs
  - input costs
- prices of production substitutes
- market org.

Equilibrium

Supply Shift

Demand Shift
ELASTICITY

Price elasticity of demand: \( E_D = \frac{\% \text{ incr. in } Q}{\% \text{ incr. in } P} \), NOT = slope!

Elastic

\[ E_D = 0 \]

- Luxury goods
- Ready substitutes
- Large fraction of income

Price elasticity of supply: \( E_S = \frac{\% \text{ inc. in } Q \text{ supplied}}{\% \text{ increase in } P} \)

\[ E_S = 1 \]

- Necessities
- No ready substitutes
- Small fraction of budget

Perfectly elastic: \( E_S = \infty \)

Revenue = \( P \times Q \)
- decreases when \( P \) increases

Perfectly inelastic: \( E_S = 0 \)

Revenue = \( P \times Q \)
- increases when \( P \) increases

Determinants:
- time period
- extent to which production can be increased
**Time Frame of Equilibrium**
- monetary (supply fixed)
- short run (plant & equipment fixed; output $\Delta$)
- long run (everything can $\Delta$)

Similarly for demand, elasticity is smaller in short run
Very short run: prices move violently, Q little
Very long run: P moves little, Q a lot

**Effect of a Tax**

$1.00/barrel of oil imports

Who bears the burden?

Oil co: $.9 - 1 = -.1
Consumer: .9 $^*$

Elasticity!
Burden on consumer if demand inelastic relative to supply.
Burden on producer if supply is inelastic.

**Effect of Price Control**

Examples:
- rent control
- interest rate ceilings
- minimum wage

$\Delta P_m > \Delta P_s > \Delta P_L$
UTILITY (Behind the Demand Curve) = Satisfaction

Consumers adjust consumption so that marginal utility per $ is same for all goods.

\[ \frac{MU}{P} \text{ same for all goods} \]

→ “explains” downward sloping demand curve (higher P \( \frac{MU}{P} \downarrow \rightarrow \text{reduce Q} \))

→ MU determines value, i.e. price

MARKET DEMAND
= sum of individual demand curves

SUBSTITUTES + COMPLEMENTS (independent)

Substitutes: increase in price of A causes increase in demand for B
Complements: increase in price of A causes decrease in demand for B
CONSUMER SURPLUS

= extra utility (value) consumers collectively receive

PRODUCTION FUNCTION (Behind the Supply Curve)

= relationship between inputs & max output

Returns to Scale: balanced increase and decrease of all factors at once

- Constant (replication)
- Decreasing (natural resource industries)?
- Increasing tanker!

Productivity = \frac{\text{total output}}{\text{weighted avg. of inputs}}
COSTS

\[ \text{total} = \text{fixed} + \text{variable} \]
\[ \text{total (Q)} = \text{fixed} + \text{variable (Q)} \]

Marginal Cost = \( MC \) = additional cost of producing 1 more unit of output
\[ = \text{slope of TC curve} \]

Average Cost = unit cost = \( \frac{\text{TC}}{q} \)

Relating Marginal Product and Marginal Cost:

Like consumers with \( \frac{\text{MU}}{P} \), firms adjust inputs so that \( \frac{\text{MProduct}}{P} \) is same for all inputs

Opportunity cost: measure of what has been forgone
Industry supply = horizontal sum of firms’ supply
COMPETITIVE MARKET

Assume:  
- competitive firms/market (no producer can affect market price)
- firms maximize profits

How does firm decide how much to produce?
→ \( P = MC \)

Why?...

rising MC curve = 
firm’s supply curve
profit maxing firms may continue to operate in the short run even though they are losing money

Industry Supply = horizontal sum of firm’s supply curves

Long-run competitive equilibrium: \( P = MC = \text{min AC} = \text{breakeven price} \)

**SURPLUS**