

Economics. (I)

Q2 How does the IS-LM model allow equilibrium to be shown in both Goods and money market simultaneously? Elucidate with graphs.

Introduction

The IS-LM model, also known as Hicks-Hansen model, is a two dimensional framework used to visualize the simultaneous equilibrium in both the Goods and Money market in the short-run. It helps us understand how changes in investment, saving, money supply, and demand for money influence interest rate and output. The IS-LM framework has two basic components the IS curve that represents the goods market equilibrium, while the LM curve represents the money market equilibrium. Therefore when both the curves intersect that point shows the simultaneous equilibrium in both the markets.

The IS-Curve

The IS curve is visual representation of the goods market equilibrium. It is derived from the relationship of investment and interest rate and its translated effects on Aggregate Expenditure. As we see in figure 1(a) showing interest rate on the Y-axis and Investment on the X-axis. The slope I represents given Investment at a given rate of

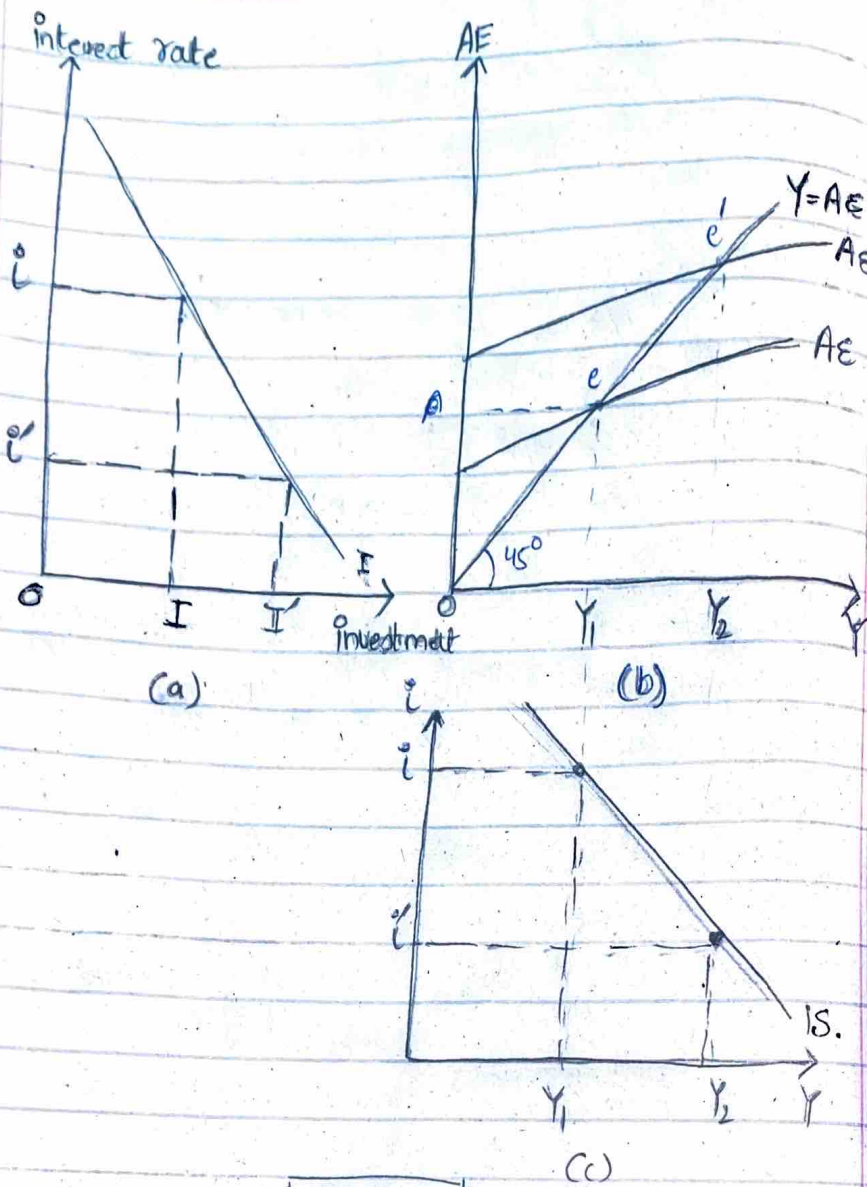


Figure 1.

