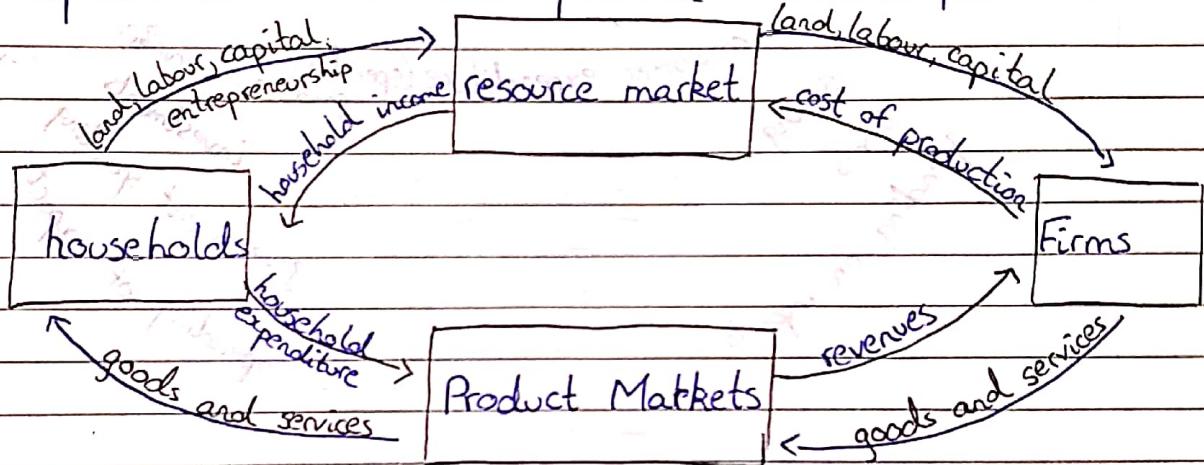


- Economic Activity

- The circular flow of income model
- It shows that in any given time period, the value of output produced in an economy is equal to the total income generated in producing that output, which is equal to the expenditures made to purchase that output.



Circular flow of income model in a closed economy.

• Le leakages and Injections

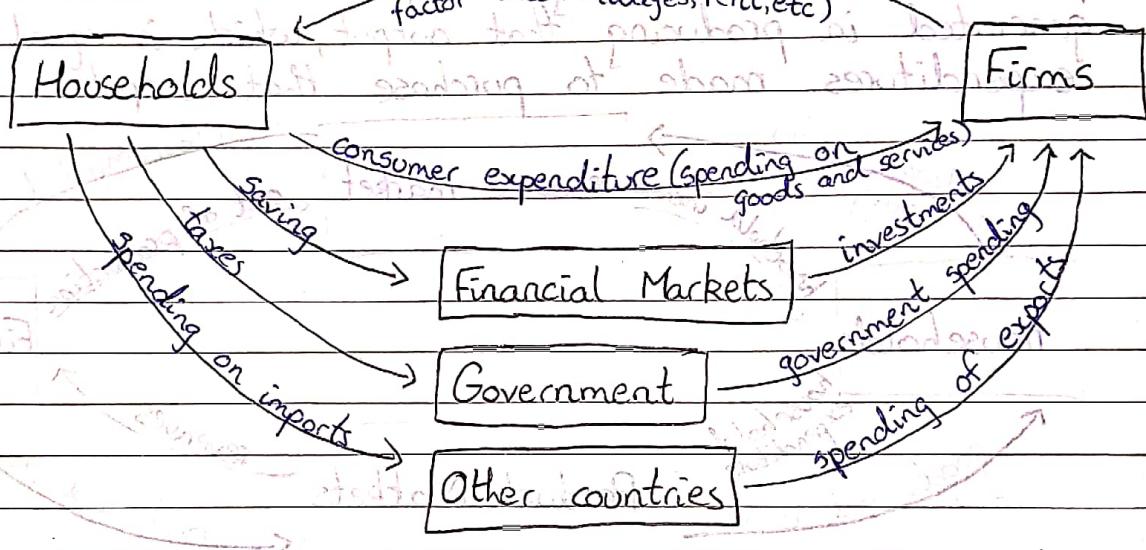
→ Savings - when consumers save a part of their income, this represents leakage, because it is the income that is not spent to buy goods and services.

