

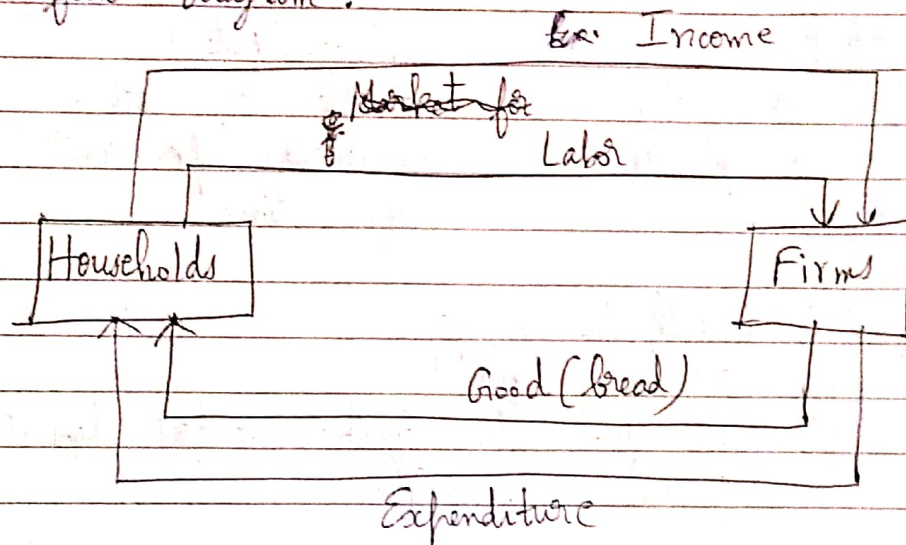
↳ Gross Domestic Product (GDP):

→ Total monetary value of goods & services produced by the nation in a given period of time.

→ GDP measures $\left\{ \begin{array}{l} \text{values of goods \& services.} \\ \text{the total income of everyone} \\ \text{in an economy and or the total expenditure on the} \\ \text{economy's of goods \& services.} \end{array} \right.$

GDP: $\text{Income} = \text{expenditure (in an economy)}$
 $\left[\begin{array}{l} \text{Income of } \left\{ \begin{array}{l} \text{the buyer} \\ \text{seller} \end{array} \right\} = \left\{ \begin{array}{l} \text{Expenditure of the} \\ \text{buyer.} \end{array} \right\} \end{array} \right] \text{ from rules of accounting.}$

→ GDP measures the flow of dollars in the circular flow diagram:



→ Flow of i/p & o/p.

→ Flow of dollars

Here, $\text{GDP} = \text{Total Income of firms (OR) Total expenditure by households.}$

Every transaction that affects expenditure also affects income & vice-versa.

Eg: If firms produce \uparrow bread $\Rightarrow \uparrow$ expenditure $\Rightarrow \uparrow$ income.

Reason:

Case 1: Firms \Rightarrow \uparrow Demand by \uparrow labor (households) \Rightarrow expenditure \uparrow \Rightarrow income (firms) \uparrow

Case 2: Firms \Rightarrow \uparrow Demand by \downarrow labor (households) \Rightarrow expenditure \uparrow \Rightarrow income \uparrow

\hookrightarrow Ways to measure GDP:

\hookrightarrow Production Method Approach.

\hookrightarrow Income Approach

\hookrightarrow Expenditure Approach. (★)

\hookrightarrow Stock

\rightarrow Qty. of sth. at a pt. of time.

Flow (Rate)

\rightarrow Qty. of sth. measured per unit of time.

\hookrightarrow Ex: ① Health & Saving (stock) (flow)

② Govt debt & Govt. budget deficit (stock) (flow)

\hookrightarrow Investment

Capital (stock)

\rightarrow Spending money on new capital.

\rightarrow factor of production

\hookrightarrow EXPENDITURE APPROACH:

\hookrightarrow GDP is calculated w.r.t. exports

\hookrightarrow 4 components \rightarrow Net expenditure

\rightarrow imports

In expenditure approach, $GDP = Y$ is:

$$Y = C + I + G + NX$$

Equation is an identity

Every dollar of GDP (C, I, G, NX) called as: "National Income Accounts Identity".

Consumption (C) → Goods & services bought by households.

