

Scarcity
 - want more of everything, BUT... restriction on resources
 - drives us to make choices (study of econ)

Incentives
 - reward that encourages action / penalty that discourages action

Benefit
 - what you gain

Cost
 - what you must give up

Opportunity cost
 - takes into account cost of giving up other options

$$OC = \text{direct price} + \text{Net Benefit of Next best alternative}$$

Graphs

* Label all axis, lines, and points properly for full credit

PPF (Production Possibility Frontier)

- line on graph which separates amount of goods that can/can't be produced
- attainable (inside or on PPF)
- unattainable (outside PPF)

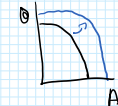
Non-linear PPF's

- OC is not constant (increases as PPF bows out)

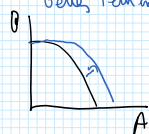
Can't tell exactly where optimal production is (depends on other factors) but we know it lies on the PPF

Expanding PPF

More resources



Better Tech in A



Comparative Advantage

- when a producer can produce a good at a lower opportunity cost than anybody else

Absolute Advantage

- when a producer can produce a good in a larger quantity than anybody else

* Everyone can gain from specialization/cooperation even if someone is worse at everything

(or trade)

- Trade price must be between 2 opportunity costs

Demand Curve

- a schedule/graph shows the quantity of a good that buyers wish to buy at each price
- quantity demanded:
 - certain quantity demanded based on price
- negative slope (lower prices increase demand)
- Law of Demand:
 - if all other things remain constant, the higher

← different than "demand" which is whole curve

Changes in prices don't change

- inverse slope (lower prices increase demand)
- Law of Demand:
 - If all other things remain constant, the higher the price, the lower the demand

Supply Curve

- a curve or schedule showing the quantities of a good that sellers wish to sell at each price
- Quantity supplied:
 - for a given price what quantity is supplied
- Positive slope (higher prices increase supply)
- Law of Supply:
 - The higher the price, the more quantity the seller is willing to supply

different than "supply" which is whole curve

Changes in price don't change supply/demand, just quantity supplied/demanded

Equilibrium

- $Q^S = Q^D$
- Quantity supplied = quantity demanded
 - \Rightarrow price is price @ that quantity
- * Unless market is @ equilibrium, it will move

intersection of supply and demand curves

Market Surplus/Excess Supply

$$Q^S > Q^D$$

- Quantity supplied is greater than the quantity demanded
- Excess supply = $Q^S - Q^D$

Market Shortage/Excess Demand

$$Q^S < Q^D$$

- Quantity supplied is less than quantity demanded

Changes in Demand

- 1 Price of related goods
- 2 Income
- 3 Expected future prices
- 4 Expected future income/credit
- 5 Population
- 6 Preferences

Substitute

- good that can fulfill another good

Complement

- good used in conjunction with another good

Normal Good

- good that gets consumed more when income increases

Inferior Good

- good that gets consumed less when income increases

opposites

Changes in Supply

- 1 Price of factors of production
- 2 # of suppliers
- 3 technology

- ① Price of Factors of production
- ② Prices of related goods produced
- ③ expected future prices
- ④ # of suppliers
- ⑤ technology
- ⑥ State of nature

Elasticity

- measures consumer/supplier responsiveness to price
- depends on # of close substitutes/other options

Price elasticity of Demand

$$\epsilon_D = \left| \frac{\Delta Q\%}{\Delta P\%} \right| = \left| \frac{\text{percent change in quantity demanded}}{\text{percent change in price}} \right|$$

- Classification

$\epsilon_D > 1$ Elastic (above midpoint)

$\epsilon_D < 1$ Inelastic (below midpoint)

$\epsilon_D = 1$ Unit Elastic (at midpoint of linear demand curve)

Midpoint Method

$$\% \text{ change} = \frac{\text{end value} - \text{start value}}{\text{midpoint}} \cdot 100$$

Total Revenue

- the total amount of funds received by a seller for a good / revenue

$$\frac{\text{Price}}{\text{unit}} \cdot \# \text{ of units} = \text{total revenue}$$

Cross Price Elasticity

- change of quantity demanded of one good in response to change of price of another

