Lecture 1 - A Brief History of Economics

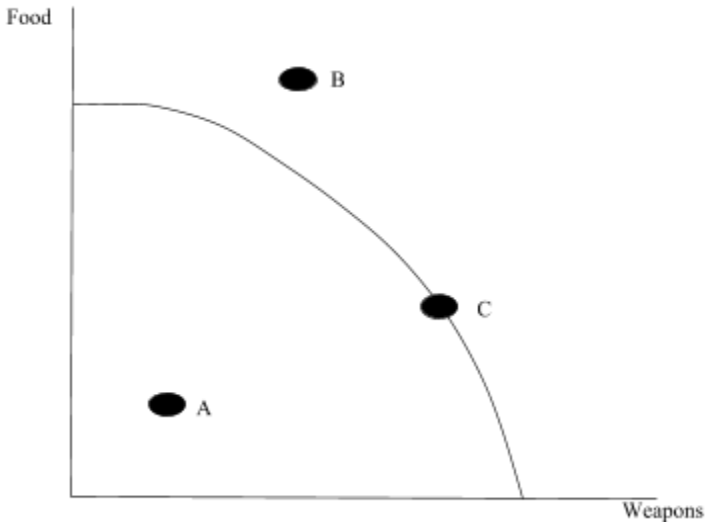
- Economics: A science of revolutions
    - First revolution: The Enlightenment (18th century)
        - Built society upon reason, natural law, individualism, and science, believed that all men were considered equal
        - Rejected Catholic church doctrine
        - 1517: The Reformations:
            - Protestantism encouraged literacy and individualism
            - "Sola fide, sola scriptura" - Martin Luther believed in no church interpretation, individual conscience
        - Voltaire: hated Catholic church, made his ideology palatable to the masses
            - Wrote Candide
        - Adam Smith: Grandfather of Economics
            - *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), discussed why he believed countries were rich and poor
                - Division of labour: assembly line produces more which leads to more wealth, exploiting divisions of labour leads to wealth
            - Often misquoted; Smith never used the term :invisible hand: to refer to benefits of free market economy, but a specific type of international business
    - Second revolution: The Marginal (19th century)
        - Economics was a part of philosophy until the late 19th century
        - *A General Mathematical Theory of Political Economy* - William Stanley Jevons, 1862
        - *Principles of Economics* - Alfred Marshall, 1890
            - Mathematical approach to economics
        - Jevons and Marshall created marginalism
            - Water - Diamond Paradox: why is water less expensive since it is way more useful?
                - Marginalist solution: water has a lower marginal utility than diamonds (there comes a point when you are well off and diamonds are worth more than water
        - Paul Samuelson - Father of Economics
            - *Foundations of Economic Analysis,* 1947
                - Incorporated thermodynamics into economics, grounded economics in mathematical optimization
    - Third Revolution: The Mathematical
    - Fourth Revolution: The Game Theoretic
        - Created by John Nash, Reinhard Selten, John Harsanyi
        - Study of strategic interactions / games
        - Not limited to economics
    - Fifth Revolution: Hasn't happened yet

Lecture 2 - Logical Fallacies

- How to think:
    - Deduction - From universal to particular, take a specific case and develop a conclusion
        - Ex. All men are mortal. Michael is a man therefore Michael is mortal
    - Induction - From particular to universal, some questions can only be answered this way, uses statistics, graphs, charts, maps
        - Ex. What program are most ECON1P91 students in?
- Deduction:
    - A deductive argument consists of premises (statements you assume to be true), and a conclusion
    - In a valid argument, the conclusion follows the premise, and the argument follows premise
    - One can argue the validity of a premise
- 2 Types of Induction:
    - Complete induction - examine all cases (Ex. Canadian Census)
    - Incomplete induction - sample from all cases, more common
- Logical Fallacies:
    - Argument Ad Hominem - attacking the person, not their argument
    - Genetic Fallacy - Because X comes from Y, X is false
    - Appeal to Authority - Believing something to be true because experts / authorities believe it to be true
    - Appeal to Emotion
    - Argumentum Ad Populum
    - Red Herring - change the subject of an argument
    - Post Hoc Ergo Propter Hoc - Because X happens before Y, X causes Y

