Course Title: BUS 162 - Business Economics
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## Chapter 1: The Challenge of Economics

- Scarcity: Lack of enough resources to satisfy all desired uses of those resources
- Economics: Study of how best to allocate scarce resources among competing uses
- Resources
    - Individual's resources: time and money
    - Society's resources: factors of production
- Opportunity cost
    - Most desired goods and services that are forgone in order to obtain something else, the value of the next best alternative that could have been selected
- Choice: Individuals and society make choices by weighing the expected benefit against the opportunity cost. Every choice involves conflicts and trade offs
- Three critical questions in Economics
    - What to produce
    - How to produce
    - For whom to produce

- Production Possibility Curve (PPC)
    - Describes that alternative combinations of good and services that could be produced with available resources and technology in a given time period
    - PPC can be represented as table as well as curve
- Economic growth = increase in output = outward shift of PPC
- Methods of dividing an economy's output
    - Distribution based on productive contributions
    - Distribution based on need (this may result in less work effort)
    - Distribution based on some combinations of productive contributions and need
- Many basic economic decisions can be made through the political process and using the market mechanism
- Market mechanism: Market sales and prices send a signal to produce about what mix of outputs consumers want
- Laissez-faire: Promoted by Adam Smith's The Wealth of Nations, it is the doctrine of "leave it alone" (free market)
- Central planning: Doctrine of "everyone's needs would be fulfilled"
- Mixed Economies: Economies that use both market and non-market signals to allocate goods and resources
- Market failure: Occurs when the market mechanism does not generate the best possible. Government intervention may be necessary
- Government failure: Occurs when government intervention fails to improve economic outcomes
- Macroeconomics: Study of aggregate economic behavior of the economy as a whole
- Microeconomics: Study of individual economic behavior, of the components of a larger economy
- Economic models highlight: Basic relationships, economic events, and helps formulate economic policies
- Ceteris paribus: Assumption that relationships within the model do not change
- President Obama: Believed in more government intervention and economic theory
- President Trump: Government interference in market decisions make economy worse off
- A graph is only a summary of empirical observations
    - It says nothing about cause and effect
    - Relationship shown in a graph may be used to support a particular theory

**Chapter 2: The U.S Economy**

- Gross Domestic Product (GDP): Total value of final goods and services produced in a country in a given time period
    - Nominal GDP (NGDP): Value of output measured in current prices
    - Real GDP (RDP): Value of output measured in constant prices. Because of inflation, only real GDP can be used to compare output from one year or another (since it is the inflation-adjusted value of GDP).
- International comparisons
    - Per capita GDP = Total GDP / Total Population

    - Per capita GDP indicates how much output each person would get if all output were divided evenly among the population
- Historical comparisons
    - US real GDP increases by about 3% per year, causing persistent economic growth
    - Economic growth is an increase in output (real GDP)
    - Economic growth permits higher standards of living and social welfare for many
- Social Welfare
    - Material possessions do not substitute for health, justice, security, and other dimensions of well being
    - More output will improve social welfare
- Components of GDP
    - Consumption (C) : Expenditures by consumers
    - Investment (I): Expenditures on new plants, equipments, and inventories
    - Government (G): Federal, State, and local government expenditures (excludes transfers)
    - Net Exports: Exports minus imports
- Capital Stock
    - The substantial productivity of the US economy is explained by the use of highly educated workers in capital-intensive production processes
    - Capital intensive production processes requires a high ratio of capital to labor inputs
- Private sector
    - The factors of production are organized and reallocated by businesses
    - Corporations are owned by many individuals
    - Partnerships are owned by a small number of individuals
    - Proprietorships are owned by one individual
- Government's role
    - The government plays a large role in deciding what, how, and for whom goods are produced by
        - Providing legal framework
        - Protecting consumers
        - Protecting labor
        - Protecting the environment
    - The government lays the foundation for market transactions by establishing and enforcing:
        - Ownership rights
        - Contract rights
        - Other rules of the game
    - Government prevents businesses from becoming too powerful and regulates the safety of products
    - The government establishes labor laws regarding
        - Entry into the workforce
        - Workplace safety
        - Number of hours one can work
        - Compensation

    - It establishes regulations that limit air, water, and noise pollution. In addition, it regulates the use of land and natural resources
- Striking a balance
    - Government intervention are designed to change how goods and services are produced
    - Government failure might replace market failure, inhibiting production, raising product prices, and limiting consumer choices
- For whom America produces
    - In a market economy, an individual's income depends on
        - Quantity and quality of resources owned
        - Prices those resources command
    - In a command economy, the government decides an individual's allocation
- Distribution of income
    - As countries develop, the personal distribution of income tends to become more equal
    - Personal distribution of income is the way total personal income is divided up among households or income classes
    - Governments can redistribute income through taxes and transfers

