

Economics (9708) - AS Level



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1. Basic Economic Ideas & Resource Allocation

1.1. Scarcity, Choice, and Opportunity Cost The Fundamental Economic Problem

- Scarcity -> There is a scarcity of resources to satisfy society's unlimited needs and wants.
- E.g. Skilled Labour -> Unemployment may occur, but highly skilled labour is always scarce in its potential demand.
- Main Outcome of this Problem -> There is a need to consider the different possibilities for allocating the available resources.

Key Terms

- Economic Problem -> The situation of the relative scarcity of resources in relation to the unlimited needs and wants of people
- Needs -> The demand for something essential, such as food or shelter
- Wants -> The demand for something less important than the demand for a need, for example, a new car
- Scarcity -> The condition where there are insufficient resources to satisfy all the needs and wants of people
- Choice -> The need to make decisions about the possible alternative uses of scarce resources
 - Assumption -> Given the existence of limited resources and unlimited needs and wants
- Economic Agents -> Individuals (consumers), Firms, and Governments
- Consumption -> The process by which consumers satisfy their needs/wants
- Production -> The process of creating goods and services in an economy
- Factors of Production -> Land, Labour, Capital, Enterprise

Opportunity Cost

- Definition -> The next best alternative that is given up as a result of making a choice
- Purpose -> Indicates the benefits that could have been obtained by choosing the next best alternative
- Application -> It can be used to evaluate both consumption and production decisions

Resource Allocation

- 3 Basic Economic Questions -> These 3 economic problems must be addressed in every economy
 1. What Goods to Produce? -> And how much will be produced; it is the process of selection
 2. How to Produce the Goods? -> The production process involves 4 factors of production (FOPS); this prompt considers how the FOPS will be utilised to produce what is required in an economy
 3. Whom to Produce the Goods For -> It is necessary to determine who (individuals) will receive what (goods). The Answers to the 3 Questions Above -> Will determine how the resources will be allocated within the unlimited needs and want to achieve certain objectives
- The Answers to the 3 Questions Above -> Will determine how the resources will be allocated within the unlimited needs and want to achieve certain objectives

1.2. Economic Methodology

Statement	Basis
Positive	Scientific / Factual Evidence
Normative	Value Judgement

- Value Judgement -> Value that is a reflection of particular values or beliefs; the opinion is based upon belief rather than factual evidence (subjective)

Ceteris Paribus

- Definition -> All other factors influencing 2 variables are assumed to remain constant; "*all other things being equal*" (Latin)
- Economic Laws -> Principles in Economics that can be observed to operate regularly; these laws require certain variables to be unchanged to withhold
- Isolation -> Allows to identification of the link between variables, without other factors affecting the relationship
- Main Purpose of Ceteris Paribus -> Enables economic behaviours to be studied from a controlled approach

Time Periods

- Short Run -> Some FOPS will be fixed and some will be variable
- Long Run -> All FOPS may change
- Very Long Run -> All FOPS may change + Supply can change as a result of Technical Progress
 - Technical Progress -> Constant in the short and long run, only variable in the very long run; improves the firm's ability to supply

Period	FOPS that can Change	Output
Short Run	Only some FOPS may change	This can only increase by using more of the variable factors
Long Run	All FOPS may change	This can be increased by using more of the variable factors
Very Long Run	All FOPS may change	Supply can change (as a result of technical progress)

1.3. Factors of Production Economic Resources

- Definition -> The inputs used to produce goods and services; they are divided into 4 factors of production (FOPS)

Land

- Definition -> The natural resources of an economy; all that lays on the surface of the earth
- Examples -> Farmland, mineral deposits, forests, lakes and rivers

Labour

- Definition -> The human workforce of the economy, includes the physical and mental effort involved production
- Alias -> Intellectual capital or Human capital
- Considers -> Skills, knowledge and abilities, AND the potential workforce (the ones willing and able to work, yet currently unemployed)
- Size/Magnitude -> Depends on population size, working age, and education/training of the workforce

Capital

- Definition -> The human-made inventions that aid in production
- Examples -> Tools, machinery, equipment, buildings (eg. factories)
- Fixed Capital -> Machinery
- Working Capital -> Eg. Stocks of raw materials

Enterprise

- Definition -> The role of the Entrepreneur in managing all 3 other FOPS, in order to enable production
- Entrepreneur -> His risk-taking endeavours make him differentiate from other workers
- Responsibility -> Organise all 3 other FOPS to promote efficiency and increase output

Factor of Production	Definition	Reward
Land	Natural resources	Rent
Labour	Human Workforce; Physical and Mental human effort	Wages / Salaries
Capital	Man-made resources; eg. Machinery	Interest
Enterprise	Production management, risk-taking endeavours	Profit

Specialisation

- Specialisation occurs when individuals, firms, regions, or economies focus on producing certain goods and services instead of others.
- It allows individuals to concentrate on what they do best, increasing overall production.
- Specialisation has improved global living standards but comes with risks:
 - Technological advancements may make specialised skills redundant.
 - Changing consumer demand can lead to job losses in certain regions or industries.

Division of Labour

- The division of labour is when production is broken down into multiple tasks, with workers specialising in specific parts.
- Enabled by technological advancements and large-scale production.
- Benefits:
 - Increases efficiency and output per worker.
 - Reduces production costs.
 - Improves the quality of finished goods.

1.4. Different Economic Systems

3 Basic Economic Questions for Resource Allocation

- Answered Differently -> Depending on the type of Economic System

Economic System

- Definition -> The way in which a particular country attempts to answer the basic economic problem
- Allocative Mechanism -> Method by which scarce economic resources are allocated between alternative uses
- 3 Types of Economic Systems -> Each uses a different allocative mechanism to decide how scarce resources should be used
 1. Market Economy
 2. Planned Economy
 3. Mixed Economy

Market Economy

- Definition -> Type of Economic System where resource allocation is taken by the private sector, producers and consumers
- Alias -> Market System, Free Market/Enterprise System
- Space that brings together buyers and sellers to exchange products
 - A market can either be physical or digital
- NO Government Intervention -> Unrealistic; no country applies to this in the real world.
- Price Mechanism -> The process in which changes in price (resulting from demand/supply changes) bring about changes in resource allocation
- Good Example -> USA, although they do have some Gov. Intervention (eg. Amtrak transportation)

Advantages	Disadvantages
1) The government can Concentrate Elsewhere: Eg. International Diplomacy (since the price mechanism allocates resources)	1) Lack of Public Good Provision: Eg. Police or Defense are not supplied at all
2) Firm Innovation: Profit maximisation incentivises sellers to be more innovative and cost-effective	2) Merit Good Under-Consumption/Production: Eg. Health and Education are underproduced and under-consumed
3) Consumer Welfare: Firms should be more cost-effective,; lower prices for consumers should arise	3) Demerit Good Over-Consumption/Production: Alcohol and Tobacco are overproduced and overconsumed
4) Maximisation of Consumer and Producer Surplus	4) Negative Externalities: Eg. Noise and Visual pollution are not taken into consideration in the midst of the production scheme

Planned Economy

- Definition -> Type of Economic system where resource allocation is taken by the State/Gov. Agencies
- Alias -> Command Economy
- Gov. Intervention -> Very High
 - In Theory -> Would suggest NO private sector involvement
 - In Reality -> No countries apply to this absolutely
- Good Example -> North Korea, the closest resemblance

Advantages	Disadvantages
1) Decisions Regard the Interests of the Whole Society: Since the State has control over almost all resources	1) Bureaucracy: Inflexible and Unresponsive System to changes in demand; since the Government intervenes in so many areas
2) The state can Decide Which Goods to Produce: also can decide to whom they will be supplied	2) Firm Inefficiency: Less incentives for firms to innovate since profit is not as supported as in a Market Economy
3) Price-Stability is Very Likely	3) Economic Inefficiency: Lack of competition leads to inefficiency and low levels of productivity
4) Lower Unemployment Rate is very Likely	4) Short Option Diversity + Poorer Quality of Goods/Services

Market v/s Planned Economy

Feature Assessed	Market Economy	Planned Economy
Decision Making	Made by consumers and producers	Made by the State/Government
Resource Allocation	Price Mechanism; Market forces of Demand and Supply	Determined by the State; central planning agencies, NOT by Market Forces
Aim of Focus	Producers = Maximise Profits ; Consumers = Maximise their Utility/Satisfaction Private	Maximisation of overall Social Welfare, NOT Profit
Ownership		State (Public)
Public Goods	Absent	Present
Profit Motive	Present	Absent
Key Economist	Adam Smith; "Invisible Hand", Price Mechanism	N/A
Alias	Free Market, Laissez Faire, etc.	Centrally Planned, State-Owned, etc.
Good Examples	USA	North Korea

Mixed Economy

- Definition -> Type of Economic System where resource allocation is taken by both private and public sector
- Purpose -> Combine the advantages of Market and Planned Economies
- Minimised Flaws -> Of both Market and Planned Economies
- Decision Making -> Both by Private and Public sector
Most Economies in the world
- Applicable Examples ->

Feature Being Assessed	Mixed Economy
Ownership	Divided between Private and Public sector
Private Sector's Aim	Self-Interest ; Profit (producers) & Utility/Satisfaction (consumers)
Public Sector's Aim	Broader community aims, public interest
The conflict between Public v/s Private Sectors	Measures like taxation and regulation burdens
Resource Allocation	Differs depending on the sector; market forces (private) or direct measures (public)

Transitional Economy

- Definition -> Economy that is in the process of changing from a Planned Economy to a more Mixed Economy
- Market Forces -> Assume greater importance and responsibility in resource allocation
- Good Examples -> Former Eastern Europe, People's Republic of China, etc.

Issues of Transition

1. Inflation -> Prices become volatile, hence the inflation rate could be higher than in the Planned Economy.
2. Industrial Unrest -> Trade Unions may exploit their stronger authority to get higher wages; which could result in strikes, protests, etc.
3. International Trade Side Effects -> May lead to BOP imbalances of export/imports, could result in current account deficits.
4. Unemployment -> May arise from workers struggling to adapt to structural employment changes; since planned economies usually have a higher rate of employment than transition economies.
5. Fall in Output -> Some industries perish when market forces are introduced, leading to a fall in output.
6. Reduction in Welfare Services -> Standard of living may deteriorate for some when market forces acquire responsibility for welfare provision.

1.5. Production Possibility Curves

Production Possibility Curve (PPC)

- Definition -> Joins the different combinations of products that can be produced in an economy in a given period of time
- PPC's Assumption -> Assuming the existing resources and level of technology available
- Alias -> Production Possibility Frontier/Boundary (PPF/PPB)
- Purpose -> Shows the maximum possible output that can be achieved; does this by illustrating the idea of choice and opportunity cost

Graph Analysis

- Increasing the Output of 1 Product = Reduces the Output of the Other Product
- Opportunity Cost of Increasing Output A -> Loss in Output B; hence shows the cost of what the next best alternative would have been
- Disclaimer -> Figure shows a movement along a PPC from one point to another; figure does not show a shift of the whole PPC
- Point X -> Consumer Output = A ; Capital Output = B
- Point Y -> Consumer Output = C ; Capital Output = D ; Inefficient use of resources = Unemployment ;
- Point 1 -> Inside the PPC = Not all resources are being used, hence output is lower than potential output
- Point 2 -> Efficient use of resources = Full Employment ; Lays on the PPC line = Maximum output/capacity withholds

Shape of the PPC

- Reason for its Curve -> Returns are not constant
- Constant Returns -> Would theoretically suggest that the amount of production sacrificed by one product and gained by another are the same/constant (this is incorrect)
- Law of Diminishing Returns -> As extra units of input are used in the production process, increase in output will be successively smaller as more inputs are added

Constant & Increasing Opportunity Costs

- PPC is NOT a Straight Line -> Because of the distinction between constant and increasing opportunity costs
- Increasing Opportunity Costs -> Occurs when the extra production of one good involves incrementing sacrifices of another
 - Reason -> Different FOPS have different qualities
 - Eg. If Country wants to raise the Production of a Good -> It has to use an increasing amount of resources that are less suitable for its production
 - Increase of FOPS that are Less Suitable for Production = Increase in the Marginal Cost of Production

Causes & Consequences of Shifts in PPC

- Disclaimer -> Figure shows a shift of the whole PPC
- PPC Shifts to the Right -> PPC1 to PPC2 ; Economy can produce more of both types of goods
 - Economic Growth -> Increase in the productive potential or capacity of an economy, since more of both goods can be produced
- Point X -> Inefficient use of resources = Unemployment
- Point Y -> Efficient use of resources = Full Employment

Causes of a Shift of PPC to the Right

1. Investment in Technology -> Labour Productivity Rises = Increase in the Future Production Potential/Capacity
 - Example -> Investing in Capital Equipment (machinery)
2. Introduction of New Resources -> Enhances the possibility of an economy to produce more
 - Example -> New mineral deposits
3. Increase in the Supply of Labour -> Increase in population size affects labour; this increases the potential quantity of labour available for employment
 - Example -> Increase in Immigration or Increase in Birth Rate
4. Improvements in Human Capital -> Skills of labour can be improved through education and training = Increase in the rate of productivity
5. Improved Management of Resources -> Changes in the production system may lead to greater output
 - Example -> Greater division of labour should improve productivity
6. Encouragement of Enterprise Culture -> Government can support new firms, through financial support or providing appropriate information/resources

Causes of a Shift of PPC to the Left

1. Migration out of Country (Emigration)
2. Reducing Labour Supply
3. Reduction in Financing Educational Initiatives -> Reduces the quality of the future labour force

1.6. Classification of Goods & Services

Free Goods

- Definition -> Good which is not scarce, thus does not need a mechanism to allocate it
 - Scarcity -> Does NOT apply
 - Quantity -> Sufficient to satisfy the good's demand
- Demand -> Equal to its supply at zero price
- NO Cost of Consumption -> This distinguishes it from private/economic goods
- Examples -> Sunshine, air, sea water, etc.

Private Goods

- Definition -> Good that is relatively scarce, thus needs to be allocated to a particular use through an allocative mechanism
 - Scarcity -> Does apply
- Alias -> Economic Good
- Rival and Excludable
- 2 Essential Qualities ->

- Rival -> If one individual consumes it, there is less available for others (reduces quantity)
- Excludable -> Price is charged for a good, thus will be excluded from those unable or unwilling to pay its price
- 2 Types of Private Goods -> 1) Merit Goods and 2) Demerit Goods

Public Goods

- Definition -> Good which is both "non-rival" and "non-excludable"
- Opposite of Private Good -> Non-Rival and Non-Excludable
- Examples -> Street lighting, Police and law, National Defense, etc.
- Non-Rival -> If one person consumes it, it does not reduce its availability to others
- Non-Excludable -> It is not possible to exclude any person from its use
 - Impossible to Prevent -> The consumption of the good by others
- Non-Rejectable -> Some public goods can't be rejected (not all of them)

Free Rider Problem

- Definition -> The fact that it's impossible to exclude individuals who have not paid for a product
- Free Rider -> Person who has no incentive to pay for the use of a public good because he can still consume it without paying
- Main Outcome -> Price cannot be charged for public goods (usually)

Non-Rejectability

- Definition -> Idea suggesting that certain public goods can not be rejected
- Examples -> Police Force, National Defense, etc.
- Does NOT Apply to all Public Goods -> Eg. Education, since consumers can avoid making use of provided education

Market Failure

- Private Goods -> Usually provided in markets, since producers can profit on charging for their consumption
- Public Goods -> Usually lack production since there is no profit incentive for producers
 - Due to Non-Rivalness and Non-Excludability
- Main Outcome -> Public goods must be provided by the State/Government

Quasi-Public Goods

- Definition -> Impossible to distinguish between if it's a private or public good
- Characteristics -> Blend between the 2 types of goods

- Examples -> Public transportation, roads, parks, libraries, etc.
- Reason -> They may be accessible, but rivalrous and partially excludable

Type of Good	Opportunity Cost & Scarcity	Rivalry	Excludability	Free-Rider	Rejectability
Free Good	No	No	No	Yes	No
Private Good	Yes	Yes	Yes	No	Yes
Public Good	Yes	No	No	Yes	No

Merit Goods

- Definition -> Private good that would likely be underproduced and underconsumed in a market economy
- Reason -> People may not be aware of the potential benefits of the product; underestimated benefits
 - Imperfect Information -> Both producers and consumer don't have the full information needed to make rational decisions
 - Outcome -> Reduces the extent of efficiency
- Characteristics -> Rival and Excludable
- Examples -> Education, Public Libraries, Health Care, Museums, etc.