Lecture 3 - Production Possibility Frontier

- Opportunity cost - benefit you receive from choosing the best alternative
- Crusades? - ask if it will be on
- Production Possibility Frontier - depicts the trade off between producing two goods. Depicts the opportunity cost of one good in terms of the other



- Line depicts the country's maximum production of these goods, the limit of production
- A - Possible but not efficient
- B - Impossible
- C - Possible and efficient
- Slope of the PPF is the Marginal Rate of Transformation (MRTS)
- Shape of PPF - Opportunity cost is not linear, stuff that is good at making weapons isn't good at making food, curve is only present when comparing two extremely different things. For similar items, PPF is more linear
- Reasons for PPF to shift:
    - Better technology
    - More workers
    - More capital
    - Trade
    - Nature
    - Political and Economic institutions (inclusive institutions lead to economic growth)

Lecture 4 - Opportunity Costs

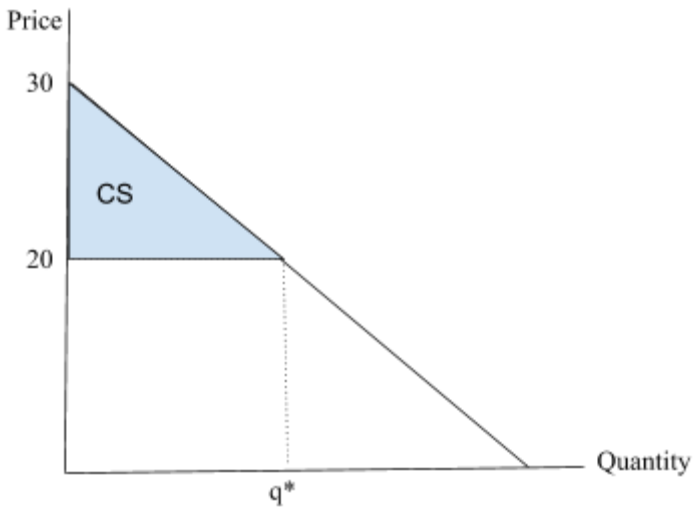
- Absolute advantage - Ability to produce a good using the least inputs
- Comparative advantage - Ability to produce a good with the lowest opportunity cost
- Example: Suppose there are two nations, Westeros and Meereen. They produce two goods, wine and unsullied soldiers. If Westeros puts all its inputs into wine, it can make 35,000 tonnes per year, if it puts all its inputs into soldiers, it can produce 21,000 soldiers. If Meereen used all its inputs, it can produce either 30,000 tonnes of wine or 6,000 soldiers.
    - Which nation has the absolute advantage in producing wine? Producing soldiers?
        - Westeros has absolute advantage in both goods
    - Which nation has the comparative advantage in producing wine? Producing soldiers?

Opportunity Cost	Wine	Soldiers
Westeros	0.6 soldiers per 1 tonne of wine	1.67 tonnes of wine per soldier
Meereen	0.2 soldiers per 1 tonne of wine	5 tonnes of wine per soldier

Meereen has competitive advantage in producing wine, Westeros has competitive advantage in producing soldiers

Lecture 5 - Demand

- Top reasons why most businesses fail:
    - Lack of demand
    - Lack of capital
    - Competition
- Law of demand - when prices fall, consumers want to buy more
- 6 factors that can shift demand:
    - Income
        - Normal goods - products such that when income increases, demand increases
        - Inferior goods - products such that when income goes up, demand goes down.
    - Population Growth and Composition
    - Change in price of substitutes
        - Substitute good - X is a good such that when the price of X goes up, the demand for Y increases. Goods X and Y are said to be substitutes (ex. Pepsi and Coke)
    - Change in price of complementary goods
        - Complementary good - X is a good such that when the price of X goes up, the demand for Y goes down (ex. Netflix and popcorn)
    - Change in future expectations of price
    - Change in tastes / preferences
- Consumer surplus
    - =(½)(B)(H) , =WTP - price one actually pays
    - Can never be negative
    - Example: Demand curve equation: P = 30 - q, calculate consumer surplus at a price of $20?