- Non-durable goods:
 - last for a short time.
 - Eg: Food, clothing
- Durable goods:
 - last for long time
 - Eg: TVs, computers.
- Services:
 - Work done for consumers by individuals and firms.
 - Eg: haircut, doctor visits.

→ Investment (I) → consists of goods bought for future use.

categories

- Business fixed investment:
 - Purchase of new equipment by firms.
- Residential fixed investment:
 - Purchase of new housing by households.

Inventory investment:

↑ in firms' stocks (inventory) of goods.

→ Govt. purchases (G):

- goods & services bought by Govt. ^{state, local, federal, etc.}
- Military equipments, highways & services provided by Govt. workers.
- excluded ^{social} Security, welfare, transfer payments to individuals.

income to individuals (households). Here expenditure approach is used to calculate GDP. So, ignore this. ^{already considered C, households expenditure.}

→ Net Exports (NX):

$$NX = \text{Export} - \text{import}$$

value of goods and services sold to other countries.

value of goods & services foreigners sell to us.

→ Closed economy → $NX = 0$

→ Open economy → $NX > 0$ → export > import

→ $NX < 0$ → export < import
Both export & import <

→ No export/import.

→ Closed economy → $Y = C + G + I$

→ Open economy → $Y = C + I + G + NX$.

Date _____
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↳ Gross National Product (GNP): → part of GNP
Total income earned by the nation's
factors of production regardless of your
location.

↳ Net National Product (NNP):
Difference b/w factors payments from
abroad and those to abroad.

$$\textcircled{*} \quad \left[\begin{aligned} \text{NNP} &= \text{GNP} - \text{GDP} \\ &= (\text{Factor payments from abroad}) - \\ &\quad (\text{Factor payments to abroad}) \end{aligned} \right]$$

NNP shows the total income of the nation.

↳ GDP → measures values of all final goods & services.

↳ Nominal GDP → measures values of all final
goods & services using CURRENT PRICES

↳ Real GDP → measures values of all final
goods & services using PRICES OF A
BASE YEAR.

↳ = 2010 (now).

↳ GDP Deflator:

$$\left[\text{GDP deflator} \right] = 100 \times \frac{\text{Nominal GDP}}{\text{Real GDP}} \quad \textcircled{*}$$

↳ Inflation Rate:

$$\left[\text{inflation rate} \right] = \left[\% \text{ increase in overall level of prices} \right] \quad \textcircled{*}$$

→ Consumer Price Index (CPI):

(*)
$$CPI = 100 \times \frac{\text{Cost of basket in that period}}{\text{Cost of basket in base period}}$$

of basket in the period

→ year-wise, mth-wise etc.,

→ Aggregate demand:

Total demand for all final goods & services in an economy at a given time.

→ Aggregate supply:

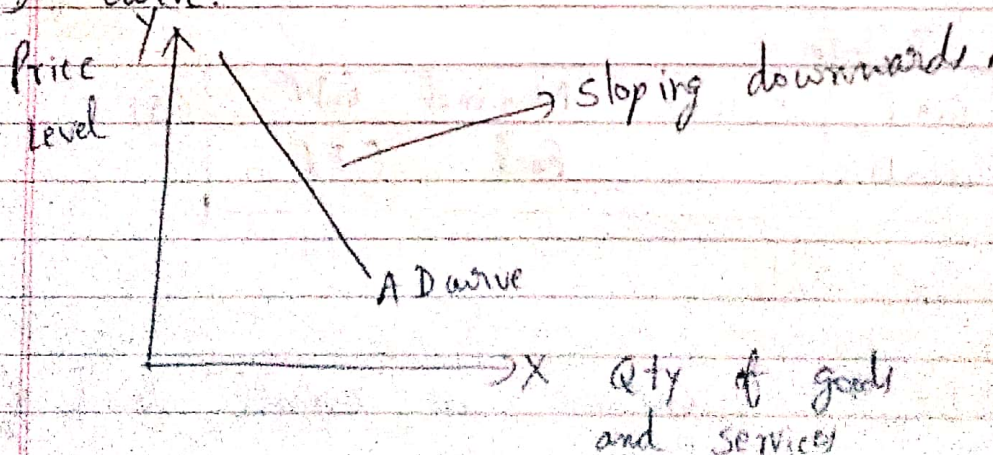
Total supply of all individual goods & services combined.

