

The Goods Market

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Aggregate Demand is the total amount of goods demanded in the economy.

Components of Aggregate demand (AD) includes Consumption (C), Investment (I), Government Expenditure (G) and Net Exports (NX). Each of these components are discussed below -

1. Consumption (C) refers to all the goods and services purchased by consumers. It is ^{also} referred to as private consumption expenditure by households. It constitutes the largest component of GDP.

• The demand for consumption rises with income. Thus, consumption function describes relationship between consumption

② and income. It is -

$$\boxed{C = C_0 + C_1 Y_d}, C_0 > 0$$
$$0 < C_1 < 1$$

Here, C_0 is the autonomous consumption
i.e. it does not depend upon

level of income. It explains that
if $Y_d = 0$ | $C = C_0$ part of consumption that will still
be consumed even if level of income
of the individual is zero.

C_1 - is the marginal propensity to
consume (MPC). It explains what proportion
of increase in income is spent
on consumption. For eg - If $C_1 = 0.60$,
it means that if income increases
by ₹ 100, then ₹ 60 will be used
for consuming goods & services (and
rest will be saved).

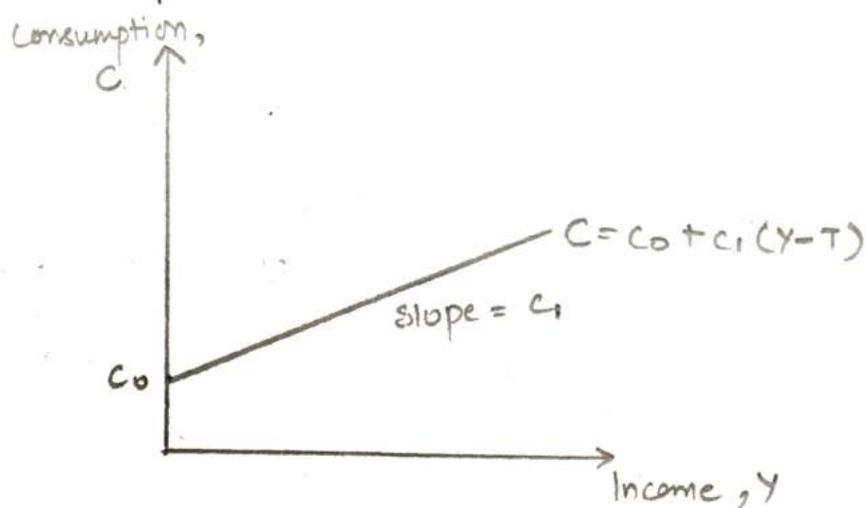
MPC is always positive, implying
that an increase in income cannot
lead to a fall in consumption.

It is also less than one, such that

a part of income is always saved. (3)

Y_d - Disposable Income, which is equal to income net of taxes ($Y-T$). So, consumption is a function of disposable income. $\therefore C = c_0 + c_1(Y-T)$.

As can be observed, consumption line is an upward sloping straight line with an intercept above zero. Slope of consumption line is MPC.



- The part of income that is not consumed is saved. So, Private saving =

$$S \equiv Y_d - C$$

$$= Y - T - C$$

Marginal Propensity to save (MPS) = $(1 - c)$.

It is positive i.e. $MPS > 0$.

4
2.

Investment (I) : refers to the purchase of goods that are not consumed today but are used to create future wealth. Private sector investment includes non-residential investment - purchases of new plants, machinery and buildings by firms and residential investment - new houses or apartments purchased by households.

This investment component excludes inventory investment as it is not a part of aggregate demand.

Also, investment here is an exogenous variable i.e. its value is given.

$$\therefore \boxed{I = \bar{I}}$$

where 'bar' represents autonomous / exogenous.

3. Government Spending (G) represents purchases of goods & services by the govt. (5)

G - does not include transfer payments made by govt. as they do not represent purchases of goods & services by the govt. Ex - Unemployment benefits ^{given} by the govt.

G is assumed to be exogenous.

The decision of G and T (taxes net of transfers) together describes fiscal policy.

4. Net Exports (NX) is exports minus imports. It is also called trade balance.

We assume ~~that~~ closed economy, therefore $NX = 0$.

⑥

EQUILIBRIUM OUTPUT

$$\begin{aligned}\therefore AD &= C + I + G \\ &= C_0 + C_1(Y - T) + \bar{I} + G\end{aligned}$$

In equilibrium, the demand for goods must equal to output produced. Therefore, equilibrium in goods market requires that Y (production or output) equals aggregate demand.