**Chapter 3: Supply and Demand**

- Markets
    - Market: Any place where goods are bought and sold. Exists wherever and whenever an exchange takes place
        - Factor markets
        - Product markets
    - Nearly every market transaction involves an exchange of dollars for goods or resources
    - Money plays a critical role in facilitating market exchanges and specialization
    - Some transactions involve barter. Bartering is limited because it requires sellers to want what buyers are offering
    - Consumers maximize happiness or satisfaction from goods and services
- Supply and demand
    - Supply
        - Individuals supply labor
        - Firms supply goods and services
    - Demand
        - Individuals demand goods and services
        - Firms demand factors of production
- Law of Supply
    - Quantity supplied increases as its price increases in a given time period, ceteris paribus
    - A positive (direct) relationship between price and quantity supplied
- Determinants of Supply
    - Holds all other influences constant, and studies the relationship between price and quantity supplied.
    - Supply depends on other influences, called determinants of supply

        - Technology
        - Taxes and subsidies
        - Factor costs
        - Expectations
        - Other goods
        - Number of sellers
- Market supply
    - Sum of individual firms' supply
- Shift in supply
    - When supply changes, quantity supplied changes at each price
    - Supply curve shifts right if supply increases, to left if supply decreases
    - A change in price causes a movement along the supply curve, not a shift
- Demand
    - A demand exists only if someone is both willing and able to pay for a good
    - Willingness to pay is determined by one's income and opportunity cost
    - Demand is an expression of buyer's intentions, not a statement of actual purchases
    - Demand can be illustrated using a demand schedule or demand curve
    - Demand curve shows consumer's quantities demanded of good at alternative prices
        - In a given time period
        - Holding all other influences constant
        - Does not indicate why willing to pay
    - As price changes, there is a movement along the demand curve
- Law of Demand
    - Quantity demanded increases as its price falls in a given time period, ceteris paribus. Negative (inverse) relationship between price and quantity demanded
- Determinants of Demand
    - Demand holds all other influences constant and studies the relationship between prices and quantity demanded
    - Demand depends on other influences, called determinants of demand
        - Taste
        - Income
        - Other goods
        - Expectations
        - Number of buyers
- Shift in Demand
    - Demand remains unchanged so long as the underlying determinants of demand remain constant
    - A change in one of the determinants of demand causes the quantity demanded to change at each fixed price
    - A change in demand causes the entire demand curve to shift
    - When demand changes, quantity demanded changes at each price
    - Demand curve shifts right if demand increases, to left if demand decreases
    - A change in price causes a movement along the demand, not a shift
- Market demand

    - Total quantities people are willing and able to buy at alternative prices in a given time period
    - Market demand is determined by
        - Tastes
        - Incomes
        - Expectations
        - Other goods
        - Number of buyers
    - Sum of all individual demands
    - Useful to businesses to understand how much consumers will spend at different prices
- Equilibrium
    - Supply interacts with demand to determine the market price and quantity
    - Equilibrium occurs at the price in which quantity demanded equals quantity supplied
    - Only one price and quantity are compatible with the existing intentions of both buyers and sellers
    - The market naturally moves to equilibrium
- Market clearing
    - The equilibrium price and quantity reflect a compromise between buyers and sellers
    - No other price yields quantity demanded equal to quantity supplied
    - Equilibrium does not imply that everyone is happy with the prevailing price of quantity
- Disequilibrium
    - Suppose the price is not the equilibrium price
    - A shortage occurs if price is too low
        - Quantity demanded > Quantity supplied
        - Unsatisfied consumers bid up the price to the equilibrium price
    - A surplus occurs if price is too high
        - Quantity demanded < Quantity supplied
        - Unsatisfied sellers mark the price down to the equilibrium price
- Changes in Equilibrium
    - Equilibrium price and quantity change wherever supply or demand change
    - Occurs when some of the determinants of supply or demand change
    - When supply and/or demand curve shift, a new equilibrium is established
    - The market naturally moves to the new equilibrium
- Government intervention
    - Governments may intervene in markets and set limits on price or quantity
    - A price ceiling sets a maximum price
        - Quantity demanded > Quantity supplied
        - Creates a market shortage
    - A price floor sets a minimum price
        - Quantity demanded < Quantity supplied
        - Creates a market surplus
    - Examples include minimum wages and price supports for agriculture
    - A government imposed price may create

        - A wrong mix of output
        - An increased tax burden
        - An altered distribution of income
        - Political favoritism
    - The apparent inefficiencies of price controls imply markets outcomes are best left alone
    - The laissez faire doctrine preaches nonintervention by governments in markets
    - Price and quantity are determined solely by the interaction of independent market participants
- Market mechanism
    - Optimal outcomes are the best possible given limited resources
    - Market participants' choices maximize the likelihood of attaining their goal

