

INTERNATIONAL ECONOMIC



**Comprehensive Coverage
of Macroeconomic Concepts**



**Exam-Oriented Approach
with PYQ Analysis**



**High-Yield Topics
for Maximum Score**



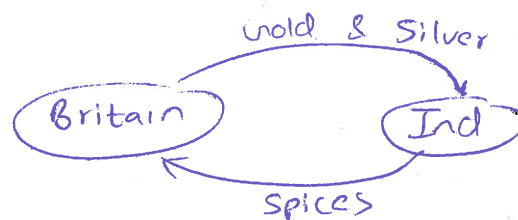
**Diagrams, Tables & Case
Studies
for Better Understanding**

BY
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Mercantilism

⇒ In entire Europe, this thing was popular that inflow of goods & outflow of gold & silver. Hence few writers started writing against this practice.



They said, "Is it not possible that inflow of gold & silver occurs in UK. (Britain)"

⇒ Inflow of gold & silver in Britain is possible by selling goods abroad will lead to accumulation of wealth. Mercantilism is based on this idea.

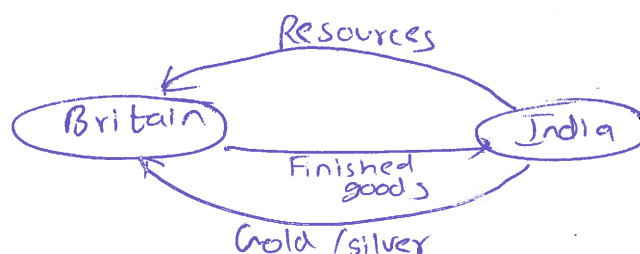
⇒ Accumulation of bullion will lead to prosperity. And the methodology for it is:

Export (↑) AND Import (↓)

⇒ To promote inflow of gold & silver, the idea of colonialism was developed, they (Europeans) thought that if you will make inferior countries your colony, you will have control over their resources as well.

⇒ Colonialism was a modified form of erstwhile Invasions by kingdoms but with a milder methodology extracting greater & periodic benefits.

In case of India, due to its large market, it experienced double exploitation.



⇒ In Mercantilism, Export of goods was promoted & Imports were curbed.

⇒ Export always leads to expansion of market. To prevent import, this could be done by Imposition of taxes, i.e. called Tariffs.

That's what Britishers did whenever India tried to export goods to Britain, they applied heavy taxes on it.

So the prices of goods became high, thereby preventing the Britishers in their country to purchase it.

⇒ Hence, in mercantilism, balance of trade should be positive.

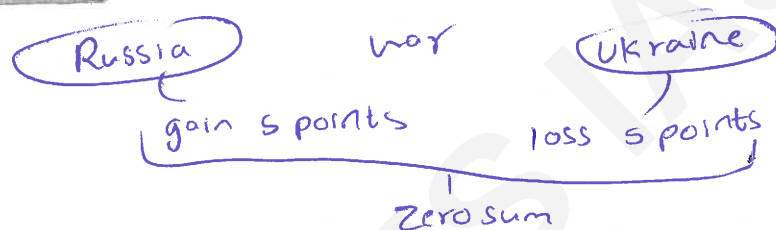
$$BoT > 0$$

$$Export - Import > 0$$

⇒ This concept came & was prevalent between 15th to 18th century & it led to colonialism.

⇒ During Mercantilism, Government followed Protectionism.

⇒ After 18th century, concept of Mercantilism declined & time of Classical came. They were against the idea of mercantilism called it Zero-sum game i.e. one country's profit is loss of another country.



⇒ These economist (Adam Smith, Ricardo, etc) promoted the concept of free trade which is based on specializations of labours i.e. Country should produce what they are proficient in producing & import other goods.

Why do Nations Trade?

Soln: - ① Price Differentiation (P.O.)

This is the main reason why nations trade with each other.

Reasons for P.O.

- (i) Demand Side
- (ii) Supply side

Price : Cost +
~~cost~~ net taxes
Cost : Factor
Payments

Demand Side

→ Demand is governed by factors like:

- [a] Income of citizens of both countries
- [b] Taste & preferences of the citizens of both countries

Ex: - There are 2 countries:

India	USA
• Produces cotton Textiles	• Will purchase textiles from India
	Why? — Income Taste

But cotton textiles are being produced in U.S.A as well (Let's assume that cost of production is same) then why will U.S.A purchase it from India.

→ US economy is richer economy than India so price of cotton textile will be higher there & hence they import from India due to price difference [Price is differentiated based on locality & purchasing power of the region's customer]

Thus, same shirts in US shops will have higher prices than Indian shirts

→ Indian producer will export if it gets higher prices abroad in comparison to home country. USA customer will purchase if it gets it at a cheaper price in comparison to their own country.

Ex: -

USA	India
shirt: ₹200	shirt: ₹100
sell at ₹150	

Supply Side

→ Supply is governed by factors like

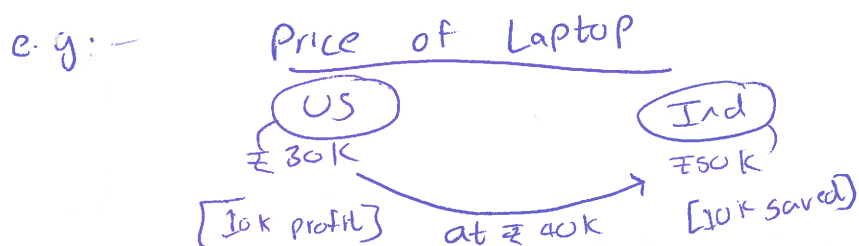
- [a] Factors of production.
- [b] Technology

Ex: -

India	US
Needs Laptop Cap. Intensive	Needs Rice Labour Intensive

→ It will be better for India to import Laptops from US as Laptop is capital intensive & Export rice to US as rice is labour intensive.

→ So India will get Laptop at cheaper price from US & US will get rice at cheaper price from India.



Adam Smith's Absolute Advantage theory

⇒ Classical were of the view that Export & Import both are important.

Assumptions

- ① Two countries, Two Commodities model: 2 X 2 model.
- ② Constant returns to scale.
- ③ Both countries can produce both the goods if they wish.
- ④ Both countries are endowed with 'X' amounts of Factors of production.
- ⑤ Free trade policies OR no protectionism.

e.g.:-

	Rubber	OR	Textile	OR Both	IOCR
India	50	OR	100	OR Both	1:2
U.S.A	100	OR	50	OR Both	2:1

Internal opportunity Cost Ratio

As observed from table, US has Absolute Advantage in production of rubber AND India has Absolute Advantage in production of textile.

⇒ This is the concept of free trade. Classical compared it with mercantilist model where only Export was encouraged.

Let's Compare

In a closed Economy

For Ind

Rub

4L → 50 units

∴ 1L → 12.5u

Tex

4L → 100 units

1L → 25 units

For US

Rub

4L → 100u

1L → 25u

Tex

4L → 50u

1L → 12.5u

		Rubber	OR	Textile	Total
4L	Ind	50	OR	100	150
4L	US	100	OR	50	150

∴ For both production

	Rub	Tex	Total
Ind	25	50	75
US	50	25	75

[As both divides labour in half for Rub. & Text]

150

Total World output

In an open Economy

⇒ Countries would only produce what they specialize in or they have absolute advantage in.

Complete specialization

Country	Rubber	Textile	Total
Ind.	0	100	100
US	100	0	100

Total World output. 200

⇒ This demonstrates that in an open economy, Output of India, USA & world increased. Hence, there is Advantage in using this method of production

Thus, Countries should produce the commodity they have Absolute Advantage in.

⇒ Now, let's look at the concept of Absolute Advantage from the point of view of consumption so as to judge the standard of living. But to analyze consumption effect we need to first look at the terms of trade (ToT)

→ This means how many units of rubber are exchanged between India & U.S.A. for 1 unit of textile.

For INDIA

ToT → 1:1

	Rubber	Textile	Total Consum.
India	40	60	100
US	60	40	100

i.e. For every 1 unit of rubber, only 1 unit of textile is exchanged
40:40
60:60

ToT → 2:1

	Rubber	Textile	Total Consum.
Ind	50	75	125
US	50	25	75

i.e. For every 2 unit of Rubber, only 1 unit of textile is exch. (By India)

note

US produce: 100 u. & 50 exported to Ind (Rubber)

Thus Ind produce: though 100 u, it will export only 25 units to US (Textile) ⇒ 2:1 maintained

ToT → 1:2

	Rubber	Textile	Total Consum
Ind	25	50	75
US	75	50	125

Rubber
for (25) exported by US, (50) given by Ind. Textile.

Q. Does Every Country gain from Int'l trade?

- Gains in Int'l trade depends on Consumption.
- Country consuming more gains more.
- Thus, all countries do not gain.

→ This is because Consumption determines standard of living.

Classicals - Value

Price ← derived from Cost
Wages → FOP

Terms of Trade

⇒ ToT of a nation is defined as the ratio of prices of its export commodity to its import commodity.

⇒ ToT can be of several types as illustrated below:

- (1) Gross Barter ToT
- (2) Net Barter ToT
- (3) Income ToT
- (4) Single factorial ToT
- (5) Double factorial ToT
- (6) Real cost ToT
- (7) Utility ToT

Net Barter ToT / Commodity ToT (N)

→ Given as $N = \frac{\text{Export Prices}}{\text{Import Prices}} \times 100$

Here we have to consider a base year,
A base year is that year where fluctuation in prices are minimum.
~~So to find~~

ex: - say, 1970 is the Base year &

$$N = \frac{100}{100} \times 100 = 100$$

Say, 1971 ~~is the Base year &~~

$$N = \frac{120}{100} \times 100 = 120$$

Improvement

Say, for 1972,

$$N = \frac{90}{100} \times 100 = 90$$

Deterioration

Note - Numerator is Export prices & Denominator is Import prices

→ Now let us consider the case, where export prices are fixed but import prices are changing.

Now, ToT for 1970 is 100

$$\text{Say, 1971, } N = \frac{100}{200} \times 100 = 50$$

Deterioration

→ Let's consider a case, where Export & Import ~~prices~~ ^{both} change

ex: - say for 1972

$$N = \frac{90}{45} \times 100 = 200$$

Improvement

→ The concept of ToT was given by Tausig.

Significance of Commodity ToT

→ N when improves, that means X_p is $\uparrow$ [X_p is price of Exp] or M_p is $\downarrow$ [M_p is price of Import] or both, then foreign exchange will increase in the country, And hence we will say economic welfare is improving in the country. (due to $\uparrow$ purchasing power)

Forex
reserve

→ Then came the economist Itaberler, he said that instead of maximization of capital N , the focus should be on optimization of it, because, if you keep on increasing the price of Export, the other country might refuse to do business with you. Hence, your price of Export have increased, this resulted in decrease in the volume of trade thereby reducing the welfare in the economy.

So, optimization is necessary to increase the export earning.

Gross Barter ToT

→ It is given as

$$\frac{M_a}{X_a} \times 100$$

An increase in the Import Quantity index (the numerator value) tends to improve Gross Barter ToT, while ~~the~~ an increase in the Export Quantity index (the denominator value) would tend to worsen / deteriorate Gross Barter ToT

EX :- For 1970, base year $\rightarrow \frac{100}{100} \times 100 = 100$

For 1971 $\rightarrow \frac{90}{100} \times 100 = 90$ Deterioration

For 1972 $\rightarrow \frac{80}{40} \times 100 = 200$ Improvement

[No symbol, Just called Gross Barter ToT]

Income ToT (I)

$\rightarrow$ In it, Export Earning = $X_p \cdot X_q$ Volume of Export

Since, it is very important for any country to take into account changes in its volume of export resulting from Export prices change, It is useful to correct the movements in commodity ToT for change in export volume.

As Hubeler suggested that it is of no use if price of export increases resulting in decrease in volume of exports & hence this entire idea was developed.

$\rightarrow$ So Income ToT, $I = N \cdot X_q$
 $I = \frac{X_p}{M_p} \cdot X_q$

[Previously N had a x100 factor to get it in %, now it is in fraction]

EX :- say, for 1970, $I = \frac{100 \times 100}{100} = 100$ Improvement

for 1971, $I = \frac{90}{100} \times 120 = 108$

[Note:- In case of $I = \frac{90}{100} \times 120 = 108$, Deterioration in N was observed; Thus despite $X_p \downarrow$, an improvement in I ToT can be observed]

for 1972, $I = \frac{110}{100} \times 80 = 88$ Deterioration

[Thus, despite N's improvement & $X_p \uparrow$; I ToT deteriorated]

Implications of Income ToT

- A rise in Income ToT only ~~indicates~~ indicates that the country can obtain a larger volume of imports from the sale of its exports, its capacity of imports based on exports has increased, As y increases, since exports are increasing, country will use this to import more.
- Therefore, a change in the Income ToT index cannot be interpreted as a measure of the gain from trade or an indicator of welfare. It should be used simply as a measure of the quantity of imports bought by exports.

[Note:- Income ToT increase will always be used to buy more Imports — rule for it]

Single factorial ToT (S)

- Here we consider the productivity of factors (factors of production)
- It is the ratio of the export price index & the import price index adjusted for changes in the productivity of the factors used in production.

$$\begin{aligned} \therefore S &= \frac{N \cdot (X_z)}{\text{Exported goods Productivity index}} \\ &= \frac{X_p}{M_p} \times X_z \end{aligned}$$

This concept was given by Jacob Viner

e.g: For year 1970, $S = \frac{100}{100} \times 100 = 100$

1971, $S = \frac{90}{100} \times 100 = 90$ Deterioration

1972, $S = \frac{90}{100} \times 120 = 108$ Improvement

Significance

→ In 1972, X_p decreases but still S increased, this is due to increase X_2 due to improvement in Factors of production which leads to decrease in cost of production which helps in absorption of shock.

→ This benefit of improved X_2 goes to importing country in the form of fall in price of the commodities.

It means that the country has taken pains to improve its productive efficiency & to cut down its production cost & these gains are transferred to the foreign countries in the form of lower (productive gains) exported prices.

Because, X_2 means that opportunity cost for a product is X_2 & thus for same amount of $Imp.$ country is ready to give more $Exp.$

Implications of increased X_2

→ In global levels we observe inequality when trade is occurring between rich & poor countries, so if there is improvement in Factors of production in rich country then benefits will be transferred to poor countries & world's inequality should reduce.

But this does not happen as the benefit of increased efficiency of factors of production is retained in the rich country only in the form of increased salary & profits. Therefore, world's inequality is not reduced.

Poor / Middle economies

These are agricultural economies, so improved X_2 reduces prices of Agricultural goods & benefit of this is enjoyed by rich countries to which goods are exported.

Note

→ Margins of Agrarian goods are very less compared to Capital goods & thus price competition does not lead to transfer of benefits of X_2 .

Double Factorial ToT (O)

→ Given as $O = N \cdot \frac{X_Z}{M_Z}$

Exported goods productive index
Imported goods productivity index

OR

$O = \frac{S}{M_Z}$

Real Cost ToT (R)

→ Given as $R = N \cdot \frac{X_Z}{X_Y} \Rightarrow \frac{S}{X_Y}$

Real Cost Index

Utility ToT (U)

→ Given as $U = N \cdot \frac{X_Z}{X_Y} \times \frac{1}{U_m} \Rightarrow \frac{S}{U_m}$

Utility Index

→ Utility Index

Amount of satisfaction derived by consumption of a particular commodity.

Comparative Advantage

⇒ David Ricardo's comparative advantage theory, 1817, it explains how & why countries gain by trading even if **One Country is more efficient than the other in producing everything.**

eg :-

	Rub	Tex
Ind	80	100
Malaysia	60	40

Thus, India is more efficient than Malaysia in producing both Rubber & Textile **BUT STILL TRADE WILL OCCUR**, as explained by Ricardo however according to Adam Smith in the above scenario, trade will not occur.

"A country should specialize in producing & exporting the goods that it can produce at a lower opportunity cost & import the goods that it produces at a higher opportunity cost."

⇒ so comparative advantage is based on relative efficiency not absolute efficiency.

⇒ Relative efficiency will be given as

$$\text{Rubber} \rightarrow 80 : 60 \\ \approx 1.3 : 1$$

Thus, Malaysia have less comparative disadvantage in producing Rubber & it will specialize in it.

$$\text{Textile} \rightarrow 100 : 40 \\ = 2.5 : 1$$

Thus, India have more comparative advantage in producing Textile & it will specialize in it.

J. Nehru -

"The children of today will make the India of tomorrow."
 "The way we bring them up will determine the Future of the country."

Introduction

→ Ricardo's model is further addition on Smith's model. The theory of comparative advantage suggest that a country should specialize in production (exports) of those goods in which either it's comparative advantage is greater or comparative disadvantage is lesser & it should import those goods in the production of which it's comparative advantage is less or comparative disadvantage is more.

Assumptions

- ① There are 2 countries & 2 commodities (2x2 model)
- ② One country has absolute advantage over another in both the products & the other country has absolute disadvantage in both the products.
- ③ Both countries have 'x' factors of production.
- ④ Free trade policy

Closed Economy

e.g :-

Country	Tex.	Rub.
India	120	120
Malaysia	40	80
World	160	200

$$\therefore \frac{120}{40} = \frac{3}{1} = 3:1 \text{ (Tex.)} \quad \& \quad \frac{120}{80} = \frac{3}{2} = 1.5:1 \text{ (Rub.)}$$

Thus, India has ^{more} comparative advantage in Textile & thus it will produce & export it, whereas Malaysia has lesser comparative disadvantage in rubber hence Malaysia will produce & export rubber.

Autarky

Country	Tex.	Rub.	Total produc.
Ind	80	40	120
Malaysia	20	40	60
Total	100	80	180

After trade — Specialization

Country	Tex.	Rub.	Total Prod.
Ind	120	0	120
Malaysia	0	80	80
	120	80	200

⇒ World GNP has gone up from 180 to 200 after introduction of trade. This gain is entirely enjoyed by Malaysia in this case.

⇒ This suggests that, small countries tend to benefit more than the large countries from the standpoint of specialization in production resulting from the establishment of international trade. (Therefore, small countries need ^{Foreign} small markets to achieve specialization in production.)

⇒ Unless both countries tend to gain from trade, there can be no trade between them.

Then how will trade occur?

→ Trade occurs under Terms of trade → $\frac{\text{Exp. Price}}{\text{Imp. Price}}$ or $\frac{\text{Exp. Qun}}{\text{Imp. Qun}}$

For ToT → 3:4

Country	Tex.	Rub.	Total
Ind	60	80	140
Malay.	60	40	100
			200

(Note) — no country will exp. all it's good & always consume some of it

For TOT as 3:4

	Tex.	Rub.	TC/TP
Ind	90 → 30	40	130
Malay.	30	40 → 40	70
			200

Trade gain in both countries as

At Autarky, Ind produced 120 units & Malaysia produced 60 units; thus both countries are gaining 10 units each. (Trade will occur)

For TOT as 1:2

	Tex.	Rub.	TC/TP
Ind	100	40	140
Malay.	20	40	60
			200

Thus, India is gaining 20 units & Malaysia is not gaining, compared to autarky, but trade will occur as Malaysia is a small country & at least getting a market to sell.

(Note) — Country tries to at least keep with itself as much as it is exporting. (When trade occurs)

For TOT as 1:1

	Tex	Rub.	TC/TP
Ind	80	40	120
Malay.	40	40	80
			200

No one is gaining, trade will not occur.

Law of Reciprocal demand : Offer Curve

⇒ The principle of reciprocal demand was developed by J.S. Mill in the year 1848, in his book 'Principles of political Economy'

⇒ Later, offer curve technique was developed by Edgeworth & Alfred Marshall.

⇒ The offer curve tries to show how the exact terms of trade are determined by the interactions of demand & supply.

Ricardo:

Pessimist economist

Adam:

Optimist economist

Note

Marxism says that this society was created by capitalist to sustain their profits & your subjugation.
ex: - Entertainment is made to let you balance gains with consumption (of time & money) & would not rise

Assumptions

- ① Two countries Two commodity model (2x2)
- ② No transportation cost
- ③ Perfect competition
- ④ No trade barrier
- ⑤ Constant cost function
- ⑥ Free trade exists

Schedule for trade propensity of India

Textile (Exportable)	Rubber (Importable)	ToT
25	5	5:1
40	10	4:1
60	20	3:2
80	40	2:1
100	100	1:1

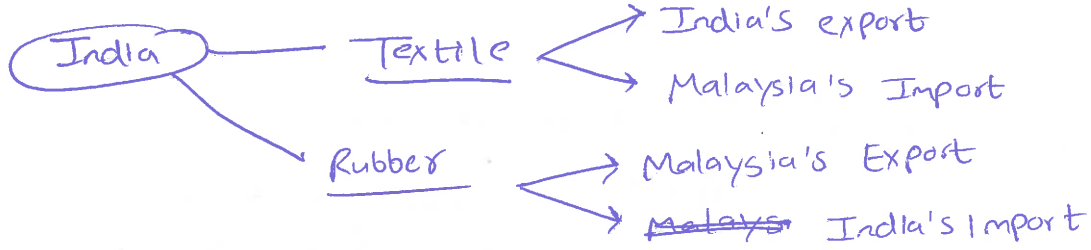
Note

Import is the price you get for Export

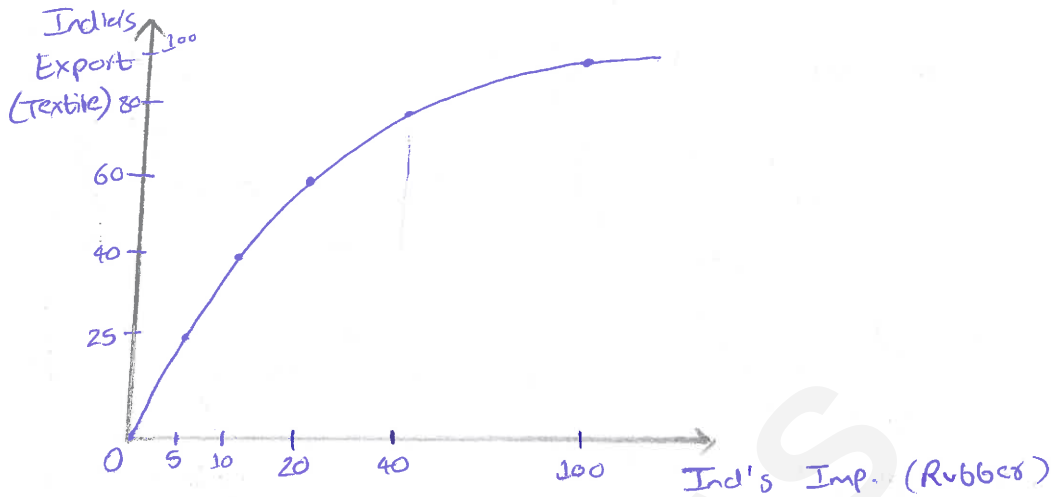
⇒ As India goes on consuming more units of rubber, its marginal utility for rubber goes on diminishing & hence, it is going to offer lower price for rubber (Law of diminishing marginal utility)
(i.e. less export for it)

⇒ Law of reciprocal demand relates the proportion in which goods are exchanged between the countries.

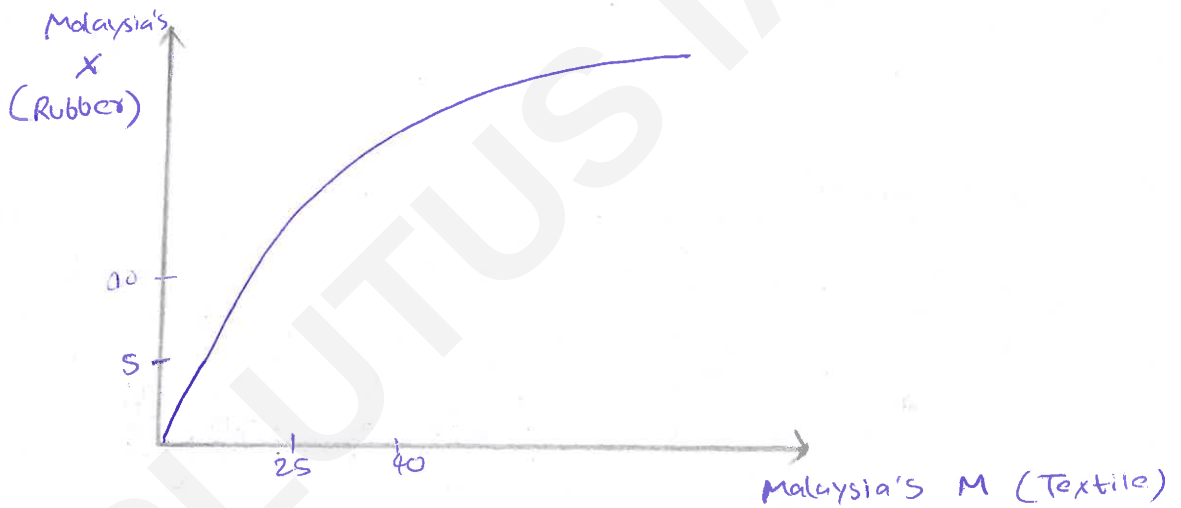
⇒ Offer curve is a technique which helps us to represent a series of optimal bundle that an individual or a country can trade in a market given different ToT.



India's offer curve

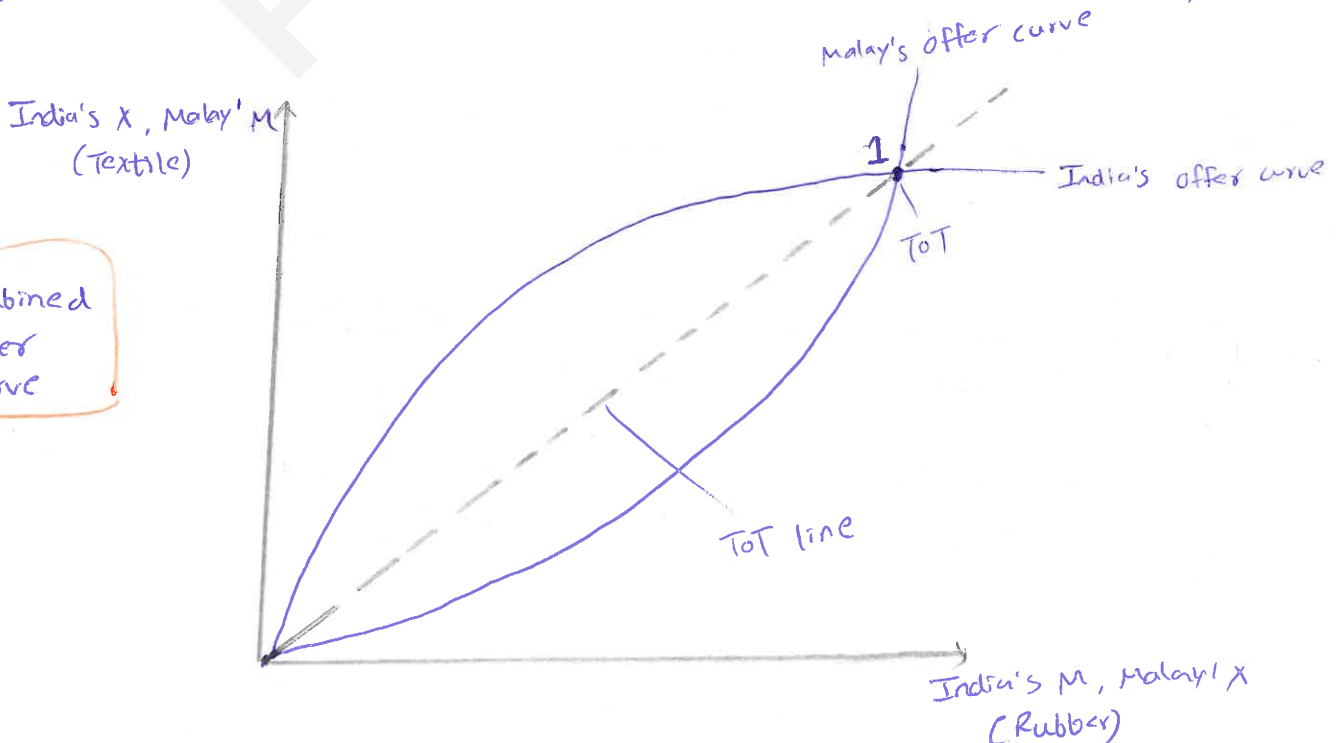


Malaysia's offer curve



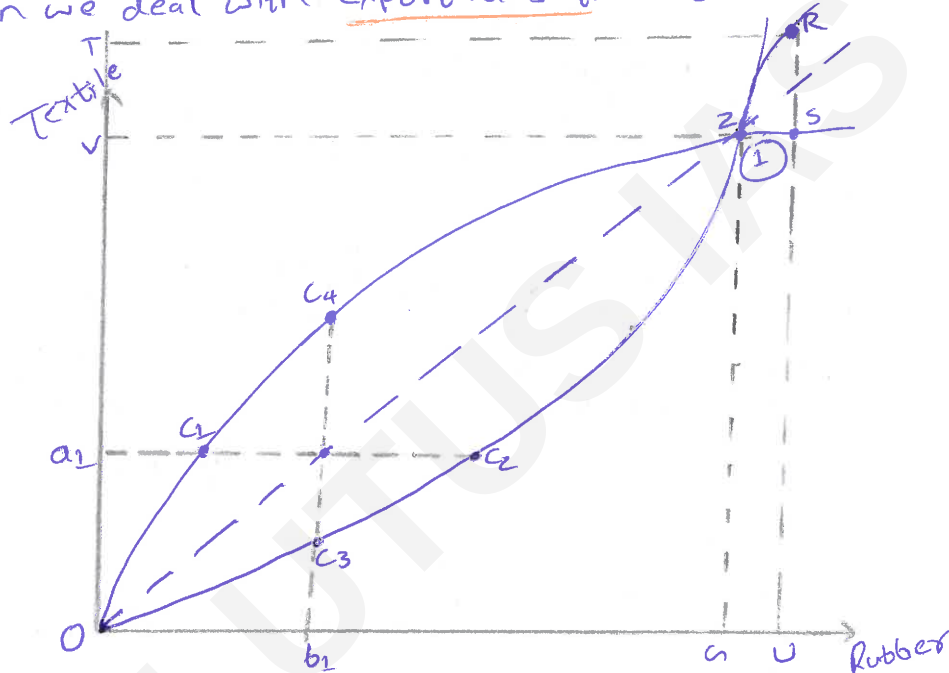
Trick — offer curves face should be on the import side of country.

Combined offer curve



Exact Terms of Trade

- The trade takes place at point 1, because at this point, country A's offer curve is exactly equal to what country B is asking for, And country B's offer curve is also exactly equal to what country A is willing to accept.
- We say that at point 1, the reciprocal demand of 2 countries are in exact balance & trade equilibrium is reached. This has taken place at a point where 2 offer curves intersect
- Offer curve is both Demand as well as supply curve at the same time.
- When we talk of importables then offer curve is demand curve & when we deal with exportables then offer curve is a supply curve.



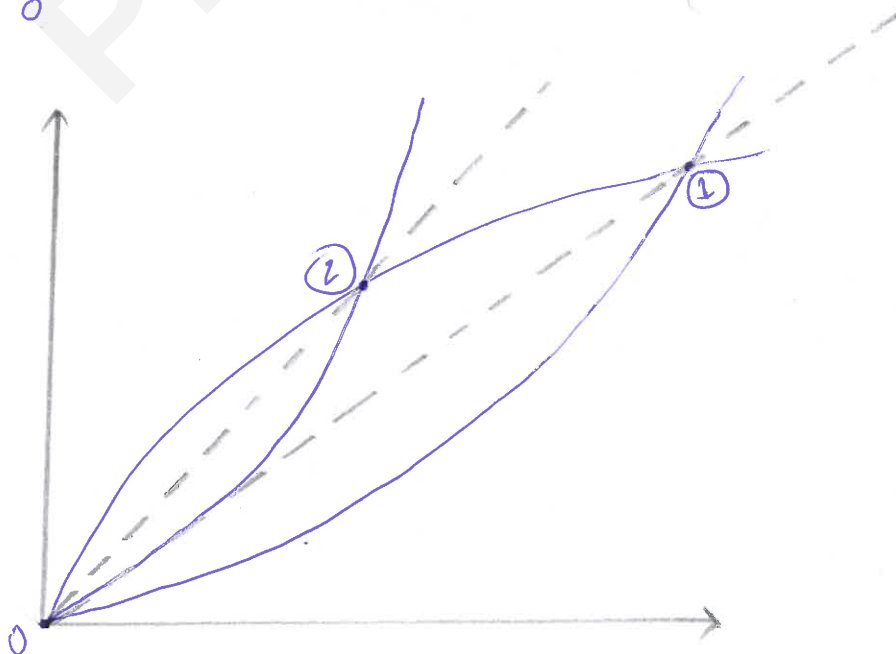
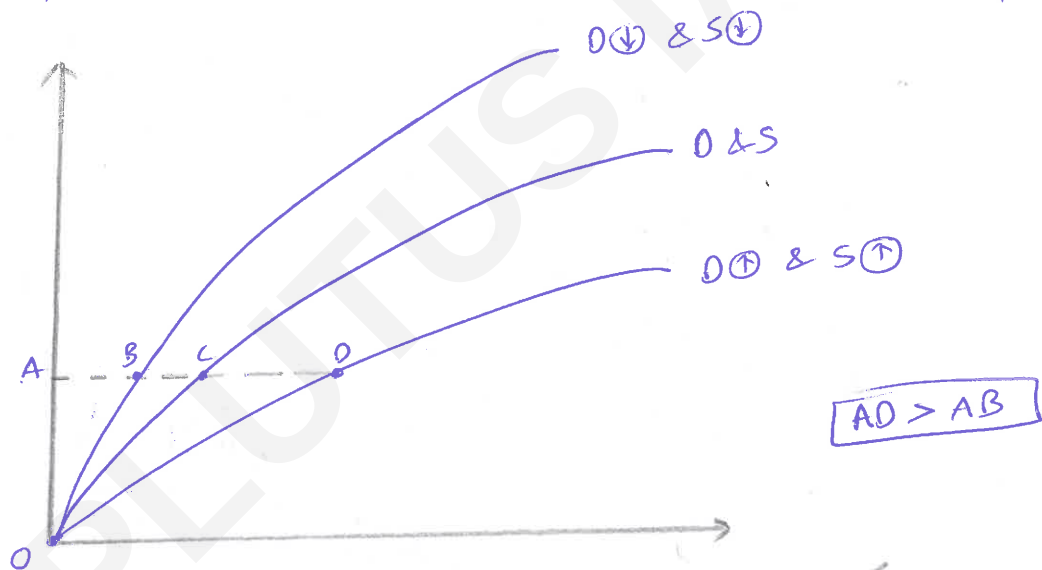
- India says to Malaysia that "I am giving you OA_1 textile & I want a_1C_1 of rubber in return." to which Malaysia says, "I am willing to offer you a_1C_2 of rubber". So at this point we can see that India is getting more than it desired.
- At any other instance, Malaysia says to India that "I am willing to give you OB_1 of rubber & you give me b_1C_3 of textile" but India says, "I am willing to give you more i.e. b_1C_4 of textile".
- So both countries realize that actually they are getting more than what they asked for, that means volume of trade is increasing. So they keep on trading more till point 1.