Merit Good Provision

- Governments -> 2 Choices: Either 1) Subsidise or 2) Provide Free Consumption
- Eg. Education -> Prevents consumption from being limited to only those able to pay for it

Main Takeaways from Graph

- Reason for Under-Consumption & Under-Production -> Lack of recognition about benefits of merit good
- Treatment -> Government intervenes to encourage consumption and production of merit goods
 - Examples -> Education, Health care, etc.

Demerit Goods

- Definition -> Private good which would be overproduced and overconsumed in a market economy
- Reason -> Individuals may not be aware of the potential damage of its over-consumption (imperfect information)
- Characteristics -> Rival and Excludable
- Examples -> Cigarettes, Alcohol, etc.

Demerit Good Discouragement

- Governments -> Discourage consumption through tools such as taxation

- Taxation -> Makes demerit goods more expensive, hence demand falls
 - Eg. Cigarette Demand -> Reduction would benefit the individuals concerned
- Price Elasticity of Demand -> Determines the effectivity of taxation in discouraging demerit goods
 - Inelastic Demerit Goods -> Consumers may ignore the price hike and maintain similar levels of consumption due to addiction

Main Takeaways from Graph

- Reason for Over-Provision and Over-Consumption -> Lack of recognition about damages of demerit good
- Treatment -> Government intervenes to discourage consumption and production of demerit goods
 - Measure -> Taxation

Type of Good	Rival	Excludable	Production	Consumption
Merit Good	Yes	Yes	Underproduction	Underconsumption
Demerit Good	Yes	Yes	Overproduction	Overconsumption

Information Failure

- Definition -> Situation where people do not have the full information needed to make informed decisions about their behaviour
- Alias -> Imperfect Information
- Key Element in Private Goods -> Influences market failure in both Merit and Demerit Goods
 1. Merit Goods -> Under-Consumption and Under-Provision; Unaware of potential benefits
 2. Demerit Goods -> Over-Consumption and Over-Provision; Unaware of potential damages

Treatment for Information Failure

- Government Intervention -> Either encourage or discourage consumption and production of good
 - Merit Goods -> Encourage
 - Demerit Goods -> Discourage
- Gov's Aim -> Treat the imperfection of the market

- Misallocation of Resources -> Product is not consumed and produced in the right quantities

2. The Price System & the Microeconomy

2.1. Demand & Supply Curves

Effective Demand

- Definition -> The quantity of a good or service an individual is willing and able to purchase over a range of prices over a period of time.
 - Desire for a Product -> Must be backed up with the ability to pay for it
- Important Note -> You must distinguish an individual's demand for a product from the desire or need for a product
 - Eg. an Individual wants a Ferrari but can't Afford It -> Economics states that he does not have a demand for it
 - Reason -> Individual may be willing but is not able to; hence, Effective Demand is not met

Demand

- Individual Demand -> Relationship between individual demand and the price for a product
- Law of Demand -> For most goods and services, the quantity demanded is inversely proportional to its price.
- Demand Curve -> Curve showing the relationship between the quantity of products individuals are willing and able to buy over a range of prices over a period of time.
 - Assuming Ceteris Paribus -> All other factors affecting demand are held constant Relationship between demand and price
 - Illustrates the Law of Demand ->

E.g. Demand for Tomatoes by Individual "Tom"

- Assuming Ceteris Paribus -> All other factors affecting Tom's demand for tomatoes remain constant
- **Absence of the Supply Curve -> We cannot determine the quantity demanded and the price

Market Demand

- Definition -> The total demand for a particular product in the market
- Purpose -> Shows the relationship between market demand and the price of a product
- Calculation -> Adding together the quantity demanded of each individual at any given price

Supply

- Definition -> The quantity of a good a producer is willing and able to offer for sale over a range of prices, over a given period of time

- Determining the Equilibrium Price and Quantity -> One must evaluate both demand and supply curves of a product.
- Individual Supply -> Relationship between an individual producer's supply and the price for a product
- Law of Supply -> For most goods and services, the quantity supplied is directly proportional with its price.
 - If Price Rises -> Quantity Supplied Rises
 - If Price Falls -> Quantity Supplied Falls
- Supply Curve -> Curve showing the relationship between the quantity of a product producers are willing and able to offer for sale over a range of prices, over a period of time All other factors affecting supply are held constant
- Illustrates the Law of Supply -> Relationship between supply and price

Law of Supply Explanation

- Higher Prices -> Producers are willing to supply more because it is likely more profitable
- Lack of Demand Curve -> We cannot determine the quantity supplied and at what price

Market Supply

- Definition -> The total supply for a particular product in the market
- Purpose -> Shows the relationship between market supply and the price of a product
- Calculation -> Adding together the quantity supplied of each individual producer at each price

Shift of the Curve v/s Movement Along Curve.

- Price -> Moves along the given curve (either supply or demand curve)
- Determinants of Demand/Supply -> Bring about changes in the whole curve when these conditions change
- Movement Along Curve is NOT the Same as Shift in Curve
- Movement Along Curve -> Either contractions or extensions of demand/supply
- Shift in Curve -> Movement of the whole curve due to changes in the determinants

Determinants of Demand

- Price is NOT the Only Factor -> Other factors affect an individual's demand for a good/service
- Conditions of Demand -> Affect how much an individual will demand at each price
 - Produce Shifts in Demand -> Either to right or left

1) Income

- Normal Good -> Good whose demand rises as income rises, and falls as income falls; most goods and services

- Inferior Good -> Good whose demand falls as income rises, and rises as income falls
 - Reason -> Consumers usually opt for cheaper alternatives when their income is reduced
 - Eg. McDonald's -> The least "well-off" opt for fast food over real meals due to them being cheaper

Type of Good	Income Relationship	Income Rises	Income Falls	Example
Normal	Direct relationship	Demand rises	Demand falls	Most goods
Inferior	Inverse relationship	Demand falls	Demand rises	Fast food (eg. McDonald's)

2) Price of Other Goods

- Goods are Usually Related to One Another -> Either as A)Substitutes or B)Complements
- A) Substitutes -> Goods that are alternative to one another ; they can replace each other
 - Example -> Coffee v/s Tea
 - If Price of Tea Rises -> Tea's demand is reduced, since individuals opt for coffee; Coffee's demand rises
 - If Price of Tea Falls, -> Opposite happens
- B) Complements -> Goods that are consumed together
 - Example -> Gas Fuel and Car
 - Car's demand will fall
 - If Price of Cars Rises ->
 - Fuel's Demand Falls Too -> Since fuel's demand is likely inversely related to the price of cars

Good Relationship	Good A & B	Price of A Rises	Price of A Falls	Example
Substitutes	They can replace each other; alternatives	Good A's demand falls ; Good B's demand rises	Good A's demand rises ; Good B's demand falls Coffee v/s Tea	
Complements	They are consumed together Good A's demand falls ; Good B's demand falls	Good A's demand rises ; Good B's demand rises	Car and Gas Fuel	

3) Tastes & Preferences

- Individuals -> Unlikely to consume products they do not like
- The More Attractive a Good Is -> The greater the demand is likely to be
- Advertising -> Can influence individual's tastes and preferences, hence influence the demand of a product

4) Speculation

- Individuals -> May buy products hoping their price will rise, thus can profit when reselling it
- Speculative Products -> Houses, Shares, Antiques, etc.

- High Speculation of Rising Prices -> Demand is likely to rise

5) Size, Age, Gender or Population

- Population Size -> Generally directly proportional with demand for most goods and services
- Age and Gender Fluctuations -> Influences the behaviour of demand for goods and services that have a specific demographic
 - Example -> Products targeted to the young or elderly, or focused on either males or females

6) Distribution of Income

- Income Equality -> Demand for normal goods should increase
- Income Inequality -> Demand for luxury goods (rich) and inferior goods (poor) should increase
 - Influence on Inferior and Luxury Goods -> Will depend on the nature of the change in distribution

Determinants of Supply

- Price is NOT the Only Factor -> Other factors affect an individual producer's supply for a good/service
- Conditions of Supply -> Affect how much an individual producer will supply at each price
 - Produce Shifts in Supply -> Either to right or left

1) Costs of Production

- Rise in Costs -> Supply curve should fall
 - Reason -> Producers can offer less for sale at each price
- Examples -> Cost of chips for making phones, salaries of office workers

2) Availability of Resources

- More Availability -> Supply curve should rise
- Eg. More Copper Deposits are Discovered -> Tech industries can produce more electronic chips

3) Climate

- Does NOT Affect All Goods -> Only affects industries that are concerned with the weather
 - Example -> Agriculture
- Bad Weather Conditions -> Supply curve should fall
 - Reason -> It reduces the ability to produce more crops
- Other Industries Impacted -> Construction, tourism, etc.

4) Technology

- Improvements in Technology -> Supply curve should rise
- Reduction in Costs of Production -> Lets firms produce more at each given price
 - Eg. New Machinery -> Might significantly increase tech industries' ability to produce electronic chips

5) Government Regulation

- Government's Purpose/Aim -> Health and safety, consumer welfare, legislation, etc.
- Main Goal -> Protect employees from being exploited; equal pay and minimum wage
- High Regulation -> Supply curve should fall
 - Reason -> Usually rises the costs of production or reduces efficiency of FOPS

6) Taxes & Subsidies

- Indirect Taxes -> Supply curve should fall
 - Reason -> Increases the costs of production for producers
- Subsidies -> Supply curve should rise
 - Reason -> Reduces the costs of production for producers; producers can supply more output at lower prices

Determinants of Demand & Supply

Conditions of Demand	Conditions of Supply
1) Income	1) Costs of Production
2) Price of Other Goods // Relationship of Goods	2) Resource Availability
3) Tastes & Preferences // Advertising	3) Climate Weather
4) Speculation	4) Technology
5) Size, Age, Gender or Population	5) Government Regulation
6) Income Distribution	6) Taxes & Subsidies

Shifts in the Demand Curve

- If Any of the Conditions of Demand Change -> Demand curve will shift according to the nature of the condition affected
- Shift in Demand Curve -> Individuals are either able to purchase more or less of a product at each price
 - Shift to the Right -> Demand Grows ; individuals can buy more of a product at each price
 - Shift to the Left -> Demand Shrinks ; individuals can buy less of a product at each price

Demand Condition Being Assessed	Rise in Demand // Shift to the Right	Fall in Demand // Shift to the Left
1) Income	Normal Goods: Rise in Income; Inferior Goods: Fall in Income	Normal Goods: Fall in Income; Inferior Goods: Rise in Income
2) Relationship of Goods	Substitute's price rises; Complement's price falls	Substitute's price falls; Complement's price rises
3) Tastes & Preferences	More Advertising // Product becomes more Attractive	Less Advertising // Product becomes less Attractive
4) Speculation	High Speculation that Good's price will Rise	High Speculation that Good's price will fall
5) Population	Increase in Good's Target Population Fall in Good's Target Population	
6) Income Distribution	More even distribution of income (Income Equality)	Less even distribution of income (Income Inequality)

Shifts in the Supply Curve

- If Any of the Conditions of Supply Change, the Supply curve will shift according to the nature of the condition affected
- Shift in Supply Curve -> Producers can purchase more or less of a product at each price.
 - Shift to the Right -> Supply Grows; individuals can buy more of a product at each price.
 - Shift to the Left -> Supply Shrinks; individuals can buy less of a product at each price

Supply Condition Being Assessed	Rise in Supply // Shift to the Right	Fall in Supply // Shift to the Left
1) Costs of Production	Lower Wages // Cheaper Raw Materials	Higher Wages // Expensive Raw Materials
2) Resource Availability	Discovery of Ore Deposits Optimum Weather	Trade Embargoes
3) Climate Weather	Conditions Improvements in	Bad Weather Conditions
4) Technology	Technology Regulation	N/A
5) Government Regulation	Less Taxes; More Subsidies	Excessive Government Regulation More Taxes; Less Subsidies
6) Taxes & Subsidies		Subsidies

2.2. Price Elasticity, Income Elasticity & Cross Elasticity of Demand

Price of Elasticity of Demand

- Definition -> Measures the responsiveness of a change in demand to a change in price
- Formula -> $PEd = \frac{(\% \text{Change in Quantity Demanded})}{(\% \text{Change in Price})}$

- $PED > 1$ = Price Elastic -> The change in price leads to an even bigger change in demand
- $PED < 1$ = Price Inelastic -> Demand is relatively unresponsive to a change in price
- $PED = 1$ = Unitary Elastic -> Change in demand is equal to the change in price
- $PED = 0$ = Perfectly Inelastic -> Demand does not change when price changes
- $PED = \infty$ = Perfectly Elastic -> Demand falls to zero when price changes; infinite change in demand

Type of PED	PED Value	Shape
Perfectly Elastic	$PED = \infty$ Horizontal Line	
Elastic	$PED > 1$	Less Steep Curve
Unitary Elastic	$PED = 1$	Hyperbola
Inelastic	$PED < 1$	More Steep Curve
Perfectly Inelastic	$PED = 0$	Vertical Line

Eg. Price of Bread Increases

- Increase in Price -> 15%
- Decrease in Quantity Demanded -> -20%
- $PED \rightarrow -20\% / 15\% = -1.33$
- Ignore Whether Value is Positive or Negative -> Solely consider the magnitude
- Magnitude = 1.33 -> $1.33 > 1$, so PED is relatively price elastic

Factors Influencing Price Elasticity of Demand

1. Necessity -> Determines whether a good's demand is more likely to respond to a change in price
 - Necessary Goods -> Relatively Inelastic Demand, since even though prices rise consumers still need to consume those goods
 - Luxury Goods -> Relatively Elastic Demand, since they are not necessary
2. Substitutes -> The amount of substitutes a good has can influence the elasticity
 - Several Substitutes -> Relatively Elastic Demand
 - Eg. Market for Bread -> Relatively Inelastic Demand, since there are less substitutes for bread
3. Addictiveness -> More addictive goods have Relatively Inelastic Demand, since consumers are addicted to them
 - Eg. Cigarettes -> Consumers continue demanding them, even if price increases
4. Proportion of Income Spent on the Good -> Influences consumers capability to afford the product, hence its demand
 - Smaller Proportion -> Relatively Inelastic Demand
 - Greater Proportion -> Relatively Elastic Demand

5. Durability of the Good -> A good's duration determines how much consumers are willing to wait to buy another one

- Longer Durability -> Relatively Elastic Demand

6. Peak and Off-Peak Demand -> During peak times, demand for tickets is Relatively Inelastic

Factor Being Assessed	Elastic PED	Inelastic PED
1) Necessity	Luxury Goods; eg. travelling	Necessary Goods; eg. food/electricity
2) Substitute Availability	Several Substitutes; eg. phones Less Addictive	Fewer Substitutes; eg. bread More Addictive
3) Addictiveness	Greater Proportion; eg. car	Smaller Proportion; eg. magazine
4) Proportion of Income	Longer Durability; eg. washing machine	Shorter Durability; eg. food
5) Durability		
6) Peak and Off-Peak	Off-Peak times	Peak times