**Chapter 4: Consumer Demand**

- How Consumers Act
    - Sociopsychiatric Explanation: Suggests our desire for goods and services arises from our needs for social acceptance (or envy), security, and ego gratification
    - Economic explanation: Suggests that prices and income are just as relevant to consumption decisions as more basic desires and preferences
    - The concept of demand attempts to encompass all relevant influences on why we purchase what we do
- Utility: individuals' pleasure or satisfaction from a good or service
- Utility Theory
    - Economists accept consumers' tastes as outcomes of sociopsychiatric and cultural influences
    - The goal of a consumer is to maximize total utility given prices of goods and services and their income where total utility is the amount of satisfaction obtained from the entire consumption of a product
- Marginal Utility
    - Satisfaction obtained by consuming one additional unit of a good or service
    - Law of diminishing marginal utility states satisfaction declines as more of it is consumed in a given time period
- Price Elasticity of Demand
    - Business seek to understand how total revenue changes if price is altered
    - The elasticity of demand measures the responsiveness of consumers' purchase to a change in price
    - Price elasticity (E) = (Percentage change in quantity demanded) / (percentage change in price)
- Consumer responsiveness
    - All goods can be characterized by whether consumers are responsive to price changes
    - Elastic ($E > 1$): Responsive
    - Unitary elastic ($E = 1$): 1 to 1 response
    - Inelastic ($E < 1$): not responsive

- Degree of Elasticity
    - Relatively elastic (E > 1): Airline travel, fresh fish, new cars
    - Unitary elastic (E = 1): Private education, radios and televisions, shoes
    - Relatively inelastic (E < 1): Cigarettes, coffee, gasoline, long-distance telephone calls
- Total Revenue
    - The price elasticity of demand can explain changes in total revenue
    - Total revenue = price x quantity sold
    - Price changes cause opposing changes in quantity sold
    - Total revenue rises or falls depending on which change is larger
- Price Elasticity of Demand: Influences
    - Several influences explain the differences in price elasticities of demand
        - Necessity vs Luxury
        - Availability of substitutes
        - Price relative to income
- Consumer Income
    - Consumers may change their purchases of goods and services as their income rise
    - As income rises, most buy more. Such products are referred to as normal goods
    - As income rises, some goods and services are purchased less. Such products are referred to as inferior goods
- Advertising: Insecurity and Identity
    - One of the favorite targets of advertisers is our sense of insecurity
    - Brand images are developed to give consumers a sense of identity
    - Based on beliefs and is typically not about informing the public
- Advertising and Elasticity
    - Advertising increases brand loyalty, causing demand to become less elastic

**Chapter 5: Supply Decisions**

- The Production Function: Technological relationship expressing the maximum quantity of a good attainable from different combinations of factor inputs
- The Production Function Input
    - Tells the maximum output that could be produced by adjusting factor inputs
    - Labor is an input that adjusts easily
- The Production Function Output
    - Output slows as more of an input is needed
    - Output depends on how many inputs are used
- Marginal Physical Product (MPP)
    - Marginal physical product (MPP) is the change in total output associated with one additional unit of input calculated as following: MPP = (Change in total output) / (change in input quantity)
    - MPP initially increases due to specialization of labor but MPP eventually diminishes as more of it is employed when other inputs are fixed
    - MPP can be negative if too much labor is used
- Fixed Inputs: The limited availability of fixed inputs is the cause of diminishing returns

- Law of Diminishing Returns: explains that the marginal physical product of a variable input declines as more of it is employed with a given quantity of other (fixed) input
- Inputs over time
    - The Short run is the period of time in which some inputs can't be changed
    - The Long run is the period of time in which all inputs can be varied
- Production Function Goals
    - A production function provides how much a firm could produce, but not how much it will want to produce although a firm's goal is to maximize profit
    - Profit = Total revenue - Total cost (value of all inputs)
- To outpace diminishing MPP, business must increase productivity of all workers through
    - Increasing education and training
    - Increasing capital investment
- Increasing productivity = Reducing cost

**Chapter 6: Competition**

- Market structure: Refers to the number and relative size of firms in an industry.
    - Perfect competition → Monopolistic competition → Oligopoly → Duopoly → Monopoly
- Perfect competition
    - Competition with many other firms in a perfectly competitive market
    - No market power
        - No one producer or consumer is able to alter the market price or quantity
        - Everyone is a price taker
        - Example: catfish farmers in the South
- Monopoly
    - A monopoly firm supplies the entire market of a particular good or service with no direct competitors
    - Complete market power
        - Able to alter market price of a good or service
        - A monopoly firm is a price setter
    - Example: Microsoft
- Imperfect competition
    - Duopoly
        - Two firms supply a particular product
        - Example: Coca-Cola and PepsiCo
    - Oligopoly
        - A few large firms supply all or most of a similar product
        - Examples: Airline industry, automobile industry
    - Monopolistic competition
        - Many firms supply essentially the same product but each enjoy brand loyalty
        - Examples: Gasoline stations and fast-food outlets