→ Before point ①, countries will always get more than they demanded for & thus trade will occur till then. And at point ①, it will get exactly what it demands from the other country & thus ToT is reached at point ① where trade achieves equilibrium.

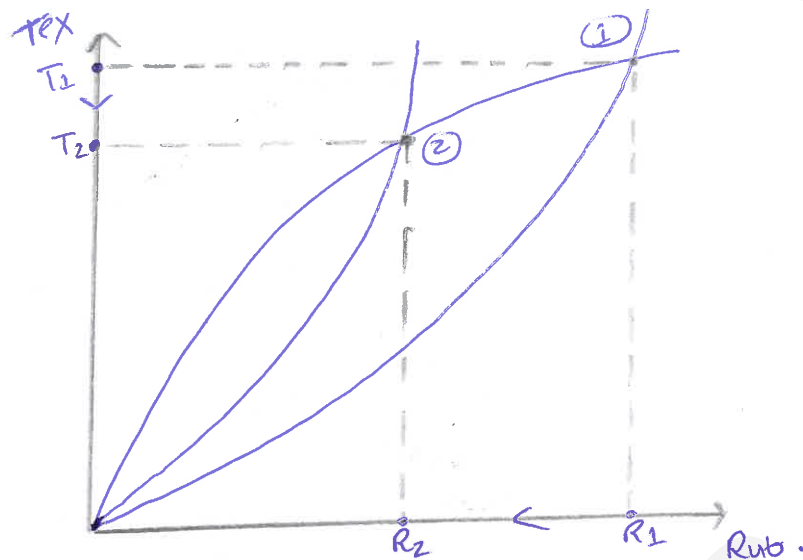
→ At points S & R (beyond ToT point ①); ^{Malaysia} ~~India~~ demands UR but Ind offers only OV (for OV amount of rubber given by Malaysia) And Thus, will not be able to trade with as Malaysia gains less.

Q. ToT is constant or it changes?

Solⁿ :- ToT depends on offer curve and offer curve of a country is totally dependent on demand & supply of that country.



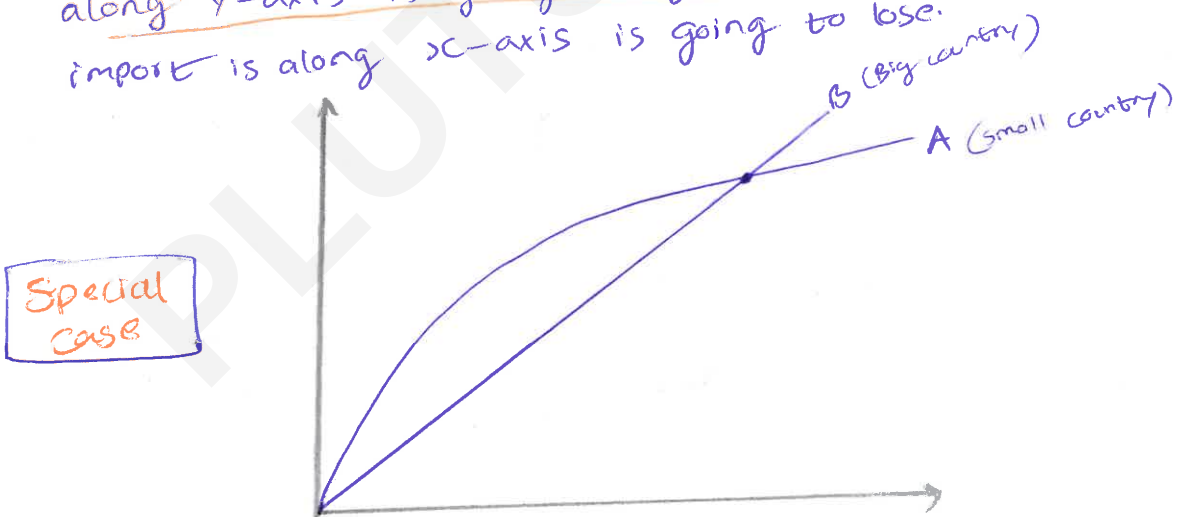
→ As we can see ToT changed from point (1) to (2) due to change in offer curve.



Thus for India $\frac{P_x}{P_m}$ or $\frac{Q_m}{Q_x} \downarrow$ — ToT $\downarrow$

& for Malaysia, $\frac{P_x}{P_m}$ or $\frac{Q_m}{Q_x} \uparrow$ — ToT $\uparrow$

→ **Note** — As ToT line become steeper, country whose import along Y-axis is going to gain AND the country whose import is along X-axis is going to lose.



Special
Case

→ Here, offer curve of country B coincides with the Terms of Trade line.

→ In this case, we have to remember that country B is a bigger country, hence it creates infinite demand for goods exported by A & infinite supply for goods exported to A.

→ Here, if the shift in offer curve occurs, it only changes the volume of trade.

→ The demand or supply conditions ^{which} change in small country A such that its offer curves move upward & downward has no effect on Terms of Trade. It only affects the size of International Trade. [ToT is completely controlled by Big country]

Heckscher-Ohlin model (HO Model / HO theory of International trade)

⇒ Till now whatever theories (Absolute advantage, comparative Adv., Reciprocal theorem); we have studied, all were the classical theories of international trade.

⇒ This is the modern theory of international trade.

⇒ HO said that Ricardo never told that on what basis we classify comparative advantage, they said that for production, we will be producing those goods which have maximum comparative advantage or least comparative disadvantage.

Assumptions

- ① There are 2 countries, 2 commodities (X & Y) & 2 factors of production (L & K) [2x2x2 model]
- ② Both nations use same factors of production & same technology.
It implies that if factor prices were equal in both countries then producers in both countries will use exactly same amount of labour or capital in production of each commodity.
- ③ Commodity X is labour intensive i.e. It uses more labour than capital at given factor price ratio (w/r) & commodity Y is capital intensive.
- ④ Both commodities are produced under constant returns to scales.
- ⑤ Taste & preferences of the people are same in both the nations.
- ⑥ Perfect competition in factor market & product market.
- ⑦ None of the countries is a small country.

⇒ Basic Idea

Country A	Country B
→ Labour intensive	→ Capital intensive
→ Country A would produce & export good X (as it is labour intensive good)	→ Country B would produce & export good Y (as it is capital intensive good)

⇒ ~~There is no perfect factor mobility within the~~

⑧ There is perfect factor mobility within the nation but there is no possibility of factor mobility between 2 nations. This means that there will be no difference in earnings of factors of production within a country but it is possible to have international difference in the absence of trade.

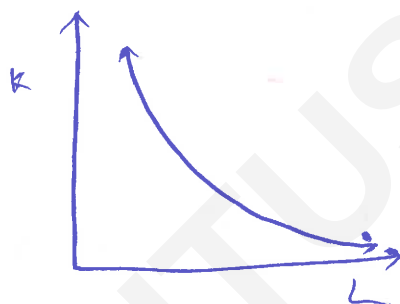
⑨ All resources are fully employed in both the countries & there is no obstruction to free trade. This means that specialization will continue until prices of commodities are equal in both countries.

(As commodity X is supplied in Country B, supply there (↑) & thus price (↓) AND in country A, increasing labour demand for commodity X causes prices to (↑))

⑩ Trade between 2 countries is balanced (Export of country = Import of country)

Note

Iso Quant



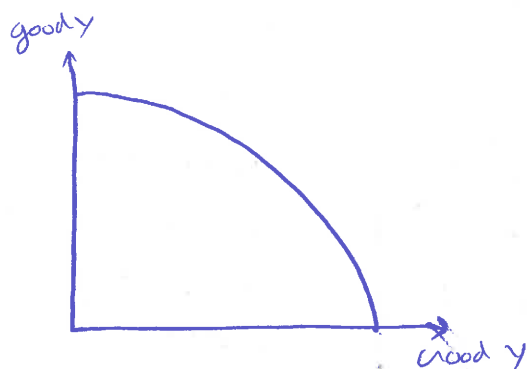
Curve, encompassing the combination of factors of production (K, L) that lead to same amount of output.

Indifference curve



Curve, embodying the combination of 2 goods giving same amount of satisfaction.

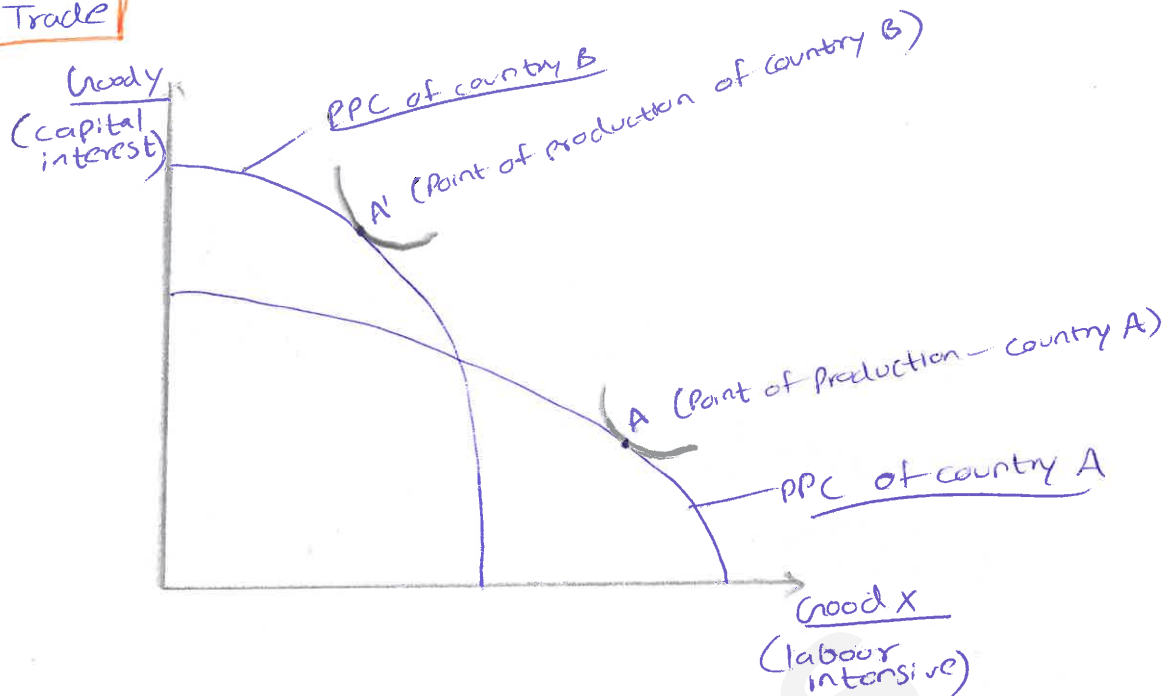
Production Possibility Curve



Curve, having the combination of good X & good Y which a country can produce by employing all its resources (FOP)

Physiocrats: Local economist especially in France who viewed that Agriculture is the source of all output & the economy
Mercantilist → Physiocrat → Classical

Before Trade

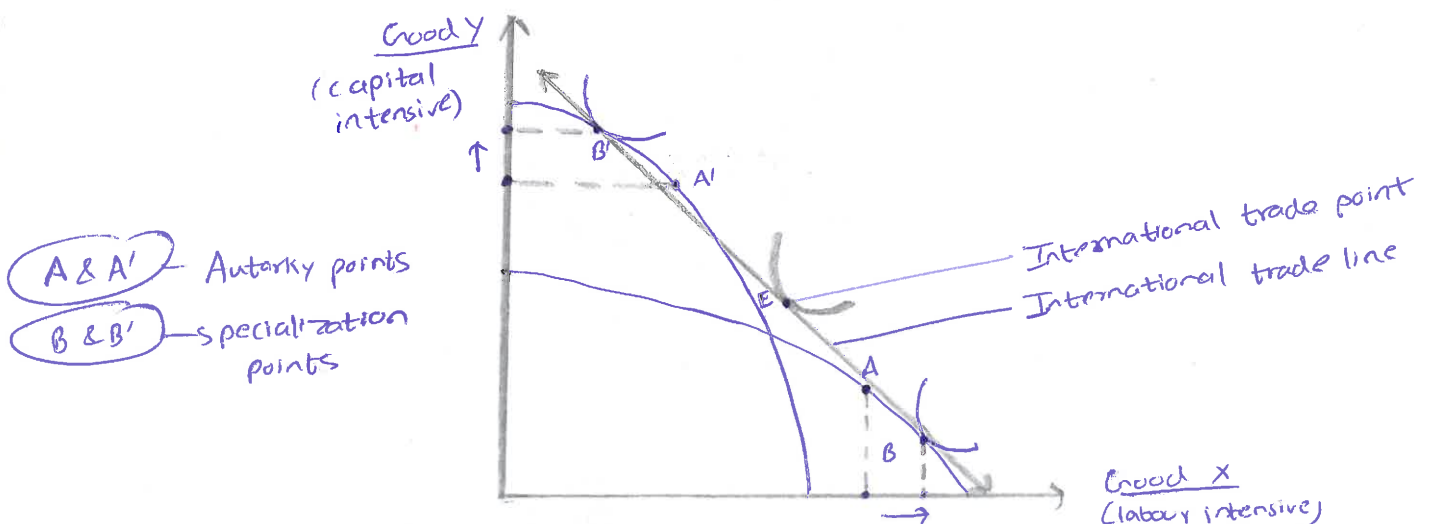


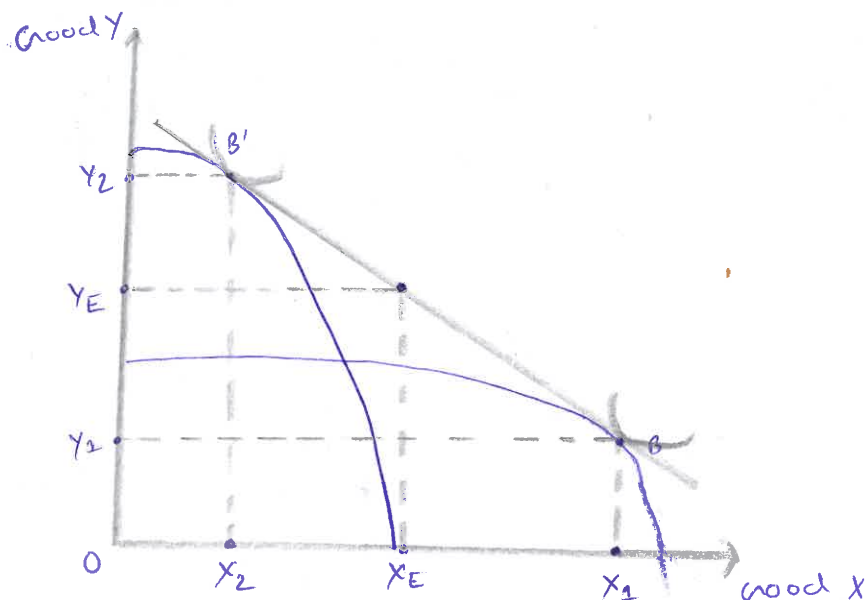
The point of intersection at A & A' of PPC & indifference curves of Country A & Country B respectively gives their respective equilibrium production.

- ⇒ We can see in PPC of A as this country is labour intensive, it is producing more of Good X than Good Y.
- ⇒ From the PPC of Country B we see that it is producing more of Good Y than X.

After Trade

- ⇒ As Country A specializes in Good X, it will produce more of Good X, hence production point will shift from A towards X axis (i.e. B).
- ⇒ And Country B having specialization in Good Y will produce more of it & hence its production point will shift towards Y axis (i.e. B').





⇒ Country A was producing OX_1 quantity of good X, now after trade it will export $X_1 X_E$ quantity of good X.
Country B was producing OX_2 quantity of good X, now after trade it will import $X_2 X_E$ quantity of good X.

⇒ Country B was producing OY_2 quantity of good Y, after trade it will export $Y_2 Y_E$ quantity of good Y;
Country A was producing OY_1 quantity of good Y, after trade it will import $Y_1 Y_E$ quantity of good Y.

⇒ HO was talking of Balance of trade, which means

∴ For country A

Value of Export + value of Import = 0

∴ $X_E X_1 + Y_E Y_1 = 0$

Now since $Y_2 Y_E = Y_E Y_1$

For Country A

Value of Export + value of Import = 0

∴ $P_x (X_1 - X_E) + P_y (Y_1 - Y_E) = 0$

For Country B

Value of export + value of Import = 0

∴ $P_x (X_2 - X_E) + P_y (Y_2 - Y_E) = 0$

Explanation

→ The HO theorem states that a country has a comparative advantage in the production & export of that commodity which uses more intensively country's relatively abundant factors of production.

Country A	Country B
→ Labour Abundant (Intensity)	→ Capital Abundant (Intensity)
→ Labour is cheaper	→ Capital is cheaper

Hence, it is not about the quantity of the factors rather the price of the factors.

⇒ It was given by Paul Samuelson

⇒ Under factor price equalization, trade becomes a substitute for international migration of factors of production, due to which in equilibrium, relative factor prices $\left(\frac{K}{L}\right)$ becomes equal to each other.

Assumptions

① This is 2X2X2 model

ex:- Before Trade

India
→ Labour intensive
→ $\left(\frac{K}{L}\right) \downarrow$

US
→ Capital intensive
→ $\left(\frac{K}{L}\right) \uparrow$

After Trade

ex:- If India produces 5 carpets with 10 labourers, as trade begins, demand increases to 25 carpets & thus there will be scarcity of Labour. (as supply of Labour is constant)

So Trade increases the demand of Carpets & eventually the demand of Labour & since it is available in scarcity $\left(\frac{K}{L}\right)$ will increase. (as L is decreasing)

And similarly, for US, after international trade, capital's demand increases but supply of capital is not increasing so $\left(\frac{K}{L}\right)$ decreases.

② Perfect Competition in the market

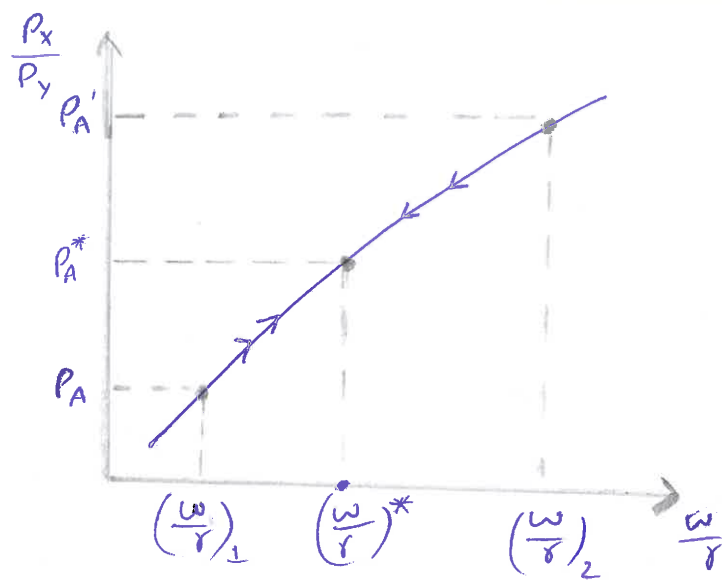
③ Same level of technology in both the nations.

$w \rightarrow$ Wages (return of labour)

$P_x \rightarrow$ Price of good x

$r \rightarrow$ Interest rate (return of capital)

$P_y \rightarrow$ Price of good y



⇒ Country 1

- As it is labour surplus, labour is cheap & thus $\frac{w}{r}$ will be low & so $\frac{P_x}{P_y}$ will be low, obtained at point P_A , at point $(\frac{w}{r})_1$

⇒ Country 2

- As it is capital surplus, ~~lab~~ capital is cheap & thus $(\frac{w}{r})$ will be high (at point $(\frac{w}{r})_2$) AND so $\frac{P_x}{P_y}$ will be high (at P_A').

⇒ After trade, $(\frac{w}{r})$ for country 1 would increase as demand for labour will increase & hence after trade, $(\frac{w}{r})$ for country 1 will move up.

Whereas, in country 2, as demand of capital increases thereby r also increases & hence $(\frac{w}{r})$ decreases so it will move down.

Both will reach a common $(\frac{w}{r})$ at centre with coordinates $(\frac{w}{r}^*, P_A^*)$

This phenomenon is Factor price equalization

$\Rightarrow$ So $(\frac{w}{r})_1$ given at P_A as $\frac{P_x}{P_y}$
 $(\frac{w}{r})_2$ given at P_A' as $\frac{P_x'}{P_y'}$

$$P_A < P_A'$$

i.e. Price of commodity ~~of~~ X (P_x) is lesser in country 1 & Price of commodity Y (P_y) is lesser in country 2.
Therefore, Country 1 would specialize in production & export of commodity X & Country 2 would specialize in production & export of commodity Y.

$\Rightarrow$ Therefore, in this model, factor prices or factor rewards are getting equalized (after trade)

Factor Intensity Reversal

$\Rightarrow$ Let's say there are 2 countries (A & B). Country A is labour surplus. that is labour intensive products are being produced. Country B is capital surplus that is capital intensive products are produced.

$\Rightarrow$ Let's say labour intensive good is X & capital intensive good is Y $(X) \rightarrow LI$ & $(Y) \rightarrow KI$

$\Rightarrow$ This theory says that if good X is labour intensive in Country A & capital intensive in country B then how will trade occur between these 2 countries.

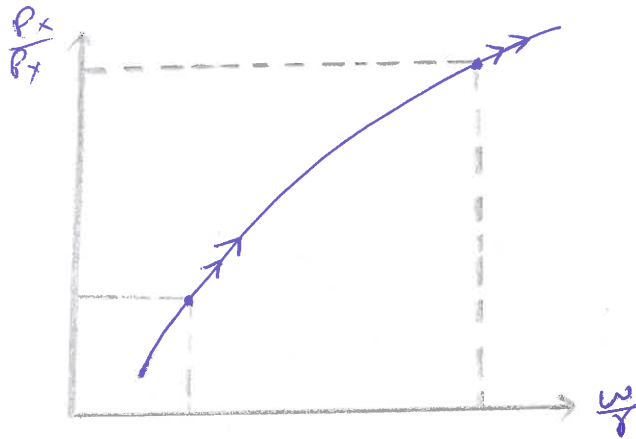
Introduction

$\rightarrow$ Under factor intensity reversal, a commodity is labour intensive in labour abundant nation & capital intensive in capital abundant nation. This happens when it is easy to substitute one factor for another. In this case price equalization is violated & thus Heckscher-Ohlin theorem breaks down.

→

Country A
 $X \rightarrow$ L-intensive
 $Y \rightarrow$ K-intensive
 $(X) \rightarrow$ Export.
 $\hookrightarrow D_L \uparrow \rightarrow w \uparrow$
 $\therefore (\frac{w}{r}) \uparrow$

Country B
 $X \rightarrow$ K-intensive
 $Y \rightarrow$ L-intensive
 $(X) \rightarrow$ Export
 $\hookrightarrow D_L \uparrow \rightarrow w \uparrow$
 $\therefore (\frac{w}{r}) \uparrow$



(Note: - ~~B~~ despite having X production cheaper, will ~~export~~ produce & export Y only because it is the good demanded by A)

Leontief Paradox

- Q. Does HO theorem withstand the Factor intensity reversal test? state the relevance of Leontief paradox.
- ⇒ Leontief studied export & import of US economy from 1947-51.
 - ⇒ He found out that imports of US economy were more capital intensive in comparison to labour intensive good. This is contradictory to what HO proposed, US being capitalist economy should import more of labour-intensive good.
 - ⇒ He observed, both exports & imports of US & found out that US was exporting capital goods but imports of US were 30% more capital intensive.
 - ⇒ He said that US economy is a labour-intensive economy since labour of US is 3 times more productive than labour of other countries. Later on he relinquished his studies & said that nations trade due to price difference, hence his theory is wrong. (doubt)
 - ⇒ He again conducted a study from 1951 ~~sta~~ data of US economy & said that previous data was of the times of 2nd world war.
 - ⇒ This time he found out that Exports of US. were 6% more labour intensive

Reasons for this paradox

By Lieontiff

① Tariff policy of U.S.

- U.S. provided protection to its labour intensive goods by imposing tariffs on the imports of labour intensive goods.
- Due to this, the imported labour intensive goods became expensive whereas U.S. labour intensive goods were cheap. Hence people in U.S. purchased these domestic labour intensive goods & exports of these goods started as well.
- Other countries of the world observed this & since these countries wanted to earn foreign exchange, they started exporting capital intensive goods. ~~Now the Import Substitute industry of U.S.~~ Hence, Import of capital_{Intensive} goods increased in U.S.

Krauss study

- ⇒ Krauss conducted his study from 1958-1961 of US exports & imports
- ⇒ He said that yes, exports of US are more labour intensive

Reason

- He said that in K/L of US exports, L is more but U.S. labour is highly skilled & this is due to the research & development of U.S. economy which comes under the capital. Hence, US labour is actually 'human capital' of US.
- Hence, he said Lieontiff paradox does not hold.

Boeven study

- ⇒ He conducted studies of 27 countries in the year 1987 & observed that half of country support H.O. model & rest half support Lieontiff.

Scott & Harrison study

- ⇒ They conducted the study from 1990-92 & found that if there is a bilateral trade between 2 countries then H.O. model exists but there are 2 conditions for it to hold true.
 - (i) Similar preferences
 - (ii) Less distant

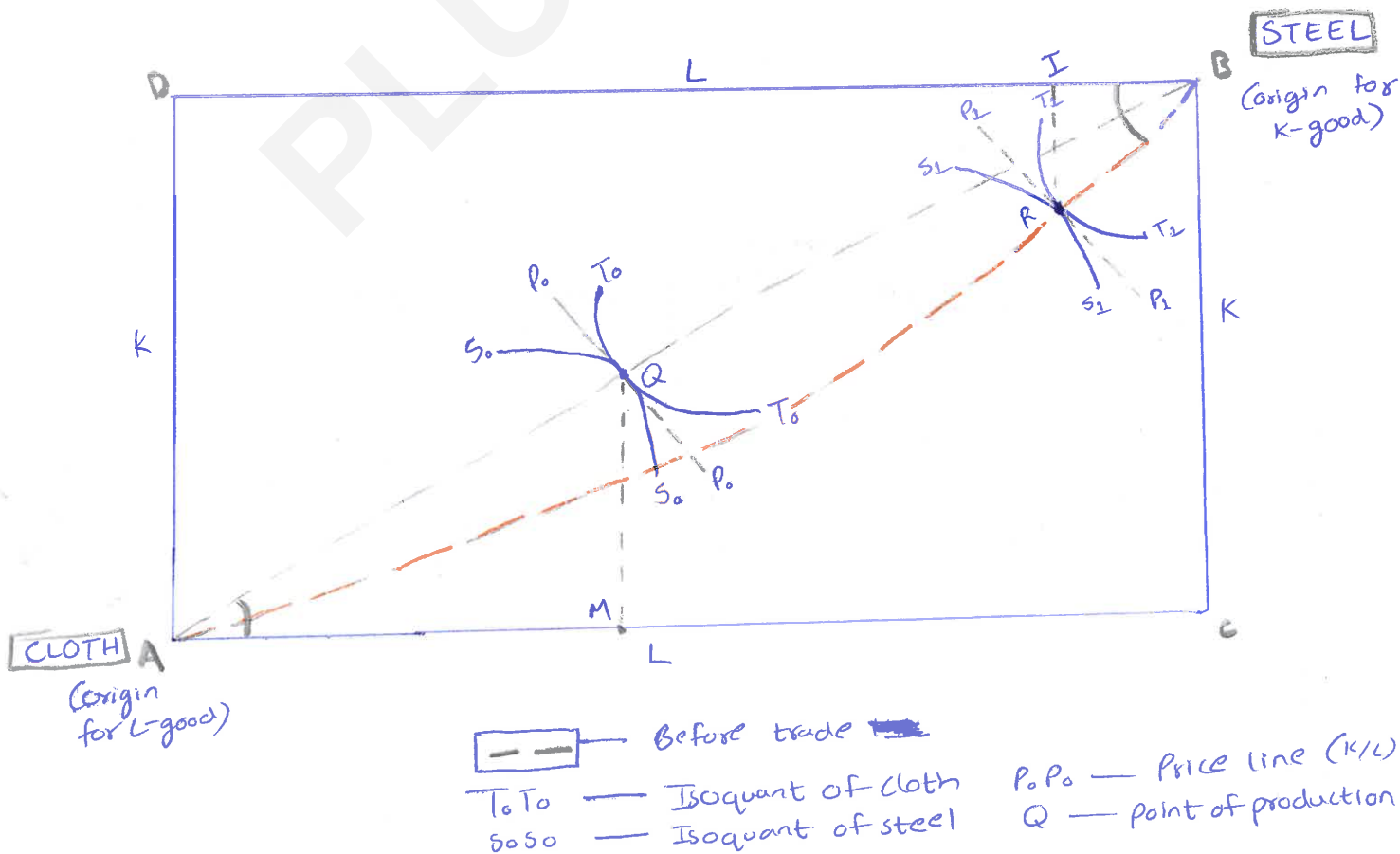
⇒ In 1941, Stolper & Samuelson worked out from the H-O theory, a theorem concerning the effects of trade on income distribution.

⇒ According to this theorem, the free trade will benefit the relatively abundant factor & hurt the relatively scarce factor of production. For example, If a country is labour abundant, it will produce labour-intensive goods for international trade.

Therefore, demand for labour would increase & hence wages of labour would increase. But this is hurting the demand of capital & reward of capital i.e. interest.

Assumptions

- ① The country is producing only 2 goods with the help of 2 factors of production (2x2x2). (say steel & cloth)
- ② Steel is capital-intensive & cloth is labour-intensive.
 $\left(\frac{K}{L} > 1\right)$ $\left(\frac{K}{L} < 1\right)$
- ③ The supplies of both the factors are fixed. (K & L)
- ④ The country is assumed to be labour abundant & capital scarce.
- ⑤ There is perfect competition in both the factor market as well as commodity market.
- ⑥ International terms of trade remain fixed.



⇒ Angle QAM represents the slope, giving the amount of L & K used in production.

So $\tan \angle QAM$ gives $\frac{QM}{AM}$ i.e. $\frac{K}{L}$

It thus, can be observed that more L is used here as compared to K.

It must also be noted that steel's isoquant is away from the origin B i.e. greater production & cloth's isoquant is near the origin A i.e. lesser production; before trade.

⇒ Angle RBI represents the slope, giving the amount of L & K used in production after trade.

So $\tan \angle RBI$ gives $\frac{IR}{IB}$ i.e. $\frac{K}{L}$

After trade, country being labour intensive increases its production of cloth & thereby new isoquant for cloth is $T_2 T_1$ & for steel is $S_2 S_1$. And $P_1 P_2$ is the new price line & production point is R.

⇒ As it can be observed that $P_1 P_2$ is steeper than $P_0 P_0$ (As price line represents K/L), this means that K/L is increasing in the production of goods.