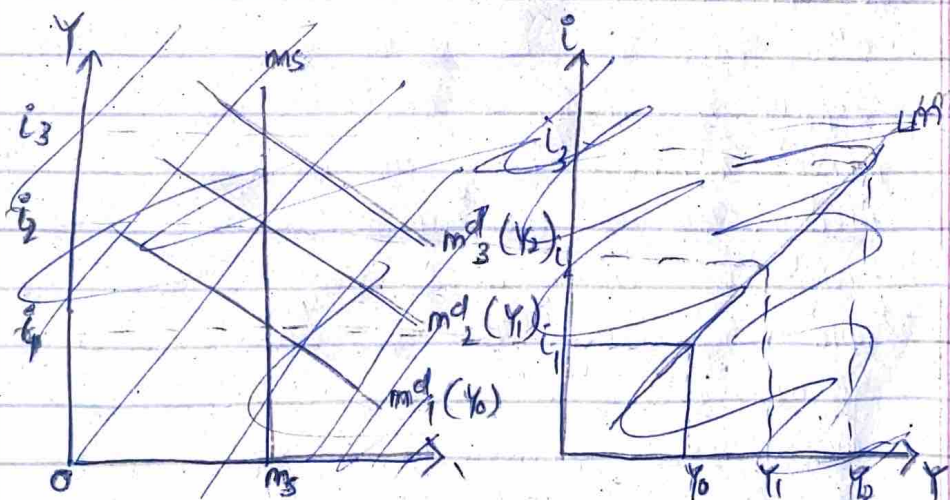
interest rate. while the downward slope of the function shows negative relation between interest rate (i) and investment (I). Therefore as interest rate decreases from ' i_0 ' to ' i_1 ' we see a rise in investment from ' I ' to ' I' '

Now we assume that aggregate expenditure (AE) is equal to ^{sum of} consumption (C), government net spending (G), investment (I) and net exports N , then $AE = C + I + G + N$, this is the net-

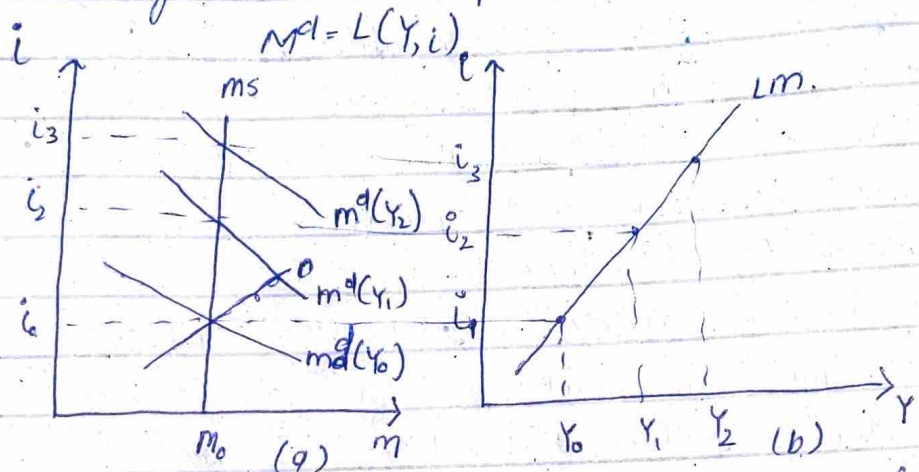
expenditure of a country. The Graph (b) of figure 1 reproduces the Aggregate expenditure model where 'Y' represent the national output on the x-axis and 'AE' on the y-axis. Shows total expenditure. While the 45° line $Y=AE$ represents an equilibrium in expenditure and output. As in graph (a) a decrease in interest rate results in an increase in 'I' this is represented by a shift in AE curve from AE to AE' increasing the output from Y_1 to Y_2 . Changing the goods market equilibrium from e to e'.