- Market Demand vs Firm Demand
    - In perfect competition, the market demand curve and the firm demand curve are distinct
    - The market demand curve is always downward sloping
    - The firm demand curve is always horizontal
- The Firm's Production Decision: Output, Revenues, and Profit
    - Total revenue: Value of a firm's sales
    - TR = P x Q (where TR = total revenue, P = price, Q = Quantity)
    - Total profit is the difference between total revenue and total costs
    - Total profit = TR - TC (where TR = total revenue, TC = total cost)
- Profit Maximization
    - To maximize profits, a firm should produce an additional unit of output only if it brings in revenue that is greater than the cost of producing it
    - Marginal revenue = extra revenue from selling one more unit = price (in perfectly competitive markets)
    - Marginal cost = extra cost from selling one more unit = (change in cost) / (change in quantity)
- Computing Profit
    - Profits can be computed in one of two ways
        - Total profit = TR - TC (where TR = total revenue, TC = total cost)
        - Total profit = (p - ATC) x q (where ATC is the average total cost and therefore p - ATC is profit per unit)
    - Total profits are maximized where p = MC
- Market Supply: Total quantity that firms are willing and able to sell at various prices, for a given time period, and while influences on firms' supply are fixed
- Determinants of Market Supply
    - Price of factor inputs
    - Technology
    - Expectations
    - Number of firms
- Entry and Exit
    - Positive economic profits influence firms entry/exit to the market
        - New firms enter the industry
        - Market supply curve shifts outward
        - Market price decreases and output expands
    - Firms enter a competitive industry so long as positive economic profits exist
    - Long-run competitive market equilibrium occurs when
        - P = min(ATC)
        - Economic profits are zero
- Barriers to Entry
    - Barriers to entry are obstacles that make it difficult or impossible for would-be producers to enter a market
    - There are no significant barriers to entry in competitive markets
- Competitive market characteristics
    - Market Characteristics

        - Many firms
        - Downward sloping demand
        - Identical products
        - Low entry barriers
        - Perfect information
    - Firm Characteristics
        - Price taker
        - Set output where MC = p
        - Zero economic profit in long run

**Chapter 7: Monopoly**

- Patent Protection
    - Patent: Exclusive rights to an innovation
    - Legal harassment: Sue potential entrants
    - Exclusive license: Contract restricting factors of production
    - Bundling products: Selling complementary products
    - Government franchise: Exclusive production right
- Research and Development
    - In principle, monopolies have a greater ability to pursue research and development
        - Have profits to invest in expensive R & D
        - No incentive to improve products
        - Continue to make profits by maintaining market power
- Entrepreneurial Incentives
    - In principle, monopolies potentially drive entrepreneurial activities, however
    - 1. Positive profit by innovation is not exclusive to monopoly industry
    - 2. Innovators in perfect competition have the ability to earn large profits

**Chapter 8: The Labor Market**

- Labor Supply
    - The willingness and ability to work specific amounts of time at alternative wages rates, in a given time period, ceteris paribus
    - The opportunity cost of working is the amount of forgone leisure time
- Market supply of labor
    - The market supply of labor is the total quantity of labor that workers are willing and able to supply at alternative sage rates, in a given time period, ceteris paribus
- Labor demand
    - Employers seek a certain number of workers at specific wage rates.
    - Demand for labor is the quantities of labor employers are willing and able to hire at alternative wage rates, in a given time period, ceteris paribus
- Labor Demand Inputs

    - The amount of factor inputs to produce a certain output is identified by profit maximization
- Derived demand
    - Increased sales will increase a firm's demand for labor (and other resources)
    - Derived demand is the demand for labor and other factors of production, derived form the demand for the final goods and services produced by these factors
- Wage rate
    - At lower wage rates, marginal cost is reduced and firms seek to hire more workers to produce higher output
    - The quantity of labor demanded depends on the wage rate
    - Higher the wage rate, the lower the quantity of labor demanded
- Marginal Revenue Product (MPR)
    - The value of a worker is the worker's marginal revenue product
    - The marginal revenue product is the change in total revenue associated with one additional unit of input calculated as: Marginal revenue product = (change in total revenue) / (change in quantity of labor)
    - MPR sets an upper limit to the wage rate an employer will pay
- Marginal Physical Product (MPP) vs Marginal Revenue Product (MPR)
    - The change in MPP is the same as the change in MRP
    - The relationship between MPP and MRP
        - MRP = MPP * p (where p is output price)
- Supply of labor
    - The number of workers that will be hired by a firm is determined by the demand for and the supply of labor
    - An employer is willing to pay a worker no more than MRP
- Hiring and MRP
    - A firm will continue to hire as long as the next worker's MRP is greater than the market wage rate
    - As more workers are hired, MRP falls
    - Hiring stops when the last worker hired has MRP = wage rate (Firms hire workers until MRP = wage rate)
    - MRP curve is the labor demand curve
- Equilibrium
    - Market demand of labor depends on
        - The number of employers
        - The MRP of labor in each firm and the industry
    - Market supply of labor depends on
        - The number of workers
        - Each workers' willingness to work at alternative wage rates
    - The intersection of supply and demand establishes equilibrium wage
- Changing market outcomes
    - The following changes in market conditions alter wages and employment levels
        - Changes in labor productivity
        - Changes in the price of the good produced by labor