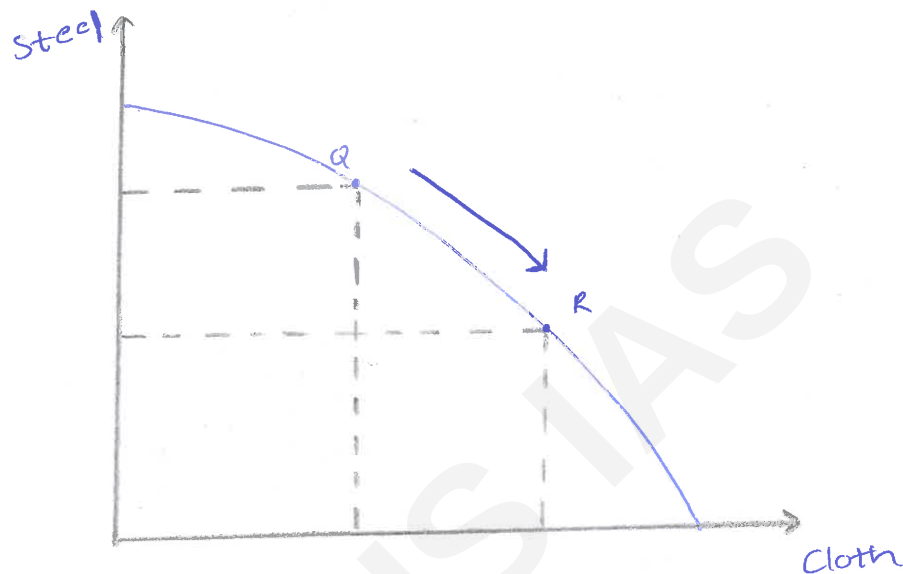
Why K/L rises?

→ Initially labour was cheap as country is labour intensive, after trade demand for labour increased but supply of labour is fixed & hence labour from steel started migrating from steel to cloth but still were not able to fulfill the entire demand so hence L ↓ & so $\frac{K}{L}$ ↑.

→ As demand of labour is high, so wages would also be high but entrepreneur is concerned with the profit, so in place of labour for the production of cloth, he started using capital thereby K increased & thus $\frac{K}{L}$ also ↑.

⇒ We also saw that demand of Labour is increasing, that would result in increase in labour price (wages), which is abundant factor & hence is getting benefitted.

⇒ Labour from steel started migrating to the production of cloth & hence capital holder sent their capital also to steel ~~if~~ labour from steel to cloth at minimum return i.e. r is decreasing. So scarce factor is suffering the loss.



Implications of this model

- ① Free trade will improve the distribution of income within less developed countries.
- ② Export promotion

⇒ It refers to trade policies without any tariffs, quantitative restrictions & other methods obstructing the movement of goods/ services between countries.

⇒ Professor Jagdish Bhagwati defined free trade policy as absence of tariffs, quotas, exchange restrictions, taxes & subsidies on production, factor use & consumption.

Arguments in favour of free trade / Case for free trade

→ The classical economists were in favour of free trade policy.
 → Among the modern economist Haberler advanced the following arguments in favour of free trade:

- ① Maximization of output.
- ② Optimum utilization of resources.
- ③ Optimization of consumption.
- ④ High factor income.
- ⑤ ~~A~~ Educative value
- ⑥ Wide market
- ⑦ Prevents monopolies
- ⑧ Encourages inventions
- ⑨ Develops transport & communication.
- ⑩ Promotes international cooperation.
- ⑪ Best policy of economic development

Maximization of output

→ Under free trade, a country specializes in the production of those commodities which is relatively best suited to produce & export in exchange for those imports which it can obtain more cheaply.

→ This maximizes the output of all the participating countries. Because all gain from trade which in turn increases the real national income of the world economy.

→ Thus free trade leads to maximization of output, income & employment.

Optimum Utilization of resources

→ Each country specializes in the production of those goods for which it has a abundant supply of natural resources. As a result, the existing resources in each trading country are employed more productively & resource allocation becomes more efficient.

Optimization of Consumption

→ Free trade benefits the consumer where they are able to buy a variety of commodities from abroad at minimum possible prices.

High factor income

- Under free trade, there is perfect mobility of factors of production
- They can move from one place to another & between countries in order to earn more. Thus such factor incomes as wages, interest, rent & profits are high under free trade.

Educative values

- According to Haberler, free trade has an educative value.
- International competition encourages home producers to sacrifice leisure in order to increase productivity.

Leisure

- Anything that does not fetch income
- Even study, exercise etc.

Wide Market

- As the demand of goods is not confined to one country but to so many countries, the entire world becomes the market for all types of goods & services.

Prevents Monopolies — short-term

- Under free trade, each country specializes in the production of few commodities & the firms or industries are of the optimum size, so that the cost of production of each commodity is minimum.
- Thus, Free trade ensures a lower price for exports as well as imports. And the price mechanism under perfect competition prevents the formation of monopolies.

Encourages inventions

- Free trade encourages nations to produce the best & the cheapest product in order to gain more.

Develops transports & communication

- Free trade encourages the development of means of transport & communication not only within countries but also among countries.
- Development of internet, e-mail, & e-commerce has been possible due to more free trade globally.

Promotes international cooperation

- To solve bilateral & multilateral trade problems, different countries come into contact with each other & hold trade talks with each other.

Best policy for economic development

- By fostering interdependence among nations, free trade can contribute to political & economic stability.
- When countries are economically interlinked, they have a vested interest in each others economic ~~need~~ well-being, potentially leading to peaceful & cooperative international relations.

The case against free trade

① The Job loss & displacement

- Critiques argue that free trade can result in the loss of domestic jobs as ~~countries move~~ companies move production to countries with lower labour cost.
- Industries that cannot compete with cheaper imports may downsize or shutdown leading to unemployment & economic dislocation for workers in affected areas.

② National Security concerns

- Some argue that free trade could compromise country's national security by making it overly dependent on other nations for essential goods or services, potentially undermining its sovereignty & resilience in time of crisis. (EU totally dependent on US for security)

③ Inequality & social impacts

- Critiques suggest that free trade can exacerbate income inequalities within countries as its benefits may not be equally distributed among the population.
- This can lead to social unrest & undermine social cohesion.

④ Market Volatility & Financial risk

- Free trade can expose domestic economies to global market volatility & financial risk.
- Increased integration can lead to vulnerability to external shocks & financial crisis.

⑤ Emergence of MNCs & monopolies in long term

- Free trade leads to the emergence of international & local monopolies, according to Haberler.
- Such monopolies developed with the spread of MNCs under free trade which proved harmful to other countries & the domestic interest. This factor also led to adoption of the policy of protectionism.

⑥ Exploitation & colonization of countries

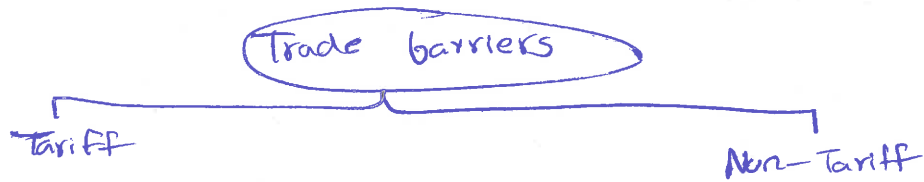
→ Economists do not agree with Haberler, that the free trade policy helps in development of underdeveloped countries. Rather this policy led to the exploitation & colonization of countries during the 15th century & early 20th century.

⑦ Environmental & Labour Standards

- Free trade can create a race to the bottom ~~& this is~~ in which countries might reduce environmental & labour standards to attract investment & remain competitive.
- This can lead to degradation of environment & exploitation of workers in less regulated areas

⇒ Trade barriers refers to any govt. policy & regulation that restrict international trade by making it more difficult or expensive for goods & services to cross border.

⇒ These barriers can take several forms including tariffs, quotas, subsidies, import license & Local content requirement, etc. Each of these barriers aim to protect domestic industries from foreign competition.



Tariff

→ It is a tax or duty levied on goods when they enter or leave the national frontier or boundary. In this sense, a tariff refers to Import duties OR Export duties but generally tariff is synonymous with Import duty.

→ Following types of tariffs are there: -

① Ad-valorem tariff

Based on value & thus (↑) in this tax make cheaper product attractive (as % of value - tax (↓))

- Applied as a percentage of the total value of the imported commodity.
- The Import duty is a fixed percentage of C.I.F (Cost, Insurance & Freight)

② Specific Duty

Based on quantity & thus (↑) in this tax make cheaper product expensive (as flat tax for cheap products amount to high tax to price ratio)

- Levied per physical unit of the imported commodity.
- For ex: ₹ x / TV or on cloth / metre or on oil / litre, etc.

③ Compound duty

- Combination of ad-valorem & specific duty.

④ Sliding Scale duty

- Sometimes government levies import duties which vary with the prices of the commodities imported.
- Such duties are known as sliding scale duties which may be ad-valorem or specific.

→ On the basis of Country wise discrimination

① Single column tariff

- When a uniform rate of duty is imposed on all similar commodities, irrespective of the country from which they are imported.

② Double column Tariff

- Under this system, 2 different rates of duty exist for all or some of the commodities.

[2 different rates for 2 different countries]

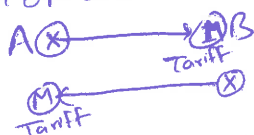
③ Multiple or Triple column Tariff

- Under the multiple column tariff system, 3 or more tariff rates are levied on each category of commodity

→ On the basis of retaliation

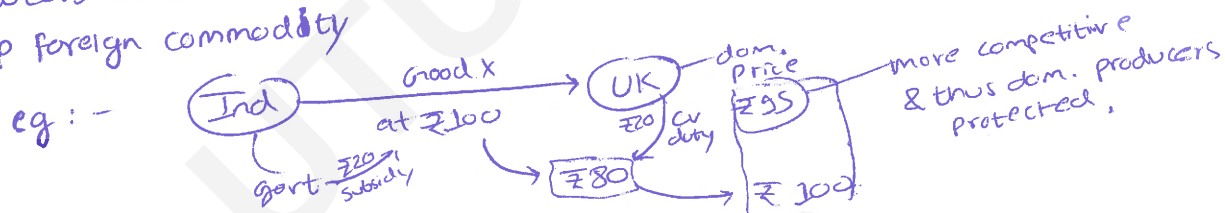
① Retaliatory Tariff

- It is levied by one country on the imports of another country in order to punish the latter for its trade policy which harms the exports or balance of payment position of one country



② Counter-vailing duty

- It is an additional duty which is imposed on a commodity whose export price is reduced by the other country through an export subsidy.
- The additional duty is levied to raise its price in order to protect producers of the same commodity in the importing country from the cheap foreign commodity



Non-Tariff restrictions

[It mainly includes direct restrictions (Quotas), monetary restrictions & technical & Administrative restrictions]

→ Following are the types:.

① Quota (Quantitative restrictions)

- These are imposed with a view to reduce the quantity of imports (or exports) to a limited size.

② Monetary Restrictions

- A country can impose foreign exchange control to accomplish precisely the same effect limiting the volume of Import.

Like LBS

③ Administrative & Technical regulations

- They include custom regulations on bringing certain products either on the ground which constitute a health hazard or do not meet the safety regulations of the country.

④ Government procurement policies or state trading practices

- These policies involve giving preferences to domestic producers for government procurement

⑤ Subsidies

- It can be seen as a trade barrier when they provide support to domestic industries, making it difficult for foreign competitors to compete on equal footing.
- By receiving the financial assistance from the govt., domestic producers can lower their prices making it harder for foreign goods to enter the market.

Imports
 $W_p < D_p$

Exports
 $W_p > D_p$

W_p — world prices
 D_p — Dom. prices

⑥ Import License & Local content requirement

- Import License puts the restrictions on the quantity of good that can be imported. (not on goods for personal use but on businesses)
- local content requirement demands that a certain portion of a product's value must be used for domestic country.

Immiserising Growth

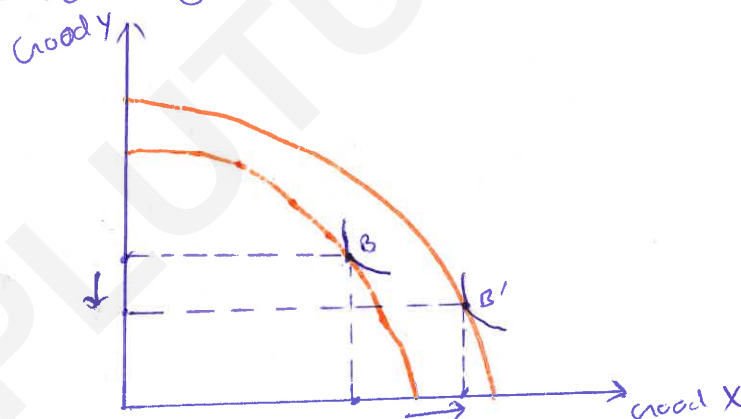
Qn. 2016 The argument that export-biased growth may turn the ToT unfavourable to the country & hence may not be beneficial, is applicable in the case of a large country & not a small country. explain.

Qn. 2015 What is immiserising growth? How can it be prevented through trade policy intervention?

⇒ According to Jagdish Bhagwati, Immiserising growth (In) is a concept in economics that refers to a situation where a country's economic growth leads to decrease in its overall welfare or wellbeing despite of increase in its Aggregate income or output.

Rybczynski Theorem

- There are 2 goods in an economy X & Y, where X is labour intensive, Y is capital intensive.
- P_x & P_y (Prices of X & Y) are constant.
- Now if quantity of labour increases & quantity of capital is constant then production of X increases & production of Y decreases.
($\propto$ Proportional to the $\uparrow$ in labour)



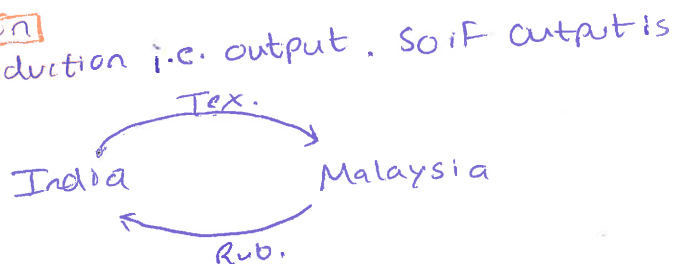
Trade & Economic growth

- Economic growth refers to the production i.e. output. So if output is increasing, we say growth is occurring.

ex: If there 2 countries,

(If) — For Ind
Export > Import,

Ind. is producing more &
have larger volume of trade



- If Ind starts producing more rubber then its Import of rubber would decrease & hence volume of trade will also decrease.

→ Production is Pro-trade if the output of the nation's exportable commodity increases proportionately more than the output of its importable commodity. And is Anti-trade if the output of the nation's importable commodity is proportionately more than the output of its exportable commodity.

② Consumption

→ Consumption signifies economic welfare, India is exporting textile to Malaysia & production of textile is increasing but it will not be effective if consumption of textile is not increasing.

→ Hence, Despite of increase in production volume of trade will not increase

→ Consumption of importables is increasing — This is pro trade

→ Consumption of Exportables has increased — This is Anti trade

→ Consumption is pro trade if the nation's consumption of its importable commodity increases proportionately more than consumption of its exportable commodity.

→ ① If Production (Exportables) + Consumption (Importable) ↑ — Pro trade

This means, Growth as well as welfare of Economy is ↑
Volume of trade expands proportionately faster than output.

→ ② If Production (Importables) + Consumption (Exportables) ↑ — Anti trade

This means, Growth as well as welfare of Economy is deteriorating.
Then volume of trade expands proportionately less than output
& may even decline absolutely.

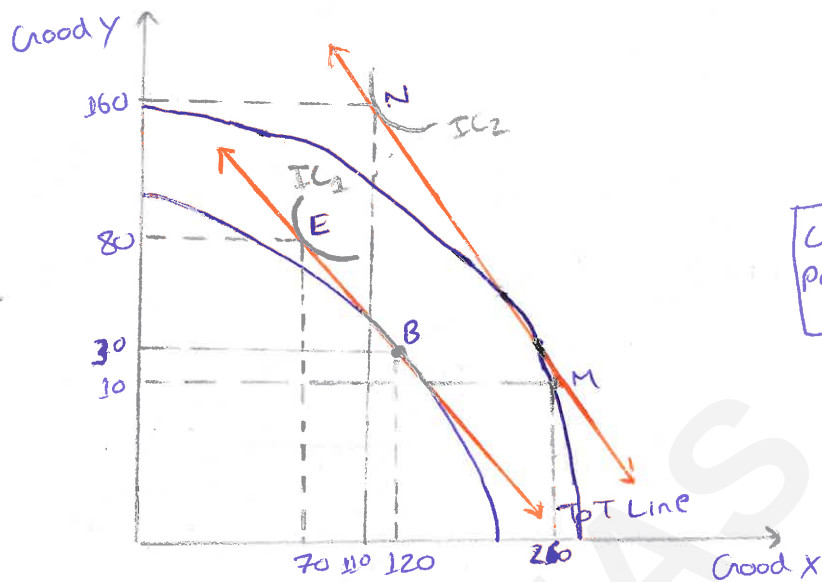
→ ③ If Production (Pro trade) & Consumption (Anti trade) or vice versa then volume of trade would depend on the net effect of the 2 opposite forces.

→ ④ If Production & Consumption are neutral (neither Pro trade nor Anti trade) then trade expands as the same rate as output.

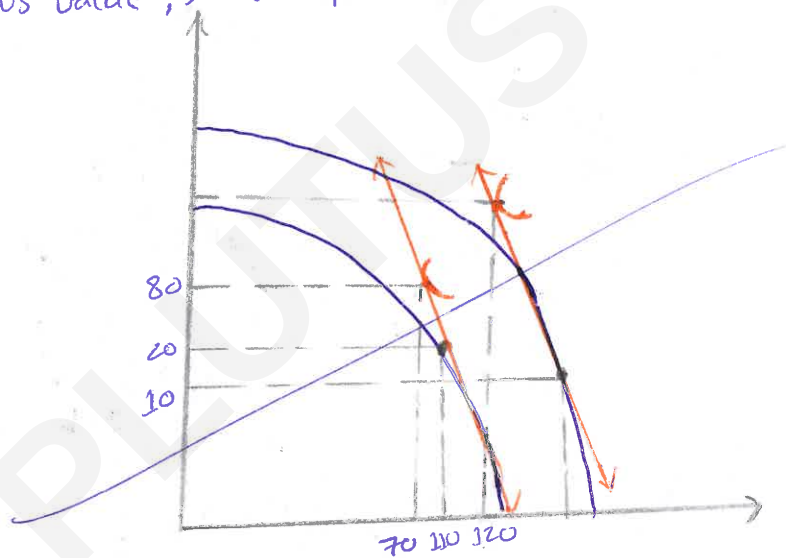
Note — In case ②, as Consum. is anti-trade
— Protected Domest. goods sold at high prices.
— Foreign options curtailed — low quality.
— As a result standard of liv. / welfare ↓

Small Country Case

→ Small Country implies unimportant country i.e. it is such a country which will not be able to alter the terms of trade in the global market i.e. it is not able to influence the prices or demand, etc in global market



→ Let us say that quantity of labour has increased to the double of previous value, so the production point shifted from B to M.



→ ToT does not change so ToT line will be parallel (to the pre-ToT)
 → we need to consider consumption as well. Let's say after trade, consumption is at point E, on observing we found that consumption of good X is 70 & consumption of good Y is 80 but 120 units of good X were produced, this means 50 units (120-70) of good X have been exported. And 50 units of good Y is imported (80-30)

$$\therefore ToT = \frac{Q_M}{Q_X} = \frac{50}{50} = 1$$

→ When labour increases, Production of X becomes 260 b¹ production of Y has reduced to 10 units.

In this scenario, production of Exportables is greater than production of Importables

Consumption

→ So the Consumption before was $70X + 80Y$
& after is $110X + 160Y$

Therefore, consumption in Importables (Y) have $\uparrow$ more.
So Consumption is Pro-trade.

Hence, Production & Consumption is Pro-trade

⇒ So from the Consumption points of E

$$10u - (L) \quad E \rightarrow 80 + 70 = 150$$

$$20u - (2L) \quad N \rightarrow 160 + 110 = 270$$

Now since Labour is doubled so

$$\text{Per capita consumption (at E)} = \frac{150}{10} = 15u./\text{Labour}$$

$$\text{Per capita consumption (at N)} = \frac{270}{20} = 13.5u./\text{Labour}$$

So per capita consumption $\downarrow$ & thus welfare $\downarrow$

This is the concept Immiserising Growth

Large Country Case

→ It can alter Terms of Trade.

→ Here, we are going to study 2 effects

(1) ToT effect

(2) wealth effect

ToT effect

$\frac{P_x}{P_y}$ is
Constant

Taxonomic
If then case

Volume of trade
Reduces

(Is it because $K \uparrow$)
Usually when
Importables are produced

Then ToT improves

As country has $\uparrow$ production
it will import less & ~~and~~ since it is a
large country, it can alter ToT by
offering less X_s for the reduced M_s
& thus ToT improves

[Large country Discretion]

[of
Importables]
Since
growth
is occurring

Volume of trade
Increases

Usually when Exportables
are produced more
(Is it because $L \uparrow$)

Then ToT deteriorates

As country has $\uparrow$ production
of Exportables, X_s will $\uparrow$
& thus ToT deteriorates

→ If growth regardless of its source or type expands nations volume of trade at constant prices then the nation's terms of trade tends to deteriorate, on the other hand, if growth reduces the nation's volume of trade at constant prices, nation's ToT tend to improve.

Wealth effect

→ It refers to the change in the output per worker or per person as a result of growth (Per capita consumption)

→ Now, Economic Growth $\begin{cases} \text{can} \rightarrow \uparrow \text{ Economic welfare} \\ \text{can} \rightarrow \downarrow \text{ Economic welfare} \end{cases}$

→ Now Economic growth will increase or decrease economic welfare will depend on:-

(1) ToT effect

(2) wealth effect

→ (a) A positive wealth effect by itself tends to increase the nation's welfare. Otherwise nation's welfare tends to decline or remain unchanged

(b) If wealth effect is positive & nation's terms of trade ^{improves} as a result of growth or trade then the nation's welfare would definitely increase.

(c) If ToT & wealth effect both are unfavourable then nation's welfare $\downarrow$.

(d) If wealth effect & ToT effect move in opposite direction, nation's welfare may deteriorate, improve or remain unchanged depending on the relative strength of the 2 opposite forces.

For small country

Both wealth effect & ToT effect deteriorates
wealth effect, was negative as output/person decreased & ToT effect is deteriorating because as P_x/P_y was constant & volume of trade was expanding thereby welfare of the small country was decreasing.

ToT improve : ToT line steeper
ToT deteriorate : ToT line flatter



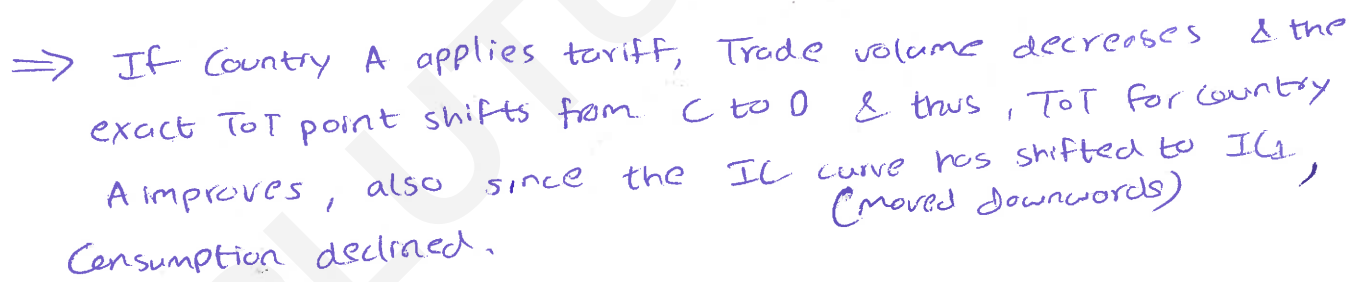
→ So here, ToT line has become flatter i.e. ToT deteriorated.
When Labour $\uparrow$ & thus volume of trade $\uparrow$

And thus, a negative ToT effect.

→ Also, initially, the consumption curves IC_1 & IC_2 were along constant ToT but now IC_3 moved backward & thus consumption $\downarrow$ & thus wealth effect $\downarrow$

∴ Consumption/wealth — $(-ve)$
ToT — $(-ve)$
overall welfare — $(-ve)$

- ⇒ optimum tariff is discussed for large countries & not for small countries
- ⇒ whenever a country applies tariff, terms of trade change or ToT effect improves.
- ⇒ optimum tariff is that tariff which improves the economic welfare



⇒ If country A, further applies tariff, Trade volume further declines & the exact ToT point shifts from D to E & thus, ToT for Country A improves again. Also since the IC curve has shifted to IC_2 , Consumption declined further

⇒ At point F, it is observed that $\uparrow$ Tariff further will $\downarrow$ Consumption with a very great proportion & thus point F is the point of optimum tariff where along with tariff (max possible), consumption is maximum.
(welfare)

Assumptions

Formula

$$\rightarrow \text{Optimum tariff rate} = \frac{1}{\text{Elasticity of demand for Foreign Country's good}}$$

Assumptions of optimum tariff theory

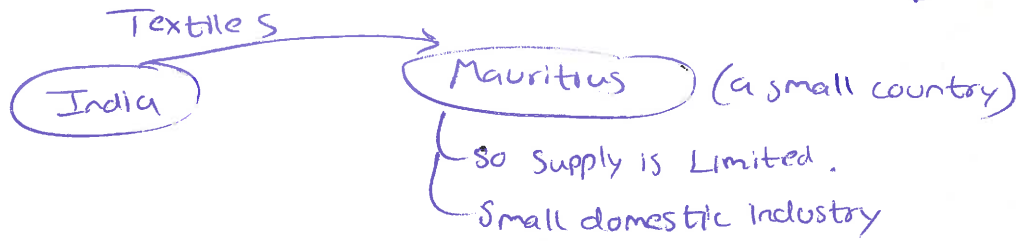
- ① Country imposing optimum tariff is a large country.
- ② Foreign supply of Import ~~of~~ is not perfectly elastic.
- ③ No Retaliation by other countries.
- ④ Perfect competition
- ⑤ Full employment
- ⑥ Tariff is imposed on the Imports only.

Criticism

- ① Small countries cannot use optimum tariff.
- ② Retaliation by country nullifies the benefits.
- ③ Difficult to measure elasticity.
- ④ Against the principles of free trade.
- ⑤ May lead to trade wars.

Effects of Tariff on Partial equilibrium / Microeconomic effect of Tariff

(Strategic Trade Policy)



⇒ Mauritius applied tariff on import of textiles from India for

- (i) Protection of the domestic industries
- (ii) Price effect
- (iii) Negative impact on consumption
- (iv) Revenue would increase
- (v) Balance of payment positive effect

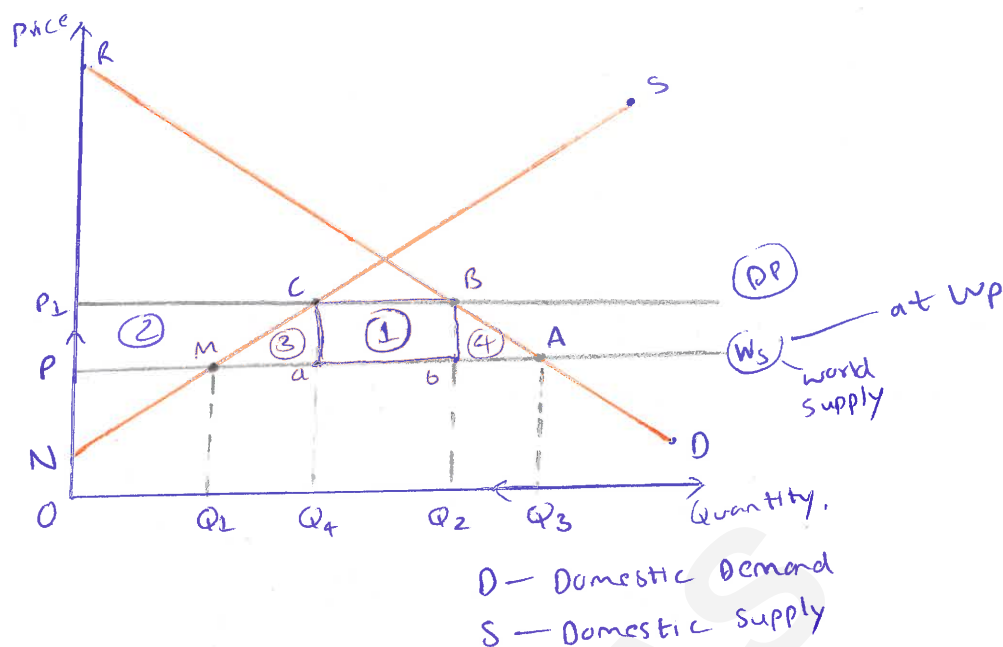
⇒ The Partial equilibrium analysis of tariff is most appropriate when a small nation imposes a tariff on imports competing with the output of a small industry then the tariff will not affect the world prices (because nation is small) nor the rest of the economy. (because industry is small)

Assumptions

- ① There is only one small country.
- ② It imposes tariff on one country.
- ③ The demand & supply curve of a commodity relate to the country which levies & an import duty (Tariff).
- ④ Demand & supply curves are assumed as given & constant.
- ⑤ Consumer's taste, incomes & prices of other commodity are assumed to be constant. (Ceteris Paribus)
- ⑥ changes in cost conditions such as externalities, technology, innovations, etc do not take place. [Extra impacts by industries, etc]
- ⑦ The world supply of commodity is perfectly elastic.
- ⑧ The home country does not impose tariff on the imports of raw material required for producing the commodity.
- ⑨ There is no transport cost.
- ⑩ The foreign price of the commodity remains unchanged.
- ⑪ The Imported & domestically produced commodities are perfect substitutes of each other.

Tariff under Partial Equilibrium

Price effect



→ OP is the price of good at global level & OQ_3 is the quantity demanded domestically.

Now since domestic supply is OQ_1 , Q_1Q_3 amount of quantity will be imported.

→ Tariffs are applied

- So price increases from P to P_1 globally domestically & thus new price at domestic level becomes OP_1 . (Price rise of PP_1)
- According to Law of demand, when price $\uparrow$, Quantity demanded will decrease & as we see that Demand Curve intersects ~~world supply~~ (price line) at point B, so new quantity demanded is OQ_2 .
- According to Law of supply, when price $\uparrow$, Quantity supplied will increase & as we see that Supply Curve intersects price line at point C, so now quantity supplied is OQ_4 .

→ Due to price effect, following implications will be observed:

- ① Protective effect or production effect. (Supply of domestic producers $\uparrow$ to OQ_4)

(2) Consumption effect (As we saw demand $\downarrow$, this is consumption effect)

(3) Revenue effect

(4) Redistribution effect

→ There will be no ToT effect as it is a small country which cannot alter ToT.

Revenue effect

→ After tariff, Imported Quantity is now Q_4Q_2

→ Revenue earned = $Q_m \times \text{Amount of Tariff (Price hike)}$

$$= Q_4Q_2 \times PP_1$$

= Area of $acBb$ (as ① in graph)

BoP effect (X-M)

If ① $M > X$: Deficit

② $M < X$: Surplus.

2 ways to improve BoP

(i) $M \downarrow$

(ii) $Rev. \uparrow$

In this case, since Import declined from Q_1Q_3 to Q_4Q_2 , Rev. also $\uparrow$ simultaneously (by tariff); BoP is improving.

Redistribution effect

→ Before tariff, producer surplus was MNP (before tariff); [as he was ready to sell at ON but market pushed it to P]

→ After tariff, producer surplus $\uparrow$ to P_1CN , the increase is observed as P_1CM (as ② in graph)

→ Before tariff, consumer surplus was RAP.

→ After tariff, consumer surplus fell to $RB P_1$, the decrease is observed as P_1BAP (as ① + ② + ③ + ④ in graph)

Consumer surplus Lost = Area (1) + Area (2) + Area (3) + Area (4)

Recovered by Govt Retrieved by producer / Dead weight Loss

PLUTUS IAS

Effective rate of protection

- ⇒ Protectionism is adopted by countries to provide growth to indigenous industries
- ⇒ When indigenous industries will thrive then your output / GDP is going to increase AND Employment will increase.
- ⇒ To achieve these objectives, several tools are adopted by the government, one such tool is tariff.
- ⇒ When tariff is applied on final goods for protecting domestic goods, such a tariff is called Nominal Tariff (t)
(Nominal Rate of Protection) $t = \frac{P' - P}{P}$
 P' : World price after tariff
 P : World price before tariff

Effective rate of protection

- ⇒ For example, let's take a sweater, to manufacture sweater, we need raw material.
- ⇒ Raw material can be available domestically or can be imported.
- ⇒ If raw material used is domestic then there is no issue, therefore effective rate of tariff will be equal to nominal rate of tariff.
- ⇒ But if the govt. applies tariff on the imported raw material then the problem arises.

$$e = \frac{t - a \cdot r}{1 - a}$$

- e → Effective rate of protection
- t → Nominal tariff (on final goods)
- a → % of imported input (raw material) in domestically produced goods
- r → rate of tariff on raw material or input

Case 1 — If a is 0 (no imported input)

$$\therefore e = \frac{t - 0 \cdot r}{1 - 0}$$

$$\therefore e = t$$

Case 2 — If r & t are constant but a changes, for $r = 10\% = 0.1$
 $t = 20\% = 0.2$

→ Let's say initially $a = 50\% = 0.5$

$$\begin{aligned}\therefore e &= \frac{t - ar}{1 - a} \\ &= \frac{0.2 - 0.5 \times 0.1}{1 - 0.5} \\ &= \frac{0.2 - 0.05}{0.5} \\ &= \frac{0.15}{0.5} \\ &= \frac{3}{10} = \underline{\underline{30\%}}\end{aligned}$$

→ Let's say initially $a = 40\% = 0.4$

$$\begin{aligned}e &= \frac{t - ar}{1 - a} \\ &= \frac{0.2 - 0.4 \times 0.1}{1 - 0.4} \\ &= \frac{0.2 - 0.04}{0.6} = \frac{0.16}{0.6} = \frac{16}{6 \times 10} \\ &= \underline{\underline{26.6\%}}\end{aligned}$$

⇒ Thus as $a \uparrow$, e also $\uparrow$

∴ $e \propto a$

Case 3 - If a & r are constant, $a = 50\% = 0.5$
 $r = 10\% = 0.1$

Let $t = 20\%$

$$\begin{aligned}e &= \frac{0.2 - 0.05}{1 - 0.5} \\ &= \frac{0.15}{0.5} \\ &= \underline{\underline{30\%}}\end{aligned}$$

Let $t = 30\%$

$$\begin{aligned}e &= \frac{0.3 - 0.05}{1 - 0.5} \\ &= \frac{0.25}{0.5} \\ &= \underline{\underline{50\%}}\end{aligned}$$

⇒ Thus, as $t \uparrow$, e also $\uparrow$, Hence

$$e \propto t$$

Case 4 — If a & t are constant & r changes

r which is a tax on input is paid by domestic producer only so if r is going to increase, protection available to domestic producer will decrease

Hence, on $\uparrow$ of r , $e \downarrow$

$$\therefore e \propto \frac{1}{r}$$

⇒ t is applied on final goods & r is applied on inputs, if r becomes greater than t ; e would become -ve. (i.e. decrease not a neg. no.)

