Chapter 5: Efficiency

November 12, 2018 9:59 PM

- People are better off when they buy and sell things
  - This principle drives many businesses that do not manufacture or grow anything themselves, but instead facilitate transactions between producers and consumers
    - Grocery stores
    - Investment banks
    - Online retailers/marketplaces
- Can we quantify how much better off people are?
  - **Surplus**: the measure of the benefit someone gets when they buy something for less than they would have or sell something for more than they would have
    - Best way to look at benefits people get from successful transactions
    - Also shows us why the equilibrium price and quantity are so important in a competitive market - they maximize the total well-being of everyone involved
    - Calculations of surplus can show who benefits from economic policy changes
  - **Efficiency** is the principle of maximizing surplus
    - Most powerful feature of a market system - especially impressive that it is achieved without central coordination
  - Surplus shows the power of trade opportunity, and is an important tool for businesspeople and public problem-solvers

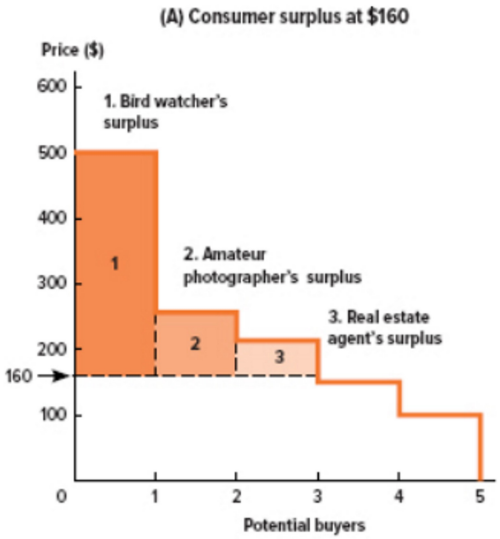
Willingness to Pay

- **Willingness to Pay**: the maximum price that a consumer is willing to pay for a certain good
  - AKA the price at which the opportunity cost is greater than the benefit derived from purchasing the good
  - Ex. Ebay: as people bid and the price increases, people stop bidding as the price rises above their willingness to pay
- **Willingness to Sell**: the minimum price that a seller is willing to sell a certain good for
  - AKA the price at which the opportunity cost is greater than the benefit derived from not selling the good
  - Ex. Ebay: sellers set the starting bid, which is their willingness to sell
- Willingness to Pay and the Demand Curve
  - This is how demand curves are created - by plotting millions of consumer's willingness to pay on a graph
- Willingness to Sell and the Supply Curve

- This is how supply curves are created - by plotting millions of seller's willingness to sell on a graph

Measuring Surplus

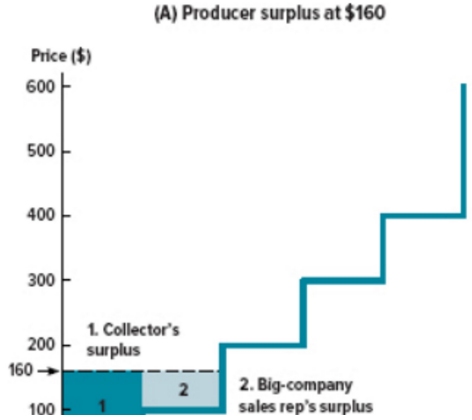
- Recall: **Surplus** is a way of measuring who benefits from a transaction and by how much
  - AKA this difference between the price at which the buyer and seller would be willing to trade and the actual price
  - This is also a measure of the value buyers and sellers get from participating in a market
- Consumer Surplus
  - Each consumer's surplus is the difference between their willingness to pay and the price they actually paid
  - Consumer Surplus is calculated by adding each consumer's individual surplus
  - Can be done easily from a graph (A)
  - Lowering of market price benefits consumers because it causes a larger surplus
- Producer Surplus
  - Same as Consumer Surplus but for producers
- Total Surplus
  - Total Surplus is the sum of consumer and producer surplus at market equilibrium
  - Is the measure of the combined benefits that everyone receives from participating in an exchange of goods or services
  - Graphically, it is the sum of:
    - Consumer surplus: area underneath demand curve above equilibrium price
    - Producer surplus: area above supply curve below the equilibrium price
  - Can be thought of as the total value created by the existence of the market
    - IMPORTANT: markets are not a zero-sum game where money, goods, and well being are fixed and divided up
    - This means that in a successful transaction, both the buyer and the seller are winners



This graph shows consumer surplus in the camera market when price is $160. The shaded area is the difference between willingness to pay and the market price for each buyer. The more that a buyer would have been willing to pay, the greater the surplus at a lower price. At this price, total consumer surplus is $470.