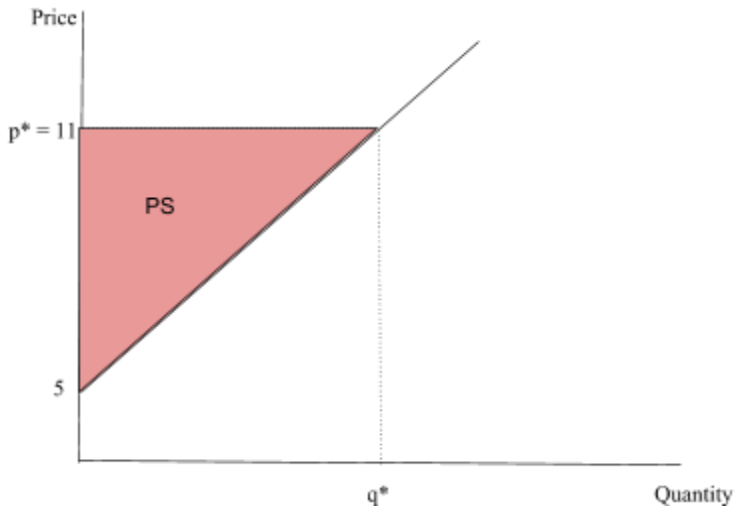


q* = 30 - p*
q* = 30 - 20 = 10

CS = (½)(B)(H)
=(½)(30-20)(10)
=50

Lecture 6 - Supply

- Complementary to demand
- Law of supply - The higher the price, the more that a producer wishes to make and sell
- When supply goes up, shifts “down”
- When supply goes down, shifts “up”
- 6 factors that can shift supply
    - Technology
    - Taxes and Subsidies
        - Taxes - cause supply to decreases
        - Tax cuts and subsidies - causes supply to increase
    - Expectation of future prices
    - Competition
    - Change in opportunity costs
    - Shocks to the natural world
- Producer surplus
    - How we measure a producer’s well being from producing and selling a good, how much the market benefits them
    - = Price product is sold for - minimum price producer is willing to sell for , = (½)(B)(H)
    - Example: supply equation; P = 5 + 2q , what is producer surplus when price is 11?

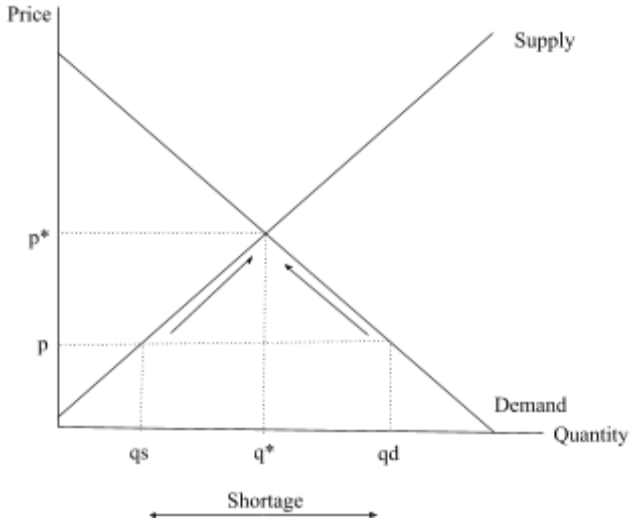


q* = (11-5) / 2
=3

PS = (½)(B)(H)
=(½)(3)(11-5)
=9

Lecture 7 - Market Equilibrium

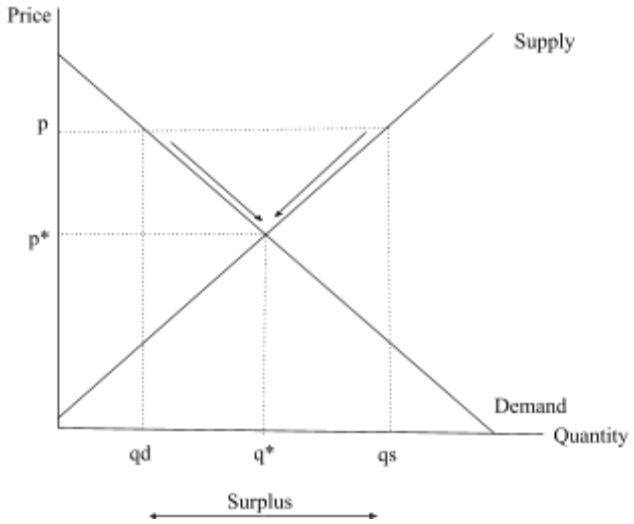
- Prices are determined by combining concepts of supply and demand together
- What if we set a price below market equilibrium (p*)?