- price cross elasticity

> 0 , substitutes

< 0 , complements

Income Price Elasticity

- change of quantity demanded based on changes in income

$$\left| \frac{\Delta Q\%}{\Delta \text{Income}\%} \right| \begin{cases} > 0 \text{ Normal good} \\ < 0 \text{ inferior good} \end{cases}$$

Price elasticity of Supply

$$\frac{\Delta Q\%}{\Delta P\%} \leftarrow \text{quantity supplied}$$

Production Efficiency

- producing on PPF (no wasted resources)

Allocation Efficiency

- producing combination of goods on PPF that people value most highly

$$\text{Marginal Benefit} = \text{Marginal Cost}$$

Pareto Efficiency

- can only make one person better off by hurting another person

Marginal Benefit

- benefit consumer receives from consuming one more unit of good / revenue

- individual demand curve (points represent marginal benefit)

Marginal Benefit

- benefit consumer receives from consuming one more unit of good/service
 - individual demand curve (points represent marginal benefit)
- Summed to create Market Demand Curve
- total quantity of all consumers demanded at each price

Consumer Surplus

- value of a good (Marginal Benefit) minus the price paid summed over the quantity bought

Marginal Cost

- cost of good/service, MC of producing 1 more unit
 - represented by supply curve
- market supply is sum of individual producers supply curve

Producer Surplus

- price of good minus cost of producing it summed over quantity sold

Total surplus = Consumer Surplus + Producer Surplus + Tax Revenue if applicable

Total efficiency when this is maximized

Desirable world, free market equilibrium

- everyone pursuing own self interest

What stops competitive market from being efficient?

- price/quantity regulations
- taxes/subsidies
- externalities
- public goods
- monopoly/market power
- high transaction costs

Price ceiling

- a regulation that makes it illegal to charge a price higher than a certain level (rent control)

Price floor

- a regulation that makes it illegal to charge a price lower than a specific level (minimum wage)

Quotas

- restriction on quantity produced

Taxes

- you raises price of good, can be on consumer or producer

Subsidies

- encourage consumption through lowering the price

Tax incidence

- how much of tax burden falls on seller vs. buyer
- depends on elasticity of supply/demand

$$\text{Buyers: } p^b - p^* = \text{burden on buyer}$$
$$p^* - p^s = \text{burden on seller}$$

- the more demand is inelastic, the larger share of the tax lies on the buyer

- perfectly inelastic, pay full tax

- perfectly elastic, seller pays full tax

Losses in Efficiency / Dead weight loss

- taxes/subsidies move market from efficient equilibrium

taxes \rightarrow underconsumption
subsidies \rightarrow overconsumption } create inefficiency (DWL)

- incentives \rightarrow overconsumption
- measured in loss of total surplus
 - greater the elasticity of supply/demand the further away from efficient quantity the market is
 - \therefore the greater the DWL

Consumption Choice

- possibilities (what is affordable?) \rightarrow Budget Line
- preferences (what do they like to buy?) \rightarrow Utility Function

Budget Line Equation

$$P_a Q_a + P_b Q_b = Y$$

total expenditure = budget

Slope intercept form

$$Q_b = -\frac{P_a}{P_b} Q_a + \frac{Y}{P_b}$$

Real income

$$\text{choice in terms of goods} = \frac{Y}{P_a} \leftarrow \text{income}$$

$$P_a \leftarrow \text{price of good}$$

Utility function

- assign #s to combinations of consumption goods representing the same level of happiness
- indifference curves can be derived
 - shows combos of goods where user is indifferent

Marginal Rate of Substitution (MRS)

- the rate @ which a person will give up one good to get an additional unit of another good.
- Diminishing MRS
 - as quantity of one good \uparrow a person is willing to give up more of that good for another good
 - bowed in indifference curves

Predicting Consumer Behaviour

- On budget line
- On highest attainable indifference curve
 - Optimal point is where indifference curve is tan to budget line (only intersects one)

Changes in Price \rightarrow change budget line

Changes in Preferences \rightarrow change utility function / indifference lines

Substitution Effect

- effect of change of price to consumer remains on same indifference curve

Income Effect

- effect of change in income on buying plans (all other things remain the same)