Using Surplus to Compare Alternatives

- Buyers and sellers naturally find the equilibrium price in a competitive market
- Market equilibrium is not only when buyers are matched to sellers, it is when the total surplus is maximized
- When the market moves away from equilibrium, both consumer and producer surplus goes down
  - AKA the market is **efficient** when it is at equilibrium
  - Total surplus reduction isn't the only consequence: also causes redistribution of surplus
    - Consumer to producer when price is raised
    - Producer to consumer when price is lowered



Deadweight Loss

Producer to consumer when price is lowered

This shows the willingness to sell of all the potential sellers in our market. The shaded area (1+2) between the supply curve and the market prices shows total producer surplus of $170.

Deadweight Loss

- **Deadweight Loss**: the loss in total surplus after an intervention in a market
- Graphically, it is the area under the demand curve and above the supply curve, and between the equilibrium point and the new price/quantity
- Is important for understanding the costs of government intervention in markets (through taxes, price caps, etc.)

Missing Markets

- **Missing Market**: a situation in which producers and consumers are both willing to make a transaction but can't for some reason.
- Reasons include:
  - Public policy
  - Lack of information about producers for willing consumers/vice versa
  - Lack of technology to make the transaction possible
- Implications:
  - Creating new markets (AKA opportunities for transactions to occur) increases an economy's well-being (ex. Ebay connecting buyers and sellers globally) by increasing total surplus

Chapter 6: Government Intervention

November 12, 2018 9:59 PM

Three main reasons for government intervention:

- **Correcting Market Failures**:
  - Markets don't always operate efficiently, for example:
    - A monopoly on a certain good causes an inefficiently high price
    - Consumption imposes a price on others (pollution, etc.)
  - Markets that don't operate efficiently are called market failures
  - Intervening to correct a market failure can **increase** total surplus
- **Changing the Distribution of Surplus**:
  - The most efficient outcome of a market might not be seen as "fair" (the definition of which is subjective)
  - Example: the wage market might be operating at full efficiency, but wages still might be so low that workers are below the poverty line while employers are making healthy profits
    - In this case, government intervention occurs and a minimum wage is created
- **Encouraging/Discouraging Consumption**:
  - Certain products are judged to be bad for reasons such as:
    - They make for a dangerous society (weapons etc.)
    - They have costs imposed on others (second-hand smoke from cigarettes etc.)
  - Governments intervene to alleviate those issues by:
    - Some are banned outright, like hard drugs
    - Others are taxed heavily to reduce consumption, like cigarettes

Price Controls

- **Price Control**: a regulation that sets a maximum or minimum legal price for a particular good
  - Direct effect: holds a price up or down as market shifts, preventing the market from reaching equilibrium
- Two types of price control:
  - **Price Ceiling** (setting a maximum price)
    - Pros:
      - Usually results in an increase in consumer surplus (AKA consumer well-being)
    - Cons:
      - Causes a shortage of the good, which results in rationing
      - Most methods of rationing are either unfair, extremely predisposed to corruption, or cause even more deadweight loss
    - A price ceiling that is set above the equilibrium price has no effect on the market and is referred to as **non-binding**
    - Shifts in the market can cause binding price floors to become non-binding
  - **Price Floor** (setting a minimum price)
    - Pros:
      - Guarantees minimum income for essential producers like farmers
    - Cons:
      - Creates an excess of the product, which hurts producers

        - Consumer's methods of deciding which producer to buy from (which matters because there's an excess of product) are usually unfair to the producers
        - Governments may buy up excess quantities of the product to help the producers, which many see as an inefficient use of tax dollars
    - A price floor that is set below the equilibrium price has no effect on the market and is referred to as **non-binding**
    - Shifts in the market can cause binding price ceilings to become non-binding