        - Changes in the legal minimum wage
        - The actions of labor union
- Changing market outcomes: MPP increase
    - If labor productivity (MPP) rises, wages can increase without sacrificing jobs
        - MRP shifts outward
        - All workers earn higher wages
        - Equilibrium number of workers occurs at a higher level of employment
    - Changing market outcomes: MRP Shifts right
        - As the market output price increases, MRP shifts to the right, and equilibrium can occur at a higher level of employment.
        - A higher output of price requires a change in market supply or demand for the good
    - Minimum wages raises wages, but causes unemployment
    - Workers may form labor union and bargain collectively with employers to get higher wages
- Union and wages
    - Unions shift workers to non unionized labor markets and decrease their wages

**Chapter 9: Government Intervention**

- Microeconomic sources of Market failure
    - Public goods
    - Externalities
    - Market power
    - Inequity
- Public goods as source of market failure
    - Public goods can be consumed by everyone regardless of paying. No one can be excluded from use. Examples include highways and public education
    - Free riding occurs when individuals receive the benefits of public goods without paying
    - Public goods tend to be underproduced due to many individuals free riding
    - Private goods: Those who do not purchase may be excluded from use. Examples include any good sold in the private marketplace
- Externalities as source of Market failure
    - Externalities may cause too much or too little of a good to be produced
    - Markets overproduce goods/services that generate external costs
    - Markets underproduce goods/services that generate external benefits
    - Government's role is to change production to socially optimal level
- Market power as source of Market failure
    - Market power is the ability to alter the market price of a good or service
    - Firms with market power can control market's response to price signals
- Market power results from restricted supply due to
    - Copyrights
    - Patents

    - Control of resources
    - Restrictive production agreements
    - Efficiencies of large-scale production
- The consequences of market power are
    - Reduced competition
    - Enhanced profits to firms
    - Limited consumer choice
- The legal foundations of federal antitrust are contained in three laws
    - 1. Sherman Act (1890) prohibits "conspiracies in restraint of trade"
    - 2. Clayton Act (1914) prohibits development of monopolies
    - 3. Federal Trade Commission Act (1914) created an agency to identify anticompetitive practices
- Inequity as source of Market failure
    - The market mechanism distributes output by willingness to pay, which may not be equitable across consumers
    - Outcomes may not socially optimal
    - Government alters distribution of income with taxes and transfers
- Examples of US income transfers
    - Social security to retired and disabled workers
    - Medicare to individuals over age 65
    - Medicaid to medically needy individuals
    - Unemployment compensation to unemployed workers
    - Food stamps to low income households
    - Earned income tax credit to low wage workers
    - Temporary aid to needy, low income families
- Government failure: Government failure occurs when government intervention fails to improve economic outcomes
    - The public may have substantial doubts about the ability of the government to fix market failures

**Chapter 10: The Business Cycle**

- Business cycle: Alternating periods of economic growth and contraction. Macro policy tries to control the business cycle
- Three basic measures of macro performance
    - Output growth (GDP)
    - Unemployment
    - Inflation
- The Great Depression
    - Worst economic decline in US history
    - Real GDP fell by 30% from 1929 to 33
    - Another decline occurred in 1937 to 38
    - Real GDP per capita in 1939 was lower than that of 1929
    - The Great Depression also affected industrial production in other countries