This entire process shows a negative relation between national output and interest rate and is represented on the IS curve of graph (c) of figure 1. Here we take output on the x-axis, translated from the equilibrium points of graph (b) and the simultaneous interest rates of graph (a) thus joining the points gives us a negative sloping IS curve.

The LM Curve.



On the other hand the LM curve represents the money market equilibrium for the given rate of interest rate and output level. as according to Keynesian the money demand depends on the cost of holding money and its transaction and speculative motive for holding money. Therefore the greater the income level the greater would be demand for money to support the economic transactions. Thus demand for money can be expressed as



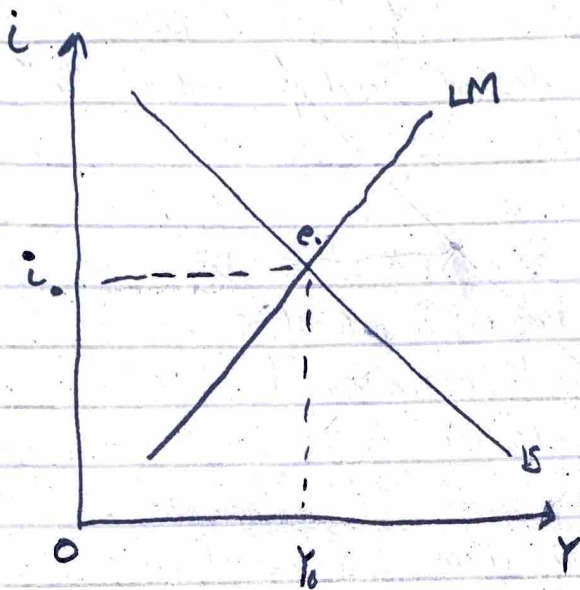
ex where M^d is money demand, Y is income and i the interest rate (cost of money). This is shown by the different m^d groups on graph (a) as the income increases demand for money also rises and as in the short term supply of money is fixed the cost of money increases along the demand for money. This is translated onto graph (b) giving us an upward sloping LM curve representing the connection between different income levels and outputs for which money market is in equilibrium. Therefore the equation of LM curve

becomes

$$M_s/P = L(Y, i)$$

where M_s/P shows the money supply and $L(Y, i)$ represents the demand for money.

The IS-LM interaction.



As now we know that any point on the IS curve and the LM curve shows us the equilibrium conditions in the goods and money market therefore the rate of interest i and output Y that for which both the curves intersect gives us the simultaneous equilibrium in both the markets. showing that there is no excess supply or demand in both markets, leading to a stable economic condition.

Conclusion.

The IS-LM model, although a simple model, shows us many fundamentals of economics and gives greater ~~at~~ view

For many macro-economic policies as what effects would an a tighting money policy have on the goods market or what would be the implications of a loose fiscal policy on the interest rate have, and thus how a money policy should be played along ~~to~~ the fiscal policy to attain the desired level of output and interest rate.

Q3 Elaborate the own price, cross-price and income elasticity theoretically and empirically. Also explain the relationship between own-price elasticity and total revenue

Introduction

Understanding how consumer behavior reacts to change in prices and income is crucial for businesses and policymakers. As business would like to maximise their revenue while policy maker might be wanting to decrease ~~and~~ or increase the consumption of a good or services or might want to know the incidence of tax on a good to producer or consumer. This is done through measuring elasticity, the measure of responsive of a given price, given change have an effect on the demand of a good.

Own-price Elasticity.