Taxes and Subsidies

- **Taxes** are used by governments to raise revenue for public programs
    - Also used to correct market failures or encourage/discourage consumption of certain goods
- **Tax on Sellers**
    - Given a $0.20 tax per unit on a seller:
        - Supply decreases because the market price is effectively $0.20 lower, raising the supply curve by $0.20
        - Demand remains constant because tax doesn't change any of the non-price determinants of demand
            - Note: Quantity demanded may (probably will) change, AKA there will be a shift on the demand curve
        - Equilibrium price rises and quantity demanded decreases because the equilibrium point moves up the demand curve to match the new supply curve
            - NOTE: the supply curve doesn't actually move - adding a tax adds a new supply curve
            - One supply curve is for what producers make, and the other is for what consumers pay
            - The **tax wedge** is the difference between these two curves, aka the tax amount
        - The government makes a profit $0.20 for each good sold
            - Graphically: the rectangle between the y-axis and the new equilibrium points
        - A deadweight loss occurs because of the loss of the transactions willing to be made at the pre-tax equilibrium price
        - A redistribution of surplus occurs: both producers and consumers lose surplus to the government
            - The government's new surplus can pay for services that might transfer surplus back to the producers and/or consumers
            - NOTE: This surplus is not a deadweight loss because it gets transferred to the government and is not completely lost
- **Tax on Buyers**
    - Given a $0.20 tax per unit on the buyer: (this is the inverse of the Tax on Sellers section)
        - Supply remains constant
        - Demand decreases
        - Equilibrium price decreases and quantity demanded decreases
        - Tax on Buyers creates a tax wedge just the same as Tax on Sellers does
        - The government also collects the same amount per unit sold
- Four effects from imposing taxes:

    - Equilibrium quantity falls AKA the goal of the tax has been achieved (consumption has been discouraged)
    - Buyers pay more and sellers receive less which creates a tax wedge
    - Government receives revenue = tax amount * new equilibrium quantity
    - Deadweight loss occurs - this means that the revenue received by the government is less than the reduction in total surplus
- When evaluating a tax, weigh the goal of the tax against the loss of surplus in the market
- **Who Bears the Burden of a Tax?**
    - The outcome of a tax is the same no matter who pays it
    - Producers or consumers pay more depending on the elasticity of the demand and supply curves
    - **Equal Incidence** (buyers and sellers pay the same) occurs when the supply curve and the demand curve are equally elastic
    - **Sellers pay more** when the demand curve is more elastic than the supply curve (AKA consumer demand is affected more heavily by a price change that the supply curve)
        - The consumers are happy to give up the good in question, which hurts the producers even more than the decrease in price
    - **Buyers pay more** when the supply curve is more elastic than the demand curve (AKA supply is affected more heavily by a change in price than demand)
        - The consumers are unwilling to give up the good in question, which hurts the consumers more because they have to pay more
    - Therefore: the side of the market that is more elastic adjusts more to the price change, therefore paying less of the tax
    - EXAMPLE: Taxing companies for pollution isn't a perfect solution because consumers will end up with at least some of the tax burden

Subsidies

- **Subsidy**: the reverse of a tax, AKA the government pays the consumers or producers of a good
- They are used to encourage the production and consumption of certain goods
- Used to benefit certain groups instead of using price controls which create a shortage or excess supplies
- Consumers and producers respond in the opposite way that they would to a tax
    - Quantity supplied and demanded increases, government spends money
- Three effects of subsidies:
    - Supply increases because suppliers are getting paid more per unit at no cost to the consumer
    - Demand remains constant because consumers aren't affected
    - Equilibrium price decreases and equilibrium quantity increases because buyers pay the same amount but sellers receive more
- Subsidies positively affect consumers and producers by adding total surplus to the market, but have a cost to the taxpayers
- Like tax, subsidies have the same effect regardless of who gets the subsidy