⇒ The effective rate of protection is a measure used in economics to access the overall impact of trade protection on a particular industry or sector. It takes into account not only the only direct effect of tariff or ^{other} trade barriers on the final product but also the impact on intermediate inputs or raw materials ^{used} in the production process. _{tariff}

⇒ Effective rate of protection can be calculated through $\left(e = \frac{t - ar}{1 - a} \right)$

Dumping

⇒ It is the export of the commodity at below cost or at least the sale of commodity at lower price abroad than domestically.

Note

→ Producer if sells his goods :-

(i) In domestic market

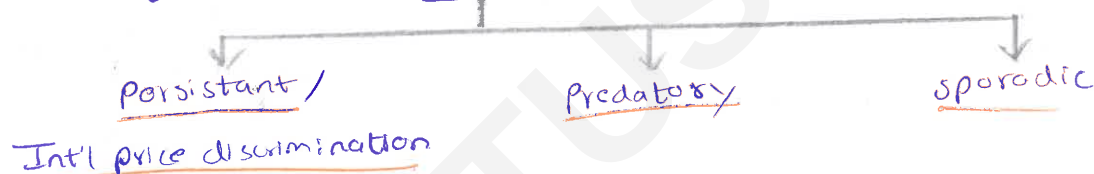
- There is no transportation cost
- No trade barrier

(ii) In Foreign market

- Transportation cost
- Trade barrier

→ So, if producer wants to maximize his profit, he has to sell in both the markets. So to capture foreign market, he reduces the prices of goods

⇒ Dumping can be of 3 types:



Persistent Dumping

→ It is the continuous tendency of the monopolist to maximize total profit by setting the commodity at a higher price in the domestic market in comparison to international market.

Predatory Dumping

→ Temporary sale of commodity at lower market price to drive foreign producers out of business.

Sporadic Dumping

→ It is occasional sale of commodity abroad at a lower price to sell off the surplus goods.

Effects of Dumping

→ Effects on

	Importing Country	Exporting Country
Positive impacts	(i) <u>Lower price</u> for consumers (ii) Increased <u>competition</u>	(i) wider <u>market</u> (captured) (ii) <u>Revenue</u> would ↑
Negative impacts	(i) Harm to <u>domestic industries</u> (ii) <u>Reduced Innovation + investment</u> (Firms in such case think of ↓ the prices ultimately ↓ quality & thus ↓ invest. & Innovation) ↳ As in survival mode (iii) <u>Environmental damages</u>.	(i) Trade rationalization (by M. ing. country) (ii) <u>Loss of long term market share</u> (iii) Damage to <u>reputation</u> (iv) <u>Debts</u> will increase.

→ Ex: China dumps steel in international market.

Export Subsidy & its effects

2020
Q Many countries subsidise some of their export industries. Use a partial equilibrium model under perfect competition to illustrate the following effects of an export subsidy over a large country.

- 1) welfare effects of export subsidy
- 2) which group is winning & which is losing by the subsidy.

2011
Q How is subsidy better than tariff to achieve domestic objectives.

2009
Q In the presence of domestic distortion, subsidies are the first best policy & Tariff are the second best. Do you agree.

⇒ While exporting, we see that Export prices should be less than the world prices & to achieve this objective, subsidies are provided by the government. Whereas in tariff which is applied when the price of imported goods is less than domestic good.

↳ ① $w_p < D_p$ — Import → Tariff.

② $w_p > D_p$ — Export → Subsidies

⇒ So in export subsidy, Government tries to capture foreign market by reducing the price of exported goods (Law of Demand) AND for this reason, they give financial assistance to domestic producers.

Introduction

⇒ Export subsidy is the financial incentive provided by government to domestic producers or exporters to make their exports cheaper in the international market. This is typically done through direct payments, tax break or low interest loans or government funded marketing or promotional activities.

OR

⇒ Export subsidies are direct payments (or the granting of tax relief & subsidized loans) to the nation's exporters or potential exporters or low interest loans to foreign buyers to stimulate nation's exports. As such Export subsidies ~~can~~ be regarded as a form of dumping.

Examples of Export Subsidy

① European Union provides very high support prices to maintain its farmer income under its common Agricultural policies.

These high farm subsidies lead to huge agricultural surpluses & subsidized exports, which takes Export market away from US & other countries.

② Another example is the US extraterritorial income or Foreign Sales Corporation provision of the US tax code which have been used since 1971, by some 3600 US companies. (Including Microsoft, Boeing) to setup overseas subsidiaries to enjoy partial exemption from US tax income earned abroad.

(Note) — US banned these laws after intervention of World Trade Orga. in 2004.

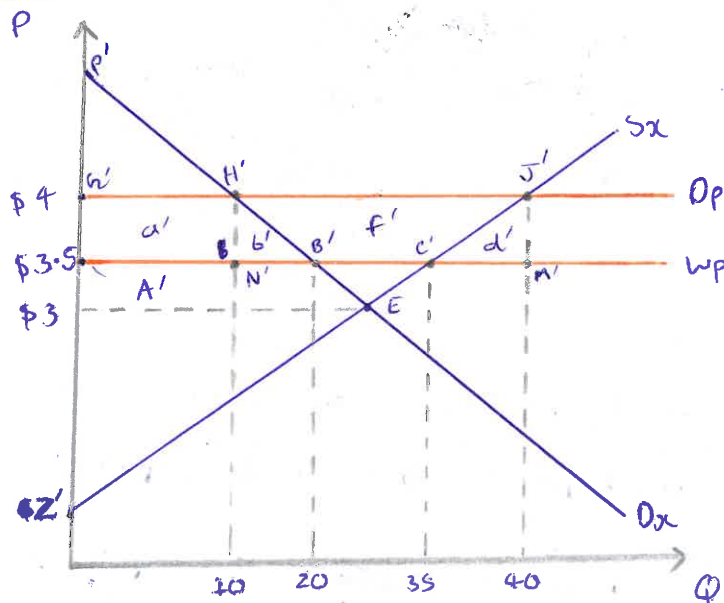
Pros of Export Subsidy

- ① Promotes Export.
- ② Support for Domestic industries.
- ③ Development of new market

Cons of Export Subsidy

- ① Distortion of trade
- ② Cost to taxpayer
- ③ Inefficiency
- ④ overlapping of resources
(Shortage of resources for domestic market)
- ⑤ Loss of Consumer welfare
(As domestic consumer gets inferior goods & superior goods are exported)

Small country case (No A m ToT) (a price taker)



⇒ So (Initially), here country Exports as Domestic price at \$3 is less than the world price at \$3.5. [$D_p < W_p$]

⇒ Government is providing subsidy for export, this means that resources will be used to manufacture products for EXPORTS. This will lead to scarcity of resources for production of domestic goods. Hence there will be scarcity, due to this prices are going to increase for domestic producers. (from \$3 to \$4)

⇒ As observed from WP intersection of D_{sc} & S_{sc} , Quantity demanded was 20 units & quantity supplied was 35 units. Thus $35 - 20 = 15$ units are Imported. Exported.

⇒ Now the domestic prices have increased due to the subsidy given by govt. This will lead to increase in production (to 40u) & domestic consumption would ① to 10u, due to Law of demand.

Thus, now $40 - 10 = 30$ units are Exported.

⇒ When world price was \$3.5, Consumer surplus is $P'A'B'$.

& When world price was \$4, consumer surplus is $P'G'H'$.

$$\text{Loss in Consumer surplus} = P'A'B' - P'G'H' = \underline{a' + b'}$$

So in Numerical terms

$$\hookrightarrow \text{Loss in CS} = a' + b'$$

$$= (0.5 \times 10) + \left(\frac{1}{2} \times 0.5 \times 10\right)$$

$$= 5 + 2.5$$

$$= \underline{\underline{7.5 \text{ units}}}$$

⇒ When world prices were \$3.5, Producer Surplus was $A'Z'C'$

& when world prices became \$4, producer surplus became $G'Z'J'$

$$\therefore \text{Gain in P.S} = \cancel{A'Z'C'} G'Z'J' - A'Z'C' = \underline{a' + b' + f'}$$

Numerical value

$$\begin{aligned}\therefore P.S &= 75u + \frac{1}{2} \times 45 \times 0.5 \\ &= 75u + 11.25 \\ &= 86.25u.\end{aligned}$$

⇒ Total Government Subsidy given

as per unit govt subsidy is \$ 0.5 then on quantity Exported (30 units), Total Govt subsidy = $b' + f' + d'$

$$\begin{aligned}&= 0.5 \times 30 \\ &= 15 \text{ units}\end{aligned}$$

⇒ Net effect

$$\begin{aligned}NE &= -(a' + b') + (a' + b' + f') - (b' + f' + d') \\ &= -\underline{(b' + d')} \\ &\quad \swarrow \text{Dead weight Loss}\end{aligned}$$

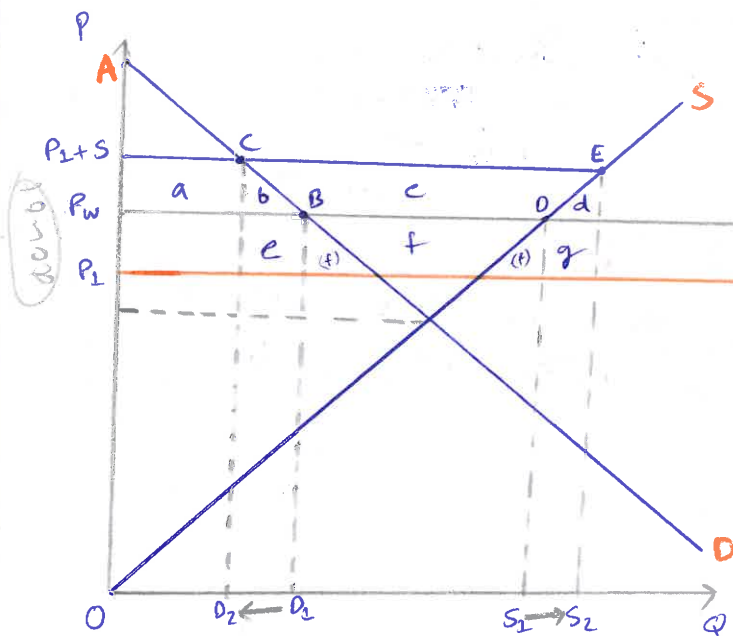
Large Country Case

⇒ What is Large country?

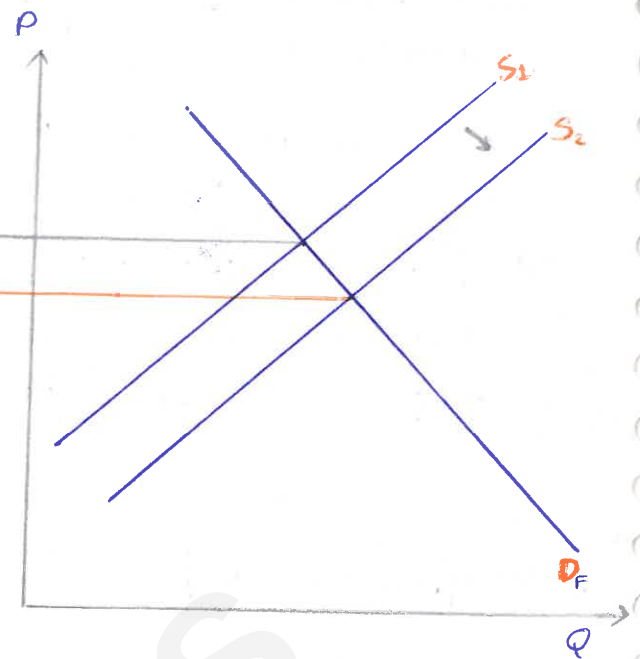
- (i) Can alter terms of trade (ToT)
- (ii) Large production capacity & hence can supply a lot in market.
- (iii) Has huge markets.

⇒ Here we will consider 2 markets, Domestic & World mkt.

Domestic market



World market



⇒ Supply done by domestic country to the world under free trade is $D_1 S_1$.

⇒ Demand of Domestic good in foreign market (D_F)

[Initially price was P_w (global) & P_1 (dom.) so X_S took place; now subsidy is given & thus P_w declined to P_1 while producer received greater rev — $P_1 + S$]

⇒ S_2 is the supply $D_1 S_1$ of the Domestic good

⇒ When government started providing Export subsidy so that the prices of goods decrease & its export increases. Then producers started producing more goods so as to (↑) Exports.

This increased supply is shown by S_2 & decreased prices are shown by P_1

⇒ In world market, Exporter is getting $P_1 + S$ in his pocket.

⇒ In Domestic market, as we can see, prices have declined to P_1 , so producers will start neglecting domestic market, due to this, there will be scarcity of commodity in domestic market

⇒ To prevent this scarcity of commodity occurring in domestic market, Producers should be provided the price equal to $P_1 + S$, so that they can supply in the domestic market as well.

⇒ when the prices ↑ in the domestic market to P_1 , Commodity becomes expensive & hence domestic consumer will demand less thereby the demand decreases to D_2 but since prices have increased, producers will supply more & hence supply ↑ to S_2 .

(Note) — The P_1 price line extending to world market denotes 2 things:-

- (i) World market here have prices P_1 with corresponding domestic supply to Domestic $P_1 + S$ prices.
- (ii) Domestic market here have $P_1 + S$ prices & thus, since consumer demands high at P_1 ; At $P_1 + S$, consumer ↓.

⇒ Total Effect

→ So consumer surplus at P_w will be ABP_w
 " at $P_1 + S$ will be $ACP_1 + S$

Hence Loss ⇒ $-(a+b)$

→ So producer surplus at P_w will be ODP_w
 " at $P_1 + S$ will be $OEP_1 + S$

Hence surplus ⇒ $+(a+b+c)$

→ Cost of subsidy = $S \times D_2 S_2$
 $= -(b+c+d+e+f+g)$

→ Net effect → $-b-c-d-e-f-g - a - b + a + b + c$

$= -b-d-e-f-g$

$= -[b+d+e+f+g]$

Dead weight Loss (DWL)

Not this is the reason, DWL calculation is small country not make below WP errors (not Tot effect)

⇒ Tot effect

• So as Prices ↓ from P_w to P_1

∴ $TOT = \frac{P_x \downarrow}{P_m} \Rightarrow TOT \uparrow$

Fall in Tot = Fall in price × Qty Exported

$= P_w P_1 \times D_2 S_2 = e+f+g$

Q. 2018 A Quota on imports & an equal ~~tariff~~ import tariff are equivalent in competitive market. But not under monopoly, why?

Q. 2005 Examine the effects of Quota & Tariffs on Terms of Trade. Discuss the advantages of Quota over tariff in the present day context.

Import Quota

- It is Quantitative restriction
- Govt. Tells how much quantity to be imported.

Import Tariff

- Tax on the imported quantity
- Here the import is based on Domestic demand, just the tax is imposed on it.

⇒ Import Quota is the direct limitation of the physical quantity of imports permitted in the country.

⇒ Types of Import Quota

- (1) Unilateral
- (2) Bilateral
- (3) Mixing or indirect Quota

Unilateral Quota

→ Quota applied by 1 country

→ 2 types

(i) Global Quota

- In case of global quota, Quota is fixed in global terms & any foreign country can supply the amount fixed at the lowest price.
- The Quota imposing country gets the price advantage & the global Quotas are non discriminatory.

(ii) Allocated Quota

- Involves allocating & distributing the quotas among different foreign countries on the basis of predetermined criteria, the allocated quotas are discriminatory & quota imposing country does not necessarily get the price advantage of the global quota system.

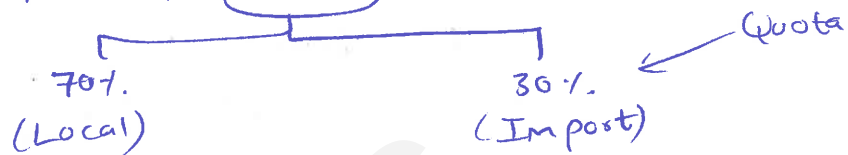
Bilateral Quota

- It implies mutual agreement between countries through negotiation.
- The advantage of these quotas is that they do not provoke retaliation.

Mixing or Indirect Quota

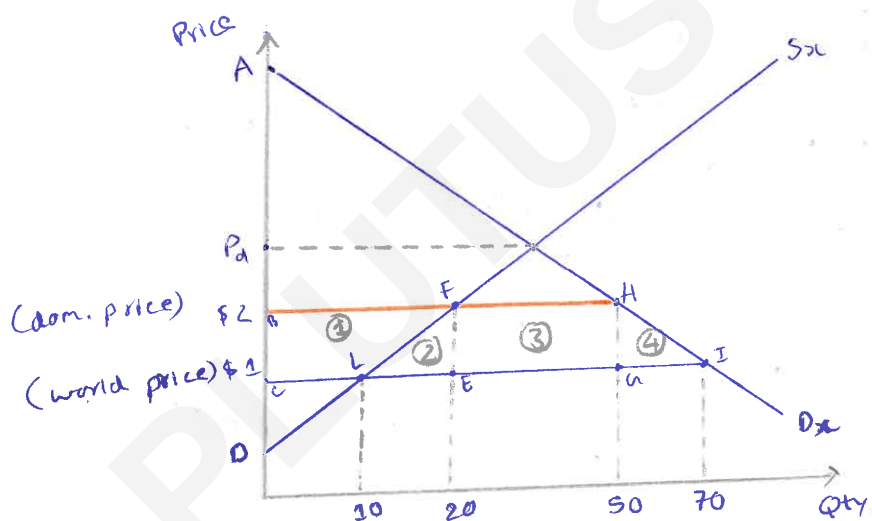
- Here Domestic producers are asked to use a fixed proportion of imported & local materials used in producing their products.

ex: Sweater with Raw material : wool



⇒ Effects of Quota

- It is observed that Quota leads to lesser Imports & so Quantity supplied (Q_s) $\downarrow$ & thus Price $\uparrow$



At world prices, Quantity Imported = $70 - 10$
= 60 units

- As now, govt. has fixed the Import Quota at 30 units, due to $\downarrow$ in supply, Prices $\uparrow$ to \$2 (Dom. supply Price)
- And thus Dom. supply $\uparrow$ to 20 units & Dom. demand $\downarrow$ to 50 units.

So Now, Imported Quantity = $50 - 20$
= 30 units

Equal to Import Quota

[Note that according to Quota, Dom. Demand & Supply gets adjusted]

→ Change in Consumer Surplus

At WP $C.S. = AIC$

At \$2 $C.S. = AHB$

$$\therefore \text{Loss in C.S} = AIC - AHB \\ = \textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4}$$

→ Gain in Producer Surplus

At WP $P.S. = DCL$

At \$2 $P.S. = DBF$

$$\therefore \text{Gain in P.S} = DBF - DCL \\ = \textcircled{1}$$

→ Govt. Revenue

• In case of import subsidy, govt. revenue (in case of tariff) or govt. loss (in case of subsidy) will depend on the fee charged by govt. to give license

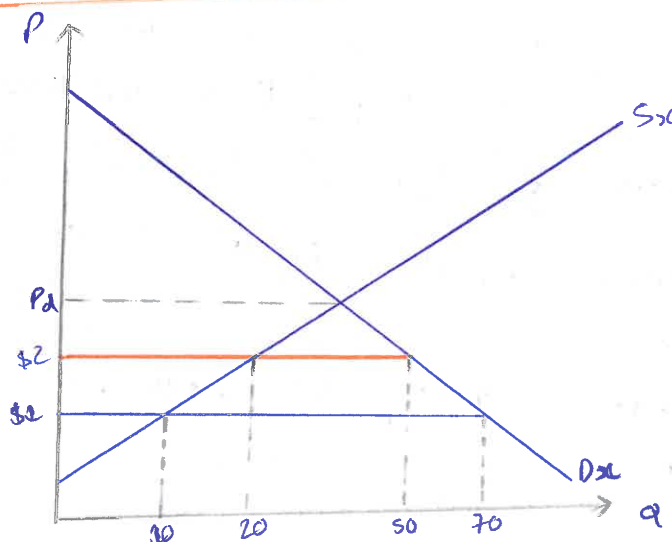
• Let's assume, \$1/unit of Import is the License fee

$$\text{Govt. Revenue} = \$1 \times 30 \quad (\$30) \\ = \textcircled{3}$$

→ Dead Weight loss

$$\text{Net effect} = -(\textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4}) + \textcircled{1} + \textcircled{3} \\ = -(\textcircled{2} + \textcircled{4})$$

⇒ Comparison between Tariff & Quota



→ When Tariff is applied in accordance with the Import Quota, there is no difference between the two

Here as 100% tariff is applied, prices have become \$2 (from \$1)
Also an Import quota of 30 units is fixed

In both these cases, prices rise to \$2 & only 30 units of Commodity can be imported.

⇒ This paradox basically criticizes Stolper-Samuelson theorem

According to HO

→ If there is Country A → L-surplus country
Country B → K-surplus country.

X → L-intensive good
Y → K-intensive good

→ Since country A is L-surplus, it will do production & export of good X & Import of good Y.

According to Stolper-Samuelson (Free trade)

→ If there is Country A → L-surplus, will produce & export good X.

→ So when good X is produced & exported, Labour demand ↑ & thus wages start ↑ing. Thus reward for L (w) is ↑ing.

→ So according to SS, under free trade relatively abundant factor benefits

→ If tariff is imposed on good Y (capital intensive) because country A is importing good Y. So to produce good Y, more Capital (K) will be required & hence demand of capital will ↑ & hence price of Y will ↑ in the domestic market.

→ So Domestic producers will try to manufacture more of Y. So, production of Y increases (Law of supply)

→ Hence demand of Capital (K) is going to ↑.

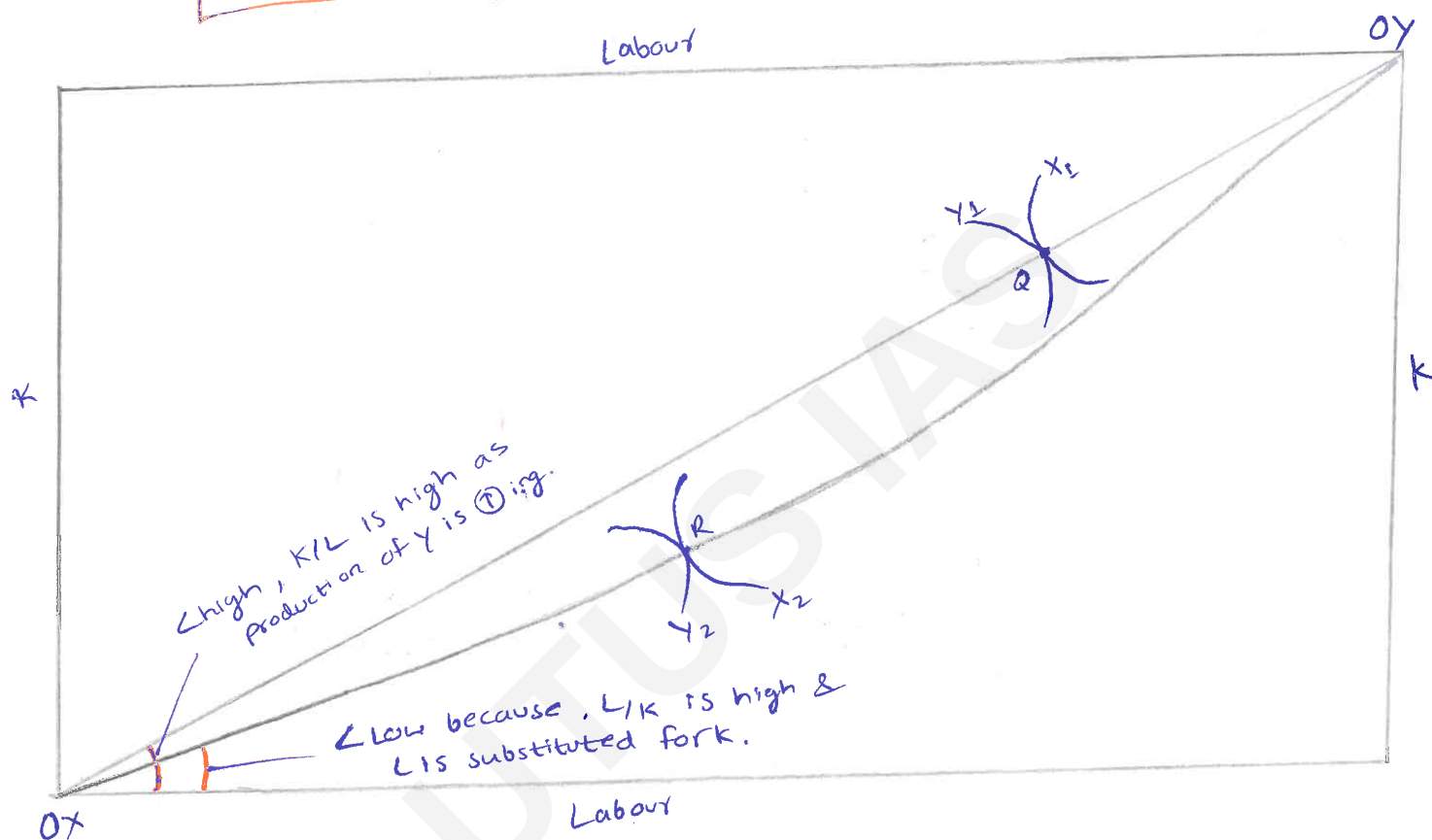
⇒ So, from where ^{will} this additional capital come, to which they (SS) said, some of the capital will come from good X & production of good X will ↓ [Because K was shifted to good Y]

But, quantity of capital obtained from X is less than the capital required for the production of Y.

⇒ So now, we will substitute L for K, so this will increase the productivity of K & thus reward for K will also ↑ due to above mentioned scenario, so r increases.

[As even during substitution, L is very much abundant & K is available in shortage (more demand → more price → more productive.)]

⇒ So, after tariff relatively scarce factor benefits.



→ Production of Y increases & production of X decreases, therefore Isoquant of Y will move towards OX & Isoquant of X will also move towards OX.

→ When production of Y increases, $\left(\frac{K}{L}\right)$ increases but as K required falls insufficient & L is substituted for K, so $\left(\frac{L}{K}\right)$ would start increasing.

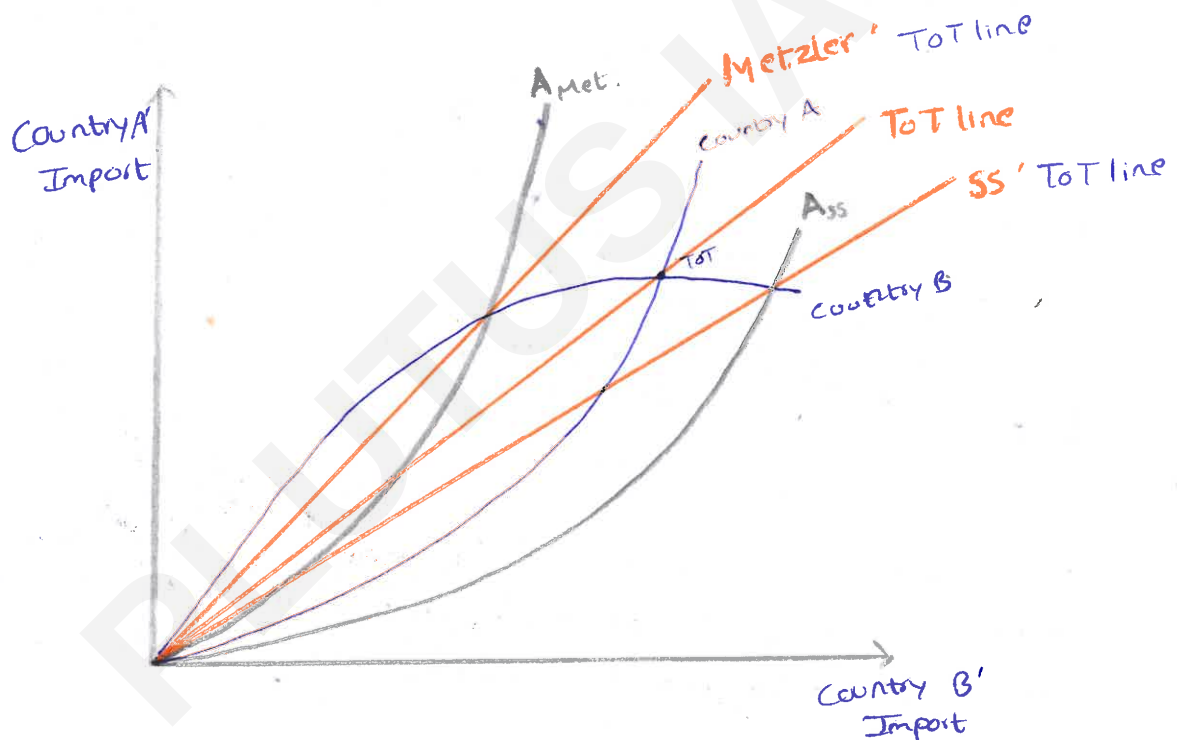
→ As we can see in the figure these isoquants are joined with the origin with the help of lines. These lines tell us whether K/L is high or K/L is low.

→ We can see whether K/L is high or low by observing the angle line makes from the origin that means K/L is high & if angle is high & K/L is low if angle is low.

Metzler Paradox

- As we know that $ToT = \frac{X_p}{M_p}$ & when $M_p \uparrow$; ToT deteriorates.
- But Metzler, according to his study of 1940s, observed that after imposing tariff, ToT does not deteriorates rather it improves.
- SS also said that after imposition of tariff, production of Y starts increasing & production of X starts decreasing.
- Metzler agreed to the fact that after imposition of tariff, production of Y would increase, but he asked, why would production of X fall.

He said production of X would fall only when price of X is less than price of Y (Law of supply: Profit for firms)



Metzler

- ToT improves
- Relatively Abundant factor benefits (even after tariff)

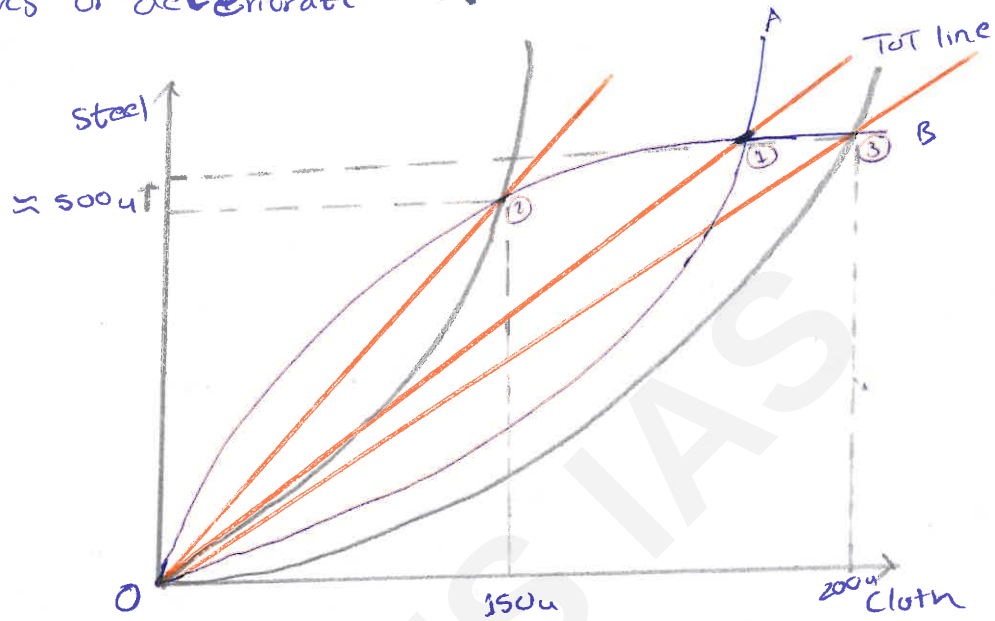
SS

- ToT Deteriorates
- Relatively scarce factor of Production is benefited.