- Savings are placed in financial markets. Thus savings are leakage from flow of consumer expenditures, and after passing through financial markets it is injected back into expenditure flow as investments.

→ Taxes - Households pay taxes; this is also a leakage as the income is not spent on goods and services. The government uses this funds to finance government expenditures.

Eg:- health, defence, education, etc.

↳ Imports - As the payments of goods and services of imported goods are taken by other countries. Exports are injection as the spending of foreigners who buy this good are injected in the market.



↳ Circular flow of income model with leakages and injections.

IF

Injections < Leakages → the income flow becomes smaller.

Injections > Leakages → the income flow becomes larger.

Eg: If larger leakage than injection. Suppose more is saved than investment. Thus part of household income doesn't come back into the flow. As a result fewer goods and services purchased, thus firms cut back on their output, buy fewer factors of production, unemployment increases and household income is reduced.

- Measures of Economic Activity

The output of an economy is referred to as 'aggregate output'

It is useful because this allows us to:

- assess an economy's performance over time.
- make comparisons with other countries.
- establish a basis for making policies that will meet economic objectives.

Three ways to measure the value of aggregate output.

The expenditure approach adds up all spending to buy final goods and services produced within a country over a time period.

The income approach adds up all income earned by the factors of production that produce all goods and services within a country over a period of time.

The output approach calculates the value of all final goods and services produced in a country over a time period.

Expenditure Approach	Income Approach	Output Approach
Final Expenditure	Factor Income	Final Output
GDP = C + I + G + X	GDP = Wages + Rent + Interest + Profit	GDP = Y
Final Expenditure + Factor Income = Final Output	Final Output = Final Expenditure + Factor Income	Final Output = Final Expenditure + Factor Income
$GDP = C + I + G + X$	$GDP = Wages + Rent + Interest + Profit$	$GDP = Y$

The Expenditure approach

$$GDP = C + I + G + (X - M)$$

C - consumer expenditure by households

I - investment undertaken by firms, government

G - government spending

$(X - M)$ - net exports - may be positive or negative

- ↳ imports (domestic spending on foreign goods)
- ↳ exports (foreign spending on domestic goods)

Domestic product - value added by firms in a country

National product - value added by "nationals" of a country - whether residing in home country or abroad

Domestic Product in home country Net Product

Gross	Net	Gross	Net
GDP	NDP	GNP	NNP/NNI
\swarrow	\searrow	\swarrow	\searrow
GDP_{MP}	GDP_{FC}	NDP_{MP}	NDP_{FC}

Gross \rightarrow Net

= Gross - depreciation

Net \rightarrow Gross

= Net + depreciation

$$NDP = GDP - \text{depreciation}$$

- Domestic product $\xrightarrow{\text{NFI}}$ Net product
- $\text{NFI} = \text{net factor income}$
- ↳ what we pay to foreigners minus income received by national factor institutions
- Market price - price at which good is sold in the market.
- Factor cost - cost for factors of production
- $\text{Net indirect taxes} = \text{factor cost} + \text{subsidy/tax on factor}$
- $\text{Factor cost} + \text{NIT} = \text{market price}$
- $\text{Market price} - \text{NIT} = \text{factor cost}$

The Income Approach

Factors of Production	Land	Labour	Capital	Enterprise
Income	(Rent)	(Wages)	(Interest)	(Profit)

3 categories

- A - labour income - compensation of employees (income from others)
- B - Operating surplus - earned from ownership of capital
- C - Mixed incomes - A+B