Evaluating Government Interventions

- To predict how much an intervention will affect a market, we need to know the elasticity of the supply and demand curves
- Consider a tax:
    - When both curves are inelastic, equilibrium quantity doesn't decrease much

    - When demand is more elastic, equilibrium quantity decreases more
    - When supply is more elastic, equilibrium quantity decreases more
    - When both curves are elastic, equilibrium quantity decreases the most
- The elasticities can also predict who will bear more of the burden of the tax
- **Long-run vs. Short-run Impact**
    - Buyers and sellers can take time to respond to price change
    - Example: a price floor on gasoline
        - Short-term impacts on demand would be minimal because while people might cut down on unnecessary driving, things like work commutes won't change
        - Short-term impacts on supply would be minimal because it would take more time for oil companies to invest in new oil rigs etc

Chapter 7: Consumer Behaviour

November 12, 2018 9:59 PM

- **Utility**: a way of describing the value that a person places on something (product, experience, etc.)
  - $20 isn't valuable by itself, it's valuable because of the things you could buy with it
  - Economists ask: what are your wants and constraints?
  - Different things provide different types of positive outcomes for you:
    - Reading a book would make you proud that you read
    - Watching TV makes you relaxed
    - Etc.
  - Utility is the measure used to compare the happiness derived from different activities
  - Utility is fundamental to economics, because it's what drives consumer behaviour
  - Economists assume that people are rational utility maximizers, AKA they choose the option that brings them the most utility
  - Utility is hard to measure precisely, so the most we can do (for others) is investigate what they choose
    - This is called **revealed preference**
  - **Utility function**: a formula for calculating the utility someone gets from consuming a combination of goods and services
    - Each unique combination of goods and services is called a **bundle**
    - These numbers are relative rather than absolute because we can't precisely measure utility
  - **Marginal utility**: the change in total utility from consuming one more unit of a good or service
    - Tends to get smaller as more units of a good or service are consumed - called **diminishing marginal utility**
      - This is especially obvious for food items
      - Might diminish into the negatives
  - **Budget constraint**: a line on a graph which shows all possible combinations of goods/services that can be purchased with a given constraint (cash available
  - Changes in income impact the budget constraint
  - As do changes in price
  - **Income effect:** change in consumption resulting from increased wealth due to lower prices
  - **Substitution effect**: change in consumption from a change in relative price of goods
    - I.e. If movies become cheaper relative to concerts, more movies will be purchased
    - AKA opportunity cost has changed
  - **Veblen goods**: goods of which more are demanded when the price is higher, i.e. Because they're flashy and expensive
    - This is an example of how utility is impacted by others opinions
- **Utility and society**
  - **Altruism**: doing something because it makes you feel good about the utility it brings someone else
  - **Reciprocity**: doing something in return for someone doing good to you

Chapter 12: The Costs of Production

November 12, 2018 10:00 PM

- Costs of producing a good aren't just raw materials and factory labour - R&D etc. Must also be considered
- Maximizing profits is every business' goal
  - Some businesses claim to have one or two other goals (known as double or triple bottom line) such as social or environmental impacts
- Profit = revenue - costs
  - Revenue = quantity * price
    - Sum of the quantity*price for each unique product sold
  - Costs
    - **Fixed costs**: costs that don't depend on the quantity of product produced
      - R&D, rent, equipment, etc.
    - **Variable costs**: costs that depend on the quantity of product produced
      - Raw materials, certain labour costs, etc.
    - Opportunity cost of operations is split into two categories:
      - **Explicit costs**: costs that incur an actual dollar amount from the company's bank account, including the fixed and variable costs
      - **Implicit costs**: costs that represent forgone opportunities
        - Storing product in someone else's warehouse vs their own warehouse costs the business the same, because they either have to pay the other person or lose the opportunity to get paid for their storage space
  - Measuring profits
    - **Accounting profit** = revenue - explicit costs
    - **Economic profit** = revenue - explicit costs - implicit costs
- **Production Function**: relationship between quantity of inputs and quantity of outputs
  - Inputs: raw materials, labour, machines, time, ideas, etc.
  - Outputs: goods/services produced
  - **Marginal product**: increase in output generated by one additional unit of input