Effects of Quota on ToT

⇒ As we know that, Quota is restriction on Quantity ;
ToT is price restriction. $\left[ToT \rightarrow \frac{P_x}{P_m} \text{ or } \frac{Q_m}{Q_x} \right]$

⇒ Now the question arises, when Quota is imposed, ToT improves or deteriorate

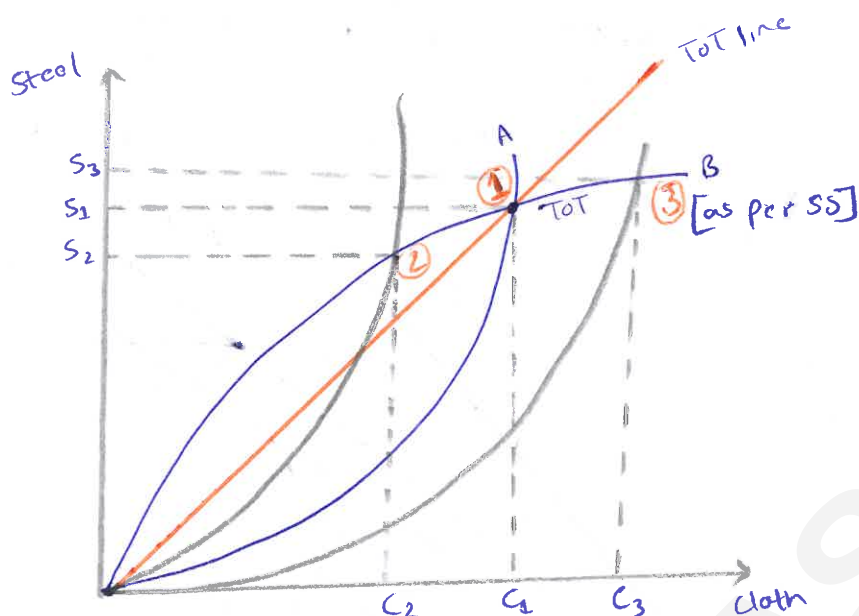


$$\therefore ToT_1 = \frac{500}{150} = 3.33 \quad \& \quad ToT_2 = \frac{500}{200} = 2.5$$

∴ ToT deteriorates

⇒ Can Improve or Deteriorate depending on the Import & Export Quantity.

⇒ As we know that Tariff is tax or duty & ToT is $\frac{P_x}{P_m}$ or $\frac{Q_m}{Q_x}$



→ At point (1), steel imported by country is OS_1 & cloth exported is OC_1 .

→ At point (2), steel imported is OS_2 & cloth exported is OC_2 .

→ At point (3), steel imported is OS_3 & cloth exported is OC_3 .

⇒ At point (2) in comparison to point (1), steel imported is less but cloth exported is much less than steel imported & hence ToT is improving at point (2).

⇒ At point (3) in comparison to point (1), steel imported is more but cloth exported is much more than steel imported & hence ToT is deteriorating at point (3).

⇒ Thus, Under Tariff, ToT can improve or deteriorate.

⇒ SS said that, under tariff, relatively scarce factor of production will be benefitted.

So if country is labour-intensive, its import will be capital-intensive good & according to SS, in this country capital will be benefitted.

⇒ But according to Metzler, ToT will improve; & ToT can only deteriorate ~~can only~~ if price of X is less than price of M.

⇒ This model does not talk about Comparative Advantage which was the basis of trade between 2 countries, in all the models that we have studied till now.
~~In all the~~

⇒ Rather this model says that bilateral trade between 2 countries is directly proportional to:

- (i) Product of GDP between 2 countries **AND**
indirectly proportional to distance between 2 countries.

So $(GDP_1 \times GDP_2)$ is the product of the 2 &

- if Large country X Large Country → High trade volume.
- if Small country X small country → Low trade volume
- if Large country X small country → Moderate/some trade volume.

⇒ As distance between 2 countries decrease, Transportation cost & other cost decrease & hence volume of trade increases

⇒ Monopolistic model of Intra-Industry Trade

Monopolistic Competition

⇒ Product Differentiation (Products are but close substitutes)

Note — Intra-Industry Trade

→ Same product will be imported & Exported between 2 countries

ex:- If France & Germany are doing Intra-Industry trade of car then France will import & export cars from Germany.

→ Balassa-Krugman conducted empirical study after removal of trade barrier between European economies in 1958 & observed trade increased in spite of similar tastes, preferences & similar factor endowments (same amount of resources & technology)

⇒ The reason they gave for this increase in trade was product differentiation i.e. close substitutes.

⇒ He emphasized that the product may be same (ex: shampoo) but it is not possible for a country to produce all varieties of the same product due to limited resources & technology
For Ex:- Laureal & Head & Shoulders, both are shampoo but few people use Laureal & they would not shift to head & shoulders & vice-versa & No country can produce all variants of shampoo due to limitations of resources.

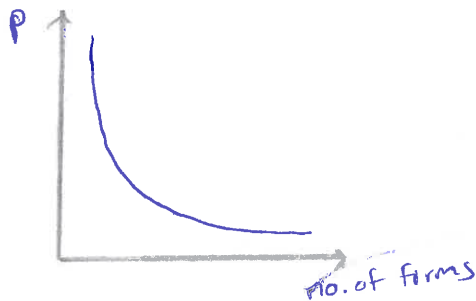
⇒ ~~But~~ Then came Krugman, & he proposed that yes, product differentiation is one of the factor but 'Brand value' is also very important. As a consumer for ex: who is using Laureal would continue to use Laureal shampoo as it is the brand & an identity for consumer.
Due to this, Brand Loyalty exhibited by consumers, the producer enjoys sort of monopoly power. And hence, despite of the fact that same type of products are being produced by European countries, volume of trade increases.

⇒ Opening of market increases market size for all the firms, due to this there will be large scale production → Economies of scale

Lower cost of production ←

Demand side

- As no. of firms ↑ → Price ↓
[due to competition]

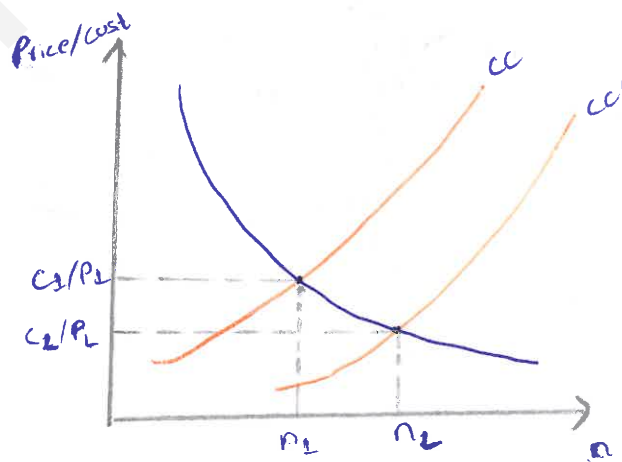
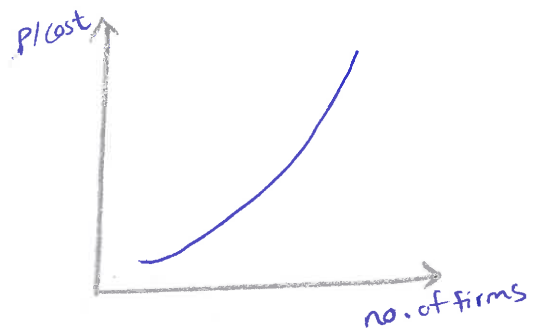


Supply Side

- As no. of firms ↑ → Production cost ↑

Dis economies of scale

- ① When market becomes overcrowded with firms then there is complexity of managing many companies leading to rise in cost.
- ② As more firms enter the market, they compete for limited resources like land, labour, capital, leading to rise in avg. cost.
- ③ Industrial growth can lead to a deterioration in shared infrastructure such as roads or ports which increases transportation & distribution cost.



Thus, As trade barriers are removed, mkt size increases.

So Economies of scale will take place & CC shift to CC'

Implications

- Intra-industry trade can be a significant component of overall trade even between countries with similar factor endowments.
- Trade can lead to greater variety & lower prices for consumers.
- In contrast to HO model, it is possible for all the factors to gain.

Can HO Model explain Intra-Industry trade

Q. 2016 Differentiate between Inter-Industry & Intra Industry Trade. Can Standard HO model explain intra-industry trade. Discuss.

Q. 2016 Explain Brander-Krugman model of Intra-Industry Trade in oligopolistic market.

Intra-Industry Trade

- Here we talk of similar & identical goods
 - Trade where goods of the same classification are both Imported & Exported.
- Intra-industry trade is a consequence of Imperfect competition (monopolistic competition) i.e. firms with monopoly power sell to every country in which there is profit margin

Inter Industry Trade

- If there are 2 countries

A	B
L-surplus	K-surplus
↓	↓
Good X, L-intensive	Good Y, K-intensive
Produced & Xed	Produced & Xed

- Hence, Here different commodities are traded.
- Hence in Inter-Industry trade is between countries where export & import consists of different types of goods. Such trade is based on difference in factor endowments.

Countries tend to export goods where they have relatively large factor endowments, used in producing goods & to import goods which they cannot produce themselves or which they can produce at high cost due to scarcity of factor intensively used in producing them.

⇒ ① HO says that based on factor intensity (which factor is scarce) countries decide what to export.

② So Intra-industry trade (which is classification of same type of good) is not possible in HO model

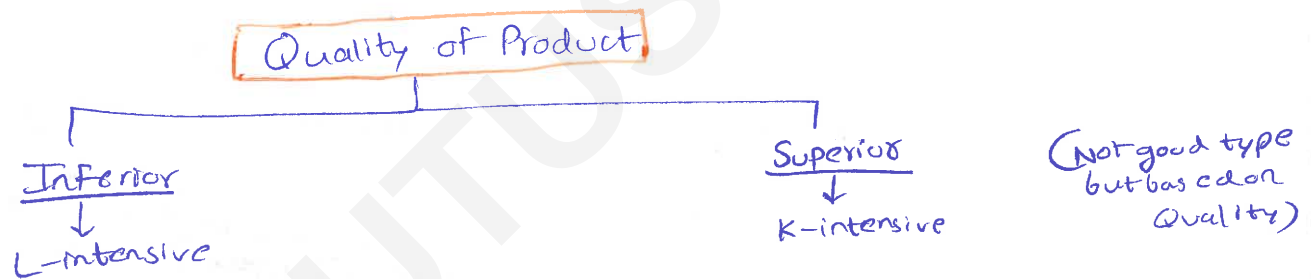
New HO Model

→ This model explains Intra-industry trade. A bit of modification was done in HO model to obtain this model.

→ In 1981, an economist named R.A. Falvey gave a model called 'Vertical Intra-industry Trade model' — New HO model
Based on diff

→ Krugman (in his monopolistic model that we already discussed) talked about variety of products & we refer it as 'Horizontal differentiation' model of Intra-industry trade

→ R.A. Falvey talked about Quality of products & we refer it as 'Vertical differentiation' model of Intra-industry trade.



Assumptions of R.A Falvey / Neo HO Model

- ① Two Countries Two factors of production : Capital & Labour ;
- ② Countries have different factor endowments (1 is capital abundant & another is Labour abundant).
- ③ Each country produces a continuum of good differing in quality.
(in continuity)
- ④ Higher Quality goods require more capital per unit labour.
- ⑤ Consumers prefer higher quality goods but face budget constraints.
- ⑥ The K-abundant country has a comparative advantage in producing higher quality goods (Capital ^{intensive} goods) while labour abundant country has comparative advantage in lower quality goods (L-intensive goods)
- ⑦ Each country produces a sange of good's quality level ranging from low to high

⑧ Both countries Import & Export goods within industry but at different quality level.

⑨ Cost differentiation depends on the factor prices & quality level.

⇒ Suppose there is country A which is capital abundant.

→ In a country there are both rich & poor people.

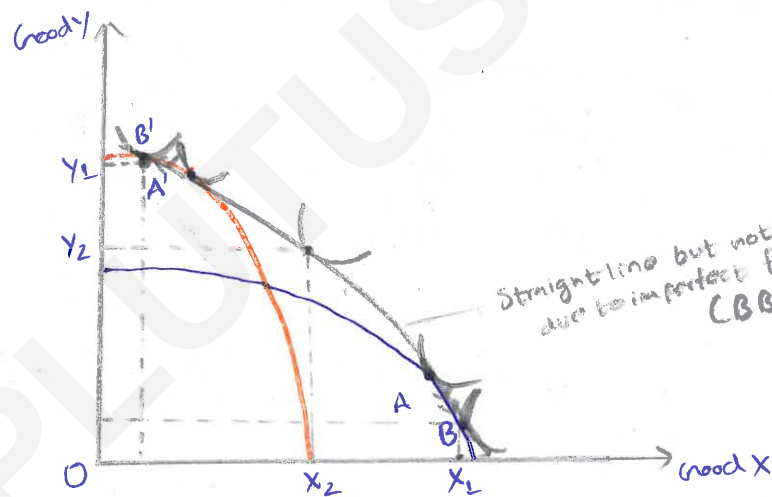
→ Rich ~~want~~ people want superior quality product (K-intensive & expensive)

→ Poor people want inferior quality product (which is L-intensive & cheap)

→ Hence country A will export Capital-intensive product (superior quality) & will import for its domestic poor citizens Labour intensive products (inferior quality).

⇒ Country A → K-surplus
X-good (K-intensive)
↳ Superior Quality

Country B → L-surplus
Y-good (L-intensive)
↳ Inferior Quality



→ Country A is exporting X_2X_1 amount of Good X & consuming OX_2

→ Country B is exporting Y_1Y_2 amount of Good Y & consuming OX_2

⇒ In Oligopoly,

- ① There are few firms in the market
- ② Monopoly power with seller (Firm is Price giver)
- ③ Imperfect competition

Oligopoly is a market supplied by small number of firms in which the choice of one firm affects the profit of other firm. The Firms are linked by strategic interaction, so market equilibrium is determined by the outcomes of strategic consideration.

⇒ In Cournot oligopoly, the strategic variable for each firm is output.

⇒ In Bertrand Oligopoly, the strategic variable for each firm is price.

⇒ The firms in an Oligopoly can also engage in non-price competition through product specification or advertising.

Intra-industry trade

→ Trade where goods of the same classification are both imported & exported. Intra-industry trade is the consequence of imperfect competition. Firms with monopoly powers sell to every country in which there is a profit margin.

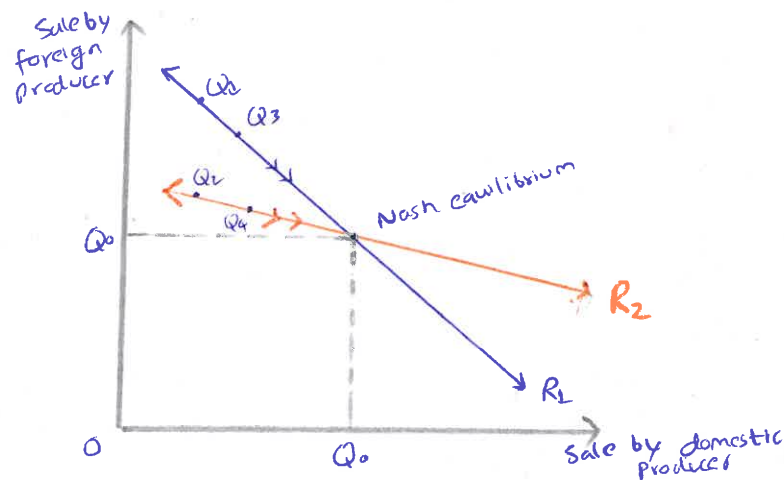
Monopoly power

→ The degree of control that a firm can exercise over a market.

⇒ Brander-Krugman used Cournot model to explain intra-industry trade. (Cournot model is a form of imperfect competition where all firms simultaneously decide how much to produce. If there are only 2 firms; it is known as Cournot Duopoly.)



→ Both firms continue to produce different outputs until they reach a common output Q_0 (Nash equilibrium)



Here we have drawn reaction curves of 2 firms.

Reaction curve represents the reactional strategy of one firm on observing the output of another firm. R_1 is the reaction curve of foreign firm & R_2 is the reaction curve of domestic firm.

→ If Firm 1 decided to produce Q_1 quantity, firm 2 produced Q_2 quantity, then accordingly firm 1 produced Q_3 & firm 2 produced Q_4 quantity & so on. Then finally they reached equilibrium where production of both firms is Q_0 .

Reaction Curve

The optimal strategy of 1 player in a game expressed as a function of the strategy choices of other players.

Nash equilibrium

An equilibrium concept for a game of strategy. A set of strategies (1 for each player) constitutes a Nash equilibrium, If no player has an incentive to change their strategies given the strategies chosen by other player.

⇒ Balance of Payment is the systematic record of all the economic transactions between the residents of a given country & the residents of the rest of the world in an accounting period.

EXPORT

Receipts → Earnings + Borrowings [Money which comes in a country]

Payments → Spending + Lending [Money which goes out of a country]

IMPORT

(Note) — Balance of Payment accounts will always get balanced
(Receipts will always be equal to payments)

Balance of payment statement includes — 6 major accounts

- ① Goods account
- ② services acc.
- ③ Unilateral transfer acc.
- ④ Long-term capital acc.
- ⑤ Short-term capital acc.
- ⑥ International Liquidity acc.

Goods Account

→ Here we talk about the trade of physically visible items which are goods or merchandise.

→ Here if receipts is equal to payments, it is called Zero good balance.

$$\underline{\text{Receipts} = \text{Payments}}$$

→ If receipts are greater than payments, it is called positive good balance

$$\underline{\text{Receipts} > \text{Payments}}$$

→ If receipts are less than payments, it is called Negative good balance

$$\underline{\text{Receipts} < \text{Payments}}$$

Services Account / Invisible acc.

→ Here we talk of the services exported or imported in various sectors
ex : IT services, Hospitality services, fin. services, etc.

→ These services traded are called 'Invisibles'

- If Receipts = Payments, Zero Services balance
- If Receipts > Payments, Positive Services balance
- If Receipts < Payments, Negative Services balance

Unilateral transfer accounts

- As the name suggests, it is one directional transfer
ex: Govt. is getting aid from foreign or govt. is giving aid to foreign.
transfers here include:

- (i) Aid (in emergency)
- (ii) Grants (for Altruistic help)
- (iii) Private transfer (Remittances)
- (iv) Interest payments

- Here there is no obligation of repayment

Long term capital account

- Long term refers to the period of 1 year or more.
- Here, inflow/outflow of capital occurs.

Capital Flow can occur

- | | |
|---|--|
| <p><u>For profit making</u> (5% or more)</p> <ul style="list-style-type: none"> • <u>FDI</u>, can be done for <ol style="list-style-type: none"> ① Greenfield Investment (Investment in new project) ② Acquisition (Acquiring a business by purchasing min. 51% of the stakes) ③ Joint Venture (Partnership with local business) ④ Minority investment (Acquiring < 51% of a business) • FDI is done to: <ol style="list-style-type: none"> (i) Access <u>new market</u> (ii) Gain a <u>competitive advantage</u> (iii) <u>Diversify</u> the investment | <p><u>Different for various sectors</u> (< 5%)</p> <p><u>For higher interest rate or dividend.</u></p> <ul style="list-style-type: none"> • <u>FII</u>s, also called as <u>PPI</u> (FPI part of FII when done by indiv.) ① These investments are done in stocks, mutual funds, Exchange traded funds (ETFs) ② Here investor is in passive role ③ Distav This investment is done by investor for: <ol style="list-style-type: none"> (i) diversification in portfolio (ii) Exposure to growth (iii) Reduced volatility |
|---|--|

Short term Capital account

- Here the deposit done in bank account or other places for a period < 1 yr
- This is also called as unrecorded transaction account as it becomes tough to measure transactions of this account since people deposit & withdraw in short term.

International Liquidity account

- This account talks of Net changes in the foreign reserves & this we will explain with the help of a table.

Account	Credit (Receipts)	Debit (Payments)
① Goods Account	1500	800
② Service Account	500	1400
③ Unilateral Transfer account	100	120
④ Longterm Capital account	900	400
⑤ Short term Capital account	500	600
⑥ International Liquidity account		150
Total	3500	3350 +150

- So, here a surplus of 150 is created & this will be adjusted by a Debit of 150 to maintain balance of payment.
- Had there been a deficit then there would have been addition in receipt.

Balance of Trade

⇒ It is defined as the difference between value of goods & services sold to the foreigners by the residents of the home country and the value of goods & services purchased by them from foreigners.

⇒ So basically, this is the difference of Receipts & Payments.

Cases

For Goods

- ① Receipts = Payments → Equilibrium in BoT
- ② Receipts > Payments → Surplus in BoT
- ③ Receipts < Payments → Deficit in BoT

For Services

- ① Receipts = Payments → Equilibrium in services
- ② Receipts > Payments → surplus in services
- ③ Receipts < Payments → Deficit in Services

⇒ There is a general conception that receipts are always better. But here depending on the type of account under which transactions are occurring, we decide whether receipts are good or bad.

Current A/C

If Receipts > Payments
→ then more goods & services are exported & more remittances coming in the country.

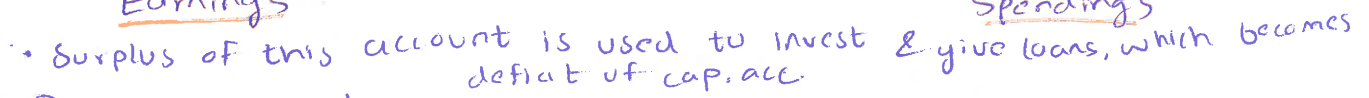
→ Thus, Greater Receipts are good here.

Capital A/C

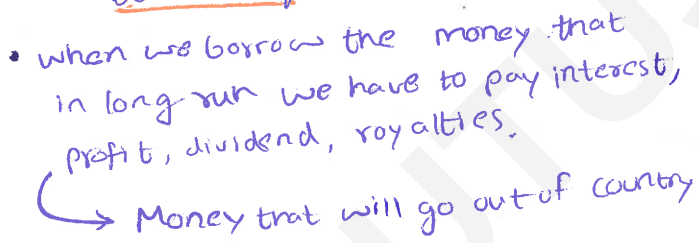
If Receipts > Payments
→ then more borrowing is done here & more liabilities are created

→ If this borrowing is used in revenue & day-to-day exp. it's bad
If it is used in Infra, invest, etc. Capex. it's good

- $\text{Goods A/c} + \text{Services A/c} = \text{Balance of Trade A/c}$
- $\text{BOT A/c} + \text{Unilateral transfer A/c} = \text{Current Account}$



- Here we talk about the inflow & outflow of long term & short term capital.



- In long run there will be inflow of interest, dividend, royalties, profit.

↳ money that will flow in the country.

Cases :

- (1) Receipts $>$ Payments — Surplus in Capital acc.
- (2) Receipts $<$ Payments — Deficit in Capital acc.

- But here we cannot say that surplus is good because we have borrowed the money & would have to pay interest, etc in long run.
- Neither can we say that surplus is bad, as for the growth of the country, investment is required & this money is obtained from borrowing. If this borrowed money is invested then in long run it will be good as it will lead to returns.

$\Rightarrow \text{Balance of Payment} = \underbrace{\text{Current Acc.}} + \underbrace{\text{Capital Acc.}}$

If a surplus here → Used for Capex
Deficit here

Overall balance

⇒ Similarly for BOP = Current Acc + Capital Acc. (2)

Becomes deficit for current acc. in long run (Interest, dividend, etc paid) ← If surplus in short run term here

Overall balanced

⇒ It is generally considered to be a correct behaviour for a country with surplus on the current account to lend abroad & run deficit on capital account — (1)

⇒ The surplus on the current account is considered good so as to offset the capital account deficit; to pay off the old debt.

But if a country is running persistent surpluses in current account, it will run several risk

(i) Accumulation of Foreign Reserves

• By countries monetary authority, lead to expansion of money supply & domestic inflationary price upsurge.

(ii) Exchange rate Appreciation

• which would in turn make country's export less competitive in world market which would lead to Import expansion & export contraction. [Leading to surplus vanished & in long run deficit created]

Indian rupee pegged with dollar

PYQ 2005 In the context of two Country model, derive foreign trade multiplier & explain its working. what will be its repercussions.

⇒ Investment multiplier

→ In closed Economies

→ Given as $\frac{\Delta Y}{\Delta I}$ (Change in Income due to unit change in invest.)

(i) Export Multiplier / Foreign Trade multiplier

• It is occurring in open economies

• $\frac{\Delta Y}{\Delta X}$ i.e. change in Income due to unit change in Export.

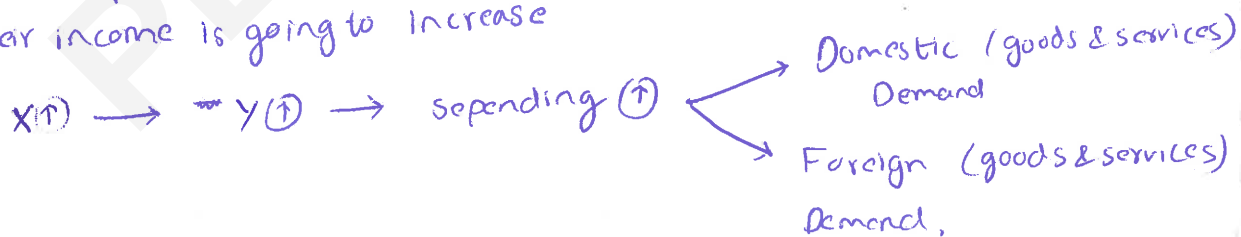
Foreign trade multiplier that describes impact of change in country's export on its national income is an extension of Keynesian multiplier which applies to closed economy.

Foreign trade multiplier is the amount by which national income of a country will be raised by unit increase in exports

$$\text{Export Multiplier } (K_F) = \frac{\Delta Y}{\Delta X}$$

⇒ Working of Foreign Trade Multiplier / Export Multiplier

→ When exports increase then people associated with export market, their income is going to increase



→ so the business is going to hire more people to produce products for exports, thereby income of these new hired people will also increase.

→ When there income increases, they will increase their spending in the market & hence increasing the demand both in the domestic as well as foreign market.

→ Domestic demand is associated with MPC or  (save)

$$MPC + MPS = 1$$

thus $MPS = 1 - MPC$ OR $MPC = 1 - MPS$

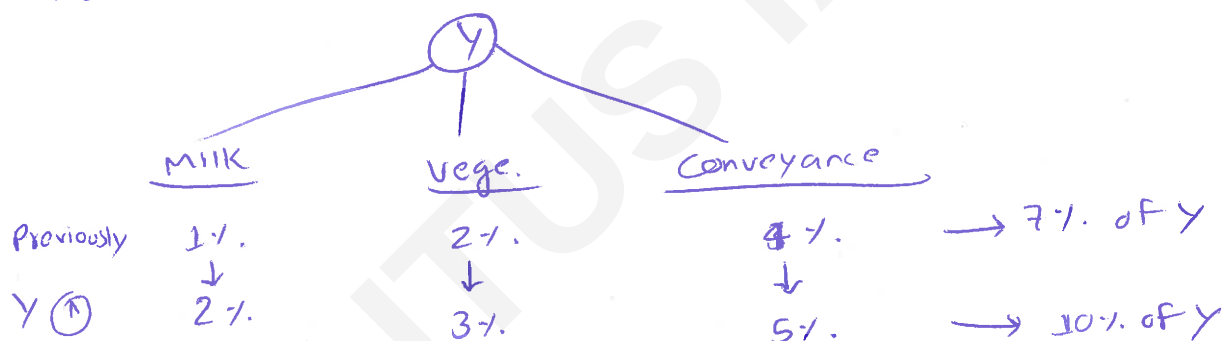
→ Foreign Demand is linked with Marginal Propensity to Import (MPM)

Let us understand the concept of MPC in order to understand the concept of MPM

★ Effect of MPC on Multiplier

→ Suppose Mr. X spend some percentage of his income to purchase milk, vegetables, commutation fare, etc

This spending done by Mr. X is actually creating incomes for milkman, vegetable share, Autodriver, etc. Now these people will spend their incomes on some other things thereby creating incomes for others



as Income (↑), MPC also (↑)

So when spending of Mr. X increased, his MPC (↑) too, due to which earnings of milk, vegetable, etc increased & these people also increased their spending.

→ Hence, we can conclude that higher MPC will lead to higher multiplier effect.

★ Effect of MPS on Multiplier

→ If MPS (↑) → Consump. (↓) + Savings (↑)

→ As consumption decreases, lesser income will be generated in the economy
MPS (↑) → Lower Multiplier effect

MPM (Import propensity)

→ It is the proportion of additional income that people spend on imported goods & services. (Note that along with it MPC & MPS already have some value)

→ When MPM is high, money goes out of the economy & hence cannot contribute in the multiplier effect.

Derivation

$$Y = C + I + (X - M)$$

$$\therefore Y - C = I + (X - M)$$

$$S = I + (X - M)$$

$$\therefore \boxed{S + M = I + X}$$

At equilibrium

$$S = I$$

$$S = I_d + I_f \quad \text{Foreign investment is net of Export \& Import}$$

[Note: - Export & Import does constitute investment to & from the country, left in good & services (export)]

$$\therefore S = I_d + X - M$$

$$\therefore S + M = I_d + X$$

$$\therefore \frac{\Delta S + \Delta M}{\Delta Y} = 0 + \frac{\Delta X}{\Delta Y}$$

[Here I_d is constant]

$$\frac{\Delta S + \Delta M}{\Delta Y} = \frac{\Delta X}{\Delta Y}$$

$$\therefore \frac{\Delta Y}{\Delta X} = \frac{\Delta Y}{\Delta S + \Delta M}$$

$$\therefore K_f = \frac{1}{\frac{\Delta S}{\Delta Y} + \frac{\Delta M}{\Delta Y}}$$

$$\therefore K_f = \frac{1}{MPS + MPM}$$

→ ~~That~~ The above equations shows that smaller the value of MPS & MPM , higher the value of multiplier,

→ The above model is the model without repercussions. In the above model, we are looking at the MPS & MPM of the domestic country. If we want to consider the model with repercussions then we will have to see MPS & MPM of foreign country.

→ Foreign trade multiplier with repercussions is known as feedback foreign trade multiplier (K_{ff})

Foreign Trade multiplier with Repercussions

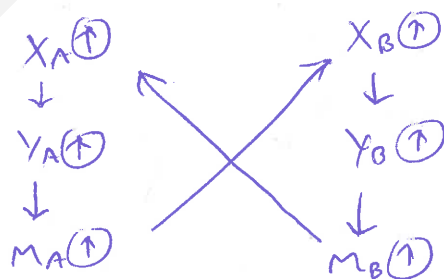
⇒ Here we observe MPC & MPS of both the countries (Exporter & Importer)

Effect of Exports — Feedback Foreign trade multiplier model of Export

- (1) Expansionary Effect
- (2) Contractionary Effect

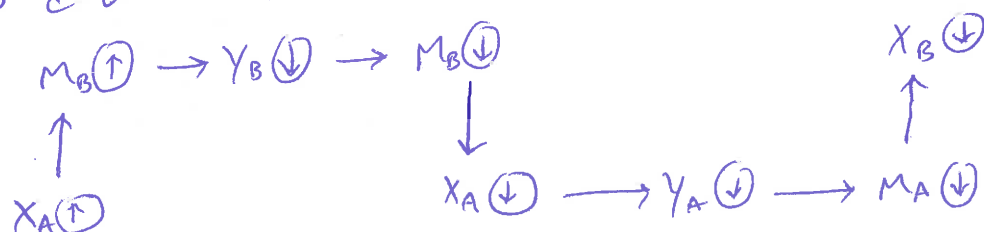
Expansionary Effect

→ Let's say here we have 2 countries A & B; when export of country A increases, its income increases, hence people start spending & import of country A increases, Increase in Import of country A means increase in Export of country B & then income of country B will increase which will lead to increase in import of country B which will ~~be~~ lead to increase in export of country A & the cycle repeats.



Contractionary Effect

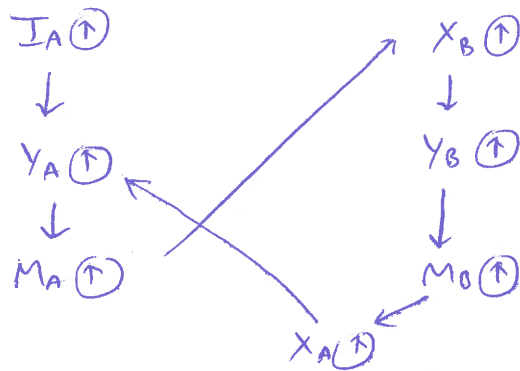
→ Increase in Export of country A means increase in Imports of country B & when imports increase, Income decrease (Country B)



Feedback Foreign Trade multiplier model of Investment

→ Here only one effect is present i.e. Expansionary effect.

Expansionary effect of Investment



⇒ Foreign trade Multiplier with repercussions is also known as feedback foreign trade multiplier denoted by k_{ff} . It arises when other countries respond to initial change.
[In k_f , it was only dom. response.]

⇒ Increase in Exports may have expansionary effect as well as contractionary effect.