Point Price Elasticity of Demand

- Definition -> Measures the price elasticity of demand at a specific point on the demand curve instead of over a range of it.
- As Price Rises -> Point PED becomes more elastic, as consumers become more sensitive to price changes
- As Price Falls -> Point PED becomes more inelastic

Income Elasticity of Demand

- Definition -> Measures the responsiveness of a change in demand to a change in income
- Formula -> $YED = (\% \text{Change in Quantity Demanded}) / (\% \text{Change in Income})$
- $YED < 0$ = Inferior Good -> As income increases, demand decreases; consumers switch to better quality alternatives; inferior good demand is reduced
- $YED > 1$ = Luxury Good -> As income increases, an even bigger increase in demand occurs; luxury good demand increases

YED Value	Type of Good	Interpretation
$YED < 0$	Inferior Good	Demand decreases as Income increases ; consumers switch to better quality alternatives
$YED > 0$	Normal Good	Demand increases as Income increases ; consumers can buy more of the good
$YED > 1$	Luxury Good	Demand increases in a bigger proportion than income

Cross Elasticity of Demand

- Definition -> Measures the responsiveness of a change in demand of one good, X, to a change in price of another good, Y
- Formula -> $XED = (\% \text{change in X's Quantity Demanded}) / (\% \text{change in Y's Price})$
- $XED < 0$ = Complements -> If Y becomes more expensive, the quantity demanded of both goods falls
- $XED > 0$ = Substitutes -> If Y becomes more expensive, the quantity demanded of X rises; consumers switch to the alternative
- $XED = 0$ = No Relationship -> Goods have no kind of relationship or influence on each other's demand

XED Feature	Interpretation	Application
Greater Magnitude (farther from 0)	Stronger relationship between goods	Degree of change between demands of both goods is much more significant
Smaller Magnitude (closer to 0) Weaker relationship between goods	Degree of change between demands of both goods is less significant	
Positive Sign (+)	Substitutes	If Good Y becomes more expensive; demand of Good X rises
Negative Sign (-)	Complements	If Good Y becomes more expensive, demand of both goods falls
$XED = 0$	No Relationship (between both Goods)	Variations in Good Y's price have no effect in Good X's demand

Type of Elasticity	Formula	Sign (+ or -)	Purpose
PED	$PED = (\% \Delta Qd) / (\% \Delta Price)$	Must be ignored	Optimising prices for revenue and taxation
YED	$YED = (\% \Delta Qd) / (\% \Delta Income)$	Must be Considered	Determining type of Good (inferior, normal or luxury)
XED	$YED = (\% \Delta \text{Good X's Qd}) / (\% \Delta \text{Good Y's Price})$	Must be Considered	Determining relationship between goods (complements or substitutes)

2.3. Price Elasticity of Supply

Price Elasticity of Supply

- Definition -> Measures the responsiveness of a change in supply to a change in price
- Formula -> $PES = (\% \text{change in Quantity Supplied}) / (\% \text{change in Price})$

- $PES > 1$ = Elastic Supply -> Firms can increase supply quickly at little cost
- $PES < 1$ = Inelastic Supply -> Supply will be expensive for firms, hence can not variate quickly
- $PES = 0$ = Perfectly Inelastic Supply -> Supply is fixed, hence any change in demand won't change the current supply
- $PES = \infty$ = Perfectly Elastic Supply -> Any quantity demanded can be met without changing the price

Type of PES	PES Value	Shape
Perfectly Elastic	$PES = \infty$	Horizontal Line
Elastic	$PES > 1$	Less Steep Curve
Inelastic	$PES < 1$	More Steep Curve
Perfectly Inelastic	$PES = 0$	Vertical Line

Eg. the Price of Wheat Increases

- Increase in Price -> 15%
- Decrease in Quantity Demanded -> 20%
- $PES \rightarrow 20\% / 15\% = 1.33$
- Solely Ignore Whether the Value is Positive or Negative -> Consider the magnitude
- $Magnitude = 1.33 > 1$, so PES is relatively price elastic

Factors Influencing Price Elasticity of Supply

1. Time Scale -> Determines whether a good's supply is more likely to respond to a change in price
 - Short Run -> Price Inelastic Supply, since producers cannot quickly increase supply
 - Long Run -> Price Elastic Supply
2. Spare Capacity -> Availability of resources determines whether producers can supply more or less of their product
 - Full Capacity -> Price Inelastic Supply, since there is no spare resources left to increase supply
 - Spare Resources -> Price Elastic Supply, since there are lots of spare and unemployed resources
3. Level of Stocks -> Amount of storage determines whether producers can allow themselves to increase supply
 - Storable Goods -> Price Elastic Supply, since firms can allow themselves to stock additional supply
 - Perishable Goods -> Price Inelastic Supply, since firms cannot stock them for long
4. Flexibility of Factors of Production -> Determines whether producers can reallocate their resources to where extra supply is needed
 - Flexible FOPS -> Price Elastic Supply
 - Fixed FOPS -> Price Inelastic Supply

5. Market Barriers of Entry -> Determines the accessibility that producers have to enter a brand new market/industry

- Higher Entry Barriers -> Price Inelastic Supply; producers struggle to enter into the product's market
- Lower Entry barriers -> Price Elastic Supply

Factor Being Assessed	Elastic PES	Inelastic PES
1) Time Scale	Long Run	Short Run
2) Spare Capacity	Spare Resources	Full Capacity
3) Level of Stocks	Storable Goods	Perishable Goods
4) Flexibility of Factors of Production	Flexible FOPS	Fixed FOPS
5) Market Barriers to Entry	Lower Entry Barriers	Higher Entry Barriers

2.4. Interaction of Demand and Supply Market Equilibrium

- Definition -> When supply meets demand; shown by $P^* Q_d$ in the graph below
- Price has No Tendency for Change -> Since producers are meeting consumers' demand
- Market Disequilibrium -> Whenever supply is not equal to demand; 2 scenarios: 1) Surplus or 2) Shortage
 - Surplus -> Occurs when supply exceeds demand; excess supply (blue line in graph)
 - Shortage -> Occurs when demand exceeds supply; excess demand red line in graph)

Relationships Between Different Markets

Market Relationship	Definition	Example
1) Joint Demand	When goods are complements (goods that are bought together)	**Gas Fuel & Car:** Increase in Car demand is likely to lead to an increase in the demand for gas fuel **iPhone v/s
2) Alternative Demand	When goods are substitutes (goods that are alternatives for each other)	Samsung: **Increase in iPhone demand is likely to lead to a fall in the demand for Samsung phones
3) Derived Demand	When the demand for a good produces a corresponding demand for another related good	**PC's & Microchips:** Increase in PC's demand is likely to lead to an increase in the demand for microchips
4) Joint Supply	When increasing the supply of one good influences the supply of another good	**Lamb Supply & Wool Supply:** Increase in Lamb supply is likely to lead to an increase in the supply of wool

The Price Mechanism // The Invisible Hand

- Price has 3 Main Functions -> Rationing, Signalling, and Incentivising
- A) Rationing -> Price increases by default when resources are scarce
 - Increase in Price -> Discourages demand, consequently rations resources
 - Eg. Plane Ticket Rise as Seats are Sold -> Because spaces are running out
 - Disincentive to Purchase the Tickets -> Results in rationing the tickets
- B) Signalling -> Price acts as a signal to consumers and new firms entering the market
 - Price Variations -> Indicate where resources are needed in the market
- C) Incentivising -> Consumers can inform producers the products they desire by making choices
 - High Prices -> Encourage firms to increase their output, since they can make more profit
 - Low Demand -> Results in lower prices, which disincentivize firms' output production

2.5. Consumer and Producer Surplus Consumer Surplus

- Definition -> The difference between the price the consumer is willing and able to pay and the price they actually pay
- Basis -> What the consumer perceives their private benefit will be from consuming the good
- Location in Graph -> Area above market price and below the demand curve
- Law of Diminishing Marginal Utility -> Consumer surplus generally declines with each extra unit consumed
 - Extra Unit -> Generates less utility than the one already consumed
 - Main Outcome -> Consumers are willing to pay less for extra units
- Inelastic Demand Curves -> Have larger consumer surplus, since consumers are willing to pay much higher prices to consume the good
- Increasing Consumer Surplus -> Either a) Rise in Demand or b) Rise in Supply
- Decreasing Consumer Surplus -> Either b) Fall in Demand or b) Fall in Supply

Producer Surplus

- Definition -> The difference between the price the producer is willing to charge and the price they actually charge
- Basis -> The private benefit gained by the producer that covers their cost
- Measurement -> Profit

- Location in Graph -> Area below the market price and above the supply curve
- Increasing Producer Surplus -> Either a) Rise in Supply or b) Rise in Demand
- Decreasing Producer Surplus -> Either a) Fall in Supply or b) Fall in Demand

Economic Welfare

- Definition -> The total benefit society receives from an economic transaction
- Calculation -> Area of producer and consumer surplus added together
- Importance -> When considering the effects of Government Intervention

3. Government Microeconomic Intervention

3.1. Maximum & Minimum Prices

Minimum Prices

- Definition -> Price control set by the Government as the lowest legal price that can be set for a good or service
- Alias -> Price Floor
- Aim -> Discourage consumption/production of goods/services
- Type of minimum price; could reduce Minimum Wage -> employment but, encourages positive externalities
 - Positive Externalities -> Improved socioeconomic welfare and incentivises work

Key Takeaways from Minimum Price Graph (above)

- 1) Quantity Supplied (Q_s) > Quantity Demanded (Q_d)
 - Supply -> Rises from Q^* to Q_s
 - Demand -> Reduced from Q^* to Q_d
- 2) Price Minimum is ABOVE Equilibrium -> Makes it more profitable to sell the good; incentivises production, and less affordable to consume (discourages consumption)
 - More Quantity Supplied (Q_s) -> Suppliers are encouraged to supply more of their product
 - Less Quantity Demanded (Q_d) -> Consumers are discouraged from purchasing the product, since it becomes less affordable
3. Main Outcome -> Excess Supply (difference between Q_d and Q_s)

Eg. of Minimum Price) Minimum Wage

1. Definition -> Minimum hourly wage an employer must pay an employee
2. Aim/Purpose -> Reduce poverty; increasing living standard of workers

3. Perverse Outcomes (Negative Side Effects)

- Unemployment Increased -> More expensive to hire workers; firms must lay off part of their workforce
- Labour Costs Rise
- Reward for Working Rises -> More workers are willing to supply their labour
- Hurts Unskilled Workers -> Since firms are stricter in the abilities they demand of their employees at higher wage rates

4. Requisites to be Effective:

- Minimum Wage must be ABOVE Equilibrium -> Or else employers will ignore minimum wages below the market wage (equilibrium level)
- Consider the Elasticity of Labour Demand
 - Inelastic Demand -> Will result in a smaller excess of unemployed workers; firms don't respond in such extreme degree to rise in labour costs
 - Elastic Demand -> Will result in a more accentuated excess of unemployed workers; firms respond adhoc to the rise in labour costs

Minimum Price Advantages & Disadvantages

Advantages	Disadvantages
1) Discourage Demerit Good Consumption -> Reduces negative externalities	1) Informal Labour -> Workers who are employed unofficially in order to work for less than the minimum wage
2) Raise Living Standard of the Poorest	2) Unemployment Rate Rises
3) Incentive for People to Work	3) Decrease in the Wealth of Consumers
	4) Inflation

Maximum Prices

- Definition -> Price control set by the Government as the highest legal price that can be set for a good or service
- Alias -> Price Ceiling
- Aim -> Encourage consumption/production of goods/services; avoid goods from getting too expensive

Key Takeaways from Maximum Price Graph Above

1. Quantity Demanded (Q_d) > Quantity Supplied (Q_s)
 - Supply -> Falls from Q^* to Q_s
 - Demand -> Rises from Q^* to Q_d

2. Price Maximum is BELOW Equilibrium -> Makes it less profitable to supply the good; discourages production, and more affordable to consume (encourages consumption)

- Less Quantity Supplied (Qs) -> Suppliers are discouraged from supplying their product, since it becomes less profitable to sell
- More Quantity Demanded (Qd) -> Consumers are encouraged to purchasing the product, since it becomes more affordable

3. Main Outcome -> Supply Shortage // Excess Demand (difference between Q^* and Qs)

- Consumers Require Rationing of the Good -> Since more consumers want the product than what is currently available
- Rationing Mechanisms -> Must be put in order to fairly distribute the product's output

Eg. of Maximum Price) Real Estate Rent Prices

1. Aim/Purpose -> Maintain the rent affordable for tenants (consumers)

2. Perverse Outcomes (Negative Side Effects)

- Landlords (Suppliers) -> Unwilling to supply their real estate to the market, since prices aren't as profitable than before the maximum rent limit
- Tenants (Consumers) -> Struggle to find available housing, since less landlords are willing to rent
- Black Market Arises -> Landlords accept bribes from desperate tenants; results in extremely exclusive rent prices, since demand accentuates significantly)

3. Requisites to be Effective:

- Price Ceiling must be BELOW Equilibrium -> Or else producers will ignore price ceilings

Maximum Price Advantages & Disadvantages

Advantages	Disadvantages
1)Essential Goods become More Affordable	1)Supply Shortage // Excess Demand -> Results in the need of a rationing mechanism to fairly distribute the supply of the desired product
2)Housing Market -> Theoretically prevented from becoming too expensive	2)Bribery & Corruption -> Regarding those responsible for regulating the queue or rationing process 3)Informal/Black Market ->
3)Transportation Market -> Fares are restricted from reaching an exceeding price	Supply scarcity is satisfied through illegal means outside of the legal market; informal price becomes far more expensive than both the maximum and equilibrium price
4)Prevents Monopoly Exploitation -> Monopolies can't exceed a set price level legally, so even though they could manipulate all alternative supply options, they would not be able to get away with it	4)Reduction in Firms' Profits -> Less profit revenue, hence less money to reinvest into the business; this may also lead to restricted economic growth
5)Can Result in Welfare Gains -> Due to lower prices, making goods more affordable, better standard of living (theoretically)	5)May Lead to Government Failure
6)Increase in Firms' Efficiency -> Since they must figure out how to cut their costs in order to raise their profitability again	

Buffer Stock Schemes

- Markets with Supply Variations -> Experience price volatility (price equilibrium varies constantly)
 - Reasons -> Eg. Agriculture Industry: difficult weather conditions
 - Agricultural Markets -> Have their supply fixed in the short run
 - Government Intervenes -> Aims to reduce price volatility through the use of buffer stock schemes
 - Buffer Stock -> Amount of a commodity that is held to limit its price volatility
 - When Commodity has Production Surplus -> Product is bought and stored in the buffer stock
 - When Commodity has Production Shortage -> Buffer stock supplies the amount needed to cover the shortage
- Key Takeaways from Buffer Stock Graph (above)

- Eg. of Buffer Stock Scheme) Demand & Supply in Agricultural Market
 - Supply in Any Year -> Perfectly Inelastic (PES=0, vertical)
 - supply curve
 - Years 1-3 -> S1, S2
 - Government's Aim -> Wants equilibrium to be at price P* and quantity Q*
- Year S1
 - Equilibrium Quantity -> Q1
 - Equilibrium Price -> P2
 - Government Buys Extra Output (Q1-Q) ->* This shifts the equilibrium price to P*
- Year S2
 - Equilibrium Quantity -> Q2
 - Equilibrium Price -> P1
 - Government Sells Buffer Stock to Cover Shortage (Q2-Q) ->* This shifts the equilibrium price to P*