- Recessions: A persistent contraction where real GDP declines for at least two consecutive quarters
- Unemployment: Unemployment occurs when labor-force participants are unable to find jobs
- The labor force consists of everyone over the age of 16 who is
    - Working
    - Actively seeking paid employment
- Unemployment Rate
    - Unemployment Rate = Number of unemployed + Number in labor force
    - To be unemployed, a person must be
        - Jobless
        - Actively seeking paid employment
    - Second measure of the economy's health (referred to as an index of human misery)
- Types of unemployment
    - Seasonal unemployment
    - Frictional unemployment
    - Structural unemployment
- Full Employment
    - Estimated to be between 4 to 6%
    - Zero cyclical unemployment, but permits seasonal, frictional, and structural unemployment
- Inflation: Increase in the average level of prices of goods and services. It is not a change in any specific price. Inflation is redistributive; making some better off and others worse off
- Deflation: Decrease in the average level of prices of goods and services
- Causes of Inflation
    - When output rises, increased pressure on prices may cause inflation
    - As an economy reaches full employment, prices will begin to rise as
        - Demands for goods outstrip supply
        - Costs of production rise
- Inflation and Income
    - Inflation rates can be used to construct real incomes
    - Nominal income: Amount of money income received in a given time period, measured in current dollars
    - Real income: Income in constant dollars, nominal income adjusted for inflation
- Income effect
    - Those with nominal incomes rising faster than inflation receive a larger share of total income
- Wealth Effect
    - Inflation redistributes income to those who own assets that increase in real value and purchasing power of an asset decreases as inflation rises. If an asset's real value increases during inflation, then purchasing power rises
- Consumer Price Index (CPI)
    - Measures the change in average prices of consumer goods and services
    - The CPI is used to construct the inflation rate, the annual rate of increase in CPI
- Price Stability

    - The Full Employment and Balanced Growth Act of 1978 establishes a goal for economic policy to hold the rate of inflation at under 3%.
- Zero inflation
    - A goal of zero inflation may threaten the goal of full employment
    - Congress weighs the trade-off between inflation and full employment
    - If zero inflation raises unemployment, people may prefer a little inflation
    - 3% inflation was determined to be a safe target
- Quality and CPI
    - Quality improvements in existing products and the creation of new products cause the CPI to not be a perfect measure of inflation

**Chapter 11: Aggregate Supply and Demand**

- The Keynesian View
    - John Maynard Keynes argued that the Great Depression was not unique
    - According to Keynesian economists, economies are inherently unstable and recessions would recur if sole reliance on the market to self-adjust. Therefore, government intervention is required.
- Aggregate Demand (AD)
    - Total quantity of output demanded at alternative price levels, in a given time period, ceteris paribus
    - AD curve slopes downward due to
        - 1. Real balance effect: As prices fall, money purchases more output
        - 2. Foreign trade effect: As domestic prices fall, consumers purchase more domestic and fewer imports
        - 3. Interest-rate effects: As prices fall, so do interest rates. At lower interest rates, loan-financed purchases increase
- Aggregate Supply (AS)
    - Total quantity of output supplied at alternative price levels in a given time period, ceteris paribus
    - AS Curve slope is upward due to
        - 1. Profit margins: As product price rises, output increases
        - 2. Costs of production: Production costs tend to increase as producers try to produce more. This is reflected in higher price
- Macro Equilibrium & Disequilibrium
    - Macro equilibrium is the unique combination of price level and real output
    - Disequilibrium occurs when the intentions of buyers and sellers are incompatible. If market price is not equal to equilibrium price, then a surplus or shortage exists
- Macro Failure (2 potential problems with macro equilibrium)
    - 1. Undesirability: The price-output relationship at equilibrium may not satisfy our macroeconomic goals
    - 2. Instability: Even if the designed macro equilibrium is optimal, it may be displaced by macro disturbances
- Shift in AD and AS Curves

    - Business cycles result from sifts of the AS and AD curves
    - Unstable outcomes result from shifts in AS and AD curves in different directions
- Undesirable shifts in Macroeconomics
    - AD curve may shift in undesirable ways due to changes in
        - Consumer sentiment
        - Income and wealth
        - Consumer spending
        - Taxes and government spending
        - Interest rates
    - AS Curve may shift in undesirable ways due to changes in
        - Resource costs
        - Business taxes
        - Government regulation
        - Production shocks
- Demand side theories
    - 1. Keynesian theory
    - 2. Monetary theory
- Keynesian Theory
    - Keynesian theory argues demand creates supply
    - If consumers aren't spending, idle production capacity occurs
    - It urges increased government spending or tax cuts to increase AD
    - Keynes emphasized that *someone* had to shift the AD curve rightward in order to restore full employment but he did not care where the spending came from
- Monetary Theory
    - Monetary theory argues that tight money supply and high interest rates contract AD
    - Money and credit affect the ability and willingness of people to buy goods and services
    - Adjust amount of money and interest rates
- Supply-Side Theories
    - Supply side theories suggest that producers are unwilling to provide more goods at existing prices
    - These theories focus on shifting AS curve outward through lowering input costs, lower business taxes, and removing costly regulation
- Policy
    - Fiscal policy: Use of taxes and spending to shift AD curve. Set by the President and congress
    - Monetary policy: Use of money and credit controls to shift the AD curve. Set by the Federal Reserve
    - Supply-side policy: Use of business taxes, (de)regulation, and other mechanisms to shift AS curve. Set by congress and the President