- At a price of p, quantity demanded exceeds quantity supplied, creating a shortage
- Because of excess demand, producers realize they can sell more a a higher price, causing movement along the supply curve
- Because producers raise price, consumers demand less quantity, causing movement along demand curve

    - Eventually they reach market equilibrium (place where supply equals demand

- What if price is above market equilibrium (P*)?



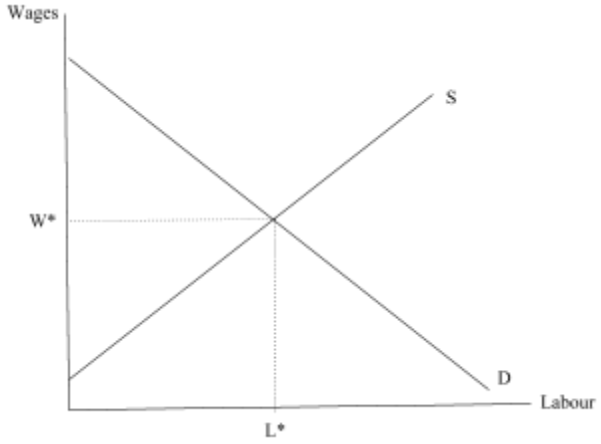
    - Because quantity supplied exceeds quantity demanded, there is a surplus
    - Producers lower prices to reduce quantity of products, causing movement down supply curve
    - Lower price makes customers want more, causing movement along the demand curve

- We measure well-being using producer and consumer surplus, which are maximized at market equilibrium
- Total surplus = Consumer surplus + producer surplus + any other benefits

Lecture 8 - Immigration

- Luddites
    - Feared technology
    - Ned Ludd smashed machines because he feared they would replace workers
- Supply and demand: The Key to Markets (Mark Zuckerburg)
    - Goals:
        - Immigration reform to bring more high-skilled workers to the US
        - Improving american science and technology education
        - Encouraging immigrants to compete with american workers
    - Creates a greater supply of labour which lowers the price and makes businesses more profitable
- Effects of too much immigration:
    - Conflict
    - Less investment in public goods
    - Lower wages
- Effects of not enough immigration:

    - No new ideas
    - Little economic progress
    - No entrepreneurs
- Immigration and the Labour Market
    - In labour markets, price of labour is “wage”
    - Producers are workers, consumers are employers



- How does immigration affect the labour market?
    - Raises competition between workers
    - Increases supply
    - Evidence: The Marielitos
        - 1980: 125,000 Cubans flee to Miami
        - George Borjas wrote *The Wage Impacts of the Marielitos: A Reappraisal*
            - Found that 60% of Marielitos were highschool dropouts, because of rapid influx, the wage of highschool dropouts in Miami dropped 10-30%

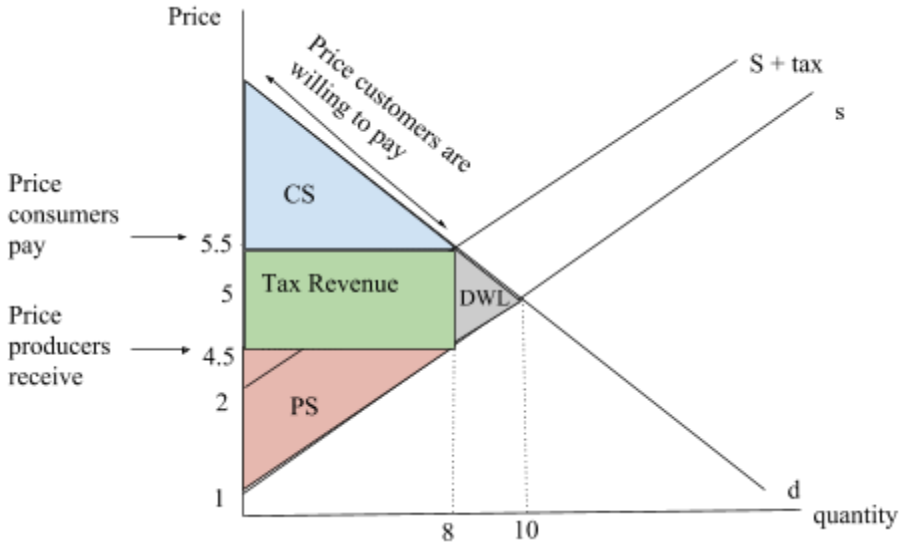
Lecture 9 - Elasticity of Demand and Supply