$$Y = AD$$

$$Y = C + \bar{I} + G$$

$$Y = C_0 + C_1(Y - T) + \bar{I} + G \quad \text{--- (1)}$$

Note -

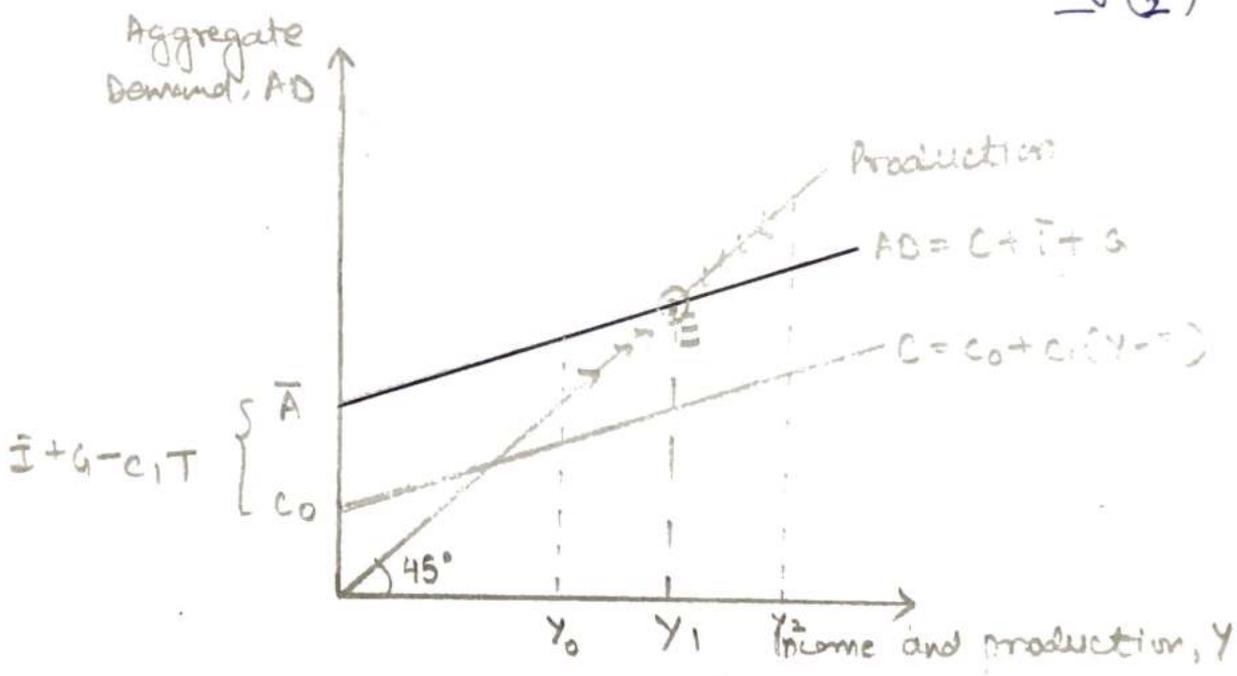
Graphically, AD (y-axis) is a function of income (x-axis).

- Demand depends upon income (Y).
- Output equals income.
- Equilibrium requires that output (LHS) is equal to demand (RHS).
- Symbol ' Y ' is used for both output (or production) and income.

from eqⁿ (1), we have -

$$(1 - c_1)Y = C_0 + \bar{I} + G - c_1T$$

$$Y = \underbrace{\frac{1}{(1 - c_1)}}_{\text{Multiplier}} \underbrace{[C_0 + \bar{I} + G - c_1T]}_{\substack{\text{Autonomous} \\ \text{spending } (\bar{A}) \\ \text{--- (2)}}$$



- 45° line represents points at which output and aggregate demand are equal. (Y = AD).
- Slope of AD and consumption line is same (hence parallel), only intercept of AD is above that of C.
- Equilibrium requires Y = AD which happens at point E.

(8)

- For any output level below Y_1 , like Y_0 , $AD > Y$, which means that firms must increase production or sell out of inventories.

For any output level above Y_1 , $AD < Y \Rightarrow$ firms gather unplanned inventories and will cut down production.

- For any increase in autonomous components ($C_0 / \bar{I} / G$) ~~or~~, AD will increase, causing an upward shift in the AD curve. Corresponding increase in output will be multiplier times i.e. $(\frac{1}{1-c_1})$.

From eqⁿ (2): $Y_0 = \frac{1}{1-c_1} \cdot \bar{A}$

$$\Delta Y = \frac{1}{(1-c_1)} \cdot \Delta \bar{A}$$

This means that an increase in autonomous spending induces a much higher increase in level of output. ^{Also,} Equilibrium level of output is higher, the larger the MPC (c_1) and higher the level of autonomous spending (\bar{A}).

① Term autonomous means that the variable concerned is not affected by other factors in the economy, it is independent.

② Endogenous variables are those explained within the model whereas exogenous variables are 'taken as given'.

For ex.- As studied in Microeconomics, in determination of Price in Demand-Supply analysis, producers take prices of inputs as given, thus exogenous. It also means that when P or D or S changes, prices of inputs will not affect or will not be affected during the transition mechanisms.

(*) Do not confuse above 3 terms with 'constant', as it is different.

③ We have assumed a closed economy s.t. $NX (= X - M) = 0$. This assumption will be relaxed later.

④ We assumed that we are operating in short run and that aggregate supply is constant.

⑤ Output decisions are made in advance. Hence, output adjusts only slowly in response to changes in AD.

⑥ Savings - Investment

Private savings is defined as what is left from disposable income after consumption. So,

$$S \equiv Y_d - C$$

$$\boxed{S = Y - T - C} \quad - (5)$$

Public savings is equal to taxes (net of transfers) minus govt. expenditure i.e. $(T - G)$.

Now,

$$Y = C + I + G$$

subtracting T from both sides,

$$Y - T = C + I + G - T$$

$$\Rightarrow Y - T - C = I + G - T$$

$$\Rightarrow S = I + G - T$$

$$\Rightarrow \boxed{S + (T - G) = I}$$

↑ ↑ ↑
 Private Public Investment
 Savings Savings

 Total Savings

This equation says that goods market equilibrium requires that investment equals saving (sum of public and private savings). For this reason, the equilibrium condition is called the IS Relation.

— X — X —