- Add all incomes $\rightarrow \text{NDP}_{FC}$

$$\text{NDP}_{FC} = \text{NNP}_{FC} + \text{NFI}$$

factor cost to GNP

add factor income to GNP

factor income earned

- Excluded incomes \leftarrow ~~income statement~~
 - Transfer payments (unilateral / one sided) no corresponding output rendered
 - Illegal income \leftarrow ~~not in market~~
 - Interest on national consumption/debt
 - Value of 2nd hand goods
- Difficulties in estimation of national Income through income method \leftarrow ~~not included in tax - tax method~~
 1. To estimate mixed income in an informal sector
 2. Interest on national debt \leftarrow should not be excluded because loans may be taken for productive purposes also.
 3. Incomes are calculated from productive purpose the records of income tax payers but in an underdeveloped country, small percentage of population is tax payer.

The Output Approach

- Identify production units - Primary
 - ~~Primary~~ \leftarrow ~~initial input~~ \leftarrow ~~final output~~
 - ~~Intermediate~~ \leftarrow ~~final product~~ \leftarrow ~~input~~
 - ~~Tertiary~~ \leftarrow ~~final product~~ \leftarrow ~~input~~
- Estimate Net Value Added by each enterprise
- Value of final output \leftarrow ~~value of payment~~ \leftarrow
 - Value of intermediate (to avoid double counting) value added.
- Value of gross output \leftarrow ~~product x market price~~
- Value of Gross output
- Value of intermediate
 - 'Gross' value' added.

- Gross Value added

90% Look

- depreciation

To value income

Net value added at MP

To below that

using

using

- Net Value added at MP

- NITs

market not affected

Net Value added FC

\rightarrow NDP_{FC} + NFY_{abroad}

(continued)

= NNP_{FC} .

- Things to remember

- Production for self consumption not accounted

- Developing countries have a large non-market output
compared to developed countries.

- Output sold in parallel market not included.

C in the parallel market - goods are traded and
do generate income but go ungenerated - this output
could be legal or illegal.

- GDP and GNP does not take into account quality of
goods and services

- Does not account for negative externalities

- Depletion of natural resources not accounted for

- International comparison of GDP do not account for
different price levels across countries

- GDP_{MP} = market value of all final goods and services
produced in a country in a year.
It includes expenditure by all 4 components.

- Real GDP = nominal GDP \times price deflator

Real GDP

- measures value of current output valued at constant prices

Nominal GDP

- measures value of current output value at current prices.

- Adjusts for changes in average price level (for inflation)

- Does not adjust to change in price level.

- Why national income statistics (GDP/GNI) do not accurately measure the 'true' value of output.

- GDP and GNI do not include non-marketed output.
 - Eg:- one's own work of repairing and improving one's home.
 - Agricultural production - consuming it and never reaching the market place.
 - GDP and GNI do not include output sold in underground (parallel) markets.

- GDP and GNI do not take into account quality improvements in goods and services.
 - Often technological advances permit improved products to be sold at lower prices.

- GDP and GNI do not take into account the depletion of natural resources.
- GDP and GNI do not account for the value of negative externalities, such as pollution, toxic waste, etc.
- GDP and GNI are differing domestic price levels.

Eg: 2 countries having GDP per capita \$1000

They produce one identical good, which sells for \$100 and for \$200 in country A and B respectively.