**Chapter 12: Fiscal Policy**

- Components of Aggregate Demand (AD)

    - AD = C + I + G + (X - IM), where C = Consumer Spending, I = Investment spending, G = Government spending, (X - IM) = Net exports
- Fiscal Stimulus
    - Increased government spending and lower taxes are forms of fiscal stimulus
    - Intended to increase incomes (to get spent and respent) and raise consumer spending
- MPC (marginal propensity to consume) and MPS (marginal propensity to save)
    - MPC and MPS show us how spending and saving decisions are connected
    - MPC: Fraction of income consumed
    - MPS: Fraction of income saved
    - MPC + MPS = 1
- Multiplier
    - Multiplier = 1 / (1 - MPC)
    - Above is the same as Multiplier = 1 / MPS
    - If a multiplier is 4, that means that for every $1 of government spending, AD increases by $4

**Chapter 13: Money and Banks**

- Money is anything that serves the following three purposes
    - Medium of exchange: Accepted as payment for goods and services
    - Store of value: Can be held for future purchases
    - Standard of value: Serves as a yardstick for measuring the prices of goods and services
- The money supply
    - Most money consist of balances in transactions accounts, a bank account that permits direct payments to a third party and is a form of money
    - Credit cards are loans, not money
    - M1: The value of coins and currency + balances in transaction accounts
    - M2 and M3 are other measures of money supply
- Creation of money
    - In making loans, banks effectively create money
- Required reserves
    - Required reserves is the minimum reserves set by government regulation
    - Excess reserves = Total reserves - required reserves
- Reserve Ratio
    - Reserve ratio = Bank reserves / total deposits
- Federal Reserve
    - The Federal Reserve System (FED) requires banks to maintain some minimum reserve ratio
    - Directly limits banks' ability to originate new loans and create new deposits
    - For each dollar of deposit, the bank must set aside required reserves

        Required reserves = Required reserve ratio * Total deposits
- Money Multiplier

    - Each new loan made creates new deposits and new excess reserves and this cumulative effect on money supply is determined by the money multiplier
    - Money multiplier = 1 / (required reserve ratio)
    - For example, suppose the required reserve ratio is 0.75. Money multiplier is therefore 1 / 0.75 = 1.33. If excess reserves are $25, then potential deposit creation is $25 * 1.33 = $33.25
- Role of banks
    - Transfer money from savers to spenders
    - Create additional money by making loans in excess of total reserves
- 4 lending constraints that limit banks' influence on macro outcomes
    - Bank deposits
    - Willing borrowers
    - Willing lenders
    - Government regulation

**Chapter 14: Monetary Policy**

- The Federal Reserve
    - The money supply is controlled by the Fed. Fed conducts monetary policies
    - Created in 1913, it consists of a system of 12 regional Fed banks and central controls, headed by a chairman.
    - Organized hierarchically: Board of Governors (7 members) → Federal Reserve Banks (12 banks, 24 branches) → Private banks (depository institutions)
    - Roles of the 12 banks
        - Clearing checks between private banks
        - Holding bank reserves
        - Providing currency
        - Providing loans (called discounting)
    - Board of Governors
        - Seven members appointed by the President and confirmed by the US senate, appointed for 14 year terms.
    - The Chair
        - Selected by the president for a 4-year term (can be reappointed), and subject to congressional approval, it is the Fed's most visible member.
        - Current chairman: Jerome "Jay" Powell
- Fed's monetary tools
    - Reserve requirements
        - The Fed influences the money multiplier by changing the reserve requirement
    - Discount rate
        - Changing the discount rate changes the cost of money for banks and the incentive to borrow reserves.
        - Lower discount rate encourages banks to make loans, higher rate discourages.

    - Open market operations
        - The Fed purchases and sells existing government bonds
- The Fed's purchase of a bond
    - Step 1: Federal Open Market Committee (FOMC) purchases government bonds; pays for bonds with Federal Reserve Check
    - Step 2: Bond seller deposits Fed check
    - Step 3: Bank deposits check at Fed bank as a reserve credit
- How Fed would act upon each economic problem
    - Unemployment (slow GDP growth)
        - Solution: Increase aggregate demand by buying bonds, lowering discount rate, or reducing reserve requirement
    - Inflation (excessive GDP growth)
        - Solution: Decrease aggregate demand, by selling bonds, raising discount rate, or increasing reserve requirement

**Chapter 15: Economic Growth**

- Two ways to expand output
    - The short run: increased capacity utilization
    - The long run: expanded capacity
- Growth index
    - Measures of economic growth must net out changes in prices over time
- Growth rate
    - Growth rate = Changes in real + GDP base period GDP
- Rule of 72
    - The rule of 72 provide the approximate number of years to double
    - The time to double is 72 divided by the growth rate
    - Growing at 2% takes 72/2 = 36 yrs
- Sources of Productivity Growth
    - Labor skills (improved through worker education and training)
    - Capital intensity (improved through research and development)
    - Resource management (Entrepreneurship)
    - Technology advances
- Government policy levers that impact AS shifts
    - Education and training
    - Immigration
    - Savings and investment
    - Deregulation
    - Economic freedoms
- Crowding In
    - Occurs when reductions in government borrowing increase private sector borrowing