⇒ Increase in investment have expansionary effect only.

Foreign Exchange Rate

⇒ It is a term that refers to foreign money that is international accepted by all the nations in the world. Most powerful foreign exchange in decreasing order are:

US dollars > Euro > Japanese Yen > British pound > Swiss Franc
> Aus. dollars > Canadian dollar > Chinese Yuan.

⇒ Foreign exchange market is a ~~destabilized market~~ Decentralized market & hence no particular agency decides that which ~~countries~~ currency are to be treated as foreign exchange.

⇒ Certain factors which determine foreign exchange:

(1) Economic size & influence

(2) Volume of trade

(3) Reserve currency status (how many nation keep your currency in reserves)

Foreign Exchange rate

→ It is the amount of domestic currency that must be paid per unit of foreign ex exchange.

→ Foreign exchange rate are calculated on demand & supply of foreign currency

Demand of foreign exchange

→ Depends upon:

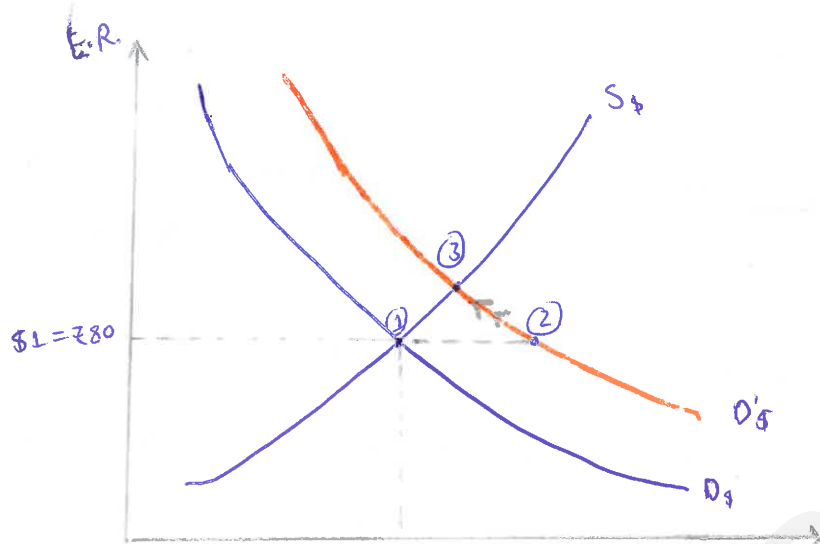
- (1) Spending (Import)
- (2) Lending
- (3) Unilateral Transfer payment
- (4) short or long-term capital outflow.
- (5) Debit transaction in Balance of payment account

Supply of Foreign exchange

→ Depends upon:

- (1) Earning
- (2) Borrowing
- (3) Unilateral Transfer payment

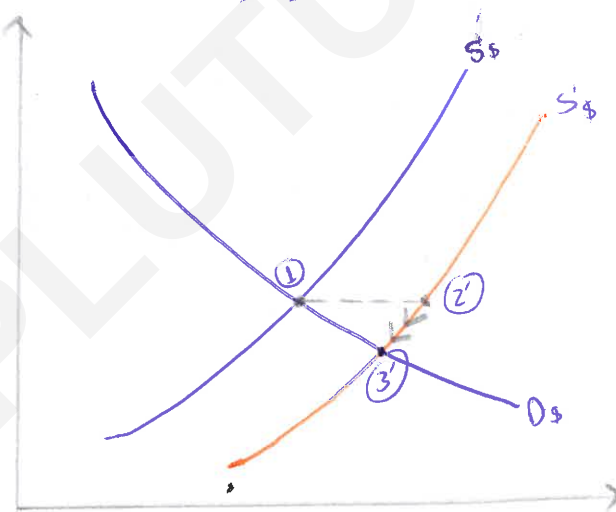
- (4) short term Long term capital inflow
 (5) Credit transaction in Balance of payment account.



Demand > supply (Payment > Receipts)

Quantity of Forex (\$)

- Now, since payments (Imports) have increased, exchange rate has reached disequilibrium state. — point (2) (from point 1)
 → So, Rupee will be depreciated & Exports become cheaper from foreigners & exch. rate reaches point (3) (a new equilibrium).



Supply > Demand

- Whenever we shift from the equilibrium point (if payments becomes less or greater than receipt) then the points we reach is called disequilibrium point.

Balance of Payment adjustment under Fixed Exchange

PLUTUS IAS

- ① Currency Depreciation
- ② Currency Devaluation.

In both of these terms, value of home currency falls with respect to foreign currency but Currency depreciation takes place due to market forces whereas currency devaluation occurs due to government.

⇒ Whenever deficit or surplus arises, we have to correct it. If the automatic correction occurs then it is called equilibrium system. Whenever govt. is involved to correct the situation, it is called disequilibrium system.

BOP Settlement

⇒ Surplus in receipts is also not good in long run because:

- (i) Inflation increases.
- (ii) Exports become expensive.

Accounts	Receipts	Payments
Goods	1500	800
Services	500	1400
Unilateral transfer	100	1200
Short term capital	900	400
Long term capital	500	630
Int'l liquidity		+ 150
Total	3500	3500

⇒ Here we see that balance of payment account is not in equilibrium but according to the rules of BoP acc., it should be balanced.

⇒ But in this case we see that receipts & payments are not equal so ~~we see that receipts & payments are not equal~~, so an entry has to be made on payment/debit side.

⇒ Balance of payment obtained via this method is called BoP balance.

⇒ The addition of value (+150) on either side is called Accommodating transaction, also called Below the line transaction.

⇒ When BoP is in equilibrium without any entry from current side this is referred as autonomous transaction or above the line transaction.

⇒ BoP adjustment

- It means balancing BoP without the use of accomodating transactions.

⇒ BoP settlement

- When accounting balance is produced with the help of accomodating transactions.

⇒ A system with price flexibility, interest rate flexibility, income level flexibility & exchange rate is assumed to be constant or fixed is referred as fixed exchange rate system.

Automatic adjustment : price flexibility, interest rate flexibility & flexibility in Income

Assumptions

- ① Initially country is in equilibrium (Receipts equal to payment)
- ② Country has fixed exchange rate.
- ③ Country has no foreign exchange reserve (can't adjust Exch by D or S A)
- ④ Only way to settle disequilibrium in BOP is through movement of Gold
- ⑤ There is no govt. intervention.

⇒ Let's understand 4th Assumption.

→ Initially country is in equilibrium i.e. $X = M$, now due to certain

Domestic Country Innovations in foreign country, $X_s \uparrow$ (of foreign country) means that our imports have increased & hence M becomes greater than X ($M > X$) (Payments become greater than receipts)

→ Therefore, Home country enters into deficit.

Now to counter this deficit or adjust it, gold will flow out of the country. This outflow of gold will lead to contraction in money supply & fall in prices ($X \uparrow$)

→ Due to increase in export & fall in Import, we would gradually reach the situation of $X = M$. This is known as Balance of Payment adjustment.

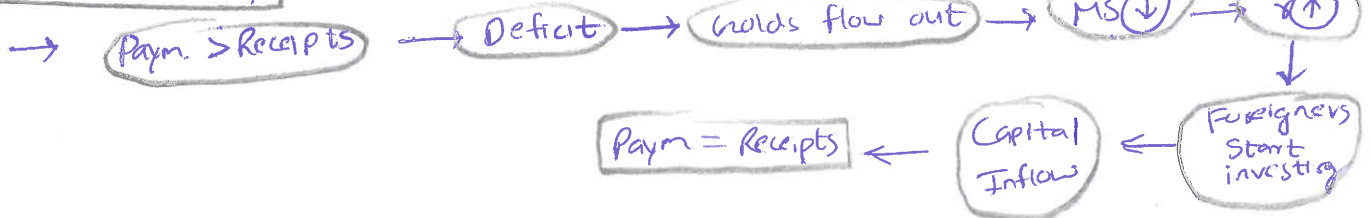
Foreign Country

→ In foreign country, exports are greater than import ($X > M$) which will lead to inflow of gold, further leading to expansion in money supply, leading to increase in prices.

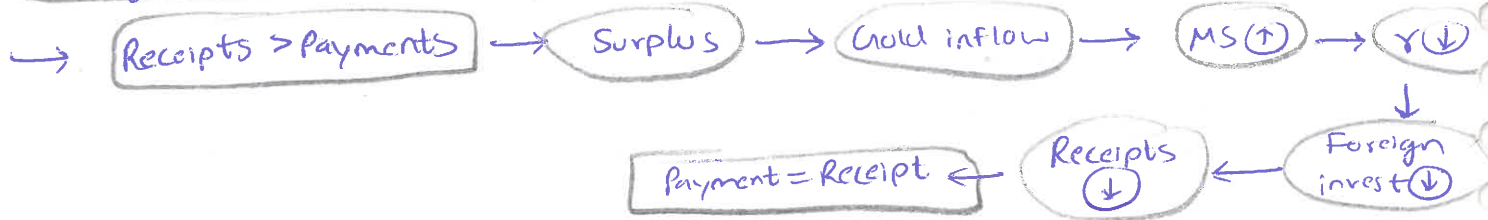
→ This will lead to $\uparrow$ in Exports & $\downarrow$ in Imports & bringing about the equilibrium of $X = M$.

Interest rates

Domestic country

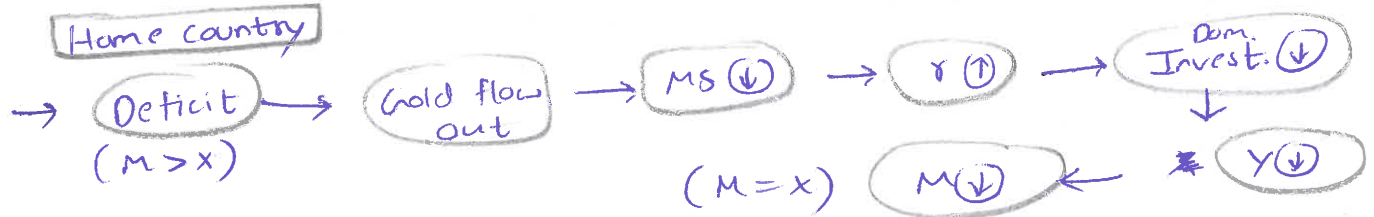


Foreign country

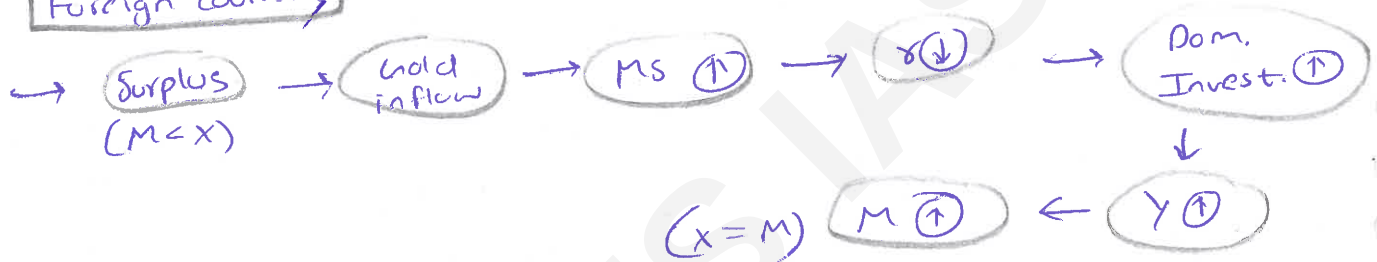


⇒ Income Level

Home country



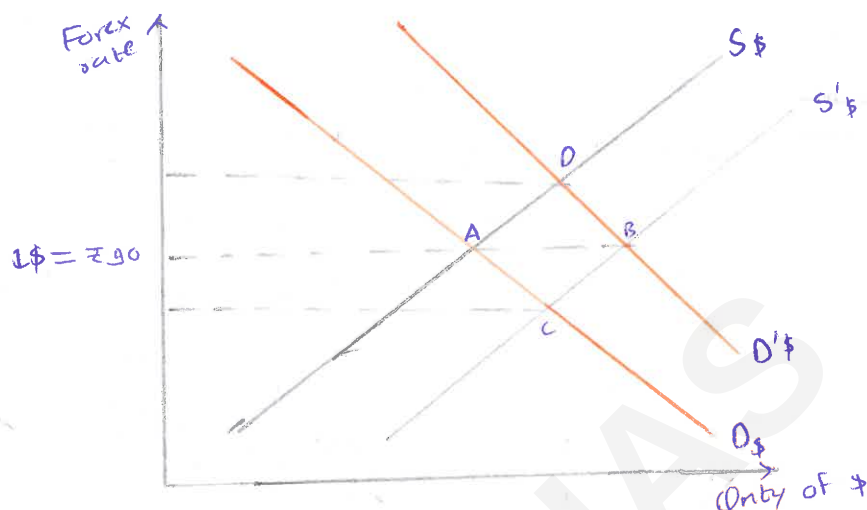
Foreign country



BoP Adjustment under Flexible Exchange rate

Fixed Exchange rate or pegged Exchange rate

⇒ Here govt. pegs the domestic currency with some stable foreign currency.
If the supply of foreign currency increases, govt. purchases it & vice-versa (if D ↑ - govt. sells it) to keep exchange rate constant.



⇒ At point A, $1\$ = ₹90$, if due to Golden Trump Card scheme, demand of dollars ↑; Exchange rate tends to ↑ but RBI stabilizes it at point A level i.e. by ↑ supply & reaching point B

⇒ similarly when demand supply of dollars ↑ due to ↑ X_s , RBI ↑ demand of dollar & again reach point B. (By purchasing it)

Flexible exchange rate

⇒ when the exchange rate depends on the market forces of demand & supply.

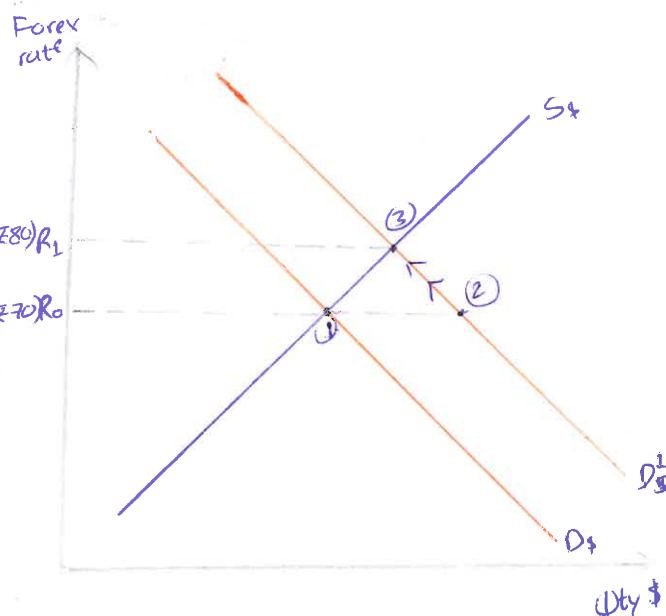
⇒ Let's say demand of forex ↑ in economy, may be due to rising M_s , war, etc. ($1\$ = ₹80$) R_1

So payment ↑ & thus ($1\$ = ₹70$) R_0

Paym. > Receipts — BoP Deficit

⇒ Now this deficit can be shown in the curve in 3 ways

- ① Rightward shift in demand
- ② Leftward shift in the supply
- ③ Combination of ① & ②



⇒ Surplus can be shown in the economy in 3 ways as 

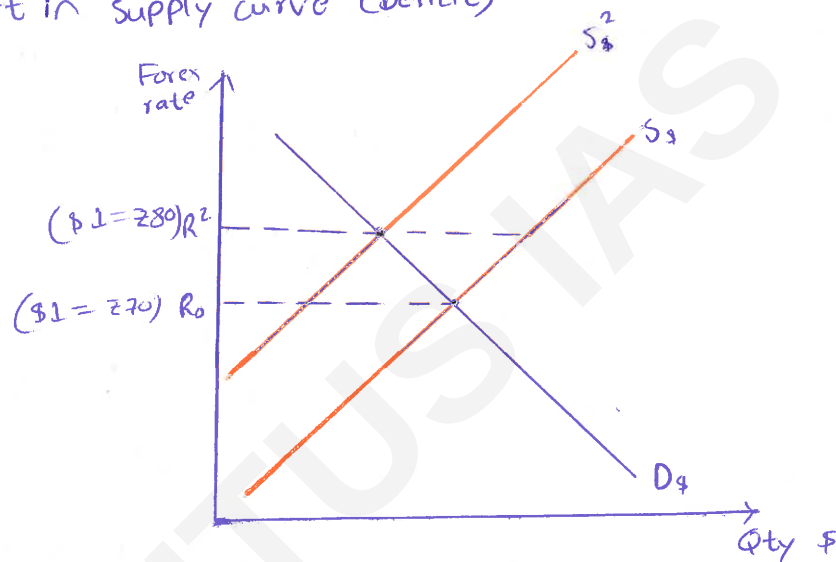
- ① Leftward shift in demand.
- ② Rightward shift in supply.
- ③ Combination of both ① & ②

Case 1

- Deficit is there & we are taking rightward shift in demand curve
- This is because Imports have ① & thus \$ demand ① & market forces pulled the demand at disequilibrium point ②.
- Market brings it back at new equilibrium point ③.

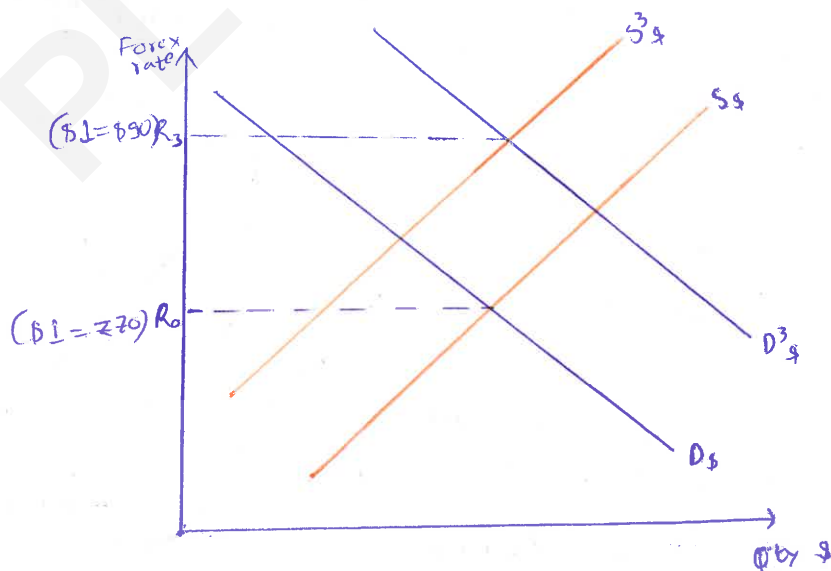
Case 2

- Leftward shift in supply curve (Deficit)



Case 3

- Rightward shift in demand curve & leftward shift in supply curve.

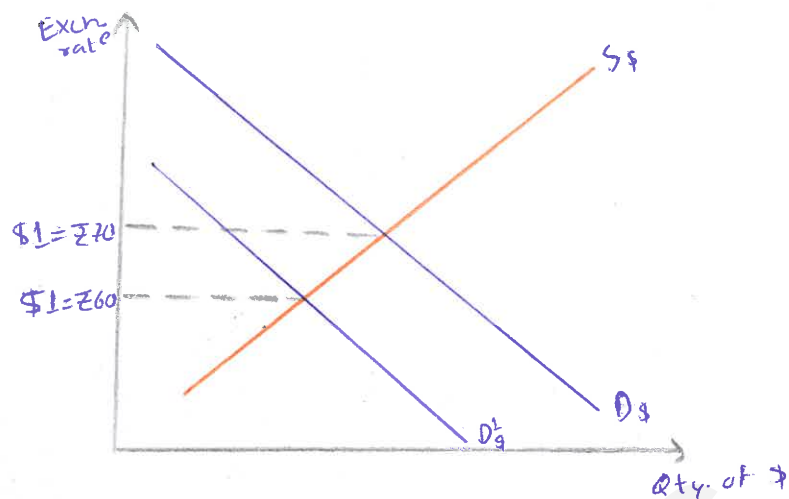


- Here we see that ① in Forex rate (standard abbrev. Exch. rate) is greater compared to case ① & ②

→ Cases of Surplus

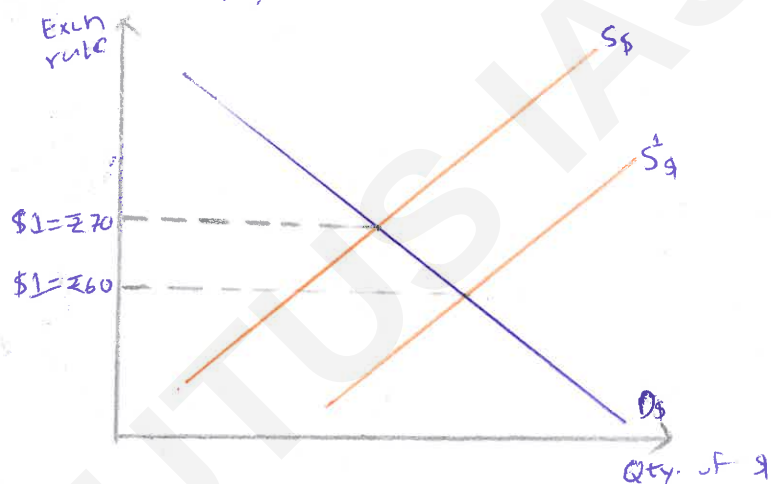
Case 1

→ Leftward shift in demand



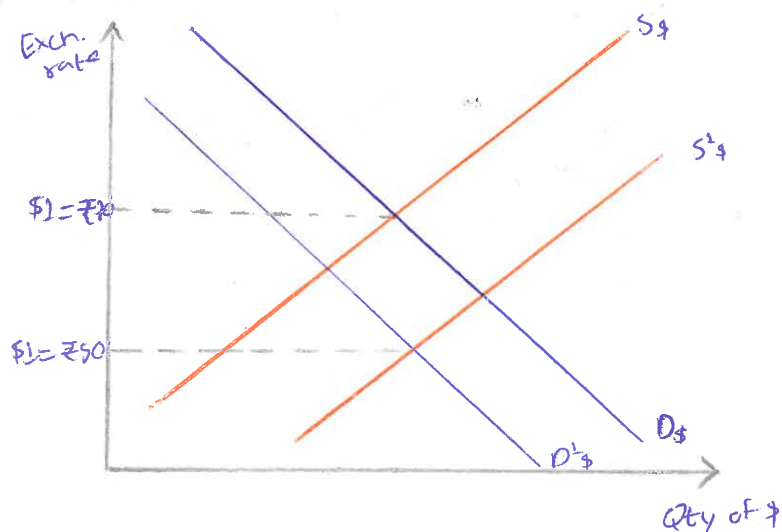
Case 2

→ Rightward shift in supply



Case 3

→ Combination of leftward shift in demand & rightward shift in supply



Q 2013 What is speculative attack on currency. Suppose the economy has fixed exchange rate & the govt. is following an expansionary monetary policy. The govt. increases the budget deficit, which it finances through a monetary expansion. How does this lead to crisis? What is the timing of the speculative attack?

Spot rate / Spot foreign Exch. rate

→ It refers to the purchase or sale of foreign exchange for immediate delivery & the exchange rate at which this takes place is called spot rate.

Forex: On 22nd January 3:35 pm ; \$1 = ₹91

Buying & selling at this point at this rate, which is spot rate.

Forward exchange rate

→ It refers to an agreement today to buy or sell a specified amount of foreign exchange at a specified future date at a rate agreed upon today

Forward Premium & discount

→ Suppose spot rate is \$1 = ₹80

→ 2 cases

Forward premium

- If Forward rate is \$1 = ₹85
 - & spot rate is \$1 = ₹80
- Then,

Forward Rate > Spot Rate

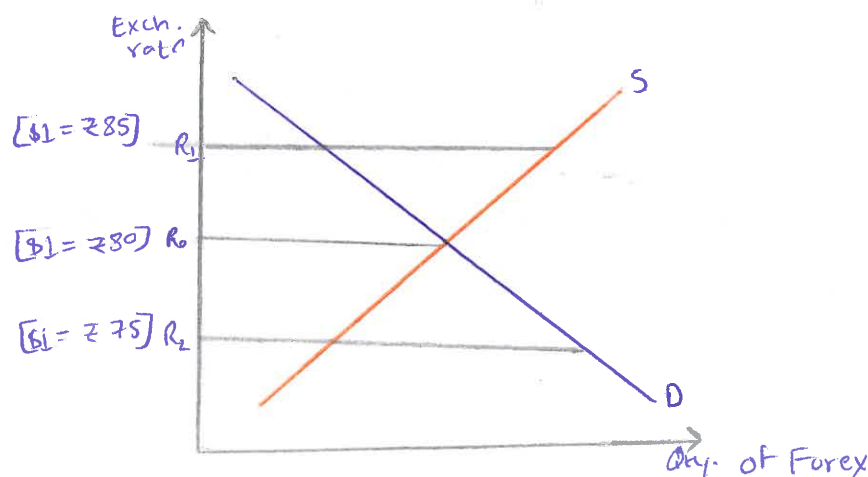
Forward Premium

Forward Discount

- If forward rate is \$1 = ₹75
 - & spot rate is \$1 = ₹80
- Then

Forward Rate < Spot rate

Forward Discount



⇒ R_0 is the equilibrium rate as of now & can be called as spot rate.
At (R_1) , we observe that this exchange rate is greater than R_0 ,
(Forward Rate R_1 greater than spot rate R_0) it is called Forward premium.

Thus at forward premium, it is expected that home currency is depreciating in future (according to market speculation)

⇒ At (R_2) (i.e. Forward discount), Home currency is expected to appreciate in future (according to market speculation)

Hedging

- Those who buy or sell foreign exchange involves a certain amount of foreign exchange risk in the sense of loss or profit accruing of it.
- The act of avoiding or covering a foreign exchange risk is called Hedging.

ex: Suppose I want \$100 after 2 months. Now I can acquire this via 2 methods

① If I purchase \$100 after 2 months at the rate prevalent at that time (spot rate of that time) then in this process, I am not covering up the risk.

② If I purchase \$100 at forward exchange rate (let's say \$1 = ₹75) & enter into an agreement with the seller at this rate for purchase after 2 months. Here I am covering the risk & this is called Hedging.

Speculation

- It is the act of taking a foreign exchange risk in an uncovered position, in the hope of making a profit.
- Speculator is a risk taker, whereas hedger was a risk avoider.

Let's say speculator also wants \$100 after 2 months:

And instead of taking it at a forward exchange rate, he chooses to purchase it at spot rate after 2 months with a hope that he will make profit if spot rate is less than forward exchange rate but opposite may also happen & he may incur loss.

→ speculation is of 2 types

- ① stabilizing speculation
- ② Destabilizing speculation.

Stabilizing speculation

- It is the purchase of foreign currency with domestic currency when price of foreign exchange falls (To understand this concept take foreign exchange as commodity & use law of demand)

Purchase of foreign exchange

- If price of foreign exch (↓), dollar (↓) & purchase of foreign exchange (↑)
- If price of foreign exch (↑), dollar (↑) & purchase of foreign exchange (↓).

Sale of foreign exchange

- If price increases then sale of foreign exchange increases & if price (↓), sale of foreign exch. (↓).

Destabilizing speculation

- If somehow, situation reverses i.e. Price is increasing & people start purchasing; if Price is decreasing & people starts selling it; this is called Destabilizing speculation.
- It is the sale of foreign currency when its exchange rate falls in the expectation or fear that it will fall even more.
OR It is the purchase of foreign currency when the exchange rate rises in the expectation that it will rise even more.
- This type of behaviour is pessimistic behaviour on the part of speculators which aggravates the problem further.

→ Let's understand how Destabilizing speculation aggravates the problem further:

Price (↓) → Sale (↑)

Then: \$1 = ₹ 70

Now: \$1 = ₹ 65

speculator is expecting dollars to fall further, it is not actually falling but he is expecting due to which, he will start selling dollars thereby increasing the supply of dollars resulting in further fall in price of dollars.

Now this will further scare the speculator & he will sell more resulting in further fall in the prices of dollars.

↳ Similarly in case if he is expecting dollars to rise, he will keep on purchasing, & thereby increasing the demand which will further increase the price of dollar thereby destabilizing speculation aggravates the problem & destabilizes the economy.

↳ Whereas in case of stabilizing speculation, if price of foreign exchange increases, people start selling foreign exchange, thereby increasing supply, which will reduce the price of foreign exch. & vice-versa hence stabilizing the economy.

Q. What is speculative attack on currency

→ Speculative attack on a currency is a situation where investors massively sell a particular country's currency in anticipation of its value decrement

→ speculators believe that (Let's say) value of rupee depreciates so they start selling rupee & demanding dollar thereby increasing demand of dollar & hence exchange rate (↑) & rupee (↓), if this continues further, demand will keep on increasing & rupee will keep on depreciating & investors will lose faith in rupees thereby further selling & leading to its depreciation.

→ This is called speculative attack on currency.

Effects of Monetary & Fiscal policy on balance of payment

⇒ This is the disequilibrium system & here govt intervenes to bring it back to equilibrium.

⇒ This is also referred as 'Expenditure changing policy'

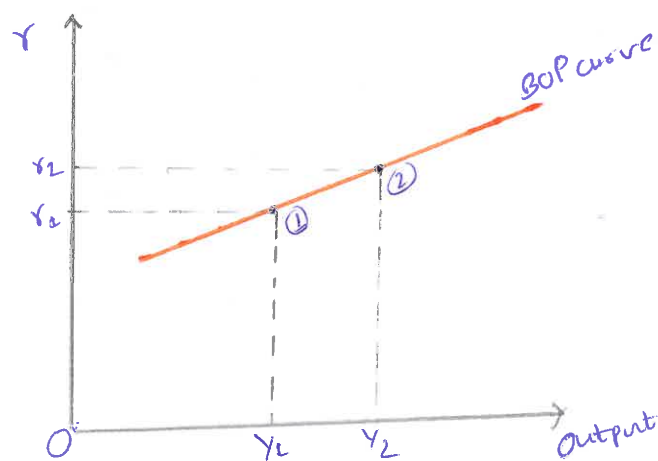
⇒ Let's understand why Monetary & Fiscal policy are called expenditure changing policy?

→ Suppose RBI reduces rate of interest, Mr. Khanna takes Car loan from the bank & starts paying interest on this loan. So if monthly expenditure of Mr. Khanna before availing loan was ₹20K but now it has ↑ to ₹30K. (monetary policy) & same happens in case of Fiscal policy as well.

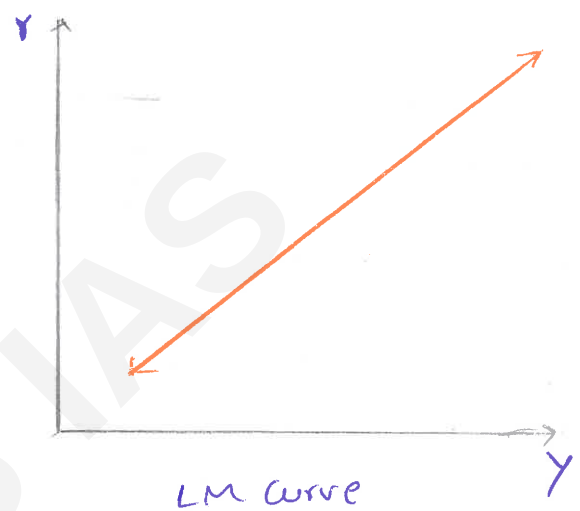
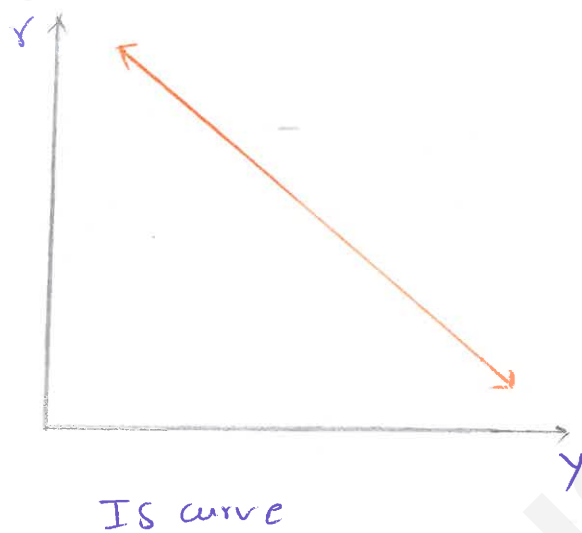
→ Thereby, these policies change the expenditure & are referred as Expenditure changing policy.

Effects of Fiscal policy on BoP

- Here we will be using ISLM curve & BoP curve.
- IS curve is Interest saving curve & deals with goods market. LM curve is Liquidity preference (Money demand) & money supply curve & deals with money market.
- As IS curve talks about equilibrium in goods & services market, it means goods & services demanded is equal to goods & services supplied.
- As LM curve deals with Liquidity in money market i.e. Money demanded is equal to money supplied.
- BoP curve depicts capital inflow = Capital Outflow.