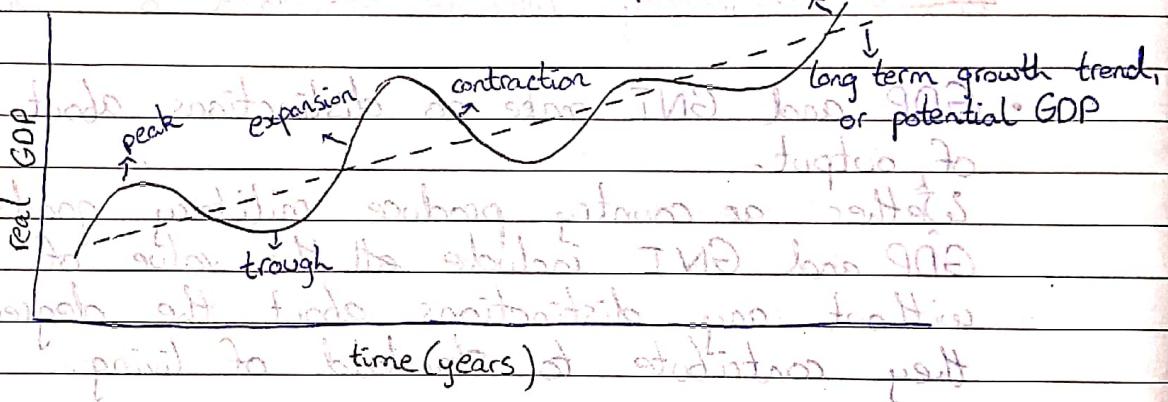
Country A has higher purchasing power and higher standard of living than the population on average.

- Why measures of the value of output (GDP/GNI) cannot account accurately measure standard of living.
- GDP and GNI make no distinctions about the composition of output.
Whether a country produce military goods or merit goods GDP and GNI include all the value of all the goods without any distinctions about the degree to which they contribute to standard of living.
- GDP and GNI cannot reflect achievements in level of education, health and life expectancy.
- GDP and GNI provide no information on the income distribution of output.
- GDP and GNI do not take into account increased leisure (no hours to work)
- GDP and GNI do not account for quality of life factors.
- Green GDP = GDP - the value of environmental degradation
which is GDP that accounts for the value of resource and environmental destruction.

GNI = GDP + net income from abroad.

- The business cycle

Fluctuations in the growth of real output, consisting of alternating periods of expansion (increasing real output) and contraction (decreasing real output), are called business cycles or economic fluctuations.



Expansion: Expansion occurs when there is positive growth in real GDP. During this period employment of resources increases, and the general price level of the economy begins to rise more rapidly (this is called inflation).

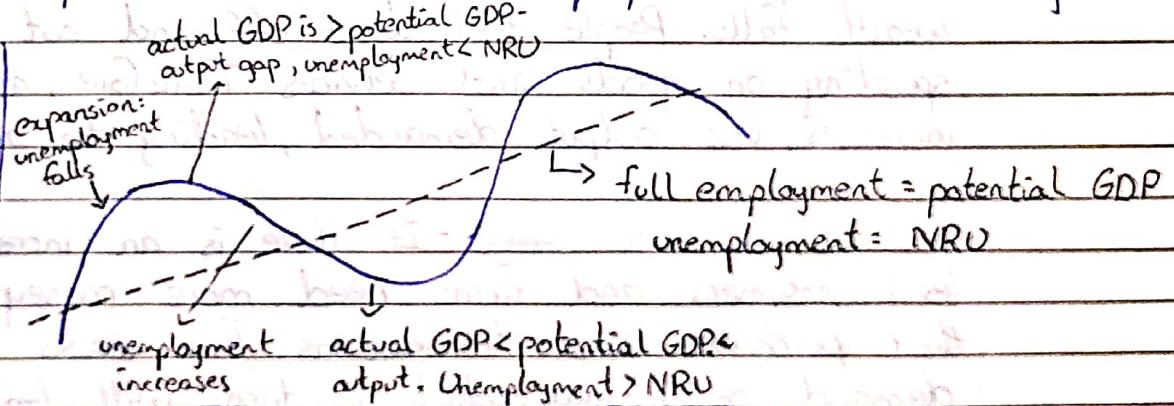
Peak: cycle's maximum GDP, and marks the end of the expansion. When the economy reaches a peak, unemployment of resources has fallen substantially, the general price level increases rapidly and the economy is likely to be experiencing inflation.