Buffer Stock Scheme Advantages & Disadvantages

Advantages	Disadvantages
1) Solves Price Volatility -> Achieves to establish price stability in uncertain markets	1) May be Arbitrary to Determine the Equilibrium Price -> Uncertainty about what the equilibrium price of a commodity should be
2) Stable Incomes for Farmers/Workforce of Unstable Markets -> Eg. agricultural market's profits are stabilised	2) Additional Costs of Operating the Buffer Stock Scheme -> Either the Government or producers will need to contribute; may distract the Government from focusing in other responsibilities
3) Encourages Producers to Engage in Long-Term Business Plans & Deals -> Gives way to economic growth, discovery of new industries, international competitiveness, etc.	3) Difficulties to Store Excess Supply -> Perishability of the produce must be considered

3.2. Taxation

Example of Average v/s Marginal Tax

- Money Earned -> \$100,000
- Money Paid in Income Tax -> \$25,000
- Net Income -> \$75,000
- Average Rate of Taxation -> 25%
- Marginal Tax Rate -> The rate of tax that you pay on your next dollar earned
 - May be Different from Average Rate of Taxation -> Since it depends on the next tax bracket the individual is on
- Tax Rate Formula -> $[(\text{Total Tax Paid}) / (\text{Total Income})] * 100$
- Tax Rate Eg. -> $[(21,036.75) / (100,000)] * 100 = 21.04\%$
- Marginal Tax Rate in Image Above -> 28%

Direct Taxes

- Definition -> Taxes that are levied on income, wealth and profit
- Payee (Recipient of Tax Payments) -> Direct taxes are paid directly to the Government
- Responsibility -> Bears on the Consumer/Firm through income, inheritance, etc.
- Examples -> Income Tax, Capital Gains Tax, Corporation Tax

Indirect Taxes

- Definition -> Taxes which are levied on expenditure of goods and services
- Collected from Sellers -> This increases the production costs of producers, thus resulting in less supply
- Market Price of Good Rises -> Hence Quantity Demanded is lower (contracts)
- Consumer Incidence -> The amount of tax passed from the producer to the consumer
- Producer Incidence -> Portion of the tax which the producer pays
- Examples -> VAT (UK), Sales Tax (USA)
- Excise Duty -> Specific Tax on a particular good
 - 2 Main Types -> A) Specific/Per-Unit Tax
 - B) Ad Valorem/Value Added Tax
 - A) Specific/Per-Unit Tax -> Fixed amount of tax charged to the seller per each unit of good/service sold
 - The Most Common Type of Indirect tax
 - Largest Source of Tax Revenue for Governments
 - B) Ad Valorem/Value Added Tax -> Tax based upon the total value of a transaction, levied as a % of a good's value

Proportional, Progressive & Regressive Taxes

Type	Marginal Tax Rate	Definition	Examples
Proportional	Flat = Average Rate of Tax	Fixed rate for all taxpayers, regardless of income	Corporation Tax; Firms, LLCs, etc.
Progressive	Rises with income	Taxes those with higher incomes more	Income Tax
Regressive	Falls with income	Lower incomes pay more in taxes (indirectly)	Sales Tax

Impact v/s Incidence of a Tax

- Impact -> The individual/company on which the tax is levied on
- Incidence of a Tax -> Eventual distribution of the burden of a tax

A1) Impact of a Specific tax

- Elastic Demand

- Impact on Elastic Product
 - Quantity Demanded -> Reduced from Q^* to Q_1
 - Price -> Rises from P^* to P_{consumer}
- Inelastic Demand
- Impact on Inelastic Product
 - Quantity Demanded -> Minimally reduced from Q^* to
 - Q_1 Rises sharply from P^* to P_{consumer}
 - Price ->
 - Ineffective to Reduce Demerit Good Demand -> Since
 - addicted consumers purchase anyways
 - Great source of revenue for Government

A2) Incidence of a Specific Tax

- Inelastic Product
- Elastic Product
- Main Takeaway -> The more inelastic a product is, the greater the burden lies on the consumer.

Scenarios for Complete Consumer Burden

- NO Producer Burden -> Either because consumers absorb all the burden or producers refuse to adjust to consumers' demands
- Perfectly Inelastic Demand -> $PED = \infty$; consumers absorb all the burden since they do not respond to changes in price; vertical demand curve
- Perfectly Elastic Supply -> $PES = \infty$; consumers absorb all the burden since producers refuse to adjust to consumers' demands; vertical supply curve

B1) Impact of an Ad Valorem Tax

- Main Difference from Specific Tax -> Tax value rises as the price rises
- Elastic Demand
- Impact on Elastic Product
 - Quantity Demanded -> Reduced from Q^* to Q_1
 - Price -> Rises from P^* to P_{consumer}
- Inelastic Demand
- Impact on Inelastic Product
 - Quantity Demanded -> Minimally reduced from Q^* to
 - Q_1 Rises sharply from P^* to P_{consumer}
 - Price ->

B2) Incidence of an Ad Valorem Tax

Taxation Graph Calculations & Formulas

- Value of the Tax -> Difference between P_{consumer} and P_{supplier}
- Tax Revenue -> $Q_1 * \text{Value of Tax}$ // $Q_1 * (P_{\text{consumer}} - P_{\text{supplier}})$

- Producer Burden
 - Area -> Above P_{supplier} , below market/equilibrium price, left of Q_1
 - Inelastic Market -> Producer burden is smaller; more money spent on product
 - Elastic Market -> Producer burden is greater; less revenue due to less sales
- Consumer Burden
 - Area -> Below P_{consumer} , above market/equilibrium price, left of Q_1
 - Inelastic Market -> Consumer burden is greater; more money spent by consumers
 - Elastic Market -> Consumer burden is smaller; consumers don't tolerate a rise in price, less demand, less sales
- Deadweight Loss (DWL) -> Inefficient allocation of resources, market failure; no party enjoys the benefit
 - Inelastic Market -> DWL is much smaller; revenue is collected anyway since consumers still buy the product
 - Elastic Market -> DWL is much greater; revenue is much smaller since consumer demand contracts

3.3. Subsidies

Subsidies

- Definition -> Benefit given by the government to producers to reduce their production costs.
- Aim -> Encourage further production
- Financing/Budget for Subsidies -> Tax Revenue
- Opportunity Cost -> Government revenue could have been used elsewhere; potential government failure: there may be inefficient spending.

Impact of a Subsidy

- Shift Supply Curve to the Right // Supply Expands -> Producers can supply more of their product at each given price.
- Market/Equilibrium Price -> Lowered from P^* to P_{consumer} (see below)
- Value of Subsidy Per-Unit -> Difference between P^* and P_{consumer}
- Total Government Spending on Subsidy -> $Q_1 * \text{Per-Unit Subsidy}$
- * Output
- Elastic Demand
- Impact on Elastic Product:
 - Price -> Slightly reduced from P^* to P_{consumer}
 - Quantity Supplied -> Large increase from Q^* to Q_1

Incidence of a Subsidy

- Consumers -> Do not fully benefit from the full value of the subsidy

- Producers -> Absorb some of the benefit of the subsidy for their own gain
- Inelastic Demand
- Main Takeaway from Inelastic Demand -> Leads to greater consumer benefit
- Elastic Demand
- Main Takeaway from Elastic Demand -> Leads to Greater Producer Benefit.

3.4. Income & Wealth Inequality

Income v/s Wealth

- Income -> Flow of money; variable
- Wealth -> Stock of money or assets; constant

Income

- Definition -> Money received, especially on a regular basis
- Wages & Salaries -> Paid to people as a reward for the work they have carried out
- Benefits -> Ways in which income can be received; pensions or tax credit
- Profits -> Income that flows into businesses
- Dividends -> Income distributed to shareholders of businesses
- Rental Income -> Flow of income to people who own and rent/lease out their property
- Interest -> Paid to people who hold money in interest-paying accounts with financial institutions

Wealth

- Savings -> Held in multiple types of accounts with financial institutions
- Shares -> Ownership of shares issued by limited companies
- Property -> Ownership of property
- Bonds -> Money held in bonds
- Pension Schemes -> Wealth held in occupational pension schemes and life assurance schemes

The Gini Coefficient

- Definition -> A statistical measure of the degree of inequality of income in an economy
 - The Lower the Figure -> The more equal the distribution of income
 - The Bigger the Figure -> The more unequal the distribution of income
- Purpose -> Measuring income & wealth inequality

2020's Highest Gini Coefficients // Most Inequality

Country	Gini Coefficient
1)South Africa	0.630
2)Namibia	0.610
3)Botswana	0.605
4)Zambia	0.571
5)Central African Republic	0.562
6)Lesotho	0.542
7)Mozambique	0.540
8)Swaziland	0.515
9)Brazil	0.513
10)Colombia	0.508

2020's Lowest Gini Coefficients // Least Inequality

Country	Gini Coefficient
1)Azerbaijan	0.166
2)Ukraine	0.250
3)Slovenia	0.254
4)Iceland	0.256
5)Czech Republic	0.259
6)Moldova	0.263
7)Slovakia	0.265
8)Kyrgyzstan	0.268
9)Kazakhstan	0.269
10)Belarus	0.270

Economic Reasons for Income and Wealth Inequality

1. Employment -> Hard to find well-paid employment
 - Increase in Unemployment -> Fewer people receiving wages, more receiving state benefits
 - Fewer Full-Time Positions -> Part-time jobs rise, income inequality increases since wages are lower in part-time positions
2. Government Policy:
 - Wage Freezes -> The wage increase rate rises slower than inflation; seeks to reduce further inflation
 - Fall in Standard of Living -> Mostly seen in public sector workers
3. Taxation -> The Government may raise tax levels to increase public revenue, makes taxes even more regressive for lower sectors of the economy
4. Distribution of Wealth:
 - People Who Already Hold Wealth -> Can invest, which creates even more wealth for them

5. The existing Concentration of Wealth -> Makes inequality a vicious cycle

Policies to Redistribute Income and Wealth

1. Minimum Wage:

- Government -> Can establish a minimum wage
- Main Issue -> Some workers may be unemployed since firms may not be able to pay all workers the minimum wage
- Side Effect -> May lead to unemployed workers living off benefits

2. Transfer Payments:

- Definition -> One-way payments (in-kind benefits) in which no good, money or service is exchanged
- Purpose -> Ensure basic living standards for all, reduce inequality and poverty, redistribute income from the rich to the poor
- Important Note -> Transfer payments are not a reward for any productive effort
- Revenue from Taxation -> Used to provide financial support to people
- Government Provisions -> Social security, unemployment benefits and housing benefits

3. Progressive Income Taxes:

- Definition -> Where the proportion of income paid in tax increases as income increases
- Purpose -> Achieve a more equitable distribution of income
- Important Note -> These do not only take more from a person as their income rises but also a higher proportion of their income
- Increase in the Marginal Rate of Taxation -> For

Income tax might start at 20% and then increase by 30%, later 40%, and later 50% as income levels rise

4. Inheritance & Capital Taxes:

- Inheritance Tax -> A tax which is paid on the money, property and possessions of someone who has died
- Capital Gains Tax -> A tax which is paid on the surplus obtained from the sale of an asset for more than was originally paid for it
- Government's Purpose -> Intervene in the economy to try to bring about a more equitable distribution of wealth

5. State Provision of Essential Goods & Services:

- Purpose -> Help redistribute income & wealth
- Money for Provision Funding -> Comes from the money received from taxation
- Main Effect -> Reduces inequality since money goes from the well-off to the less well-off
- Great Example -> State Provision of Health Care

6. Public Goods -> Must be provided by the State, or they would not be provided at all

Effect of Transfer Payments on the Market

- Transfer Payments -> Can be given in various forms of income support to those who struggle economically.
- Unemployment Benefit -> Money paid out to unemployed workers
 - Side Effect -> May discourage workers from finding employment (benefits are argued to be too high)
 - Perverse Outcome -> Inefficient allocation of resources; labour is NOT fully employed

3.5. Direct Provision of Goods & Services

State Provision of Public Goods

- Public & Merit Goods -> May not be provided or underprovided by the private sector.
 - Examples -> Education, Defense, State Provision of Wealth, etc.
 - Government Intervention -> Attempts to ensure there is an optimal level of provision of public & merit goods
- E.g. Street Lighting, Police and National Defence -> Provided by the State, since otherwise they would not be provided at all.
- Redistribute Income & Wealth -> Money used to pay for provision comes from taxation.
 - Reduces Inequality -> Tax revenue pays for goods/services the poor are not able to afford
 - Tradeoff -> Increased spending = less spending elsewhere

Effects to Notice

- Reduced Role of the Private Sector -> The State has no competition and is not motivated by profit.
 - May Lead to Less Efficiency -> Since there is a lack of incentive to reduce production costs
- Solution -> The Government can pay private firms to provide goods/services
 - Delegate Provision to Firms -> Instead of supplying them themselves
- May Result in Lower Costs -> Firms may compete to be hired by the Government

Provision of Information

- Governments -> Attempt to ensure there is no information failure; must raise awareness of the advantages of merit goods and the disadvantages of demerit goods.
- Imperfect Information -> May lead to market failure
- Consumers & Producers -> Require perfect information to make informed economic decisions
- Example -> Second-hand car dealers must show the entire history of a car

- Downsides & Challenges -> It's expensive to regulate information provision properly

3.6. Nationalisation & Privatisation

Nationalisation

Advantages	Disadvantages
May Lower Costs -> By assuming control of an industry	Lack of Competition -> The Government lacks incentives to cut costs, hinders innovation and development
Industries Run for the Benefit of Society -> Instead of seeking profit	Lower Quality Goods/Services -> Due to lack of competition
Private Monopoly Prevented -> Since the Government can assume control of an entire industry	Reduced Pool of Options for Consumers

Privatisation

- Definition -> Transfer of ownership, property or business from the Government to the Private Sector
- Method -> The Government sells the ownership of the previously state-owned asset; private firms pay the State for ownership
- Example -> British Airways shares were open to the market

Advantages	Disadvantages
1)Reduction in Costs -> Due to the constant pressure of competition within the industry	1)Benefit of Society not Ensured -> It may not be addressed due to profit-seeking behaviour
2)Higher Quality Goods/Services -> Due to competition	2)Monopolies May Arise
3)National Budget May Rise -> Through the sale of state-owned industries	3)Fewer Income Streams for Government Budget -> The State can no longer rely on an ex-industry as a source of revenue

4. The Macroeconomy

4.1. National Income Statistics

National Income

- Definition 1 -> Total value of a country's final output of goods/services in a year
- Definition 2 -> Total value of a country's production of goods/services
- Important Note -> Goods must not be counted twice
- Considerations -> Must consider net property income from abroad and depreciation

Net Property Income from Abroad

- Definition -> Inflow of interests

- Calculation -> (Profits + Dividends from Abroad) - Outflow of Money

Depreciation

- Definition -> Measures the fall in value of the capital stock of a country
 - Loss in Value of Country's Assets -> Housing, Vehicles, Machinery, etc.
- Purpose -> Sets the difference between gross and net measurements
- Alias -> Capital Consumption
- Eg. 1 Net Domestic Product (NDP) -> GDP - Depreciation
- Eg. 2 Net National Income -> GNI - Depreciation

Measuring National Income

- Different Approaches -> Basis can be on the following: Expenditure, Income, Output Data
- "Per Capita" -> Means "Per individual in the Economy"
 - Eg. GDP Per Capita -> GDP/population