→ Model of Aggregate demand & supply: (IS-LS Model)

→ 2 components:

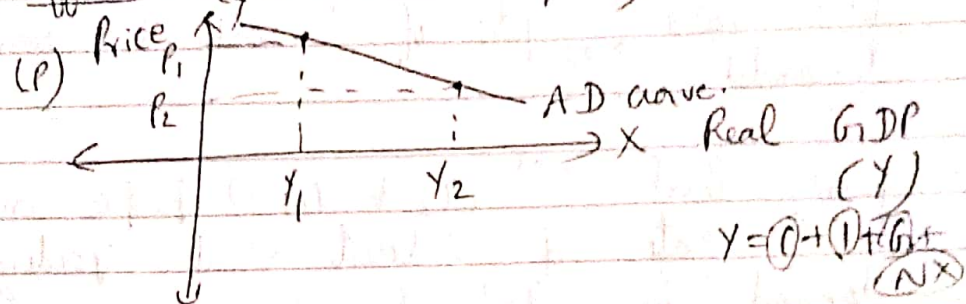
- X-axis: Real Qty. of ^{all} goods & services demanded measured using real GDP.
- Y-axis: Avg. Price Level of all goods & services as measured by GDP deflator or CPI.

→ AD curve:



- AD curve is sloping downwards because:
- Health effect (Price Level and Consumption)
 - Interest rate effect (Price level & investment)
 - Net exports effect (Exchange rate effect)

① Health effect: (due to consumption)



① P_1 to $P_2 \rightarrow$ price-level $\downarrow^{set} \Rightarrow$ real value of money $\uparrow^{set} \Rightarrow$ Consumers wealthy \Rightarrow spend more $\Rightarrow \uparrow$ qty demanded.

$P_2 < P_1$
 $\Rightarrow Y_2 > Y_1$

② P_2 to $P_1 \rightarrow$ price $\uparrow^{set} \Rightarrow$ real value of money is less \Rightarrow Consumers are poor \Rightarrow spend $\downarrow \Rightarrow \downarrow$ qty demanded.

$P_1 > P_2$
 $\Rightarrow Y_1 < Y_2$

Ex: Real Value of ~~money~~ money.

(i) Cost of a pen = Rs. 10 and customer has Rs. 20 in his wallet then no. of pens bought = 2.
 \Rightarrow Real value of Rs. 20 = 2.

(ii) Cost of a pen = Rs. 20 and customer has Rs. 20. No. of pens bought = 1.

\Rightarrow Real value of Rs. 20 = 1.

② Interest rate effect: (price level and investment)

→ price level \downarrow^{ses} (P_1 to P_2) \Rightarrow people invest \uparrow money in interest-bearing assets like banks/ informal loans \Rightarrow lower rate of interest $\Rightarrow \uparrow$ loans $\Rightarrow \uparrow$ spending of firms to buy equipments, household to buy large durable purchases like cars $\Rightarrow \uparrow^{ses}$ qty of goods & services demanded

→ price level \uparrow^{ses} (P_2 to P_1) \Rightarrow people invest \downarrow money $\Rightarrow \uparrow$ rate of interest $\Rightarrow \downarrow$ spending $\Rightarrow \downarrow$ demand for goods & services.

③ Net exports effect:

→ US: price level \downarrow^{ses} \Rightarrow interest rates \downarrow \Rightarrow real exchange value of \$ \downarrow^{des} \Rightarrow foreign goods more expensive \Rightarrow import \downarrow . But, for foreign countries, US \rightarrow dollar rate \downarrow \Rightarrow exports \uparrow .
US goods are cheaper.

$$\text{Net exports (NX)} = \text{Exports} - \text{imports}$$

\uparrow \downarrow

$\Rightarrow NX \uparrow \Rightarrow$ demand for goods & services \uparrow .
(beoz \uparrow dollars should be supplied \rightarrow value of \$ \downarrow)

→ Externalities \rightarrow +ve, -ve \rightarrow refer Gregory Mankiw main T.B.

→ CPI calc. + prob. \rightarrow refer Eco C.W.