**Chapter 16: International Trade**

- A trade deficit occurs when the value of imports exceeds the value of exports
- A trade surplus occurs when the value of exports exceeds the value of imports
- Comparative Advantage
    - A country has a comparative advantage if it can produce the good at a lower opportunity cost.
    - World output is maximized when each country produces goods that it has as comparative advantage in
- Terms of trade
    - Countries with a comparative advantage typically can sell their goods for a lower price
    - Import/export decisions are made by consumers and producers
    - The terms of trade depend on the willingness of market participants to buy or sell at various prices
- Protectionist Pressures
    - While there is always macroeconomic gains to trade, there are some microeconomic costs; Workers and producers who compete with imports products seek to restrict trade
- Three types of barriers to trade
    - Tariff is a tax on imports
    - Quota sets an absolute limit on the quantity of an imports
    - Nontariff restrictions include product standards, licensing restrictions, and restrictive procurement practices
- Tariffs
    - By raising import prices, a tariff forces these goods to be less competitive than US produced goods
- Quota
    - Reduce world efficiency and invite retaliatory action
    - It gives domestic producers the opportunity to raise market prices
    - Much greater threat to competition than tariffs because quotas prevent additional imports at any price
- Exchange rates
    - The exchange rate is the price of one country's currency expressed in terms of another country's currency
- International agreements on trade
    - GATT: the General Agreement on Tariffs and Trade
    - WTO: the World Trade Organization
- GATT
    - In 1947, the General Agreement on Tariffs and Trade (GATT) was signed by 23 of the world's largest trading partners
    - It was a commitment to:
        - 1. Pursue free-trade policies
        - 2. Extend equal access to domestic markets for all GATT members
- WTO
    - The World Trade Organization (WTO) was established in 1995 to replace GATT

    - World's trade enforcement body
    - Empowered to
        - 1. Cite nations that violate trade agreements
        - 2. Impose remedial action when violations persist

**Chapter 17: Theory and Reality**

- Fiscal policy
    - Tools include tax cut increase and changes in government spending
    - Fiscal policy consists of automatic stabilizers and discretionary policies
    - Automatic stabilizers: Ongoing government policies that automatically adjust tax rates and transfer payments in a manner that is intended to stabilize incomes, consumption, and business spending over the business cycle.
    - Discretionary policy: Deliberate changes to taxes or spending
- Examples of Discretionary Fiscal policies
    - 2001: $1.35 trillion in personal tax cuts spread over 10 years
    - 2003: $350 billion tax cut, including reduced dividend and capital gains taxes
    - 2008: $160 billion in $600 rebates and business tax cuts
    - 2009: $787 billion package of increased spending and tax cuts
- Monetary policy
    - Monetary policy is the use of money and credit controls to influence the macroeconomy. Tools include Open market operations. Reserve requirements. Discount rates
    - Conducted by US Federal Reserve
- Examples of Monetary policy
    - 1999 to 2000: Fed increases interest rates six times in one year
    - 2001 to 2003: Fed reserves policy, cuts interest rates; continues cutting interest rates
    - 2004 to 2006: Fearing inflationary pressures, the Fed raises interest rates 17 times
    - 2018: Jerome Powell becomes Fed chair, interest rate rises
- Supply side policy
    - Use of business taxes, regulation, and other mechanisms to influence the macroeconomy (shift the AS curve0
- Examples of Supply side policy
    - 1994: NAFTA; Lowered North American trade barriers
    - 2002: Provided business tax cuts and incentives
    - 2007 to 2009: Increased minimum wages from $5.15 to $7.25 per hour
    - 2017: Reduced corporate tax rate and increased investment incentives
- Case 1: Recessions
    - Keynesians emphasize the need to stimulate AD with fiscal policy
    - Monetarists emphasize the need to use rules to stabilize the economy.
    - Supply-side economists emphasize changing the shape and repositioning the AS curve to the right
- Case 2: Inflation
    - Keynesians suggest increasing taxes and decreasing spending shift AD curve left

    - Monetarists suggest decreasing money supply to shift AD curve left
    - Supplied-side economists suggest tax cuts and deregulation shift AS curve right
- Case 3: Stagflation (simultaneous high unemployment and inflation)
    - Any demand-side stimulus is inflationary
- Reasons why policies don't always work
    - Goal conflicts
    - Measurement problems
    - Design problems
    - Implementation problems