1)Gross Domestic Product (GDP)

- Definition -> Total value added in production of goods and services in a country in 1 year
- Method 1 -> Value of final goods and services produced
- Method 2 -> Value added in the production process
- Important Note -> Double counting must be prevented
- Basis -> Focused on the Output Data of the Economy

2)Gross National Income (GNI)

- Definition -> Total incomes received by a country's residents in 1 year
- Basis -> Focused in the sum of all income of the country

3)Net National Income (NNI)

- Definition -> GNI taking into account the depreciation of fixed capital assets due to wear and tear
- Calculation -> GNI - Depreciation
- Basis -> Focused in the sum of all income of the country

Market Prices

- Measure -> Value in terms of actual market prices in which goods are sold in 1 year
- Includes -> Taxes
- Excludes -> Subsidies

Basic Prices

- Definition -> Amount producer receives from consumer per unit of goods purchased
- Includes -> Subsidies
- Excludes -> Taxes
- Are excluded if they are invoiced separately
- Transport Costs ->

GDP & GNP

- Different Price Calculations -> They can be shown as either market prices or basic prices
- A) Market Price -> Includes Taxes, Excludes Subsidies
- B) Basic Price -> Includes Subsidies, Excludes Taxes
- $\text{GDP at Market Price} - \text{Taxes} + \text{Subsidies} = \text{GDP at Basic Prices}$

4.2. Circular Flow of Income

Circular Flow of Income

- Definition -> Shows how money circulates in an economy
- Between -> Households, Firms and Government
- Money -> Is provided to the FOPS for their services
- FOPS -> Owners of the FOPS spend money on goods/services which are provided
- Flow of Money Resembles a Circle
- Injections & Leakages -> Affect the circulation of money

1) Closed Economy

- NO Foreign Trade -> Economy has no exports or imports
- Components -> Consumption (C), Investment (I), and Government Expenditure (G)

2) Open Economy

- Foreign Trade -> Economy has exports and imports
- Components -> Consumption (C), Investment (I), Government Expenditure (G), and Net Exports (X-M)
 - X for Exports
 - M for Imports

Components of Different Economies

1. Simple Closed Economy -> $Y = C + S$
2. Closed Free Market Economy -> $Y = C + I$
3. Closed Mixed Economy -> $Y = C + I + G$
4. Open Economy -> $Y = C + I + G + (X - M)$

Circular Flow of Income in a Closed Free Market Economy

- Households -> Supply their labour and in return receive income
- Firms -> Make a profit on the income spent by consumers in their goods/services
- Open Economy Diagram -> Must show money from exports entering, and money from imports leaving

Introduction of Government

- Diagram -> Part of each flow would go into/come from the Government
- Supply of Labour -> Would go to both Government and Firms
- Consumption -> Would go to both Government and Firms

- Goods & Services -> Some would go to households

Leakages

- Definition -> Reduce the circular flow of income
- Leakage -> Income is not passed onto the circular flow of income
- Main Outcome -> $\text{GDP's value is reduced}$
- Calculation -> $\text{Leakage} = \text{Savings} + \text{Taxes} + \text{Imports}$
 - Savings -> Part of household's current income which is not consumed
 - Taxes & Imports -> Money flows out to other economies
- Important Note -> Each type of leakage is opposite to one of the injections

Injections

- Definition -> Money from outside the circular flow of income
- Main Outcome -> $\text{GDP's value is increased}$
- Calculation -> $\text{Injections} = \text{Investment} + \text{Government Expenditure} + \text{Exports}$

Equilibrium

- Definition -> Economy is neither growing nor shrinking
- $J = W$ -> Leakages = Injections
- Important Note -> Equilibrium is not the same as Full Employment Equilibrium
 - Price Level is NOT Increasing -> When resources are fully employed
 - $J = W$ Says Nothing About Employment or Inflation
- Important Note 2 -> Economy can be in Equilibrium while dealing with Unemployment or Prices Increasing

Disequilibrium

- Definition -> Economy is either growing ($J > W$) or shrinking ($J < W$) in size
- Greater Injections -> Economy is increasing in size; $J > W$
- Greater Leakages -> Economy is shrinking in size; $J < W$

4.3. Aggregate Demand & Aggregate Supply Analysis

Aggregate Demand (AD)

- Definition 1 -> Total amount of goods and services demanded in an economy
- Definition 2 -> Total expenditure on goods and services in an economy
 - At a given price level and period of time

Components of AD

- $AD = C + I + G + (X - M)$
- C -> Consumption; households & consumers
- I -> Investment; by firms and companies

- G -> Government Expenditure; consumption by the Government
- $(X-M)$ -> Net Exports; the difference between total exports and imports

1) Consumption

- Definition -> Part of income that is spent on goods and services
 - By individuals or households
- Examples -> Buying a bike or going to a restaurant
- Factors of Consumption -> consumption made by households
 - Disposable Income
 - Saving
 - Consumer Confidence
 - House Prices / Wealth
 - Income Tax / VAT
 - Interest Rates
 - Cost of Living

2) Investment

- Definition -> Spending on an asset or capital good for future use
 - Usually by firms
 - This spending should generate income in the future
- Examples -> Firm building a new factory or installing a new computer system
- Factors of Investment -> Influence the degree of investment made by firms
 - Confidence
 - Animal Spirits
 - Interest Rates
 - Availability of Finance
 - Government Regulations
 - Economic Growth

3) Government Expenditure

- Definition -> All Government Consumption, Investments and Transfer Payments
- Examples -> Pay for Government employees, education and health services

4) Net Exports

- Exports -> Sale of goods and services to foreign countries or people living abroad
 - Injection -> Exports are injections since they bring money into the country
- Imports -> Purchase of goods and services from abroad
 - Imports are leakages/withdrawals since they take money away from the country

Determinants of AD

1. Interest Rates -> Affects Consumption (Households/Consumers) and Investment (Firms)
 - If Rates Fall -> Firms are more likely to invest, $investment$ increases; Consumers can borrow more, $consumption$ increases
 - Overall Effect -> AD Rises/Shifts to the Right
2. Income & Wealth -> Affects Consumption
 - If Consumer's Incomes Rise -> They are likely to spend more, consumption increases
 - Overall Effect -> AD Rises/Shifts to the Right
3. Inflation Expectations -> Affects Consumption
 - If Inflation is Expected to Increase -> People are likely to spend now, consumption increases
 - Overall Effect -> AD Rises/Shifts to the Right
4. Currency Exchange Rate -> Affects Net Exports
 - If Native Currency's Value Rises -> Imports Increase since they become cheaper, net exports fall
 - Overall Effect -> AD Falls/Shifts to the Left

Nature of the AD Curve

- Downwards Slope -> Rising price levels
- If Inflation Rises -> Real Output Falls
- A) Foreign Trade Effect -> As price level drops, exports become more attractive to foreign buyers; domestic goods become more attractive
- B) Wealth/Real Balances Effect -> As price level drop, the value of wealth rises
 - **Eg. 5000 and Price Level Falls -> 5000 can now purchase more goods and services
- C) Interest Rate Effect
 - Lower Price Levels -> Encourage savings, results in lower interest rates
 - Higher Price Levels -> More money needed to purchase, borrowing rises = interest rate rises

Consequences of Rising Price Levels

1. Nominal Interest Rates Rise -> This leads to a fall in demand for goods/services, due to a fall in consumption
2. Purchasing Power is Reduced -> Leads to a fall in consumption and investment
3. Domestic Goods become more Expensive -> Leads to a fall in exports and rise in imports; fall in net exports

Shifts in the AD Curve

- Requisite -> Any change in any one of AD's components (C, I, G, $(X-M)$)

Effect in AD Curve	Change in AD Component	Real Output & Employment	Price Level	Representation in Graph Above
AD curve shifts outwards; equilibrium level of output and price both rise	Increase	Y1 → Y2	P1 → P2	AD1 → AD2
AD curve shifts inwards	Decrease	Y2 → Y1	P2 → P1	AD2 → AD1

Aggregate Supply (AS)

- Definition 1 -> Total production of goods and services in an economy
- Definition 2 -> Total value of goods and services produced in an economy

Productivity

- Definition -> Quantity of goods/services produced per unit of input per unit of time

Determinants of AS

1. Production Costs -> If wages rise, costs rise; AS is likely to be reduced
2. Tech Innovations -> Increase in productivity of labour and capital, AS increases
3. Production Taxes -> If taxation increases, costs of production rises, AS decreases
4. Subsidies -> If subsidies increase, costs of production decrease, AS increases
5. Quality of Labour & Capital -> Improvement in Education, Training, etc. results in a increase in productivity, AS Increases

1) Short-Run AS Curve (SRAS)

- Definition -> Quantity of Real GDP (Output) supplied in an economy at different price levels
- Upwards Sloping -> As general price level increases, more will be supplied
- Even Though Costs Rise -> A rise in prices will be more than enough to cover those costs
- Example -> Firms need to pay workers overtime to produce more

Rise in SRAS	Fall in SRAS
1) Decrease in Production Costs	1) Increase in Production Costs
2) Cut in Indirect Taxes	2) Increase in Indirect Taxes
3) Increase in Subsidies	3) Cut in Subsidies
4) Positive Supply Shocks → Eg. discovery of new raw materials, technological breakthroughs, etc.	4) Negative Supply Shocks → Eg. war, explosions, natural disasters, etc.
5) Improvements in Productivity	

Important Note

- Price Level on Y-Axis -> Shows the Rate of Inflation
- Fall in Price Level -> Fall in Inflation Rate
- NOT a fall in the actual prices; Disinflation is NOT the same as Deflation

Fall in SRAS

- Representation in Graph Above -> AS1 -> AS2
- Fall in Output & Employment -> Y1 -> Y2
- Rise in Price Level -> P1 -> P2 (Inflation)

Rise in SRAS

- Representation in Graph Above -> AS2 -> AS1
- Rise in Output & Employment -> Y2 -> Y1

Lower Degree of Price Increase -> P2 -> P1 (Disinflation)

2) Long-Run AS Curve (LRAS)

- When AS Reaches Full Capacity -> All resources are fully employed
- Long-Run -> No ability to increase output
 - Any Increase in Demand -> Solely results in a rise in prices
- Shifts to the Right -> May occur due to some of the following phenomenons: Improved Education, Increase in Capital Equipment, Improved Productivity
 - A) Increase in Output
 - B) Fall in Unemployment
 - C) Fall in Price Level
 - Important Note -> AS curve only shifts if productive capacity of the economy is increased
- Important Note -> The LRAS curve can be displayed in various different ways: eg. Keynesian; due to the different parameters economists consider essential in the long run

Rise in LRAS	Fall in LRAS
1) Increase in Size of Workforce (Immigration, Lower Labour Minimum Age)	1) Decrease in Size of Workforce (Brain Drain / Emigration from Domestic Country)
2) Increase in Capital Stock	2) Destruction of Capital Assets
3) Higher Quality Education	3) Negative Supply Shocks -> Eg. war, explosions, natural disasters, etc.
4) Increase in Productivity	
Main Outcome -> More can be produced with the same inputs	

Important Note

- Shifting LRAS to the Right == Growth in PPC Outwards

Fall in SRAS

- Representation in Graph Above -> LRAS1 -> LRAS3
- Fall in Output & Employment -> Y1 -> Y3

Rise in Price Level -> P1 -> P3 (Inflation)

Rise in SRAS

- Representation in Graph Above -> LRAS1 -> LRAS2
- Rise in Output & Employment -> Y1 -> Y2

Lower Degree of Price Increase -> P1 -> P2 (Disinflation)

Interaction of AS & AS in the Short Run

- Equilibrium in the AD/AS Model -> Occurs when AD and AS intersect
 - Does not represent size/degree of Output or Price Levels
 - Can Occur in Unstable Employment & Price Levels
 - All it Says -> That there is no increase/decrease in the Economy
- Main Takeaways from Graph Below:
 - Shift in AD -> Output and Price Level change in same direction as the AD curve
 - Shift in AS -> Output changes in same direction as the AS curve, Price Level changes in opposite direction as the AS curve
- Movement along AD Curve = Shift in AS Curve
- Movement along AS Curve = Shift in AD Curve

Shift in Curve	Eg. Factor	Price Level	Output & Employment
A) Rise in SRAS	Decrease in Production Costs -> More Output	Falls from P1 -> P2 Increases from Y1 -> Y2	
B) Fall in SRAS	Increase in Resource Prices -> Less output	Rises from P1 -> P3	Decreases from Y1 -> Y3
C) Rise in AD	Greater Access to Credit -> Consumption Increases Rises from P1 -> P3	Increases from Y1 -> Y2	
D) Fall in AD	Government Expenditure Decreases	Falls from P1 -> P2	Decreases from Y1 -> Y3

4.4. Economic Growth

Meaning of Economic Growth

- Definition -> Increase in production potential or real level of output of an Economy
- Real v/s Potential Growth -> Possible to distinguish between both of them
- Real Economic Growth -> Only occurs when growth is greater than increase in inflation
- Calculation -> Either in terms of GDP or GNP
- Most Popular Measure -> Real GDP

Measurement of Economic Growth

- Different Methods -> Either in GDP or GNP
- Economic Growth -> Percentage rate of increase in Real GDP, assuming the effects of inflation

- Comparison -> Economic Growth is used for comparison; eg. Either the same economy over time or between different countries
- GDP Per Capita -> Most popular measure for comparison, although it's a simplistic method (does not reflect the realities of the entire population)
 - Different Population Sizes -> Must be taken into account when comparing countries/periods of time with GDP Per Capita.