Contraction: The economy begins to experience falling real GDP.

If the contraction lasts for more than 6 months it is called recession, characterised by falling real GDP and growing unemployment of resource. Increase in the price level slows down and could also happen that the prices may fall.

Trough: represents cycle's minimum level of GDP, or the end of contraction. There may be a widespread unemployment.

- Long term growth trend
The straight line going through the cyclical line.
- When real GDP grows in the expansion phase, unemployment falls. Real GDP increases because firms increase the quantity of output they produce; to do this, they hire more labour and other resources and unemployment falls.
- Whenever the economy produces its 'full employment level of output', there is still some unemployment, known as the 'natural rate of unemployment'. For example, at any time, there are some people who are in between jobs, some who are moving from one place to another, some people who are training, etc.



- Reducing the intensity of expansions and contractions: this is aimed at making output gaps as small as possible, by flattening the cyclical curve. This would lessen the problems of rising price levels in expansions and unemployment in contractions.
- Increasing the steepness of the line representing potential output by achieving more rapid economic growth over long periods of time.

- Aggregate demand (AD) and the aggregate demand curve

Aggregate demand is the total quantity of aggregate output, or the real GDP, that all buyers in the economy wants to buy at different possible price levels, ceteris paribus.

The aggregate demand curve shows the relationship between the total amount of real output demanded by the four components and economy's price level over a particular time period.

- The negative (downward) slope of the aggregate demand curve.

- The wealth effect - Changes in price level affect the real value of people's wealth. Wealth is the value of assets that people own. If the prices increases the real value of wealth falls. People feel worse off and cut back on their spending on goods and services. Therefore, as price level increases, less output demanded, leading to an upward movement.
- The interest rate effect - If there is an increase in price level, consumers and firms need more money to carry out their purchases and transactions. This leads to increase in demand of money, which in turn will lead to an increase in rates of interest. As interest rates rises, cost of borrowing increases leading to decrease in consumer purchases as well as in investments. Therefore increase in price level lead to a fall in quantity of output demanded.
- The international trade effect If the domestic price level increases while price levels in other countries remain same, exports become more expensive to foreign buyers and the imports becomes cheaper to domestic buyers.

Thus rise in price level decreases exports and increases imports overall leading to less GDP.

- Shifts in AD Curve

Rightward or leftward shift of AD curve is caused by 4 components

- Consumption spending
- Investment spending
- Government spending
- Export and import spending

- Movement along the curve

Changes in price level leading to

- the wealth effect
- the interest effect

• the international trade effect

• changes in consumer confidence

- Shifts in AD curve

- Consumption spending

↳ changes in consumer confidence - It is a measure of how optimistic consumers are about their future income and the future of economy. If they expect their incomes to increase or an optimistic view about their future they will spend more.

↳ Changes in interest rates - Spending financed by borrowing decreases as interest rates increases as cost of borrowing increases, resulting in lower spending.

↳ Changes in wealth - Increase in consumer wealth makes them feel more wealthier, therefore they spend more

↳ Changes in personal income taxes - If government increases personal income taxes, then the consumer disposable income decreases, decreasing the spending.

↳ Changes in the level of household indebtedness - It refers to money taken people own as ~~as~~ loans in the past. If high level of debt, then people are under pressure and cut back their expenditures. Thus decreases spending.

- Investment spending
 - ↳ Changes in business confidence
 - ↳ Changes in interest rates - increase in interest rates increases cost of borrowing and firms are forced to reduce investment spending.
 - ↳ Changes in technology - Improvements in technology stimulate investment spending, thus causing increase in AD.
 - ↳ Changes in business taxes - If taxes increases the after-tax profits decreases, therefore, investment spending decreases.
 - ↳ The level of corporate indebtedness.
 - ↳ Legal/institutional changes - Law and institution not in favour of small businesses would lead to decrease in investment spending.