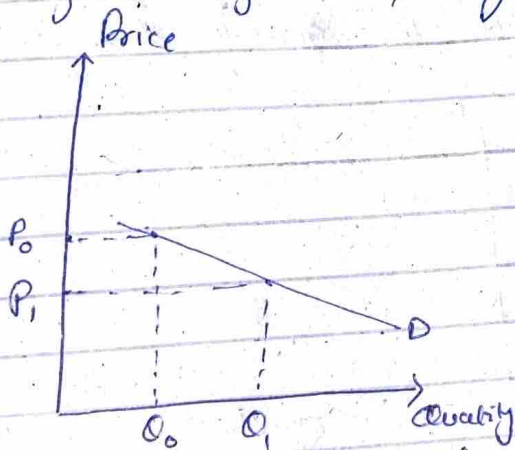
The own price elasticity measures how the quantity demanded responds to the given change in price. It is calculated as follows

$$\text{Elasticity} = \frac{\% \text{ Change in Quantity Demanded}}{\% \text{ Change in Price}}$$

There are four types of elasticity for a product with different implications.

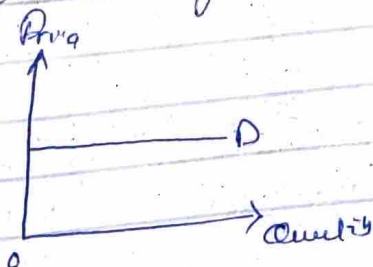
a. Elastic demand ($|E| > 1$)

This is when a small change in price leads to a high proportionately higher change in quantity.



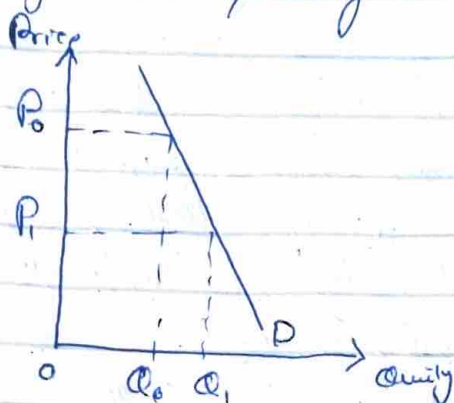
b. Perfectly Elastic demand ($|E| = 0$)

This is when any change in price has drastic impact on quantity for instance a minor increase in price would make the quantity demanded fall to zero and while a minor decrease in price will be followed by an infinite increase in demand.



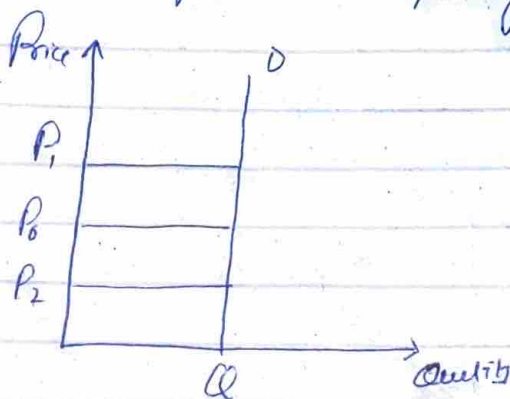
c. Inelastic demand. ($|E| < 1$)

This is when change in price is responded by a proportionally smaller change in quantity.



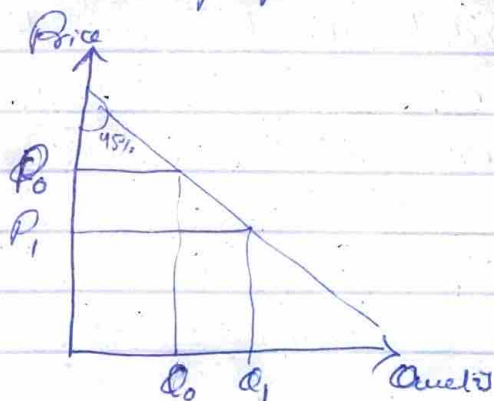
d. Perfectly Inelastic demand ($|E| = \infty$)

This is when any change in price does not impact the quantity demanded.



e. Unit price elasticity ($|E| = 1$)

Unit price elasticity implies that any change in price would be treated by ~~the~~ similar proportional change in quantity.