Real v/s Nominal GDP

- Nominal GDP -> Total value of goods/services at current prices
- Real GDP -> Nominal GDP adjusted to changes in inflation
 - Alias -> "GDP at Constant Prices"
- Positive Inflation -> Nominal GDP is greater than Real GDP
- Negative Inflation -> Real GDP is greater than Nominal GDP
- GDP Deflator -> Transforms from Nominal to Real GDP
 - Purpose -> Measures price changes from a base year
 - Will be indicated; eg. "2018 = 100" or "at Constant Prices -> 2018 prices"

Causes of Economic Growth

- Either Shifting the AD or AS Curves -> OUTWARDS

1) Shifters of AD to the Right

- Government Expenditure -> Higher G
 - Investment in Infrastructure -> Eg. Roads, Rail and Power Supplies
 - Improved Transport -> Allows goods and people to flow more freely
 - Productivity increases
 - Main Outcome -> Higher C + I
- Tax Cuts -> Higher C + I
 - More Disposable Income -> Allows individuals to spend more, firms can invest more
- Depreciation of Currency -> Higher (X-M), due to exports becoming more attractive & imports more expensive
- Lower Interest Rates -> Higher C + I, due to the cost of borrowing money being lower
- Higher Real Wages -> Higher C
 - Financial Stability -> Individuals feel confident enough to spend more on goods and services

2) Shifters of AS to the Right

- Main Outcome of Prompts Below -> Greater Labour Productivity
- Increased Investment
 - Spending on Capital Goods -> Eg. Equipment and Machinery
 - Leads to greater sales
 - Likely to Increase Output & Quality -> sales

- Improved Technology
 - More can be Produced -> With the same quantity of capital
- Improved Education & Training -> Affects quality and quantity of goods and services
 - Main Outcome -> More literate and skilled workforce
- Increase in Workforce
 - Main Factors -> Immigration or lower Minimum Labour Age Laws
- Discovery/Development of Natural Resources -> Stimulates growth in countries
- Examples -> Oil for Saudi Arabia, Copper for Zambia

Consequences of Economic Growth

- Analysis Parameters -> Human lives, Culture, Environment

Benefits	Costs
1) Rise in Standard Living -> Reduction of poverty, more consumer goods	1) Environmental Damage -> Pollution worsens, terraforming detriments the landscape, global warming, etc.
2) Improved Health and Education -> Literacy rates rise, Infant & Death Rates fall	2) Opportunity Cost -> Country at maximum efficiency leads to the need to decide between capital or consumer goods; opportunity costs and tradeoffs become more eminent
3) Increase in Tax Revenue -> More budget for infrastructure and benefits for the poor; Important Note -> Higher budget is the result of higher incomes and profits, not from higher Taxation	3) Unequal Benefits -> Change in mechanisms, people will need to readapt to such abrupt changes
4) Increase in Business & Consumer Confidence -> A Positive view of the Economy leads to investing; consumers are more willing to spend	4) Lower Quality of Life -> Overcrowding in populated areas, inferior air quality, etc.; Opportunity Cost -> More income, but poorer life quality

Suitable Economic Growth

- Resources -> Should be both used and conserved for future use
 - Demand for Resources -> Should be greater than the potential supply
 - Lack of Preservation Measures -> Resources would eventually perish and no longer exist
- Governments -> Manage growth while simultaneously preserving resources

4.5. Unemployment

Meaning of Unemployment

- Definition -> People of working age who actively seek work, at current wage rate that are unable to do so
 - Important Note -> Considers individuals who are willing and able to work, does not consider inactive individuals
 - Inactive Individuals -> Pensioners, full-time students, children-keepers (housewives)

Measurement of Unemployment

- Unemployment Rate -> Percentage of the working population who are unemployed
- Calculation -> $(\text{Unemployed}) / (\text{Working Pop}) * 100$
- Various Different Methods -> Depend by country

Labour Force Survey v/s Claimant Count

- Labour Survey -> Survey of a sample of households, unemployed are those seeking jobs without having one
 - Purpose -> Used for international comparisons
 - Weaknesses -> Sampling errors, make the calculation not fully accurate
- Claimant Count -> Unemployed are those claiming unemployment benefits; those not eligible or registered are not included
- Sampling -> Proportion of population is used as representative of the whole

Unemployment Measurement Issues

Issue	Explanation
1) Inactive Workers	Individuals that would work if their current situation changed; eg. Parents with young children
2) Discouraged Workers	Individuals that are willing and able to work, but gave up due to not having found a job
3) Part-time Workers	Considered as employed, but in reality are semi-employed
4) Unreported Legal Employment	Individuals that register as unemployed to collect State benefits
5) Unreported Illegal Employment	Individuals that register as unemployed, since they are involved in illegal practices like drugs or prostitution

Causes of Unemployment

1. Classical View -> Argues that unemployment occurs due to the trade or business cycle

- Business Cycle -> The market is capable of fixing it
- Monetarists -> Niche within classical view; argue that external interference produces disequilibrium (AS ≠ AD)
 - Example of Interferences -> Minimum wage

laws, syndicates, corporate tax, unemployment benefits, etc.

2. Keynesian View -> Argues that unemployment occurs due to the cyclical nature of unemployment and lack of AD for goods/services

- Proposed Solution -> Government Intervention to increase demand

Type of Unemployment	Explanation
1) Cyclical // Demand Deficient // General	Unemployment that arises due to the trade cycle, occurring during the downside of the economy (Recession); Classic Keynesian Unemployment -> Suggests that Unemployment originates from a lack of AD in the Economy as a whole
2) Frictional	Unemployment that can not be removed; considers individuals who are transitioning for one job to another that have not yet started their new job
3) Seasonal	Occurs in specific industries of the year; Examples -> Agriculture, Construction, Tourism, etc.
4) Structural	Unemployment that is the result of a permanent fall in demand for products of an industry ; might occur because an industry is running out of resources or is losing its comparative advantage; Main Association -> Labour-intensive firms moving to low-cost countries, due to rising labour costs
5) Technological	Type of Structural Unemployment; workforce is laid off because technology replaces labour

Consequences of Unemployment

1. Opportunity Cost -> Resources are wasted (not used efficiently); loss in the potential output of the economy
2. NAIRU -> Specific level of Unemployment in an Economy; does not increase inflation
3. Hysteresis Effect -> Tendency for Unemployment to lead to longer-term Unemployment

Economic Consequences	Social Consequences
1) Labour Resources Wasted -> Output is below potential, investments in education & training is not capitalized (used)	1) Health -> Loss of income makes it harder to provide medical care, mental health issues, and suicides
2) Fall in Standard of Living -> Less income = less consumption	2) Education -> Children give up their education so as to save money and get introduced into the workforce earlier so as
3) Lower AD -> Less consumption due to employment uncertainty, which leads to firms laying off workers, a vicious cycle, and a deflationary gap	bring income 3) Family -> Pressure and stress may cause divorces and family breakups due to homelessness, higher crime rates, etc.
4) Rise in NAIRU -> Unemployed workers believe their skills are outdated, lose confidence in their skills, and become afraid to work, a hysteresis effect	N/A
5) More Expenditure on Benefits -> Costs of taxpayers rise in order to fund bigger revenue expenditure; national budget deficit	N/A
6) Regional Problems -> Often concentrated in specific areas; younger individuals move away to more attractive regional locations, which depresses the region even more; Main Outcomes -> Older population, lack of innovation & labour, etc.	N/A
7) Income Inequality Widens -> Since more laid-off workers go into relative poverty	N/A

4.6. Price Stability

Inflation

- Definition -> Fall in the value of money, as general price level rises
- Alias -> Low Stable Inflation
 - Good for the Economy -> Eg. Federal Bank (US) aims for 2.0% inflation rate
- Rate > 0 -> Rate at which general level of prices rises over time, in annual rate
- Cost of Living Increases -> Since it becomes more expensive to consume the same goods & services

Hyperinflation

- Definition -> Period of rapid and out of control increases in the general price level
- In Practice -> Inflation rises at a rapid rate
- Great Example -> Germany in the 1920s

Deflation

- Definition -> General price level falls, the value of money rises

- Rate is Smaller than 0 -> Inflation is negative
- Purchasing Power Rises-> Consumers can afford more goods & services for the same amount of money
- Consumption May Fall -> Consumers may wait for even lower prices, assuming that deflation will accentuate further
 - Firms Sense Products Aren't Selling -> Unemployment rises, deflationary gap

Disinflation

- Definition -> Slowing rate of inflation, general price level rises at a slower rate
- Purchasing Power -> Starts falling at a slower rate
- Associated With -> Periods of low inflation, eg. Many countries in 2018-2020

Consumer Price Index (CPI)

- Definition -> Measure of the weighted average prices of a basket of goods & services purchased by households
- Base Year -> Year chosen as the point of reference for a price comparison between other years
- Weightings -> Values given to items in an index, to show their relative importance
 - Items have Different Weighting Values -> Eg. Change in food price has more effect on household expenditure than a change in a cinema ticket
- Calculation -> $(\text{Index for Year 2}) / (\text{Index for Year 1}) * 100$
- Household Expenditure -> Total expenditure by consumers that reside in a country (home or abroad)
- Minus // Excludes -> Expenditure by visitors on goods & services

Development of the CPI

Stage	Explanation
1)Base Year is Determined	The base year is given a value of 100 basis points
2)Items for the Basket of Goods are Selected	Items must be the ones bought by an average family; eg. bread, electricity, etc.
3)Each Item is Given a Weighting	Weighting shows the relative importance of the item within the average family budget
4)New Price Levels are Sourced Across Country	For each item in the basket, general price levels are determined by registering prices across the nation
5)Weighted Price Relative is Calculated	Each item's price is multiplied by its weighting; this determines the importance of the calculation within the broader development of the CPI
6)Sum of Weighted Price Relatives is Divided by the Sum of Weights (Items)	The output of this calculation gives the change in the Price Index

Difficulties in the CPI Measurement

1. Base Year -> Must not have unusual fluctuations in price, since it may mislead the calculations
2. Basket May not be Representative -> Different groups have different basket of goods they consider "essential"
3. Outdated Basket Representation -> Goods & services may not represent expenditure patterns in actuality
 - Eg. Cellphones -> Nowadays cellphones have replaced multiple other goods that were considered essential, such as mail services, telephones and even computers
4. Change in Quality/Type of Good -> Eg. Phones have much more features than 10 years ago
5. Importance of Goods & Services May Change -> Weights will need to be readjusted accordingly
6. Different Measures -> RPI & CPI

Nominal v/s Real Data

- Nominal Data -> Figures are expressed in current prices
 - Aliases -> Money Data, Money Values
 - ~~Equal Money Values~~ Show the money people get, not what they can actually buy
- Real Data -> Figures are adjusted for the change in the value of money (inflation)
 - Eg. Real Wages -> Show what that money can actually buy
 - Example -> If inflation rose 5% and wages rose 6%, real wages just rose 1%

Calculation -> $\text{Real Data} = \text{Wage Rise \%} - \text{Inflation Rise \%}$

Causes of Inflation

- 2 Main Causes of Inflation -> A)Demand-Pull Inflation & B)Cost-Push Inflation
- A)Demand-Pull Inflation -> Increase in the total AD pulls up the general price level
- B)Cost-Push Inflation -> Rise in production costs pushes up the general price level
- Key Tip -> If question asks to discuss something is the only cause, you must mention other causes to reach a conclusion

1)Demand-Pull Inflation

- Definition -> Occurs when total AD exceeds total AS
- Usually Occurs -> Near Full Employment Level
 - Scarcity -> Resources become unable to supply sufficient goods to meet the rising AD
- Price Level is Forced Upwards -> This brings AS and AD back into equilibrium

2)Cost-Push Inflation

- Definition -> Occurs when the cost of supplying goods & services is increased, which rises the cost of final prices

- Different Causes -> The following 3 causes end up raising the costs of production
 1. Rise in Raw Materials' Cost -> Eg. Oil, as it becomes scarcer, its price rises significantly
 2. Powerful Trade Unions -> Worker Associations may exploit firms by pushing up wages in excess of actual productivity gains; raises production costs
 3. Monopolies -> May raise prices indefinitely since there is a lack of competition
 - Producers may Justify Hike in Prices -> By saying they had to rise wages demanded by trade unions
 - **Wage-Price Spiral** -> Rising wages = rising prices = higher wage demands; vicious cycle

Monetarists

- Alternative View Upon Inflation -> They argue the only cause of inflation is the excess in money supply, assuming the velocity of money Gives a strong basis for Quantum Theory of Money ->
- monetarism They defend that both Demand-Pull & Cost-Push Inflation are solely a result of excess money supply
- If Money Supply Hike is Greater than Real Output -> Excess money is "soaked up" by a raise in the general price level (inflation)

Consequences of Inflation

- History of Inflation -> It is completely normal for inflation to occur
- When it Becomes an Issue -> When inflation reaches very high levels

Consequence	Explanation
1) Deflation	Leads to huge world problems; Example -> World Economy in 1920's and 1930'S
2) Income Distribution Issues	Borrowers Gain -> Pay back less interest in terms of the real value for money; Lenders & Savers Lose -> Their money becomes worth less; Fixed Incomes Lose -> Their income can buy less; Trade Union Members -> Can exploit wage increases in excess of actual inflation
3) Labour Market Problems	If Inflation is Greater than 5% -> Workers will demand more than this, so as to maintain their living standard; Employers Face a Fall in Sales -> Due to inflation, so firms won't be willing to pay their wage increase; Potentially Leads to Labour Strikes
4) International Competitiveness	Higher Inflation -> Goods & services become expensive compared to foreign alternatives; AD Falls -> Since Exports become less competitive, and Imports become more attractive (Net Exports fall)
5) Unemployment	Stagflation -> Fall in Sales = More Workers Unemployed; vicious cycle
6) Investment	Inflation Causes Uncertainty -> Firms end up investing less; Lower Future Economic Growth
7) Unanticipated Inflation	The rate of inflation can not be predicted; leads to uncertainty
8) Shoe Leather Costs	If Prices Keep Rising -> Consumers & businesses will waste their time trying to find the cheapest price
9) Menu Costs	Volatile Prices -> Administrative costs for firms rise; eg. Constantly adjusting prices, vending machines, inventory, etc.
10) Fiscal Drag	People Demand Higher Incomes -> As inflation rises; If Tax Brackets Don't Change -> People can get dragged into higher tax bands, thus pay more tax overall

5. Government Macroeconomic Intervention

5.1. Government Policy Objectives

Economic Policy

- Definition -> Attempt made by the Government to generate increases in economic welfare
- After the Great Depression -> Recognition that the Government & Monetary Authorities are responsible to advocate for economic welfare
- Methods -> Controlling Inflation, Unemployment and Economic Growth
- 2 Main Types of Policies -> 1) Demand-Side Policies & 2) Supply-Side Policies

Demand-side Policies

- Definition -> Economic policies that influence the level of Aggregate Demand
- 2 Main Types -> Fiscal Policy & Monetary Policy

Supply-side Policies

- Definition -> Economic policies that influence the level of Aggregate Supply

Macroeconomic Objectives

Objective	Explanation
1) Economic Growth	Must be Sustainable -> Does not exhaust natural resources or cause too much pollution; Increase in Living Standards; High Growth Rates -> May be very good for developing countries; No Excessive Structural/Environmental Difficulties
2) Price Stability	Lack of Rapid Inflation/Deflation; Does NOT Mean 0% -> Governments target steady levels of low-moderate inflation; High Rates Must be Prevented -> Since it results in the following: reluctant investors, menu costs, concerns those on fixed incomes
3) Full Employment -> Those willing and able to have a job can get one	Target -> 0% Cyclical Unemployment; Natural Rate of Unemployment -> Some seasonal, frictional and structural unemployment are acceptable & inevitable in the economy
4) Equilibrium in the Balance of Payments	In the Long-Run -> Value of Exports = Value of Imports**; In Any Given Year -> ** Country may run a deficit/surplus; not an issue unless it persists in the long run
5) Income & Wealth Inequality -> Addresses the distribution of income/wealth of a nation	Fair Distribution -> Subjective, not a matter of simply deciding on a fixed number; If Small Group has Very Large Proportion -> Could lead to social unrest and dissatisfaction with the Government

5.2. Fiscal Policy

Government Budget

- Definition -> Annual financial statement showing the estimates of expected revenue and spending during a fiscal year
- Budget Deficit -> Government Spending is greater than Tax Revenue
 - Cyclical Deficit -> Due to slowdown/recession in the Economy
 - Structural Deficit -> Consistently spending more than tax revenue; fiscally irresponsible Government
- Budget Surplus -> Government Spending is smaller than Tax Revenue

National Debt

- Definition -> Amount of money Government owes both domestically and abroad, which has accumulated over the years
- In Other Words -> The accumulation of a nation's budget deficit over time
- Government ends up Needing to Raise Extra Finance -> Printing more money, or by borrowing even more money
 - Printing Money -> Reduces its actual value in the greater scheme/term, leading to inflation
 - Further Borrowing -> Either short or long term, and domestic or foreign sources
- Main Takeaway -> Either method increases the National Debt
- Main Issue -> When large proportion is owed abroad, or it looks as if it can't be paid
- Domestic Debt -> Paid back to those with government bills through tax revenue
- National Debt is NOT the Same -> National debt is internal, while BOP is external

Automatic Stabilisers

- Definition -> Mechanisms built into Government's Budgets in order to stimulate AD when economy requires a boost
- When AD's Situation Improves -> These stabilisers automatically turn off
- Recession -> Ease financial stress by decreasing tax bills, or giving away State benefits
 - Without changes in the tax code or legislation
- Limit the Impact of Changes in the Economic Cycle -> Recession, Expansion