- Elasticity of Demand - measures how sensitive changes in quantity demanded are to changes in price. More sensitive means more elastic
- If a product has elastic demand, minimize cost to sell more
- Goods are extremely elastic if there are a large number of substitutes, or if it is not a necessity
- What determines elasticity of demand?
    - How easy it is to substitute one good for another
    - Is the good a necessity
- Measuring elastic demand:
    - = %change in quantity / %change in price
    - If P is on LHS, = (p/q)(1/slope)
    - Either 0 or negative
- Categories of Elasticity
    - ED = 0, demand is perfectly inelastic (always same quantity despite the price)
    - -1<ED<0, then demand is inelastic

    - ED = -1, demand is unit elastic
    - -inf<ED<-1, demand is elastic
    - ED = - inf, demand is perfectly elastic
- Elasticity of Supply - How sensitive changes in quantity supplied are to changes in price
- What determines elasticity of supply?
    - How quickly costs increase with each unit produced (the quicker, the less elastic)
- Inelastic = vertical line for both supply and demand

Lecture 10 - Taxes

- Taxes
    - Can be imposed on either producers or consumers, who actually pays the tax depends on supply and demand elasticities
    - Burden of taxation relies on who has elasticity, and who wants the good
    - Taxes can be put on goods to limit use (ex. Alcohol and cigarettes)
- Example: suppose a tax of $1 per unit is levied on producers, how does this affect the market?



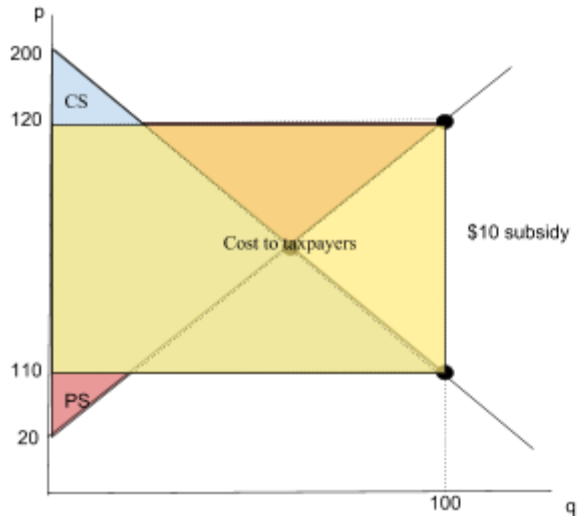
    - Total surplus = CS + PS + TR
    - Deadweight loss is how much welfare we lose when market is not efficient
    - By increasing tax, we reduce overall social welfare

Lecture 11 - Subsidies

- Replication Crisis - most scientific studies are wrong because they cannot be replicated and get the same results
    - Causes:
        - Bribery
        - Bias
        - “massaging “ data to get results you want

- Subsidies
    - Government money given to consumers or producers
    - Decrease market price
    - Distortion of social welfare
    - Sometimes good but mostly bad
    - Hurt undeveloped countries because they cannot compete with lower prices (they don't receive subsidies)
    - Ex. Bill Clinton subsidized rice in 1980, lead to death of rice industry in Haiti

- Example, a subsidy of $10 per unit is implemented into the market



Lecture 12 - Price Ceilings

- Price Ceilings
    - Maximum cost imposed by the government
    - When a price of a good is set, by law at a maximum
    - If exceeded, can be fined or imprisoned
    - Many economists believe that rent controls negatively impact poor people who need rent controls, however this is an appeal to authority
        - Landlords don't maintain property
        - Causes shortages, less rental property on the market
        - Benefits the rich
    -