• Government Spending

- ↳ changes in political priorities - They may decided to increase or decrease its expenditures in response to changes in its priorities. Increased government spending shifts AD curve to right.

↳ Changes in economic priorities: deliberate efforts to influence aggregate demand - The effects of such changes in government on aggregate demand are exactly same as above.

- Export and Import Spending

↳ Changes in national income abroad - 2 countries A and B.
If country B's national income increases, they will import more goods from country A. So leads to increase in exports and rightward shift of AD curve.

↳ Changes in exchange rate - Exchange rate is price of one country's in terms of another country's currency. If prices of country A's currency increases, becoming more expensive relating to B. Now country A's imports become expensive to country B and thus there is a fall in exports of country A and increase in imports leading to leftward shift in AD.

↳ Changes in level of trade protection. - If restrictions are imposed by country B then the exports of country A decreases leading to leftward shift of AD curve.

- Short term aggregate Supply

Short run in macroeconomics is the period of time when prices of resources are roughly constant or inflexible.

Aggregate supply is the total quantity of goods and services produced in an economy (real GDP) over a particular time period at different price levels.

The short run aggregate supply curve (SRAS) shows the relationship between the price level and the quantity of real output produced by firms when resource prices do not change.

- When increase in price level, this means output prices increases, but with unchanging resource prices (as in short run), firm's profit increase, leads to increase the quantity of output produced.

- Shifts in AS curve

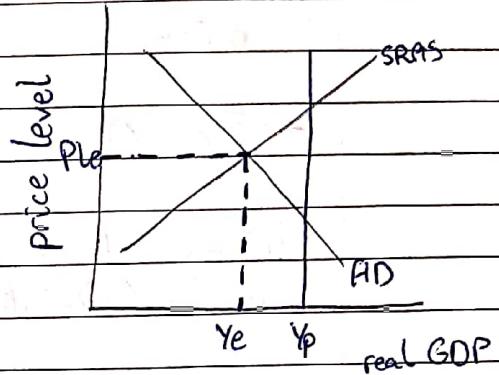
- Changes in wages - If increase in wages, with the price level constant, firms' costs of production rise, resulting in a leftward shift in SRAS curve.
- Changes in non-labour resource price - such as price of oil, equipment, capital goods affect the same way as increase in wages do.
- Changes in business taxes - If higher taxes of firms' profits are like increasing the cost of production and so SRAS curve shifts to left.
- Changes in subsidies offered to business - If higher subsidies are same like reducing the cost of production and so SRAS curve shifts to right.
- Supply Shocks - Eg: A war can result in destruction of physical capital and disruption of the economy leading to lower output produced and a leftward shift.

- Short Run Equilibrium in the AS-AD model

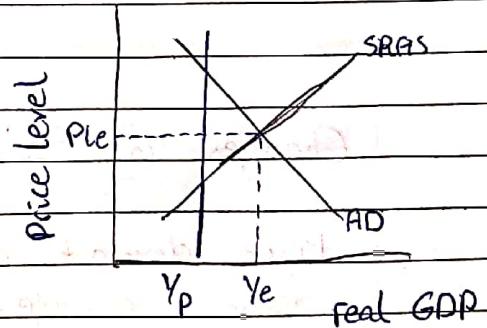
In the AD-AS model, the equilibrium level of output occurs where aggregate demand intersects aggregate supply. In the short run, equilibrium is given by the point of intersection of the AD and SRAS curve.

Recessionary (deflationary) gap - Unemployment is greater than the natural rate of unemployment. There is not enough demand in the economy to make it worthwhile for firms to produce potential GDP.

Real GDP < Potential GDP



Inflationary gap - Unemployment is less than the natural rate of unemployment. Arises because with aggregate demand AD, the quantity of real GDP that the four components want to buy at the price level (Ple) is greater than the economy's potential output.



- Long run aggregate supply and long-run equilibrium.