Reasons for Taxation

Reason	Explanation
1) Raise Revenue for Government Spending	Taxation is used along other methods simultaneously
2) Manage Aggregate Demand	Taxation is one of various methods to meet the Government's economic objectives
3) Alter Distribution of Income & Wealth	Income tax's aim is to take money from the better off and give it to the poorer
4) Manage Market Failure or Environmental Issues	Taxation is one way in which market failures can be reduced/minimised

Main Types of Taxes

Type of Tax	Definition	Examples
Direct Tax	Tax levied directly on incomes & wealth, individuals or firms	Income Tax, Corporation Tax, Inheritance Tax, etc
Indirect Tax	Levied when goods & services are bought, taxes on expenditure	Value Added Tax (VAT), Goods & Services Tax (GST)

- Excise Duty // Specific Tax -> Amount charged, Ad Valorem
Tax = % Rate of the Basket

1) Progressive Tax

- Definition -> Proportion of income paid in tax increases as income increases
- Marginal Rate of Tax Increases
- Great Eg. -> Income Tax; richer people spend a greater proportion of their income in income taxes

2) Regressive Tax

- Definition -> Proportion of income paid in tax falls as income increases
- Marginal Rate of Tax Decreases
- Great Eg. -> IVA, VAT, GST; poorer people spend a greater proportion of their income in consumption taxes

3) Proportional Tax

- Definition -> Same proportion of income is paid in tax, independent of the level of income
- Marginal Rate of Tax = Average Rate of Tax
- Average Rate of Tax -> Average percentage of total income that is paid in taxes
- Great Eg. -> Corporation Tax

Rates of Tax

- A) Average Rate of Tax
 - Alias -> "Effective Rate of Tax"; "Average Propensity to Pay Tax"
 - Calculation -> $ART = \frac{\text{Total Tax Due}}{\text{Total Taxable Income}}$
- B) Marginal Rate of Tax
 - Alias -> "Proportion of Increase in Income which is Taken in Tax"
 - Calculation -> $MRT = \frac{\text{Change in Tax Due}}{\text{Total Taxable Income}}$
- MRT is Greater Than ART as Income Increases -> In progressive tax systems

Government Spending

- A) Capital Expenditure
 - Definition -> Spending by the Government on goods & services intended to create future benefits
 - Alias -> Government Investment; Gross Capital Formation
 - Infrastructure -> Roads, buildings, etc.
 - Health & Education -> New hospitals, Schools or Sewage
 - Systems defence, Space or Vaccinations
 - Research/Innovation -> D

- B) Current Expenditure
 - Definition -> Government Consumption spending on goods & services for current use to directly satisfy the needs of members of the community
- Examples -> Wages of Public Sector's Workforce, Road Maintenance, etc.

Reasons for Government Spending

Explanation Reason	
Public goods (eg. Defence), Merit goods (eg. hospitals) and Transfer Payments (eg. Benefits)	Private Sector Would Fail to Do
2) Achieve Supply-Side Improvements in Macroeconomy	Spending on Education = Labour Productivity
3) Reduce Negative Externalities Effects	Eg. Pollution
4) Subsidise Industries in Need of Financial Support	Eg. Agriculture
5) Redistribute Income	Thus achieve more equity
6) Inject Extra Spending into Macroeconomy	Help increase Aggregate Demand and Economic Activity

Types of Fiscal Policies

- Definition -> Use of Government Revenue and expenditure to control the economy, including Government borrowing
- Purpose -> Influence the level of AD within the economy
- Fall in Tax -> AD rises since consumers can spend more + firms have more disposable (net) revenue to invest into business
- Government Expenditure -> Defence, Social Services, Infrastructure and Education
 - Financed through Taxes
- Important Note -> Fiscal Policies may be used as a means of Supply-Side measures
- Discretionary Policy -> Actions taken in response of economic events
 - Extreme Measures -> In order to offset the complex economic scenario

Feature Being Assessed	Expansionary // Reflationary Fiscal Policy	Contractionary // Deflationary Fiscal Policy
Definition	Use of fiscal policy to enable the economy to grow, increase the level of AD	Use of fiscal policy to reduce the size of the economy, decrease in the level of AD
Methods	Cut in Taxes, Increase in Government Spending; Main Outcome -> C rises, I rises, G rises Falls	Rise in Taxes, Decrease in Government Spending; Main Outcome -> C falls, I falls, G falls Rises
Unemployment	Rises, since Price Level increases	Fall, since Price Level decreases
Inflation		
Balance of Payments	Possible Deficit	N/A
National Budget	Results in Deficit Generally	Results in Surplus, as Government Revenue is increased

AD/AS Analysis of the Impact of Fiscal Policy

A) Expansionary // Reflationary Fiscal Policy

- Long Run
- Expansionary Causes
 - Fall in Taxes
 - Rise in Government Spending
- Expansionary Effects
 - AD Rises -> AD -> AD1
 - National Income Rises -> $PL*Y \rightarrow PL1Y1$
 - Real GDP Rises -> $Y^* \rightarrow Y1$
 - $Y^* \rightarrow Y1$
 - Unemployment Falls -> $P^* \rightarrow P1$
 - Price Level Rises -> $P^* \rightarrow P1$

Short Run

B) Contractionary // Deflationary Fiscal Policy

- Long Run
- Contractionary Causes
 - Rise in Taxes
 - Fall in Government Spending
- Contractionary Effects
 - AD Falls -> AD -> AD1
 - National Income Falls -> $PL*Y \rightarrow PL1Y1$
 - Real GDP Falls -> $Y^* \rightarrow Y1$
 - Unemployment Rises -> $Y^* \rightarrow Y1$
 - Price Level Falls -> $P^* \rightarrow P1$

Short Run

5.3. Monetary Policy

Monetary Policy

- Definition -> Central Bank's use of interest rates, money supply and exchange rates to control the economy

- Type of Demand-Side Policy
- Instruments // Methods
 1. Controlling Interest Rates
 2. Targeting the Money Supply
 3. Maintaining the Exchange Rate
- Central Bank
 - Definition -> Public institution that manages the currency of a country (or countries), controls the money supply and monetary policy
- Purpose -> Price Stability; some are required to enhance full employment

1) Interest Rates

- Definition -> Cost of borrowing money, and reward on lending/saving money
- Interest Rate Policy -> Use of interest rates to influence AD, through consumers and businesses
- Other Banks -> Set their rates according the Central Bank's base rate
 - Purpose -> Ensure targeted inflation rate and liquidity in the economy

Type of Interest Rate Policy	Interest Rates	Cost of Borrowing	Savings	Spending v/s Saving
Expansionary	Lower Rates; Main Outcome: rises, I rises, AD rises	Lower, hence people can borrow more money	Discouraged, since reward for saving is lower	Spending greater than Saving
Contractionary	Higher Rates; Main Outcome: falls, I falls, AD falls	Higher, hence people borrow less money	Encouraged, since reward for saving is higher	Spending is smaller than Saving

2) Money Supply

- Definition -> Total amount of money circulating in an economy at a given time
 - Considers: Coins, Notes, Deposits, Current Accounts, etc.
- Controlling Supply -> Very complex, hence this method has been mostly replaced by managing interest rates; yet it's still relevant and applicable
- Quantitative Easing -> Central Bank prints money to buy paper assets in order to increase money supply

Effect on Money Supply	Money to Lend	Interest Rates	Consumption & Investment	AD Curve
Increased Money Supply	More money to lend	Falls, since the value of lending is lesser	Both rise	Rises
Decreased Money Supply	Less money to lend	Rises, since the value of lending is greater	Both fall	Falls

Credit Regulations

- Definition -> Use of qualitative control measures by the Central Bank to regulate the consumer credit on certain products
 - Certain Products -> Mainly the ones affected by inflation or deflation
- Inflation -> Central Bank aims to make borrowing and spending harder
 - Main Outcome -> Price Level Falls = Stability
- Deflation -> Central Bank aims to make borrowing and spending easier
 - Main Outcome -> Price Level Rises = Stability

3) Exchange Rates

- Definition -> Cost of domestic currency in relation to other currencies
- Higher Interest Rates -> Domestic currency appreciates in value
 - AD Falls -> Net Exports fall, since exports become more expensive abroad and imports become cheaper
- Attracts Foreign Depositors -> Increases the demand for the domestic currency (hot money flows)

Type of Monetary Policy	Effect on Exchange Rates	Net Exports	AD Curve
Contractionary	Appreciation of Currency	Fall, exports become less competitive abroad	Falls
Expansionary	Depreciation of Currency	Rise, exports become cheaper abroad	Rises

AD/AS Analytics of the Impact of Fiscal Policy

- A) Expansionary // Reflationary Monetary Policy:
 - Definition -> Policy aimed at increasing the level of aggregate demand within the economy
 - Method -> Focuses to expand the money supply within the economy
 1. Decreasing Interest Rates -> C and I rise
 2. Increasing Money Supply -> C rises
 3. Decreasing Exchange Rate -> X rises
 - Acceptable Tradeoff -> Inflation rises
 - Long Run
 - Expansionary Effects
 - AD Rises -> AD -> AD1
 - National Income Rises -> $PL*Y \rightarrow PL1Y1$
 - Real GDP Rises -> $Y^* \rightarrow Y1$
 - Unemployment Falls -> $Y^* \rightarrow Y1$
 - Price Level Rises -> $P^* \rightarrow P1$
 - Short Run
- B) Contractionary // Deflationary Monetary Policy
 - Definition -> Policy aimed at decreasing the level of aggregate demand within the economy
 - Method -> Focuses on decreasing the money supply within the economy
 1. Increasing Interest Rates -> C and I fall
 2. Decreasing Money Supply -> C falls
 3. Increasing Exchange Rate -> X falls
 - Purpose -> Cool off the economy and reduce inflationary pressures
 - Long Run
 - Contractionary Effects
 - AD Falls -> AD -> AD1
 - National Income Falls -> $PL*Y \rightarrow PL1Y1$
 - Real GDP Falls -> $Y^* \rightarrow Y1$
 - Unemployment Rises -> $Y^* \rightarrow Y1$
 - Price Level Falls -> $P^* \rightarrow P1$
 - Short Run

5.4. Supply-Side Policy

Supply-Side Policy

- Definition -> Policy that helps to improve a country's productive potential of the economy
- Purpose -> Shift the Long-Run Aggregate Supply Curve (LRAS) to the right
- Method -> Increasing the quantity or quality of the FOPS

- Effects on Macroeconomy
 1. Economic Growth -> Real GDP rises
 2. Unemployment -> Falls
 3. Price Level -> Falls
- Important Note -> There is a notable time-lag in the effect of Supply-Side policies on LRAS

Objectives of Supply-Side Policy

- Purpose -> Improving productivity and productive capacity of the economy
- Microeconomic Measures -> That influence the Macroeconomy
- Productivity -> Quantity of goods & services produced per unit of input
 - Increasing Productivity -> Real output can rise without an increase in the price level
- Productive Capacity Increase -> Potential output of the economy has increased
 - Shifting LRAS Outwards = PPC Outwards -> Supply-side policies' effect can be shown in either PPCs or LRAS graphs

Tools of Supply-Side Policy

1. Labour Market Measures
2. Product-Market Measures

1) Labour Market Measures

- Definition -> Policies that involve increasing Government intervention in the development of the FOPS
- Alias -> Interventionist Supply-Side Policy
- A) Pressuring Trade Unions -> Enhance working of the labour market
 - Improves worker's human capital,
- B) Education & Training -> Improves worker's human capital
- C) Tax and Benefits -> Improves productivity
 - Lower tax rates encourage people to work, so does lowering unemployment benefits
 - Lower Corporate Tax -> Encourages firms to try and be more efficient, since they can keep more of their profits

2) Product-Market Measures

- Definition -> Policies that involve decreasing Government intervention or involvement in markets
- Alias -> Market-led Supply-Side Policy
- A) Privatisation & Deregulation -> Introduce competition into market, thus improving efficiency and productivity
- B) Investment in Technology -> Productivity and Efficiency would improve
 - Financing -> Done through grants or through the tax system
 - Main Outcome -> Encourages a more entrepreneurial culture

- C) Reduction in Red Tape -> Allows businesses to establish themselves, or to make changes

Shifting the PPC Outwards

- Main Factors
 - Immigration
 - Deregulation
 - Labour Market Participation
 - Innovation
 - Investment
 - Productivity Gains
 - Education

AD/AS Analysis of the Impact of Supply-Side Policy

- Determinants of the Outcome of Supply-Side Policy
 1. Shape of the AS Curve
 2. Whether other Policies are Considered
 3. If AD is also Changing
- Eg. Better Education
 - AS Curve Rises -> AS -> AS1
 - Equilibrium National Income -> Rises
 - Real GDP Rises -> Y -> Y1
 - Unemployment Falls -> P -> P1
 - Price Level Falls -> P -> P1

Interaction Between Changes in AS & AS

- Original Equilibrium -> PY, AD = AS
- If AD Rises to AD1 -> NNI, Real GDP and Employment all rise to Y1; Price Level rises to P1
- AS Rises to AS 1 Simultaneously -> This further reinforces the rise in output
 - Price Level -> Returns back to P (original stability)

Evaluating Supply-Side Policy

- Interventionist Policies -> May increase aggregate demand, due to an increase in Government Expenditure
- Other Policies -> May have harmful effects on consumers, workers and the environment
 - Environmental Deregulation -> Leads to negative externalities to society

- Supply-Side Policies -> Usually effective at shifting LRAS
 - Main Downside -> They may take years in order to show their results

6. International Economic Issues

6.1. Terms of Trade

Absolute v/s Comparative Advantage

- A) Absolute Advantage -> Ability to produce more of a product than another country, with the same amount of resources
- B) Comparative Advantage -> Ability to produce a product at a lower opportunity cost than another country (in comparison)
- International Trade -> Makes it possible for all countries to benefit from other countries' comparative advantages
 - Even when one of the countries is more efficient at producing all products

Benefits of Specialization // Free Trade

- Example Scenario) Japan v/s Sweden
- Main Assumption -> Assume that only one person is available, and shares its time equally between cars and toys

	Cars	Toys
Sweden	2	8
Japan		

Analysis

- Terms of Trade -> 1:4 (Sweden) and 4:1 (Japan)
- Sweden -> AA in toys
- Japan -> AA in cars
- To Increase Total Output -> Both countries should

After Specialization

	Cars	Toys
Sweden	0	16
Japan	16	0

- Both Countries can Trade -> As long as they stay within their terms of trade (1:4, 4:1)
- Possible Exchange Rate -> 1:1
 - Sweden -> Gives up 6 toys
 - Japan -> Gives up 6 cars

After Free Trade

	Cars	Toys
Sweden	6	10
Japan	10	6

- Overall Benefit
 - Sweden -> Gained 2 toys, 4 cars
 - Japan -> Gained 4 toys, 2 cars
- Main Outcome of Specialisation + Free Trade -> Both countries have more from each good than previously

Terms of Trade

- Definition -> Ratio of a country's export prices to import prices
- Exports -> Sale of goods & services abroad
- Imports -> Purchase of goods & services from abroad
- Terms of Trade = $\frac{\text{Index of Export Prices}}{\text{Index of Import Prices}} \times 100$
 - Rise in Index = Improvement in the Terms of Trade -> More imports can be purchased with the given amount of exports
 - Fall in Index = Deterioration in the Terms of Trade -> Less imports can be purchased with the given amount of exports

Free Trade Benefits

1) Lower Overall Price
2) Greater Choice of Goods for Consumers
3) Firms benefit from Economies of Scale
4) Increased Exports
5) Specialisation -> Countries gain an increase in economic welfare