- As we move from point (1) to point (2), Income is increasing
- When Income $\uparrow$ then Imports $\uparrow$, which will lead to outflow of capital.
- But at the same time, rate of interest is also increasing from r_1 to r_2 . When rate of interest will increase, capital Inflow $\uparrow$ thereby balancing both (Import $\uparrow \rightarrow$ Capital outflow $r \uparrow \rightarrow$ Capital Inflow)



- The goods market is in equilibrium whenever quantity demanded is equal to quantity supply (IS curve)
- The LM curve shows the various combinations of interest rate & national income for which the demand of money is equal to given & fixed supply of money.
- The BoP curve shows the various combinations of the interest rate & national income at which nation's balance of payment is in equilibrium at a given exchange rate.
- The BoP is in equilibrium when a trade deficit is matched by an equal net capital inflow, trade surplus is matched by an equal net capital outflow.
- The BoP curve is positively inclined because higher rates of interest lead to greater capital inflow (or smaller outflows) & must be balanced with higher level of national income & imports for BoP in equilibrium.

→ In Fiscal policy, instruments are govt. spending (G) & taxation (T)

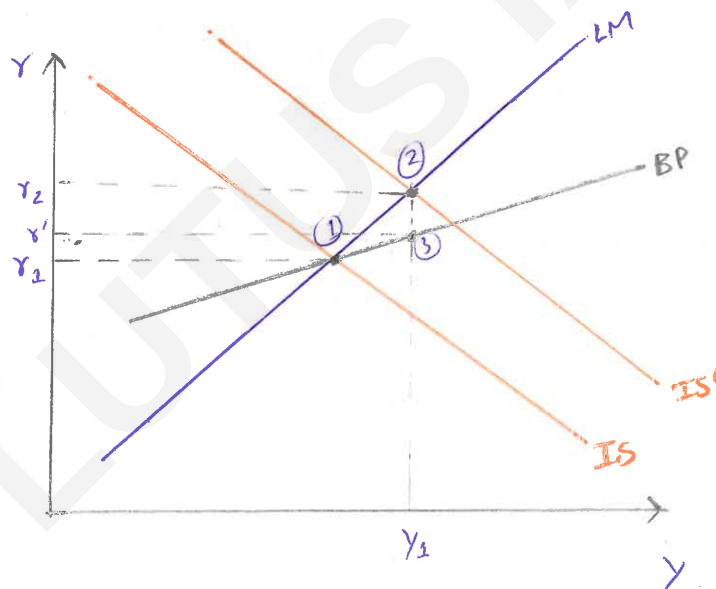
→ Here we are going to take the assumption that before the application of any of the fiscal tool, there is internal equilibrium balance & external equilibrium balance.

- Internal equilibrium balance means that there is price stability + full employment ($+1\% \pm 2\%$)
- External equilibrium balance means that there is no surplus or deficit in BoP.

Let's assume that our govt is following Expansionary fiscal policy

- This will lead to $\uparrow$ in G , & T is going $\downarrow$.
- Due to expansionary fiscal policy, IS curve shifts to the right. So point (2) is now the equilibrium point.
- But since at this new equilibrium point (2) , there is no intersection of BoP curve. (BP)

Trick: whenever new equilibrium point is on the left of BP curve, it is BoP surplus. If the new equilibrium point is on right of BP curve, it is BoP deficit.



→ Hence, there can be one of the 2 conditions:

(1) BoP Deficit

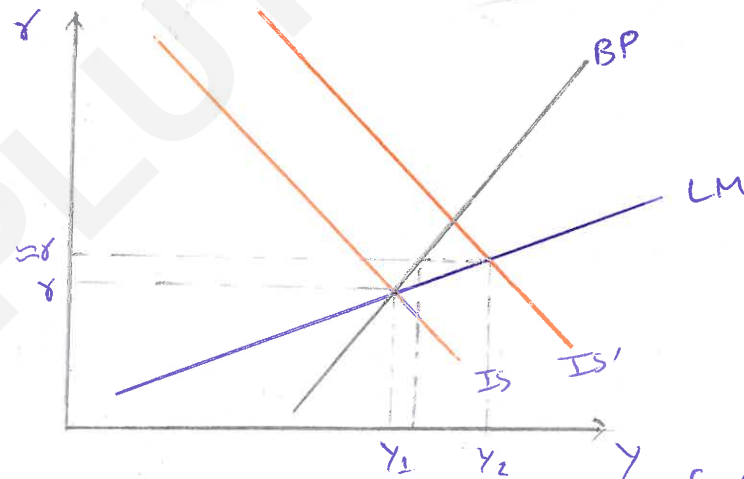
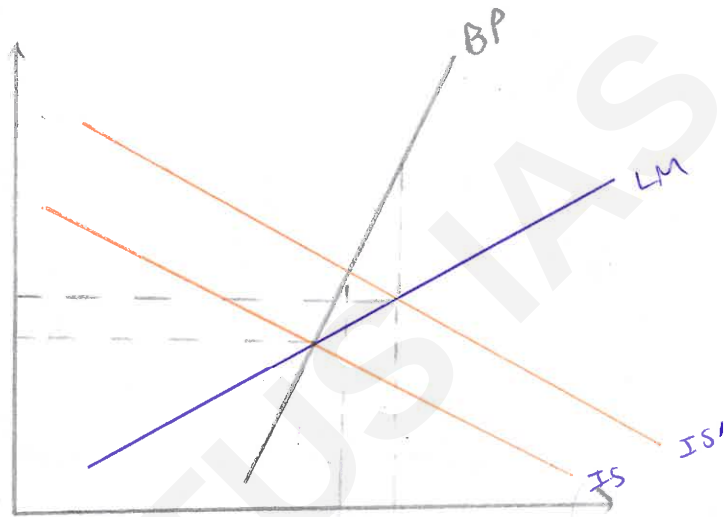
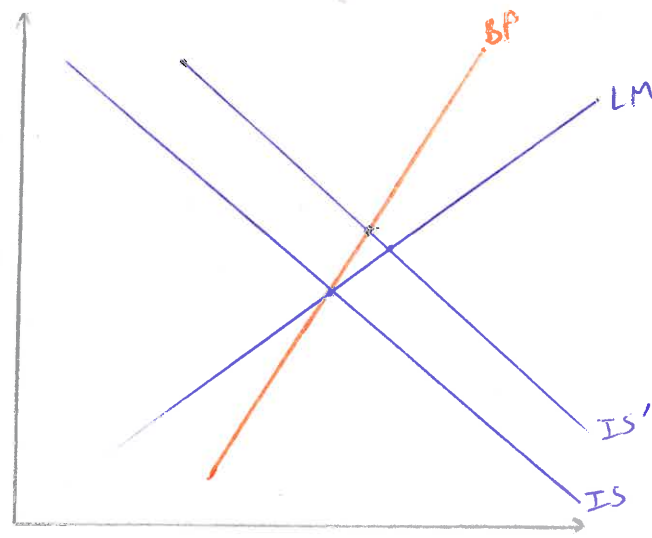
OR

(2) BoP Surplus

→ To Analyze whether we have BoP deficit or BoP surplus, we have to remember that if Y increases $\rightarrow M_s \uparrow \rightarrow$ BoP Deficit

On the other hand, if $r \uparrow \rightarrow$ K inflow $\uparrow \rightarrow$ BoP Surplus

[Note: here at point (3) , with same income Y_1 as point (2) but r has $\uparrow$ from point (3) to point (2) , thus more K inflow & trade surplus]



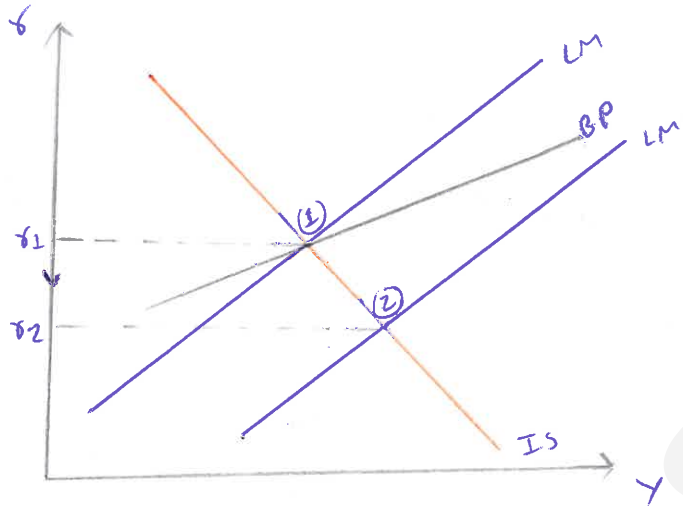
- Hence, we can conclude that, on application of fiscal policy, both effects can be observed, BOP surplus & BOP deficit.
- On further observation, we see that if BP curve is flatter & LM is steeper relatively then we get BOP Surplus
- If BP curve is comparatively steeper to LM which is comparatively flatter then we obtain BOP deficit

[Similarly we will have 2 cases in Contractionary Fiscal policy]

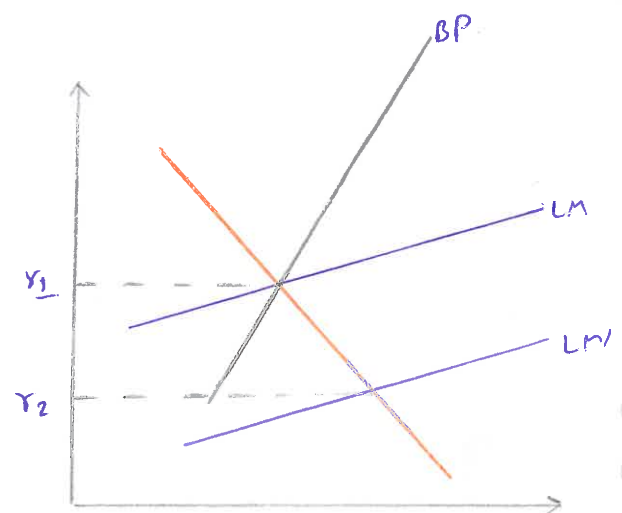
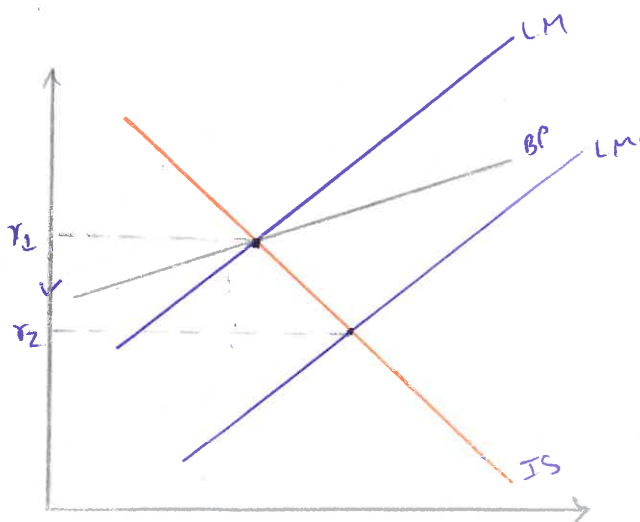
Effects of Monetary policy on BoP

- Assumptions remain same as that in fiscal policy
- Let us consider that ~~expansionary fiscal~~ monetary policy is applied by RBI i.e. Money supply is going to increase.

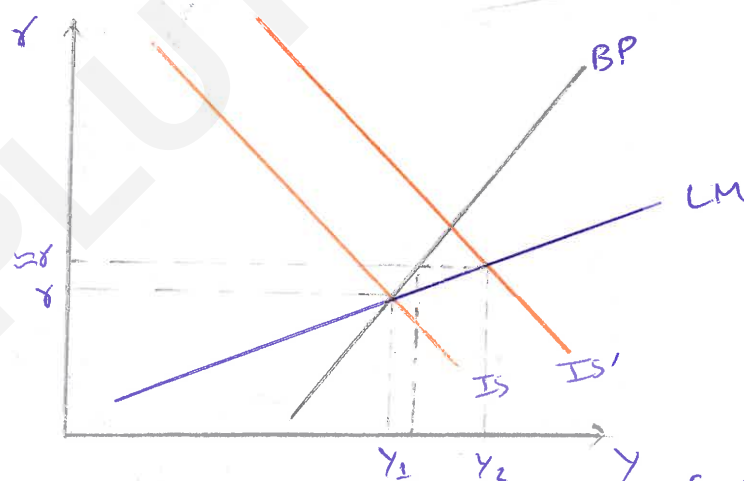
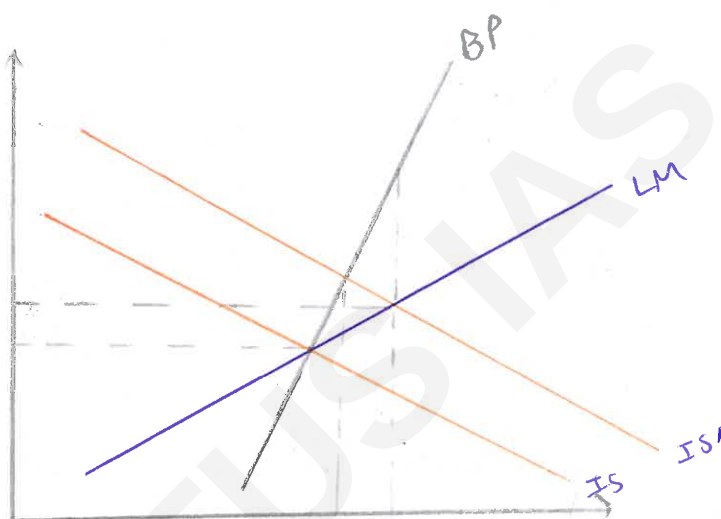
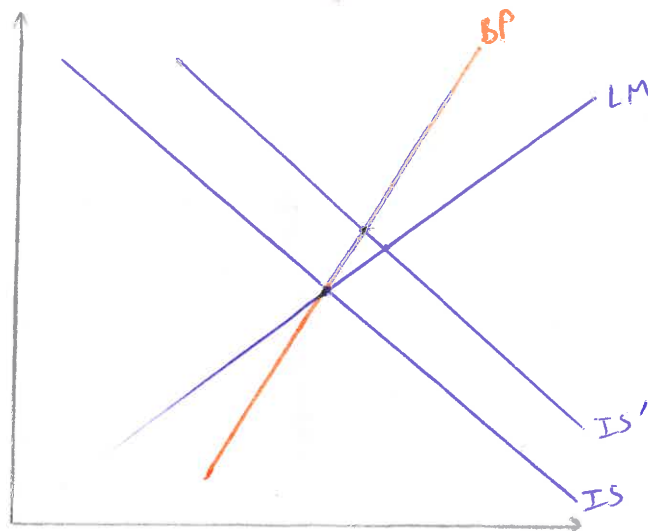
Same Trick as before



- Since interest rates $\downarrow$ (from r_1 to r_2), less capital inflow & more capital outflow from the country $\rightarrow$ **Deficit**
- Unlike Fiscal policy, effects of monetary is always certain i.e. whenever, expansionary monetary policy is used, there will be deficit in balance of payment & when contractionary money policy is used, there will be surplus in balance of payment.
- In case of Fiscal policy, we observe that impact of it would result in surplus or deficit in BoP which depends on the steepness & flatness of BP & LM curve.
- But that effect is true here or not let's examine:
For ex: in expansionary Monetary policy.



In both cases of expansionary Monetary policy, irrespective of slope of LM curve, Δ in r is equally effective & BP curve



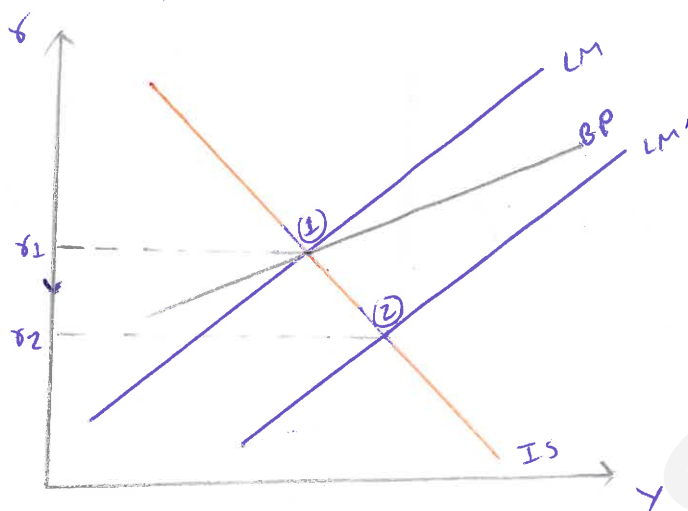
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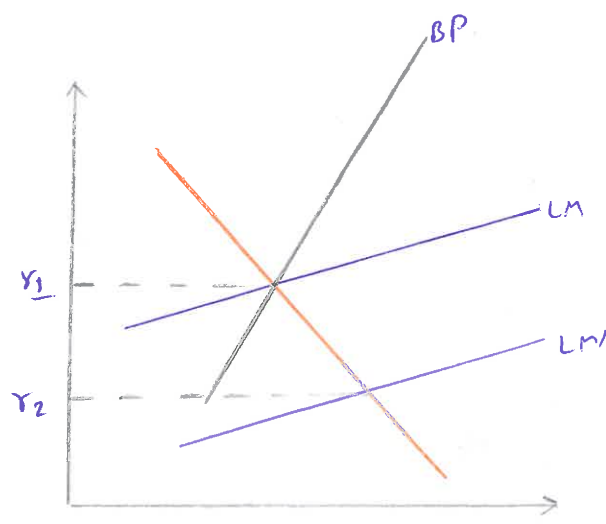
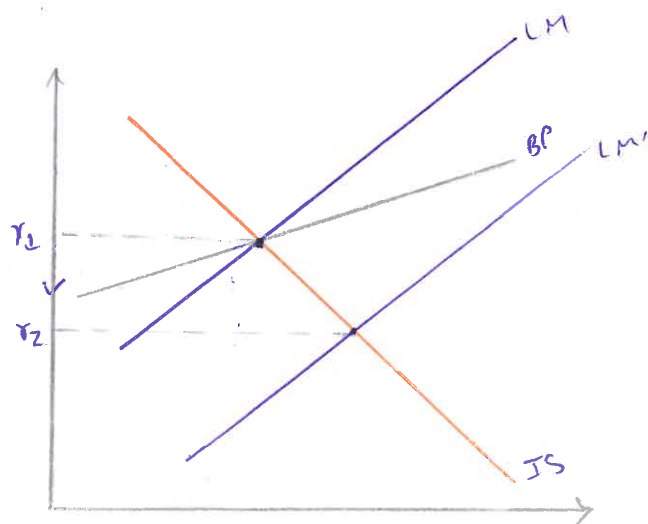
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For ex: in expansionary Monetary policy.



In both cases of expansionary Monetary policy, irrespective of slope of LM curve, Δ in Y is equally effective & BP curve

→ Thereby, we see that effects of fiscal policy are not certain,

It depends upon lot of factors.

- ① steepness of LM & BP curve
- ② Magnitude of MPC & MEM
- ③ Interest elasticity of capital inflow.

→ But effects of monetary policy are always certain.

⇒ Here we will be dealing with

① Disequilibrium system

② As system is in disequilibrium, so monetary & fiscal policy will also be considered here.

⇒ Mundell said that we have to focus both on internal balance as well as external balance.

Internal Balance

(i) Unemployment should be nearly zero.

(ii) Inflation should be under control

External Balance

(i) There should be no balance of payment surplus or deficit.

~~for~~

⇒ Robert Mundell published his paper in IMF named - "The appropriate use of Monetary & Fiscal policy for internal & external stability"

This paper was published in 1962

He said 4 cases are possible in this scenario

① Inflation Deficit (Inflation + Deficit)

② Unemployment Deficit (Unemployment + Deficit)

③ Inflation Surplus (Inflation + surplus)

④ Unemployment Surplus

⇒ If we consider the case of Unemployment Surplus (given by Mundell)

• So govt. uses expansionary Fiscal & Monetary policy

• Since we consider monetary policy (because Fiscal policy is uncertain)

(i) So in expan. monetary policy, $r \downarrow$

Thus more borrowing $\rightarrow \uparrow$ Invest.

As a result Unemployment $\downarrow$.

(Internal balance for unemployment)

(ii) When considering Fiscal policy: Govt. exp $\uparrow \rightarrow Y \uparrow$
Taxes $\downarrow \rightarrow Y_d \uparrow$

This $\uparrow Y_d$ & Y creates more demand $\rightarrow$ more invest & thus employ.

Thus, Here also Unemployment $\downarrow$.

→ Thereby, we see that effects of fiscal policy are not certain,
It depends upon lot of factors.

- ① steepness of LM & BP curve
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(1) Inflation Deficit (Inflation + Deficit)

(2) Unemployment Deficit (Unemployment + Deficit)

(3) Inflation Surplus (Inflation + surplus)

(4) Unemployment Surplus

⇒ If we consider the case of Unemployment Surplus (given by Mundell)

• So govt. uses expansionary Fiscal & Monetary policy

• Since we consider monetary policy (because Fiscal policy is uncertain)

(i) So in expan. Monetary policy, $r \downarrow$

Thus more borrowing $\rightarrow \uparrow$ Invest.

As a result Unemployment $\downarrow$.

(Internal balance for unemployment)

(ii) When considering Fiscal policy : Govt. exp $\uparrow \rightarrow Y \uparrow$
Taxes $\downarrow \rightarrow Y_d \uparrow$

This $\uparrow Y_d$ & Y creates more demand $\rightarrow$ more invest & thus employ.

Thus, Here also Unemployment $\downarrow$.

(iii) Exp. Monetary policy

• $r \downarrow \rightarrow MS \uparrow \rightarrow \text{Cap. outflow} :- \text{Cap. acc. deficit}$

(iv) Exp. Fiscal policy

• Govt. Expend. $\uparrow \rightarrow Y \uparrow \rightarrow M \uparrow :- \text{Current acc. deficit}$

Both of these compensate for Surplus.

$\Rightarrow$ If we consider the case of Inflation Deficit (given by Mundell)

(i) Contractionary Monetary policy

$r \uparrow \rightarrow I \downarrow \rightarrow Y \downarrow \rightarrow \text{Inflation countered}$

(ii) Contractionary Fiscal Policy

$G \downarrow \rightarrow Y \downarrow \rightarrow \text{Inflation countered}$

} For Inflation

Therefore Internal balance will be corrected

(i) Contractionary mon. policy

$r \uparrow \rightarrow MS \downarrow \rightarrow \text{Capital Inflow} \uparrow \rightarrow \text{Cap. acc. surplus}$

(ii) Contract. Fiscal policy

$G \downarrow \rightarrow Y \downarrow \rightarrow M \downarrow \rightarrow \text{Current acc. surplus}$

} For Deficit

$\Rightarrow$ Mundell said that the 2 cases we discussed could impart both Internal & external balance by the use of same type of contractionary policies & Expansionary policies.

But the problem arises in the remaining 2 cases

① Inflation Surplus

② Unemployment Deficit

$\Rightarrow$ For case of Inflation Surplus

(i) Contractionary Monetary policy

$MS \downarrow \rightarrow r \uparrow \rightarrow I \downarrow \rightarrow Y \downarrow \rightarrow \text{Inflation countered}$

(ii) Contractionary Fiscal policy

$G \downarrow \rightarrow Y \downarrow \rightarrow \text{Inflation countered}$

} Internal Balance

(iii) Exp. Monetary Policy

$r \downarrow \rightarrow (I \uparrow) \rightarrow \text{Capital outflow} \rightarrow \text{Cap. acc. deficit}$

(iv) Exp. Fiscal Policy

$G \uparrow \rightarrow Y \uparrow \rightarrow M \uparrow \rightarrow \text{Current acc. Deficit}$

$\Rightarrow$ So if we consider Inflation Surplus, so to counter inflation we need to use monetary & fiscal contractionary policy but for surplus we need expansionary policy.

$\Rightarrow$ In case of unemployment deficit, to encounter unemployment, Expansionary monetary & fiscal policy will be used but to counter deficit we need contractionary policy.

$\Rightarrow$ So in these cases, same type of policy cannot be used to counter both the issues — This is the assignment problem of Robert Mundell.

$\Rightarrow$ By assignment problem we mean that the country with fixed exch. rate chooses to assign monetary policy for external balance & fiscal policy for internal balance.

Case 1 — Unemployment Deficit

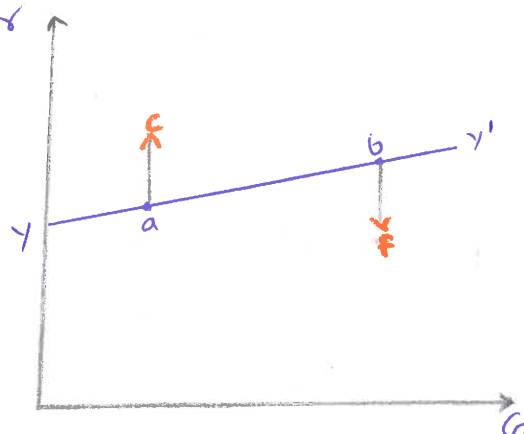
$\hookrightarrow$ He explained this case with the help of 2 diagrams of internal imbalance & external imbalance.

Internal Imbalance (full employment + 0 inflation) r

r — rate of interest
(monetary policy tool)

G — Govt. expen.
(fiscal policy tool)

YY' — Line of internal balance



$\hookrightarrow$ Both point a & b represent internal balance as drawn on the line of internal balance.

$\hookrightarrow$ At point a, r & G are low; At point b, r & G are high

$\hookrightarrow$ On moving leftward of YY' curve, unemployment is going to $\uparrow$
 Cos at point c, r is high & G is low $\rightarrow$ Low invest $\rightarrow$ Unemplt.

→ If we move right of the YY' curve, inflation (as at point f , r is low & m is high)

External Imbalance

→ Point a & n represent external balance point.

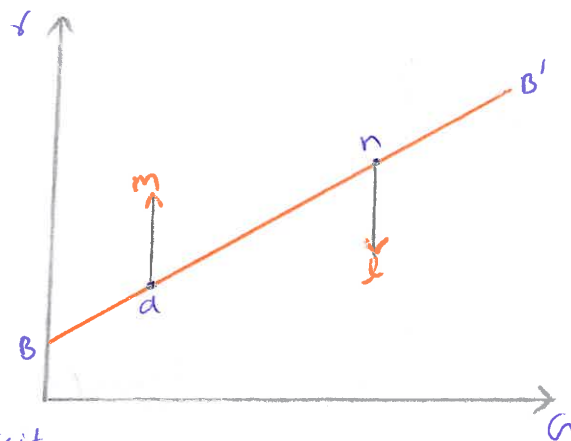
→ If we move from a to m

$r \uparrow \rightarrow$ Cap. inflow $\uparrow \rightarrow$ Cap. surplus

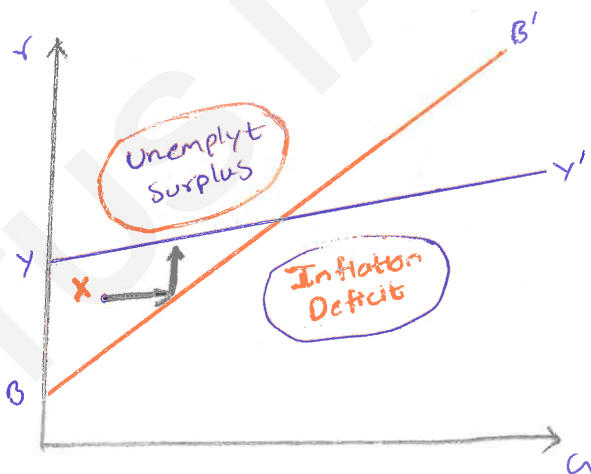
~~$m \rightarrow$~~

→ (r constant), move from n to d

$r \downarrow \rightarrow$ Cap. outflow $\uparrow \rightarrow$ Cap. deficit



→ So if we move leftward of the line BB' , we observe cap. surplus & if we move rightward of the line BB' , we observe cap. deficit.



⇒ We have already discussed the cases of Unemployment surplus & Inflation deficit; now we have to tackle:

① Unemployment Deficit

Unemployment	Deficit
• Exp. — Fiscal or monet. policy	• Contrac. — Fiscal or monet. policy
• So <u>Exp. Fiscal policy</u>	• So <u>Contrac. Monet. policy</u>
$m \uparrow$	$r \uparrow$

• But Mundell said, for Internal imbalance, use Fiscal & for external imbalance, use Monetary policy.

• So Expansionary Fiscal & Contractionary monetary policy would be the right choice here.

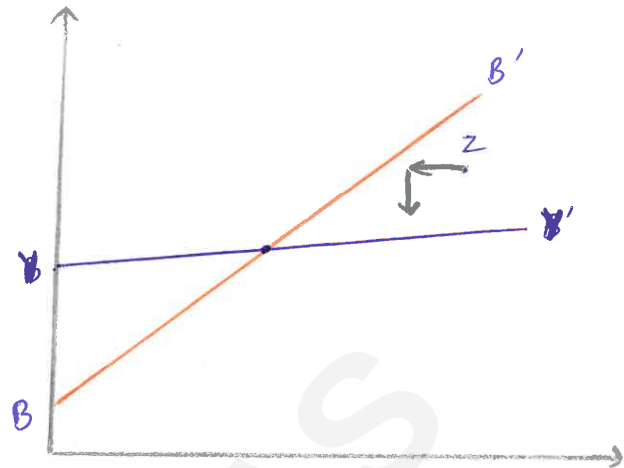
• He said appropriate choice of the Policy means, choosing that policy which will take us closer to the equilibrium point i.e. Convergence

• With this, X will move rightward & upward moving closer to Convergence

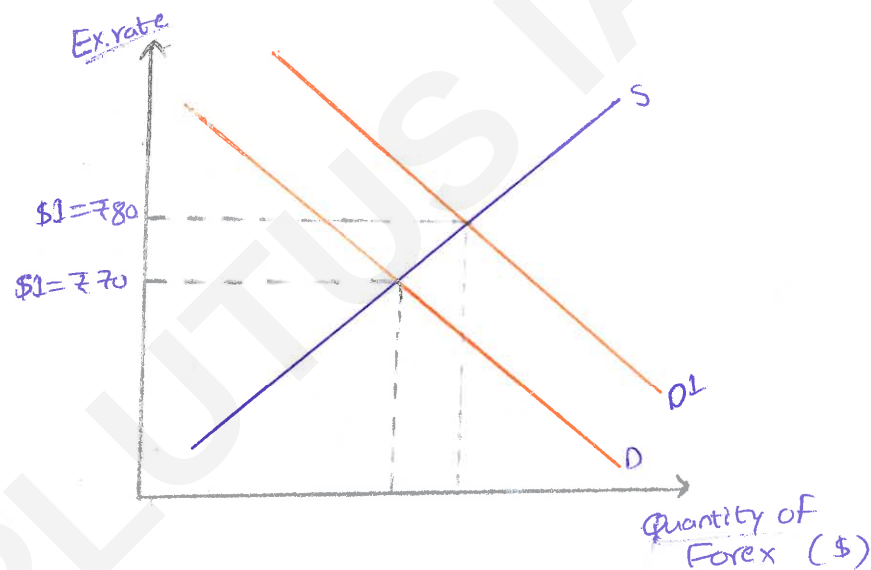
② Inflation surplus

→ So here, in order to reach towards convergence equilibrium point, α has to $\downarrow$ & r has to $\downarrow$
i.e. Contractionary Fiscal policy & expansionary monetary policy to used.

for Internal & External Imbalance respectively.



- (2018) — Under what conditions will devaluation create a trade surplus & increase output in the Simple Keynesian Framework?
- (2017) — Monetary Contraction is a better option than devaluation to improve BoP position of a developing economy under Fixed Exch. rate System. Discuss.
- (2016) — Elasticity & Absorption approaches to BoP adjustment? Discuss
- (2007) — Under the flexible foreign exch. rate scenario, Devaluation has become redundant. Comment upon the above statement.
- (2003) — Do you think devaluation has become redundant under the floating exch. rate regime? Give reason for your answer.
- (1997) — Devaluation tends to lead to further devaluation. Discuss.



When Exchange rate deteriorates due to Market forces, it is called Depreciation. However, when exch. rate deteriorates due to govt. action, it is called Devaluation.

- Devaluation means reduction in external value of the country's currency unit undertaken by govt.'s Fiat or order.
- Depreciation means reduction in the external value of country's currency unit undertaken by market forces of demand or supply.

- Revaluation means rise in the external value of the country's currency unit undertaken by the govt.'s fiat or order.
- Appreciation means increase in the external value of the country's currency unit undertaken by market forces of demand & supply.

Devaluation (Revaluation)

- Deliberate govt. action
- Fixed exchange rate system / Pegged exch. rate system
- Official adjustment of exch. rate

Depreciation (Appreciation)

- Market forces of demand & supply
- Floating exch. rate system
- Market-driven Δ in exch. rate.

Effects of Devaluation

- Devaluation is done to counter deficit in BoP, which occurs due to high Imports & Less Exports.
- After Devaluation price of Home currency falls, due to which Indian goods become cheaper for foreigners & hence they purchase more quantity of goods, thereby increasing our X_s .

There are 2 approaches of devaluation:

① Elasticity approach

② Absorption approach.

Which tells us about the effects of devaluation.