2. Cross Price elasticity

Cross price elasticity shows how the change in price of one good affects the quantity demanded of another good. This basically shows the relations of substitutes and complements, calculated as

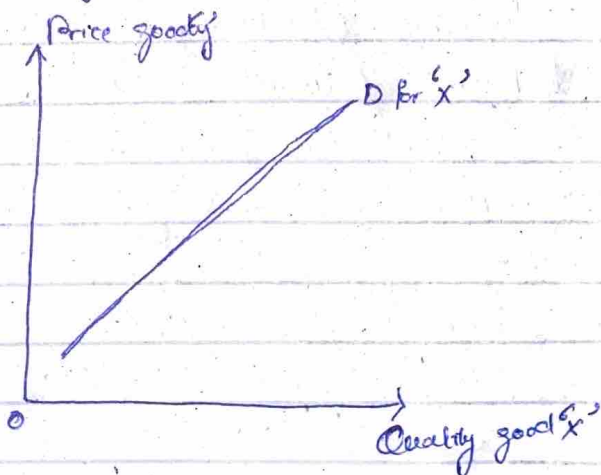
$$\text{Cross Price Elasticity} = \frac{\% \text{ change in good X quantity}}{\% \text{ change in good Y price}}$$

a. Substitute goods. ($E_{xy} > 0$)

If two goods are substitutes then an increase in price of good Y would lead to an increase in quantity of good X. This is because the consumers would shift to the product of competitors as the particular good is no expensive or to a product that can be used instead for example an increase 10% increase in price of tea would lead to a 20% increase in quantity of coffee thus $E_{xy} = 2$

$$E_{xy} = \frac{\% \text{ change in quantity of coffee}}{\% \text{ change in price of tea}} = \frac{20\%}{10\%} = 2$$

Graphically



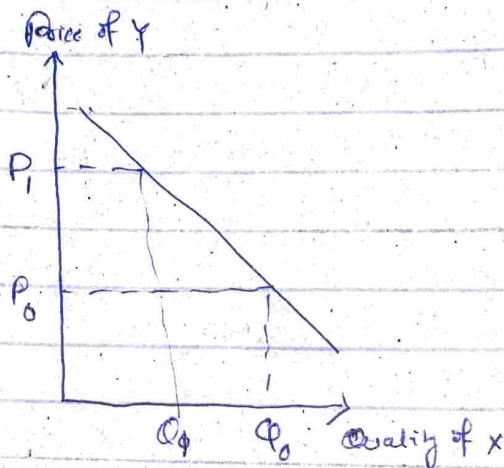
b. Complements ($E_{xy} < 0$)

Complements are goods that are used simultaneously for instance tooth brush and tooth paste, this means any increase in the price of tooth paste would result in the fall of demand for tooth brushes.

Showing cross price elasticity effect for complements
lets suppose price of tooth paste rise by 10%
the demand for tooth brush fall by 10%
the

$$E_{xy} = \frac{-10\%}{10\%} = -1$$

graphically



3. Income elasticity (E_d)

Income elasticity measures the consumer behavior towards particular products ~~also~~ & particular products, for instance when consumers income increases do they spend more ^{proportionally} on a particular product or ~~do~~ their proportionate spending falls. ~~usually~~ it is calculated as

$$E_d = \frac{\% \text{ Change in demand of } X}{\% \text{ Change in income}}$$

a. Normal goods ($E > 0$)

This is when income of a ~~good~~^{consumer} increases the demand subsequently also increases or in other words the proportion of income spent also increases for instance a 20% increase in income followed by a 7% increase in demand for clothes income spent on clothes.

b. Inferior goods ($E < 0$)

This is when income of a consumer increases the subsequent proportion of money spent on the good decreases. for instance when income of a consumer increases by 10% the ~~amount~~ proportion of money spent on salt would decrease by 2%

4. Relationship of own-price elasticity and Total Revenue.

As we know that total revenue ^(TR) is equal to Quantity (Q) multiplied by price (P)

$$TR = Q \times P$$

Therefore the ~~total~~ Elasticity of a good has direct impact on ~~Q~~ total revenue.

for instance a good with elastic good having elasticity of 2 would imply that a 2% increase in price would lead to

$$2 = \frac{x}{2\%} = 4\%$$

a 4% decline in quantity, now assuming initially the quantity demanded at price ₹100 was 100 units giving us a total revenue of 10000 Rs

however following the price increase to 102Rs the quantity demanded fell to 96 units reducing ~~quantity~~ total Revenue to 9792Rs. On the other ~~the~~ other hand for an elastic good businesses should not increase price for an elastic good.