Causes of Changes in Terms of Trade

Cause	Explanation
1) Globalisation	Expansion of world trade in goods & services + capital flow, leading to international interdependence
2) Economic Development	Increased demand for raw materials may push up prices, improving the terms of trade of primarily exporting countries (eg. Canada or South Africa)
3) Price Elasticity of Demand	If Inelasticity of Exports is greater than Imports' -> Terms of trade will improve, since export prices can be increased further than import prices
4) Economic Development	Import Demand Increases -> Terms of trade worsen; Terms of Trade Improve, More Substitutes for Exports -> Terms of trade improve
5) Exchange Rate	Depreciation or Devaluation -> Terms of trade worsen; export prices have fallen, import prices have risen (relative to the domestic currency)
6) Protectionist Measures	Eg. Tariffs -> When these measures are taken, import prices are likely to fall, overall improvement in the terms of trade
7) Population Growth	More Goods are Demanded -> Therefore import demand rises, overall worsening in the terms of trade
8) Competition	Monopoly in a Good's Production -> It can raise the good's national price, overall improvement in the terms of trade
9) Globalisation	Competition Rises -> Either lowers the prices of country's exports, or improves other country's export availability Exporting Countries -> Terms of Trade Worsen Importing Countries -> Terms of Trade Improve

Impact of Changes in Terms of Trade

- Main Factor -> Depends on the PED of imports and exports

Effect	Explanation
1) Trade Balance	If Terms of Trade Improve, but both PEDs are Elastic -> Overall worsening of trade balance + possible unemployment, since total export income falls and total import spending rises If Terms of Trade Improve, but both PEDs are Inelastic -> Overall improvement of trade balance, since total export income rises and total import spending falls
2) Developing Countries	Usually Dependent on Raw Material Exports -> Fall in their export prices significantly deteriorate their terms of trade; Standard of Living Falls -> Earn less from same volume of exports, cannot afford to import as much Important Note -> The opposite holds true; improvement in terms of trade is likely to improve its standards of living
3) Price Competitiveness	If Terms of Trade Improve -> Export prices increase more than import prices; fall in competitiveness and export demand; damages the BOP Export PED -> Determines how much export demand falls If Terms of Trade Worsen -> Rise in competitiveness and export demand; benefits the BOP

6.2. Protectionism

Protectionism

- Definition -> Action designed to reduce international trade
- Main Reason -> Countries fear that without trade barriers, domestic industries may not be able to compete with foreign imports
- Opposite -> Free Trade

1) Tariff

- Definition -> Tax/Duty on a particular product as it is being imported
- Either Specific or Ad Valorem
- Purpose -> Shift good's supply curve to the left
 - Main Outcome -> Import's Competitiveness falls, Price rises, Quantity Demanded Falls
 - Extent of Fall in Qd -> Depends on the Import's PED
- Domestic Industry -> Sees its competitiveness increased, hence its own production sales rise
- Main Drawback -> Consumer welfare is reduced

2) Import Quota

- Definition -> Legal limit on the quantity of the good that can be imported to a country
- Eg. USA -> Quota on sugar imports
- Licences -> Are given to firms allowing them to import up to a set limit
- Consumer Welfare Loss -> Greater loss than tariffs, since no tax revenue is generated

3)Export Subsidy

- Definition -> Money given to an exporter, so that the price of a good can be reduced, thus more competitive internationally
- Increases Sales -> Output and Employment Increase
- Drawback -> May increase inefficient allocation of resources
 - Government -> Could have used the money to focus on goods with potential comparative advantage
- Main Effect -> Long-term economic growth may be reduced

4)Embargoes

- Definition -> Complete ban on products from a particular country
- Political Reasons -> Embargoes are usually the result of disputes between nations or during times of war
- Placed on Dangerous/Harmful Products -> Eg. Drugs
- Longest Standing Embargo -> USA on foreign trade with Cuba

5)Excessive Administrative Burdens // Red Tape

- Definition -> Excessive "red tape" imposed on importers, in order to make importing more difficult
- Purpose -> Limit the quantity of imports of particular products into a country
- Types of Red Tape -> Establishing Health/Production Standards, Detailed Documentation, Scarce Set Entry Points, Multiple Procedures and Tedious Documentation Processes
- Main Outcome -> Benefits domestic producers but consumer welfare is reduced (due to sharper scarcity of imported available options)

Arguments for v/s Against Protectionism

1)Infant Industry
2)Unfair Competition
3)Unemployment
4)Sunset Industries
5)Dumping

1)Infant Industry

- Definition -> Industry expected to have a comparative advantage, yet small and unable to compete with foreign established industries at the moment
- Protectionism -> Enables infant industry to establish its comparative advantage and compete in its own right
 - Short Run -> Higher Prices
 - Long Run -> Lower Prices in the Future
- Issues -> Accurately identifying infant/sunrise industries is uncertain and subjective, and deciding when they are able to compete without protection gives rise to discussion

- Diversification -> High dependence in production of single good (1ry material) leads to instability
- Protectionism Allows Development of New Industries -> This reduces monoprodut dependence (especially of developing countries)
- Developing Countries -> Embrace this argument to justify their trade barriers
- Sunrise Industry -> New industries rapidly growing that are believed to have potential to be a market leader in the future
 - Important Note -> The same arguments from Infant Industries apply to Sunrise Industries

2)Unfair Competition

- Countries May Have Vast Supplies of Low Cost Labour -> Eg. China and India can sell at prices with industrial countries can not compete with
- Compelling Argument for Protectionism -> If exploitation of labour can be proved
- Not Justifiable -> Comparative Advantage theory explains how countries benefit when opportunity costs differ
- Industrial Nation's Should NOT Attempt to Compete -> Rather, they should specialise in products they do have CA on
- Retaliation -> Country employs restrictions on trade in order to retaliate against other country's protectionist measures
 - Not Justifiable -> As retaliation usually leads to a significant fall in world trade and welfare globally

3)Unemployment

- Protecting Home Industries -> Increases competitiveness of national industries, preserving the employment in the country
 - Argument Used Alongside Infant/Sunrise Industry Arguments
 - Major Flaw -> One must realise why home industries couldn't compete in the 1st place
 - Higher Costs than Overseas = Lack of Comparative Advantage -> This means nation should instead compete in markets where they do have CA
- Other Methods for Solving Unemployment -> Monetary, Fiscal and Supply-Side Policies

4)Sunset Industries

- Definition -> Industries that have lost their comparative advantage; usually industries that established themselves long ago and that demonstrate a decline in productivity and fruition
- FOPS are Immobile -> This supposedly justifies that sunset industries can not shift to expanding industries (thus why protectionism could theoretically be justified)

- Temporary Protection -> Justified, to enable FOPS to migrate + prevent structural unemployment
- Long-Term Protection -> Not justified, since it sharpens inefficiency + reduces consumer welfare

5) Dumping

- Definition -> Sale of good in foreign market at a price below its marginal cost of production
 - Sold Below the Marginal Price -> Sold at a price that domestic producers can not compete at marginally
- Persistent Dumping -> May continue indefinitely since exporting firm could be a monopoly
- Difficult to Justify Protectionism -> Exporting country has CA in good's production
 - Importing Country -> Receives lower prices + welfare gains
- Predatory Dumping -> Intention of destroying foreign competition, involving predatory pricing
 - Importing Country -> Experiences temporary benefits, but is later affected; domestic industry is destroyed + loss of competition, overseas monopoly may form
- Protectionism -> Only rationally justified in cases of predatory dumping

6.3. Balance of Payments

Current Account

- Definition -> Record of transactions in terms of trade in goods, services and primary & secondary income
- Trade in Goods -> Export and import of goods
 - Alias -> Visible Trade
- Trade in Services -> Export and import of services
 - Alias -> Invisible Trade
- Primary Income -> Income from interest, profits, dividends from foreign investment + payments from people living overseas
- Secondary Income -> Transfer of money that is not an investment, without receiving anything in return, Eg. Donations, overseas aid, military grants, etc.
- Surplus -> Payments received greater than payments made by the country
- Deficit -> Payments received smaller than payments made by country
- Balance of Trade -> Visible + Invisible Balance

Calculating the Balance of the Current Account

- Balance of the CA -> Difference between money flowing in and money flowing out
 - Components -> Trade in goods & services and 1ry and 2ry income
- Imbalance in the CA -> Either a deficit (negative figure) or a surplus (positive figure)

- Example -> Trade in Goods = 373,149 credits + 504,029 debits = -130,880 deficit imbalance of trade in goods
- Balance of Trade in Goods & Services -> Trade in Goods Balance + Trade in Services balance

UK Current Account Balance of Payments

	Credits	Debits	Balance
Trade in Goods	373,149	504,029	-130,880
Trade in Services	317,674	217,296	100,378
Balance of Trade	690,823	721,325	-30,502
Primary Income	207,497	244,810	-37,313
Secondary Income	18,040	45,535	-27,495
Total Current Account	916,360	1,011,670	-95,310

Financial Account

- Definition -> Record of the movement of money in the form of investments by residents of a country and inward flow of investment
- Net Portfolio Investment -> Shares/stocks, Government/Corporate bonds and derivatives
- Net Foreign Investment -> E.g. Huawei opens research facility in the UK
- Reserve Assets -> Holdings of foreign currencies

Capital Account

- Definition -> Capital transfers, including transfer of ownership of fixed assets or non-financial assets
- Examples -> Cash grants, patents, copyrights

Balancing Item

- Definition -> Difference between the current account and the capital and financial accounts
- Purpose -> Address errors and illustrate statistics

Causes of Imbalances in the Current Account

Deficit	Surplus
Limited Domestic Production -> Country relies on imports	Excellent Reputation in Production -> Export demand increases
Higher Standards of Living -> Demand for a broader range of goods, imports rise	
Unfavourable Terms of Trade -> Country believes they must export more and more to maintain export revenue, developing countries particularly	
Lack of Competitiveness -> Overvalued currency and/or greater rate of inflation, exports fall, imports rise	
Economic Growth -> Requires import of capital goods = persistent deficit, consumers become better off, thus why they demand more imports	
Inflation Faster than Competitors -> Exports become less competitive than imports, results in trade deficit; may lead to a depreciation to offset this	
Lack of Confidence in an Economy -> Due to factors such as persistent deficits or large rises in Government deficit, investors may fear political change or lack of a stable Government	
Trading Partners with Negative Economic Growth -> Buy less of its exports; the opposite happens when there is rapid growth	

Consequences of Imbalances in the Current Account

Effects on Domestic Economy	Effects on External Economy
Need to Tighten Fiscal & Monetary Policies → Reduce domestic demand + introduce supply-side policies, improve productive capability.	Governments Under Pressure → To introduce/increase protectionist measures
Less Access to Imported Goods → As protectionist policies are imposed	Devaluation of the Exchange Rate → Higher import prices and lower export prices; Important Note → Effectiveness depends on Marshall-Lerner and J-Curve, may lead to further loss of confidence
Fall in Foreign Investment → Sine confidence declines, less economic growth + higher unemployment	

6.4. Exchange Rates

Exchange Rates

- Definition: Price of one currency expressed in terms of another currency or against a basket of other currencies
- 3 Types of Exchange Rate Systems: Floating, Fixed, and Managed-Float

- Appreciation: When a floating exchange rate increases in value compared to another currency
- Depreciation: When a floating exchange rate decreases in value compared to another currency

Floating Exchange Rate

- Definition: a country's currency's value is determined solely by supply and demand market forces.

Causes of Changes in a Floating Exchange Rate

Cause	Explanation
Balance of Payments Disequilibrium	**Countries with Deficit -> **End up supplying more of their currency, leads to depreciation; ** \n **Eventually -> Foreign money will start to leave to offset its loss in value, again increasing the supply of currency
High Inflation	**Country with Rate Higher than Others -> **Loss in confidence of its currency; ** \n **People Sell the Currency -> Its supply increases on the market, leading to depreciation
Interest Rates	**International Money -> Seeks the highest return; \n **If Country Raises its Interest Rate -> **Attracts inflows of money from foreign investors; \n **Appreciation -> Since foreign investors will need to buy the currency to deposit in domestic institutions
Speculation -> When one or more people gamble on a currency rising (by buying) or falling (by selling), a floating exchange rate increases in value	Aim to Make a Profit: By buying it back at a lower price or selling it at a higher price

Impact of Changes in a Floating Exchange Rate

Price Elasticity of Demand for Exports & Imports:

- Determine the impact of exchange rates and Marshall Lerner's condition

Effect Considered	Net Exports	AD Curve	Price Level	Actual Output (GDP)	Unemployment
Appreciation	Fall: Imports rise since cheaper, Exports fall since more expensive	Falls, since Net Exports decrease	Falls, P1 -> P2	Falls, Y1 -> Y2	Rises, Y1 -> Y2
Depreciation	Rise; Imports fall since more expensive, Exports rise since cheaper	Rises, since Net Exports increase	Rises, P2 -> P1	Rises, Y2 -> Y1	Falls, Y2 -> Y1

Appreciation Impact on the Economy

Depreciation Impact on the Economy

Trade Weighted Exchange Rate

- Definition -> Weighted average of exchange rates of the domestic currency against foreign currency
- Weight for Each Country -> Set by its proportion in trade with the domestic country

E.g. Country X Trades with USA and Japan

- 90% of Trade -> USA
 - 10% of Trade -> Japan
 - Base Trade-Weighted Exchange Rate -> 100
 - Country X's Currency -> Rises 10% against USD\$
 - Country X's Currency -> Also rises 50% against Yen
 - Value of X's Trade-Weighted Exchange Rate Index -> 114
 - USD -> $(100 * 0.9) * 1.1 = 99$
 - Japan -> $(100 * 0.1) * 1.5 = 15$
- Trade-Weighted Exchange Rate -> $99 + 15 = 114$

Fixed Exchange Rates

- Definition -> Government fixes the value of its currency to another currency, a basket of currencies, or a commodity, e.g. Gold.
- Revaluation -> Government intervenes to increase the value of its currency
- Devaluation -> Government intervenes to decrease the value of its currency

6.5. Policies to Correct Imbalances in the Current Account of the Balance of Payments

Government Policy Objective

- Stability of the Current Account

Ideal Situation

- CA in Equilibrium -> Inflows of Money = Outflows of Money
- In Reality -> Governments attempt to keep a steady level of imbalance

Persistent Deficit

- Main Issue -> Country could face severe economic problems
- Exchange Rate -> Depreciates with time, purchasing power of domestic currency worsens abroad
- Inability to Pay International Debts -> May lead to extreme bankruptcy in some circumstances

Persistent Surplus

- Main Issue -> Produces difficulties for trading partners
 - Especially if it's a Member of Monetary Union -> They are unable to depreciate their exchange rate to offset the trade surplus
- Eg. Eurozone -> Faced this issue with Germany being in surplus, while Greece was in debt (both at the same period of time)

Effect of Policies on the Current Account

Type of Policy	Effects
1) Fiscal Policy	Expansionary -> Current Account Improves: since net exports rise Contractionary -> Current Account Worsens: since net exports fall
2) Monetary Policy	Higher Interest Rates -> "Hot Money" may appreciate the currency; Current Account Improves; Lower Interest Rates -> Imports rise; Current Account Worsens
3) Supply-Side Policy	Promotion of Research & Development -> Intends to create better/new products to gain competitive advantage; Current Account Improves Improvement in Education & Training -> Improves skills of workforce, quality of graduates improves; takes time, no guarantee that skills will benefit the Current Account
4) Protectionist Policy	Tariffs, Quotas, Etc. -> Domestic goods replace imports; Current Account Improves; Excessive Administrative Burdens // Red Tape -> Imports more difficult due to multiple barriers of entry; leads to Retaliation



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