Elasticity approach	Aspect	Absorption Approach
• Price changes & trade volumes	Focus	• Domestic income & spending
• Elasticities of demand for X_s & M_s	Key concept	• Gap between Income & Absorption (Spending)
• Ignores Income effect; full employment	Assumptions	• Recognizes Income effect
• Devaluation effects volumes (based on elasticities)	Analysis	• Devaluation effects income & spending

① Elasticity Approach / Partial Equilibrium Approach

- Here we are going to deal with the elasticities of Imports & Exports.
- Elasticity of Import is in home market.
- Elasticity of Export is in foreign market
- Elasticity of Imports

① Unitary Elasticity Demand

- Total expenditure remains constant after devaluation.

② Inelastic Demand

- Total expenditure increases after devaluation.

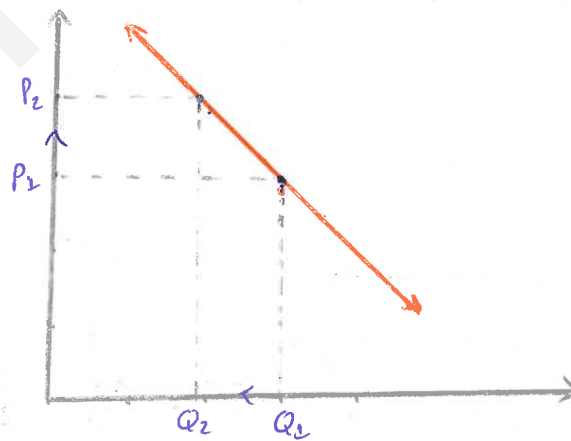
③ Elastic Demand

- Total expenditure falls after devaluation.

Graphs for Elasticity of Imports

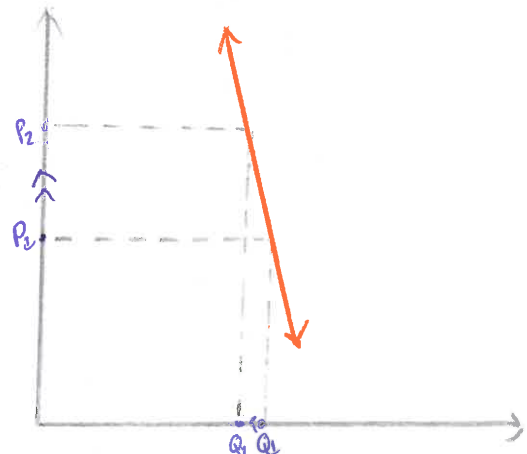
① Unitary Elastic

- Total expen. remains constant i.e. in graph price of M_s 1st of fall, would $\uparrow$ because after devaluation, prices of M_s $\uparrow$ & Quantity demanded is $\downarrow$.
(of M_s)
- In this case, $\downarrow$ in quantity demanded = $\uparrow$ in price



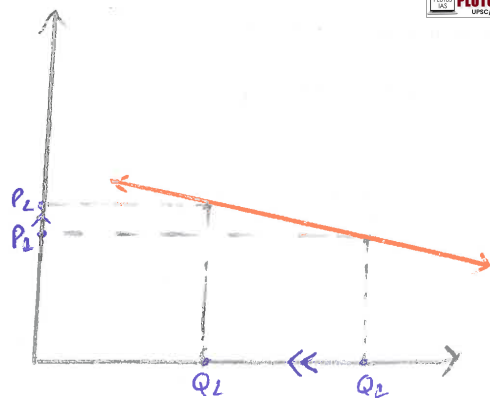
② Inelastic Demand

- Here Total expenditure $\uparrow$ instead of decreasing after devaluation i.e. fall in quantity is less in comparison to increase in price



③ Elastic Demand

- Here total expenditure decreases with increase in prices as fall in Quantity demanded is more than increase in price.

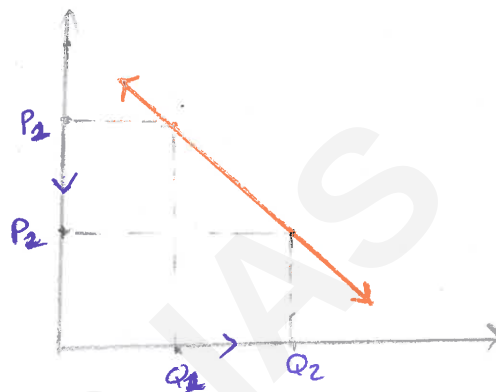


Graphs for Elasticity of Exports

① Unitary Elastic Demand

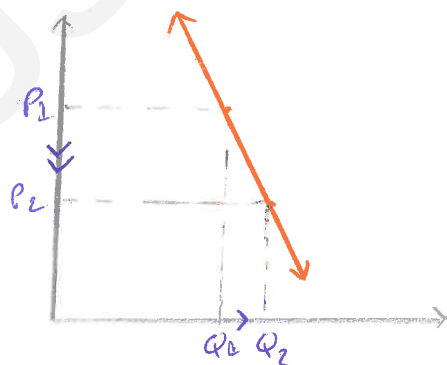
- Total expenditure remains constant after devaluation as decrease in the prices of export is equal to the $\uparrow$ in the Quantity of exports

$$\frac{\Delta Q}{\Delta P} = \frac{1}{1} = 1$$



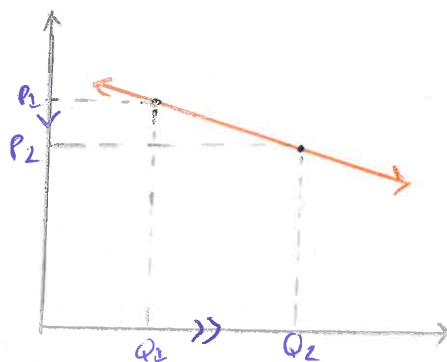
② Inelastic Demand

- Increase in Quantity is less in comparison to $\downarrow$ in price & hence total expenditure is decreasing instead of increasing as this is the case of inelastic demand.



③ Elastic Demand

- Here total expenditure $\uparrow$ with decrease in Prices, as $\uparrow$ in Quantity is more in comparison to $\downarrow$ in prices



Q.1 Explain the Assignment problem of Mundell. Also explain its solution. (250)

⇒ Assignment problem referred to the problem of choosing between Monetary & Fiscal policy, in order to bring about External & Internal balance in cases of Unemployment Deficit & Inflation Surplus

According to Mundell, there could be 4 cases in external-internal economy balance:-

① Unemployment surplus

- Such imbalances can be solved by employing Expansionary policy in both Internal & External sector.

Internal sector	External sector
• <u>Expansionary Monetary Policy</u> — Money supply increased as Interest rate declined — More investment — More Employment — <u>Unemployment Countered</u> • <u>Expansionary Fiscal policy</u> — Government spending increased — More employment — <u>Unemployment Countered</u>	• <u>Expansionary Monetary policy</u> — Interest rate reduced — Capital inflow declined — <u>Surplus Countered</u> • <u>Expansionary Fiscal policy</u> — Int Govt expenditure increased — More Income — More Imports — <u>Surplus Countered</u>

② Inflation Deficit

- Such imbalances can be solved by employing Contractionary policies in both internal & external sector

Internal Sector	External Sector
<u>Contractionary Monetary policy</u> - Interest rate increased - Money supply declined <u>Inflation Countered</u> <u>Contractionary Fiscal policy</u> - Govt. spending decreased - Income decreased <u>Inflation Countered</u>	<u>Contractionary Monetary policy</u> - Interest rate increased - More Capital Inflow <u>Deficit Countered</u> <u>Contractionary Fiscal Policy</u> - Govt. spending decreased - Income decreased - Import decreased <u>Deficit countered</u>

However, in the next 2 cases i.e.

③ unemployment Deficit & ④ Inflation Surplus, Mundell

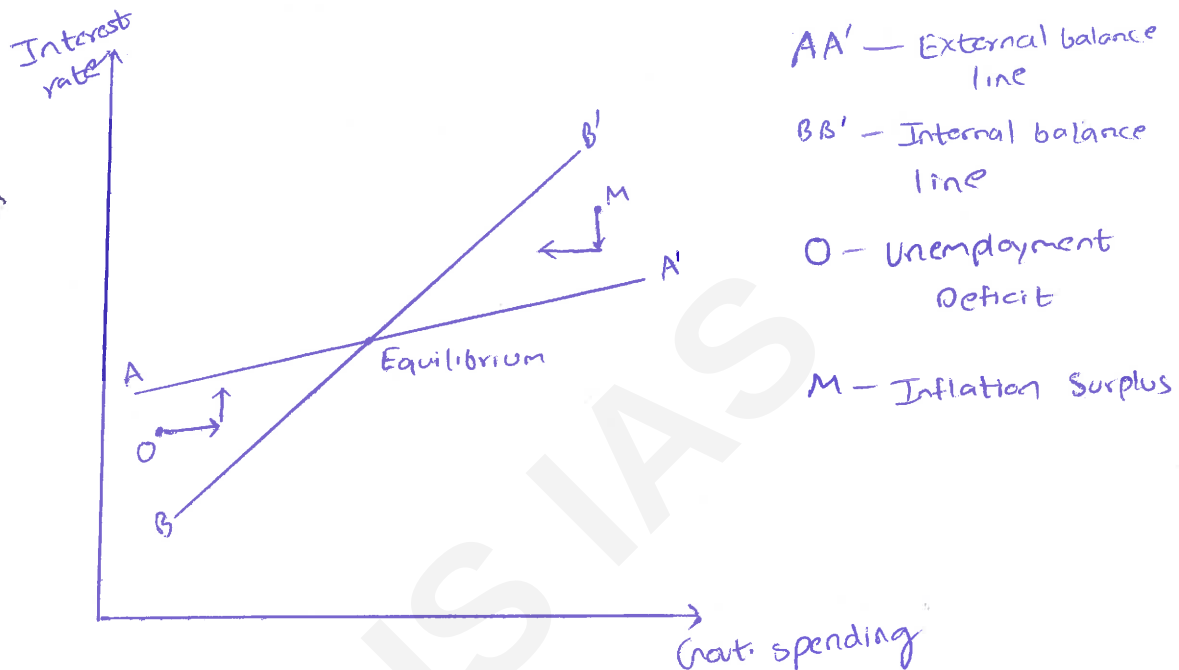
observed that single kind of policy cannot be effecting in both Internal & External Imbalance.

Thus, problem arises with the decision as which type of policy to be assigned to Internal & External imbalance.

This is known as Assignment Problem of Mundell.

Solution given by Mundell

→ Mundell proposed that a convergence towards the equilibrium of Interest rate & government spending is required to solve the problem as shown below



→ Mundell proposed that :

① For Unemployment Deficit

- We must employ an expansionary Fiscal Policy & Contractionary Monetary policy in the Internal & External sector respectively

Internal Sector	External Sector
<u>Expansionary Fiscal Policy</u> → As Govt spending increases — Income increases — <u>Unemployment</u> stands Countered	<u>Contractionary Monetary policy</u> — As interest rate increases — More Capital Inflow — <u>Deficit</u> Countered

② For Inflation surplus

- we must apply contractionary Fiscal policy & expansionary Monetary policy in the internal & external sector respectively

Internal sector	External sector
• <u>Contractionary Fiscal Policy</u> — Govt. spending decreased — Income decreased <u>Inflation countered</u>	• <u>Expansionary Monetary policy</u> — Interest rate decreased — Capital inflow decreased <u>Surplus countered</u>

Thus, the solution for the Assignment problem of Mundell lies in bringing about a convergence on the imbalance points towards equilibrium of government spending & interest rate.

Qn2 what is Devaluation. Explain Elasticity based devaluation.



Devaluation refers to decrease in value of domestic currency by a deliberate action of the domestic government increasing the exchange rate irrespective of market forces.

Devaluation consists of

① Fixed / Pegged Exchange rate

- Currency exchange rate linked & fixed by government to a strong currency or asset.

② Official Deliberate action

- Devaluation occurs by the deliberate act of the official government.

③ Non Responsive to Market forces

- Market forces of demand & supply of a currency does not impact its exchange rate.

Elasticity based Devaluation

→ Elasticity refers to change in demand for Exports or Imports for a given change in Price of currency (i.e. Exchange rate)

① Exports / Imports

- Devaluation undertaken in order to observe the desired change in exports and / or Imports to fix external Imbalance.

(a) Elastic Demand

- when Demand for Export/Import increases more than the proportion of change in prices, (of currency)

(b) Inelastic Demand

- when Demand for Export/Import decreases in proportion to the change in prices (of currency)

(c) Unitary elastic demand

- when demand for Export/Import remains constant in proportion to the change in prices.

Elasticity based devaluation is undertaken to deduce the External market reflection of responsiveness to a given change in exchange rate.

Marshall Lerner Conditions

↳ Effects of devaluation as per Marshall Lerner Conditions:

- ① If the sum of elasticities of demand for Export & Import is greater than 1, Devaluation would improve trade balance.
- ② If the sum of elasticities of demand for X_s & M_s is less than 1, Devaluation would worsen trade balance.
- ③ If the sum of elasticities of demand for X_s & M_s is $= 1$, then devaluation would leave the trade balance unchanged.

② Absorption Approach to Devaluation

- In price elasticity approach, we were talking about price elasticity of Imports & Exports.
- Here we will be dealing with:
 - (i) National Income
 - (ii) Absorption (spending)

$$\text{National Income} = \text{NNP}_{\text{FC}}$$

$$\therefore \text{GDP}_{\text{MP}} - \text{NIT} - \text{Depreciation} + \text{NFIA} = \text{NNP}_{\text{FC}}$$

$$\text{GDP}_{\text{MP}} = \underline{C + I + G + X - M}$$

$$\text{Absorption} = C + I + G \quad (\text{Expenditures})$$

National Income

- It represents the total value of goods & services produced in the country.

Absorption

- It represents the total expenditure on consumption & investment by the residents.

- Alexander Sydney gave this approach, he said $B = Y - A$
B — Balance of Payment, Y — Nat. Income, A — Absorption

- He said Devaluation will be successful when $Y > A$.

$$\therefore B = (C + I + G + X - M) - (C + I + G) \\ = \underline{X - M}$$

So B (BoP) will come positive ($X - M$ will be positive) when $Y > A$.

- whenever production (Y) is greater than Expenditure (A);
if country is producing more than it is spending, then it will start exporting.

- Devaluation can lead to a decline in the purchasing power of domestic consumers, their existing income will buy less due to
① in the import prices. This is INCOME effect

J-Curve effect ★

- ① Country follows policy of devaluation to fix BoP deficit. After devaluation
 - ① becomes cheaper, ② becomes dearer
- When Exports become cheaper then in accordance to Law of demand, quantity demanded for export will increase.
- And According to Law of supply, supply should but supply cannot increase instantly i.e. there is a time lag in increasing the supply
- The J-curve effect describes the impact of the currency devaluation on a country's trade balance. It depicts the situation where trade deficit initially worsens before improving.

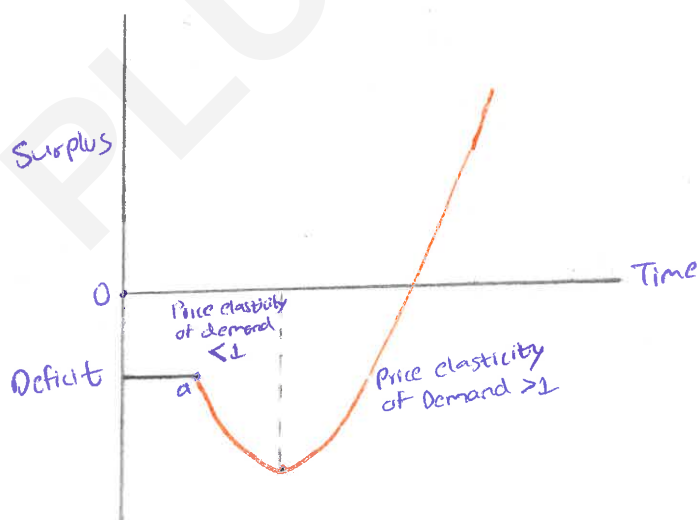
Initially downturn

- Devaluation makes exports cheaper for foreign buyers.
- But there is a lag in production & export volume ① before & export volume ②
- Meanwhile, Import becomes more expensive due to the weaker currency. (immediately)

The Initial period can lead to wider trade deficit forming the downward slope of J-curve.

Under Law of supply

- Price ① causes ① in supply as firms try to ① (profit) by selling more
- In this case, since for foreign consumer goods X_s from Ind are cheaper
 - demand more
 - Indian firm get more profit
 - supply ①



At point a — devaluation took place

Longterm Improvement (Right side of J-curve)

- As production adjust, export volume ① due to fall in the prices.
- Consumers might switch to cheaper domestic products instead of expensive M_s .
- This eventually leads to trade surplus forming the upward slope of J curve.
- * In the short run firms + Consumers may have contracts to keep buying the goods. It takes time to find alternatives. The higher price for M_s will

be an incentive for domestic firms to increase production but it takes time.

Limitations

→ J-curve is a theory & the actual outcome depends on various factors like:

- ① Elasticity of Demand for X_s & M_s
- ② Production capacities
- ③ Govt. policies

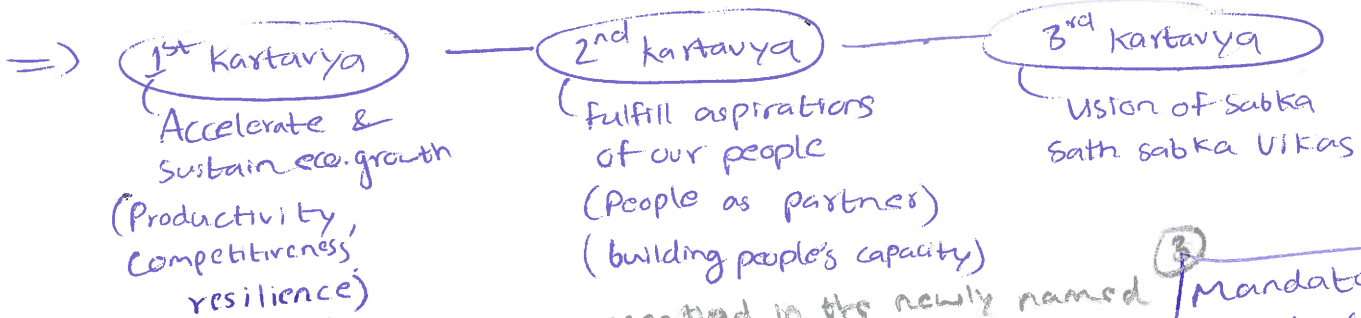
→ The J-curve does not guarantee a positive outcome. If adjustments are slow or ineffective, the trade deficit might persist.

Overall, the J-curve suggest that devaluation can be a tool to improve trade balance but it requires time & strategic management for the long term benefits to outweigh the short-term drawbacks.

Budget 2026-27

(Yuva-shakti budget)

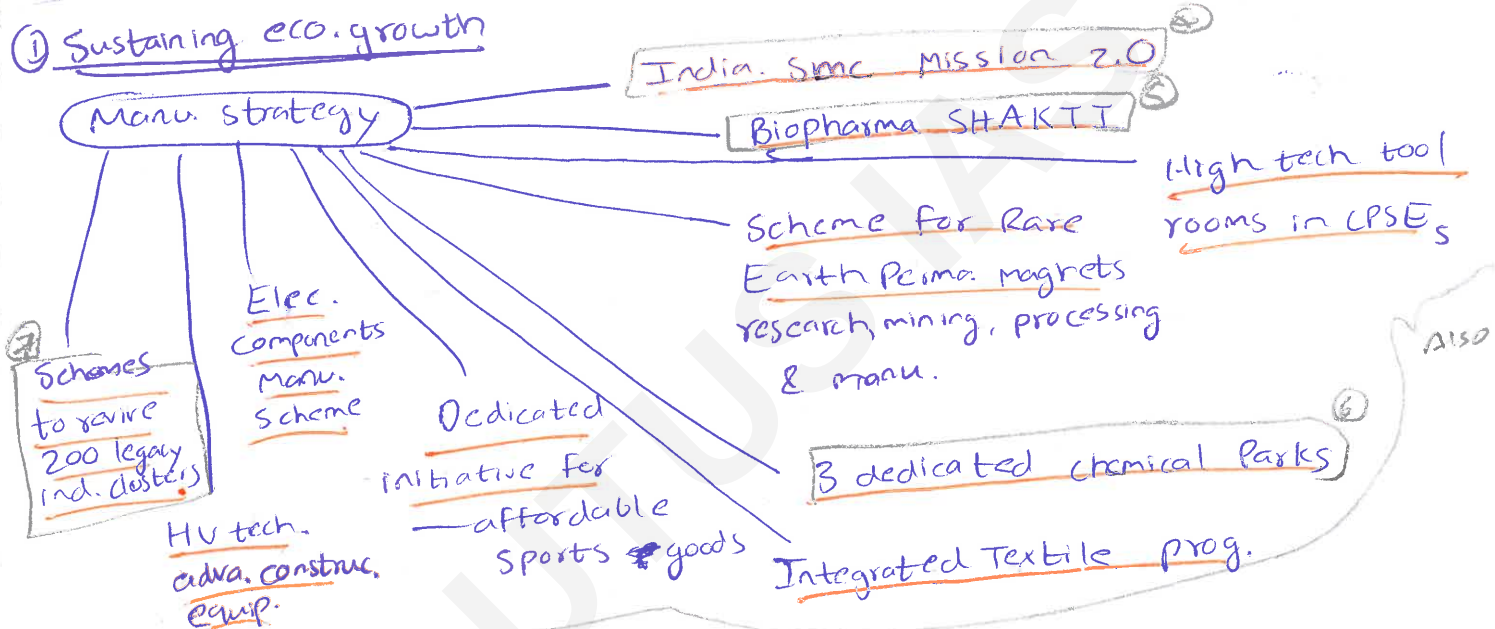
=> Govt's Sankalp — 'To focus on poor, underprivileged & disadvantaged'



↳ 4th Budget presented in the newly named Kartavya Bhawan.

6 chapters

① Sustaining eco. growth



Tax reforms

others - Notes

5yr exemption for toll manufacturer in a bonded zones — non-residents

MSME grow as 'champions'

Tax proposal
Removal of ₹10 L/consignment value cap on exports

Liquidity supp. through TReDS

(Link Gen & TReDS, LCTSMF, Credit supp.)

Equity Supp.

₹10K Cr — SME growth fund

₹2K Cr — Self Reliant India fund

Corporate Mitras

To Tier II & Tier III MSMEs (Profess. supp.)

Service sector

3 new AI Ayurveda Insti. & upgrade WHTU Global Trad Med. C.

5 hubs for Medi. Value Tourism.

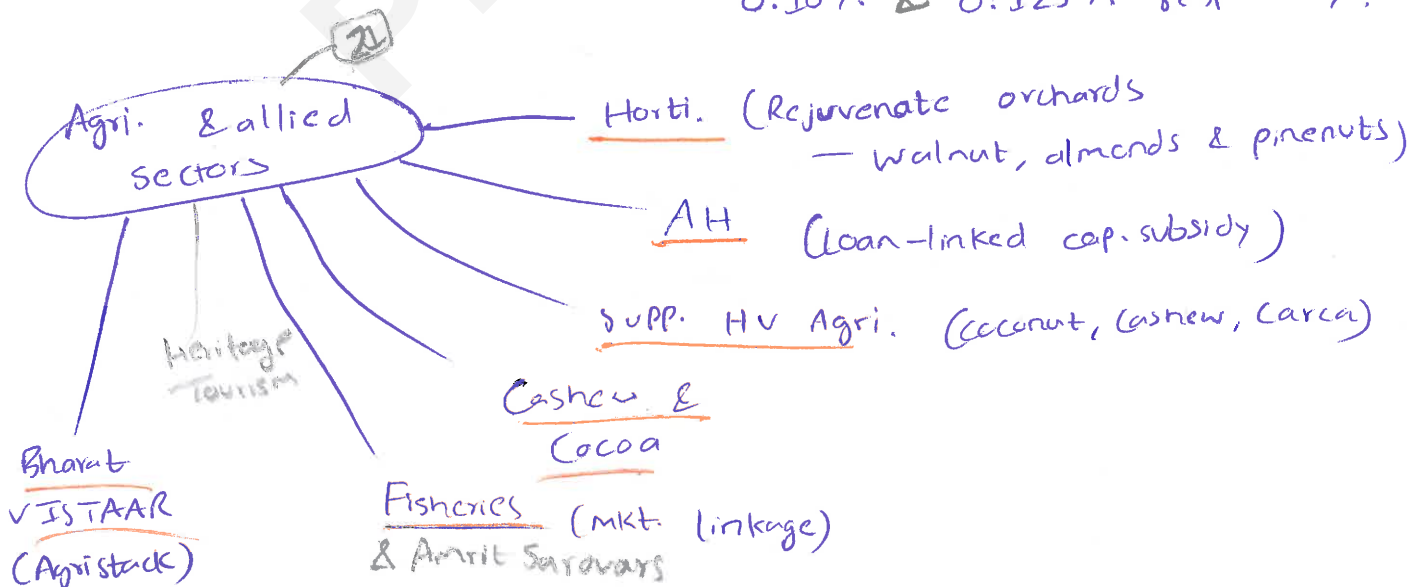
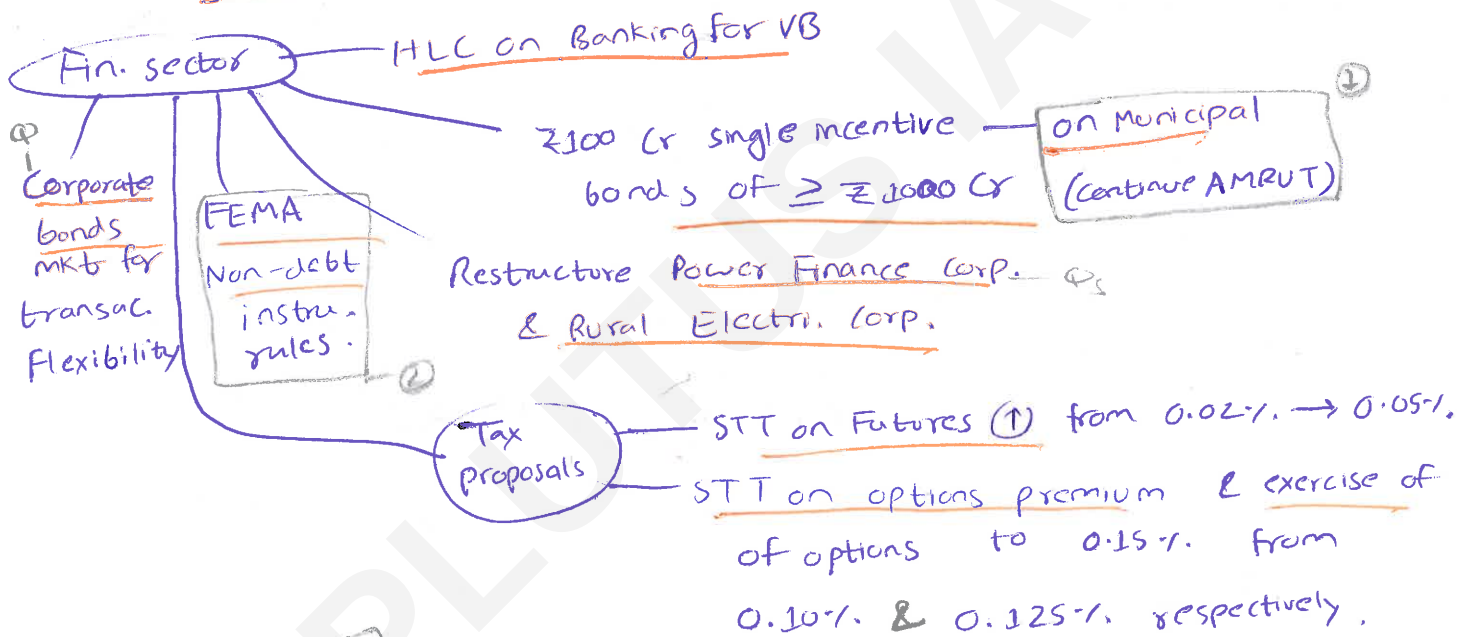
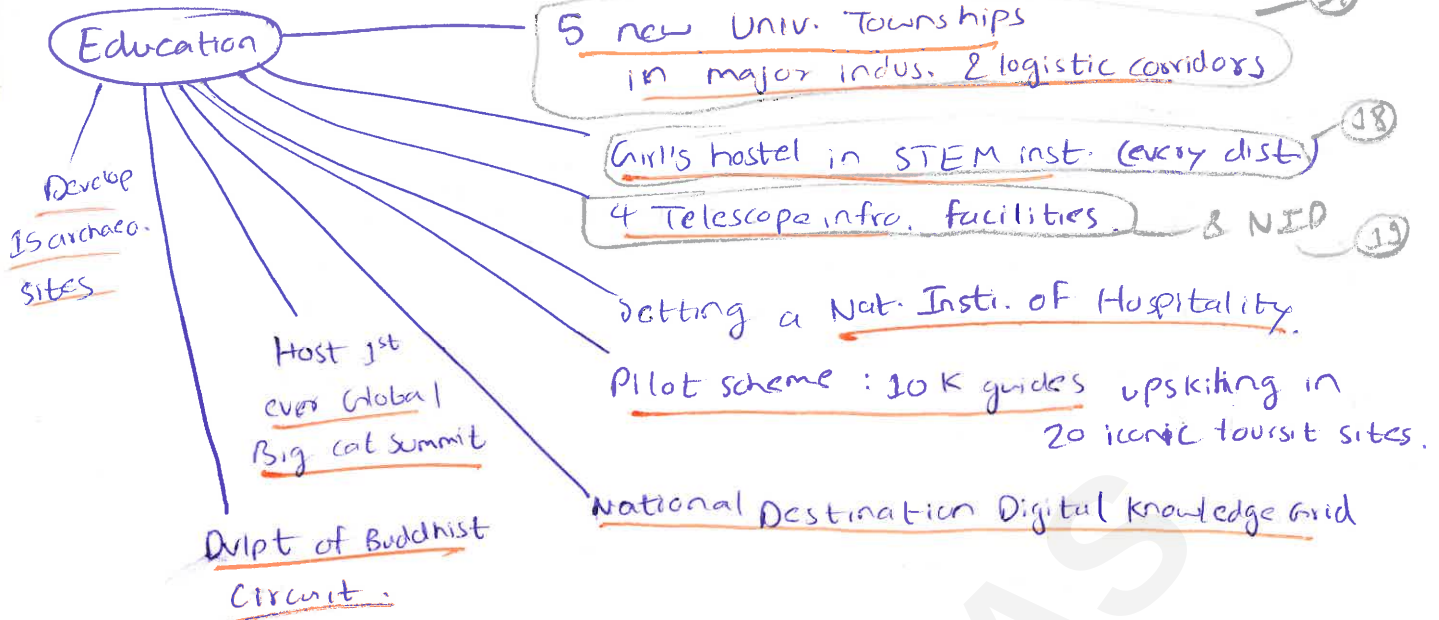
High Powered 'Edu. to emplyt. & Enterprise' standing Comm.

Upgrade & est. AHPs (Allied Health profs)

NSQF-aligned prog. — 1.5 L multiskilled caregivers.

khelo
Ind. Facilitation

AVGC Content creator Labs
New AI Nat. Insti of Design in E & NE



② Strengthening the foundations of growth

Infra.

INVITs, REITs, NIIF & NABFID initiatives.
Dulp. infra. in > 5 L (Tier II & Tier III cities)

Pub. Capex boost

FY 2015

FY 27

2 L Cr

12.2 L Cr

Infra. initiatives

- Infra. Risk Guarantee Fund (15)
- Recycle CPSE's REs assets — dedicated REI
- DFL: Dankuni to Surat. (15)
- 20 New National waterways
(linked with ship repair ecosystem)
- Coastal Cargo Promotion Scheme
(Aim: 6% → 12% by 2047)
- seaplane VOF sch.
- ₹ 2 L Cr supp — SASCI scheme.
- Purnodaya — integ.

Urbanization

Focus on Tier II, Tier III cities & temple-towns

Growth Connectors

7 HSR corridors (14)

Mum-Pune ; Pune-Hyd., Hyd-B'luva, Hyd.-Chennai,
Chennai-B'luva, DL-Bangalore, Varanasi-Siliguri.

③ People centric dlpt

- Caring Care Economy — geriatric & allied care services — > 5 L multis skilled caregivers.
- Self-Help Entrepreneur marts.
- Divyangjan Kaushal Yojana.
- Divyang Sahara Yojana. (Assistive devices)
- Supp. Artificial Limbs Manu. Corp. of India (ALMCO)
- PM Divyasha Kendras.
- NIMHANS — 2 upgradation (in Ranchi)
- Emer. & Trauma Care centers dist hosp.
- Purnodaya — ECIC

④ Trust based Governance

- (i) Duty-deferral facility : Tier 2 & Tier 3 Authorised Eco. operations (from 15 to 30 days)
(4 more points)

Taxes part
in PDF

⑤ EoDB & EoL

⑥ Fiscal matters

Fiscal Consolidation

16th FC retain 41% vertical devol.

7.14 LCr to states in FY 27

(Inclu. Rural & Urban Local Body & Disaster Manage. Grants)

(Aim) — 50 ± 1% by 2030

- FY 2025-26 — 56.1% }
 - FY 2026-27 — 55.6% (estimation) }
- Debt to GDP ratio

- FY 2025-26 — 4.4% (both RE & BE) }
 - FY 2026-27 — 4.3% (Estimation) }
- Fiscal Deficit

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