On the other let's suppose a good has inelastic ^{of E < 1} demand then the increase in price to 102 would result quantity decrease to 99 and hence giving revenue of 10098 thus the revenue increases. Therefore businesses can increase price of inelastic goods.

5. Conclusion.

Understanding elasticity is vital for businesses to optimize pricing strategies, predict consumer behavior and maximize profits. Policy makers can use elasticity concept to design effective taxes, subsidies, and regulation that consider consumer responses and market dynamics. Therefore through elasticity, both businesses and policy makers can make informed decisions.

Q4. What is balance of Payment? point out its major components. (b) Analyze any one year's BOP of Pakistan

1 Introduction.

The balance of payment (BOP) is a comprehensive record of all the economic ~~activity~~ transactions of a country with the rest of the world over a specific period, usually an year. The BOP summarizes the inflows and outflows of foreign currency encompassing all the international trade in goods and services, financial flows, and investments. The balance of payment is divided into three main categories the current account, dealing with the records of trade, income flows and remittances. Then comes the capital account that deals with the investment flows and loans a country gets or grants. Finally there is the reserves account that records the changes in the country's foreign reserves.

2. Major Components of Balance of Payment

a. Current account.

The current account of the balance of payment records the trade in goods and services along the flow of income through investment earning and worker remittances. The current account is further divided into three sections, the goods section, services and income. Where the goods section deals with

export and import of ~~goods~~ physical goods.

The Services section deals with Export and import of intangible services like tourism, education and financial services. While the income section looks after the income received from foreign investments and workers remittances.

b. Capital account.

The Capital account of balance of payment tracks foreign investment and loans. The direct investment section of the capital account ~~tracks foreign investments~~ ^{foreign ownership of} ~~and loans~~ deals with the expansion of existing foreign-owned ventures. While the portfolio investment section looks after the sale ^{and} purchase of stocks, bonds, and other financial assets. Furthermore the financial account of capital account ~~also~~ delves into the loans, grants and other financial transactions between residents and non-residents of the country.

c. Reserve Account.

This section of the balance of payment records the changes in a country's official foreign reserves held by the central bank. These changes in the reserves are the result of net surplus or net deficit of the capital and current accounts of the balance of payment.

3. Pakistan's BOP for FY 2022-23.

a. Current account.

The Current account of Pakistan's BOP faced a deficit of \$13.8 billion, due to higher outflows and less inflows.

The major contributors to this deficit arose from deficit from goods trade that accounted \$35.2 billion deficit mainly due to high import cost, particularly energy. Although Pakistan recorded a \$7.5 billion of

Services sector surplus from IT and transportation with a notable contribution from software sector. Pakistan also received a total of \$32.2 billion remittances, in which remittances from Saudi Arabia accounted for \$8.4 billion. However these weren't enough to produce a net surplus.

b. Capital Account

The Capital account despite major inflows from direct investments of \$6.5 billion mainly coming from China, UK and USA to power, cement and technology sector and portfolio investments of \$9.7 billion mainly from USA, UK and Singapore. The account faced a deficit that contributed to the balance of payment crises.

C. Reserve Account.

The reserve account of Pakistan depleted by \$3.4 billion. This was mainly due to the massive current account deficit and loan repayments. This highlights the pressure on the external financial position and underscores the need for continued focus on sustainable economic growth and export competitiveness.

4. Analysis of the BOP

The above figures show a mixed picture of Pakistan's BOP: while the capital account surplus and strong remittances offer a positive aspect, the persistent current account deficit and declining reserves raise concerns. To achieve long term BOP stability and ensure sustainable economic growth, we see a need for effective policy implementation aimed at boosting exports, one such policy can be providing support for IT growth as it contributed the most to economic growth in BOP stabilization, secondly policies and measures such as the special investment facilitation council should be implemented to attract foreign investment.

5. Conclusion

Pakistan's BOP analysis reveals an intricate dance between its domestic economy and its international interactions. Understanding the BOP's components and their trends allow for informed policy decisions that can strengthen Pakistan's external sector and pave the way for sustainable economic growth.

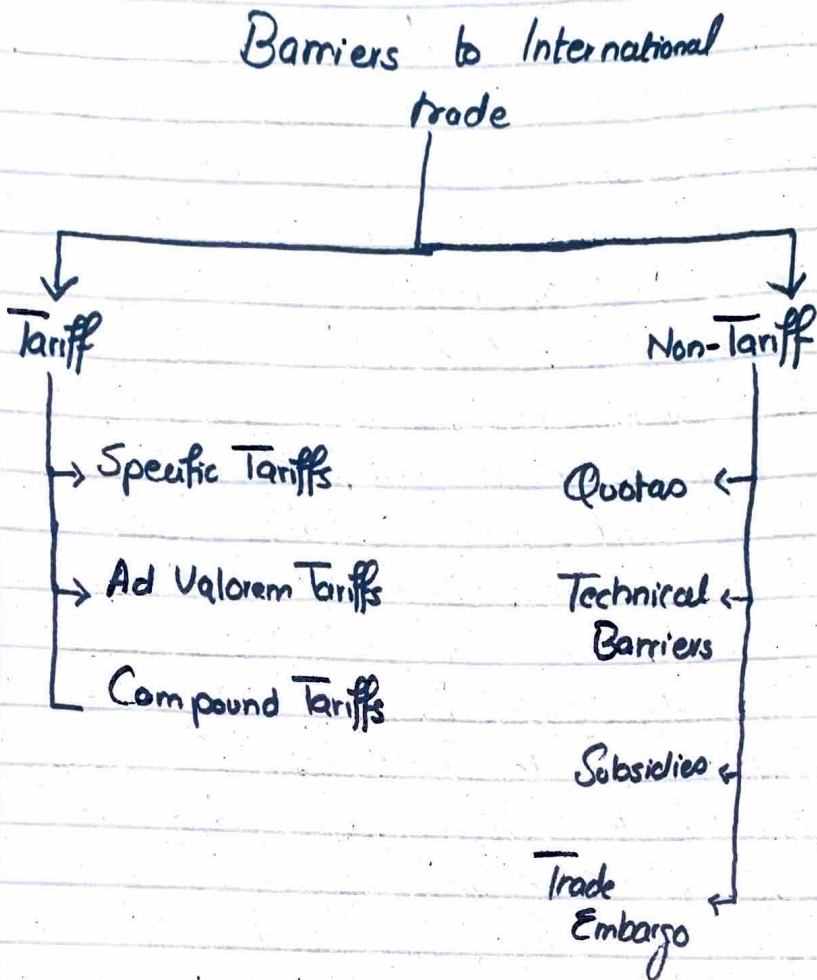
Q5 What are tariff and nontariff barriers to international trade? why do countries sometimes restrict international trade?

1. Introduction.

International trade, a tool for connecting economies, fostering competition and a fuel for growth. However despite the many countries including Pakistan often implement measures to influence the flow of goods and services across borders. These measures are known as trade barriers, applied in form of tariff and non-tariff barriers.

The tariff barriers encompass measures such as fixed import duties and compound duties, whereas the non-tariff barriers include quotas, technical barriers, subsidies to home companies and trade embargoes. These measures are usually taken in order to protect the domestic industries from the strong foreign competition, Secondly to reduce balance of payment crises as mainly done in Pakistan ~~or~~ These measures are also taken due to National security reasons & ~~in order~~ as the US is doing with China. Therefore it is crucial for to understand these barriers and the reasons behind them to comprehend global trade dynamics and Pakistan's economic landscape. a country economic landscape.

2. Barriers to International trade



The global trade landscape, while fostering immense economic interconnections, is not without its obstacles. Countries sometimes erect barriers, both visible and invisible, that impact the flow of goods and services across ~~the~~ borders. These trade barriers, encompassing both ^{tariff} ~~visible~~ and ~~invisible~~ non-tariff measures, serve a variety of purposes, but their presence undoubtedly complicates the smooth functioning of international trade. Where the tariff barriers are form of Taxes levied on

goods and services raising their prices and making them less competitive compared to domestic products. Whilst this type of barriers have many types ranging from specific to compound tariffs. Secondly, the non-tariff barriers (NTB) are any ~~other~~ measures, other than tariffs that restrict imports or exports also have varying types.

3. Tariff Barriers

a. Specific Tariffs.

Specific tariff is a specific amount of tax imposed on a certain good. This type of tariffs adds to the countries revenues and also if imposed by a greater amount reduces the import of that specific good for instance ~~Pakistan~~ ^{a country} imposes a \$5 tariff on import of ~~specific~~ shoes.

b. Ad Valorem Tariff

Ad Valorem tariff is imposing a duty on as a percentage of the imported goods value. This type of ~~tax~~ tariff also adds up to the governments revenue and discourages the import of goods. For instance Pakistan levies a 20% duty on textiles, 15% on footwear imports from any country.

c. Compound tariff

Compound tariff is the combination of Ad Valorem and specific tariff having the characteristics of both types. This

type of barrier has been used by Pakistan's government as a common example of it is Pakistan's tariff to import of cars as a 50% ad valorem duty and additional dir. regulatory duty is imposed.

4. Non-Tariff Barriers.

a. Quotas.

Quotas are a form of non-tariff barriers, this type of barrier limits the quantity of a specific good that can be imported or exported. This helps in over exporting of products to other countries so that prices do not inflate due to decreased supply.

b. Technical Barriers to Trade (TBTs)

This type of non-tariff barrier puts in product standards, testing procedures, or safety regulations that makes it difficult or expensive for foreign products to comply with local standard. As Pakistan makes it difficult for foreign ~~exporters~~ exporters to export meat into Pakistan due to the requirement of Halal Certificate.

c. Subsidies.

This type of Subsidies are a non-tariff trade barrier, where governments provides financial support to domestic industries. This does not influence imported goods.

directly but as the domestic goods are artificially made more competitive, they ~~to~~ ~~also~~ imported goods struggle ~~can~~ with survival in the market. For instance, Pakistan heavily subsidizes agricultural sector, potentially hindering competition from imported agricultural products.

d. Trade Embargoes.

Trade Embargoes are really strict measures that completely bans the trade of specific goods or with a country or a specific group of countries.

5. Reasons for trade Restrictions.

a. Protect domestic Industries.

As most of the developed countries gone through industrial revolution, can easily and cheaply produce specific goods. It gets difficult for emerging domestic industries to compete with them as they don't benefit from economies of scale thus the government imposes trade barriers to safeguard them. Similarly Pakistan imposes high duties on car imports aiming to nurture the nascent domestic ~~industry~~ automobile industry.

b. Balance of Payment Crises.

Trade deficits put pressure on ~~countries~~ a country's currency and eat up its the country's reserves. Therefore countries put trade restrictions like quotas or embargoes to reduce imports and improve balance of payment. As Pakistan for FY 2022-23 faced a \$14 billion current account and similar deficits have persisted from long time, the country imposes quotas on non-essential imports to address trade deficits.

c. National Security.

Some times embargoes or quotas are put into effect in order to safeguard crucial technology and weapons. This has been frequently used by the US in order to contain China in the race of semi conductors.

G. & H. Conclusion.

While some trade restrictions can be justified, excessive protectionism can harm all participants. Pakistan like other nations, faces a delicate balance between fostering healthy domestic industry and promoting efficient international trade. Examining the effect of tariff and non-tariff barriers is crucial for ensuring sustainable economic growth and prosperity.