Open Economy

When countries start trading.

Suppose there are 2 countries: Home(H) & Foreign(F).

$\therefore$ Under open economy: $AD = \underbrace{C + I + G}_{\text{domestic component}} + \underbrace{X - M}_{\text{components of trade}}$.

M = Imports [depends on domestic output] $\Rightarrow M = M(Y)$, $M' > 0$.

X = Exports [depends on foreign demand]. $\Rightarrow X = X(Y_f)$, $X' > 0$

& For a small economy: $X = \bar{X}$.

Value of exports $= P \cdot X$. [P = Price in Home economy.

Value of imports $= P_f \cdot M$. P_f = Price in Foreign economy]

$\therefore \quad AD = C + I + G + \frac{\cancel{P} \cdot X}{\cancel{P}} + \frac{eP_f \cdot M}{P}$. [$e$ = Nominal exchange Rate]

Eg: P = Rs. 10, P_f = \$ 5, e = Rs. 2/\$. [Value of one currency in terms of another].

Real Value of import for Home country $= \left(\frac{eP_f}{P}\right) = p$.

where p = Real Exchange Rate.

Goods Mkt:

Equillibrium condition: $Y = AD$.

$$Y = C + I + G + X - M.$$

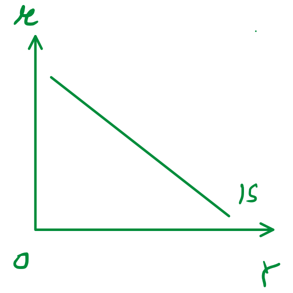
$$Y = C(Y) + I(r) + \bar{G} + \bar{X} - M(Y)$$ ..... Obtain the IS curve.

$Y = C(Y) + I(r) + G + X - M(Y)$ ...... Obtain the IS curve.

Diff: $dY = C'.dY + I'.dr - M'.dY$..

$[1 - C' + M'].dY = I'.dr$.

$$\left.\frac{dr}{dY}\right|_{IS} = \frac{(I')_{<0}}{(1 - c' + M')_{>0}} < 0.$$



Money Market

i) Supply of money is from central Bank ($M_s = \bar{M}_s$)
(money is local currency)

ii) Money demand = $TDM(Y) + SDM(r)$, $TDM' > 0$, $SDM' < 0$

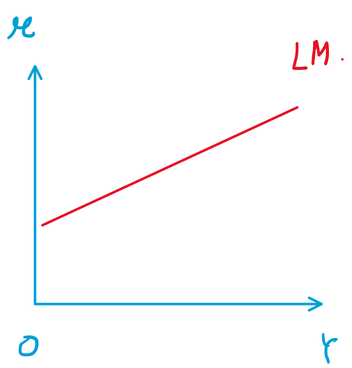
Equilibrium in Money Market:

$$\frac{\bar{M}_s}{P} = L(Y, r).$$

Diff: $0 = L_Y.dY + L_r.dr$.

$L_Y.dY = -L_r.dr$

$$\left.\frac{dr}{dY}\right|_{LM} = -\frac{L_Y^{>0}}{L_{r<0}} > 0.$$



iii) Balance of payments:

BP = Value of revenue from trade -
Value of expenditure from trade.

Eg: $I(r)$, $I' < 0$.

$r < r_f \Rightarrow$ Foreign investors will flood the domestic mkt $\Rightarrow$ Domestic investment $\uparrow \Rightarrow AD \uparrow \Rightarrow Y \uparrow$

For trade there are 2 components :
↳ Current Account (Trade in Goods) .
Capital Account (Trade in Capital) .

$\therefore \quad BP = BOT + KA.$

Current Account:

Revenue	Expentidure
Export of goods	Import of Goods.
Export of services	Import of services.

$BOT = (\text{Total Exports} - \text{Total Imports})$ of Goods & Services.

Capital Account:

Revenue	Expenditure
K-imports.	K-exports.

$KA = (K\text{-imports}) - (K\text{-exports})$.

$\therefore \quad \boxed{BP = BOT + KA.}$ --- (*)

If $BP > 0 \Rightarrow$ Balance of Payment Surplus.
If $BP < 0 \Rightarrow$ Balance of Payment Deficit.
If $BP = 0 \Rightarrow$ Balance of Payment is balanced.

$[\, M(Y) = \bar{M} + m \cdot Y, \; m > 0 \,]$

$\therefore$ Now $BOT = X - M = \bar{X} - M(Y) = \bar{X} - \bar{M} - m \cdot Y, \quad m > 0.$

$KA = \underline{KA}(r - r_f), \quad KA' > 0.$

$$= KA + \alpha(r - r_f) \quad , \alpha > 0 .$$

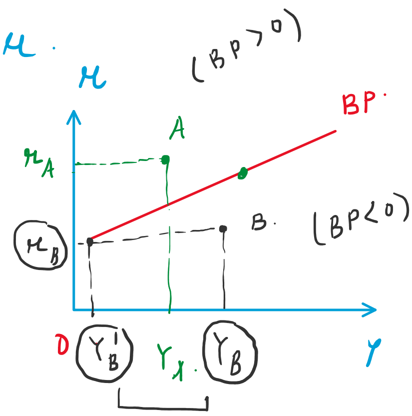
$$BP = BOT + KA = \bar{X} - \bar{M} - m \cdot Y + \overline{KA} + \alpha(r - r_f)$$

If $BP = 0 \Rightarrow \quad 0 = \bar{X} - \bar{M} - m \cdot Y + \overline{KA} + \alpha(r - r_f)$.

Diff: $0 = 0 - 0 - m \cdot dY + 0 + \alpha \cdot dr$.

$$m \cdot dY = \alpha \cdot dr .$$

$$\left.\frac{dr}{dY}\right|_{BP} = \frac{m}{\alpha} > 0 .$$



$Y \uparrow \Rightarrow M \uparrow \Rightarrow BOT < 0$.

Interpretation of BP:

Locus of (r, Y) s.t $BP = 0$ for the domestic economy.

Case I: $\alpha = 0 \Rightarrow \left.\frac{dr}{dY}\right|_{BP} = \frac{m}{0} \to \infty$.

$\therefore$ BP curve is vertical.

Interpret: $KA = \overline{KA} + \alpha(r - r_f)$

$\alpha = 0 \Rightarrow KA = \overline{KA}$ [Interest rate differ has no impact on capital mobility internationally].

$\alpha = 0 \Rightarrow$ Perfect capital Immobility.

Case II: $\alpha \to \infty$, $\left.\frac{dr}{dY}\right|_{BP} \to 0$ [Horizontal BP].

"This is called Perfect Capital Mobility"

Note: "α" captures the sensitivity of capital mobility to interest rate differentials.

interest rate differentials.

Equillibrium in the Mundell-Fleming Model: