INTERNATIONAL ECONOMICS

B.A.(Economics) – Third Year

Paper Code : BAEC1933

PONDICHERRY UNIVERSITY
(A Central University)

DIRECTORATE OF DISTANCE EDUCATION

R.V. Nagar, Kalapet, Puducherry – 605 014

INTERNATIONAL ECONOMICS

Unit 1: Introduction to International Economics

Importance of international economics – International Trade & Economic Growth – Subject Matter of International Economics – Purpose of International Economic Theories and Policies – Current International Economic Problems.

Unit 2: Theories of International Trade

Distinguishing Features of Internal and International Trade – Free Trade vs No Trade – Restricted Trade vs No Trade – The Pure Theory of International Trade – Theory of Absolute Advantage, Comparative Advantage and Opportunity Cost – Heckscher-Ohlin Theory of Trade – Factor Price Equalization Theory.

Unit 3: Economic Growth and International Trade

Introduction – Effect of Growth on Trade – Trade as an Engine of Growth – Production and Consumption Effects of Growth, Combined Effect – Effects of Growth on Terms of Trade, Immiserizing Growth – Technical Progress and International Growth – Import Substitution and Export Promotion Strategy – Gains from Trade – Factors Determining the Gains from Trade – Measurement of Gains from Trade– Customs Union.

Unit 4: Terms of Trade, Tariff and Protection

Concept of Terms of Trade – their Uses and Limitations – its Empirical Relevance and Policy Implications for Less Developed Countries– Theories of Terms of Trade – views of British School, Rawl, and Singer and Prebisch – Theory of Intervention – Economic Effects of Tariff on National Income, Terms of Trade and Income Distribution – Effects of Quotas – Effective rate of Protection.

Unit 5: Balance of Payments and Trade Policies

Balance of Payments Accounts: Balance of Trade, BOP on Capital and Current Account – Gold Standard – Automatic Adjustment Mechanism under Balance of Payments – Expenditure Changing and Expenditure Switching Policies – Direct Control for Adjustment – Trade Policies for Achieving Internal and External Balance – Changing Trade Policies of India.

Readings

Paul Krugman and Maurice Obstfeld (2002), International Economics: Theory and Policy, *Latest Edition.*

D. Salvatore (1997), International Economics, *PHI, New York.*

M.S. Dana (2000), International Economics, *Routledge Publications, London.*

R.J. Carbough (2018), International Economics. *South-Western College Publishing.*

J . Bhagwati (1981), International Trade, *Cambridge University Press, London*

TABLE OF CONTENTS

UNIT – I

Lesson 1.1 - Introduction to International Economics

Reading Objectives:

The major objective of this unit is to overview International Economics in the contemporary world. International Economics is classified into three dimensions, namely Trade Theories, Trade Policies and International Finance. Trade theories deal from Mercantilism to Factor Price equalization theorem and trade policies focus on tariff and non-tariff barriers to trade. Similarly, International finance focuses Balance of Payments, Exchange rate and macroeconomic policies to achieve internal and external balance. The reader will understand and analyse the significance of trade theories and policies and how they help nations to achieve economic growth and development irrespective of whether the nation is small or large. It helps the reader to analyse various strategies relating to exports and imports and its impact on gains from trade.

Lesson Outline:

- ➤ Introduction
- ➤ Overview of International Economics
- ➤ Importance of International Economics
- ➤ International Trade and Economic Growth
- ➤ Scope of International Economics
- ➤ Purpose of Trade Theories and policies
- ➤ Current Issues in International Trade
- ➤ Self-assessment Questions

Introduction

Once upon a time, nations gave importance to inward-looking strategies like protection to domestic producers from external competition, encouraging people to buy domestically made commodities and raw materials, restrictive imports through the imposition of the highest percentage of tariff rates, etc. But today, no Country has self-dependency and they depend on others in several aspects. For example, India exports

agriculture and allied products to Middle East countries and they import petroleum products from Middle East countries. Resources for petroleum products are scarcely available in India and they cannot fulfill their demand through domestic production. Similarly, the climate and the quality of soil in Middle Eastern countries are not suitable to produce agricultural commodities. Likewise, labour-abundant nations are exporting labour-intensive commodities to capital-rich nations and they import capital-intensive goods from capital-abundant nations. While doing so, both countries will get the benefit of buying the goods at low prices. In this context, International trade benefits nations to purchase commodities from abroad that cannot be produced domestically and they can buy goods cheaper through international trade.

Initially, low-income economies believed that internationalization causes the loss of national sovereignty and that trade is dominated by industrialised economies. Adam Smith and other Classical Economists invalidated such beliefs and proved free trade benefits all nations irrespective of whether the nation is small or large. The First phase of Internationalisation deals mostly with the movement of goods and services across a nation's borders later it was extended to labour movements and capital flows between the nations.

Since the 90s, almost all the countries in the world are adopted globalisational policies and realized the benefits of international trade and capital movements. This increased internationalization promotes economic life and welfare of the society by providing a variety of commodities at low prices. It created opportunities for companies in many countries that are owned partially or fully by foreigners. On the one hand, there was increasing interdependence between countries in favour of free trade. However, there was also a proof of increasing inter-regional and intra-regional trade agreements which poses challenges and constraints on the efforts of international institutions that focus on free trade.

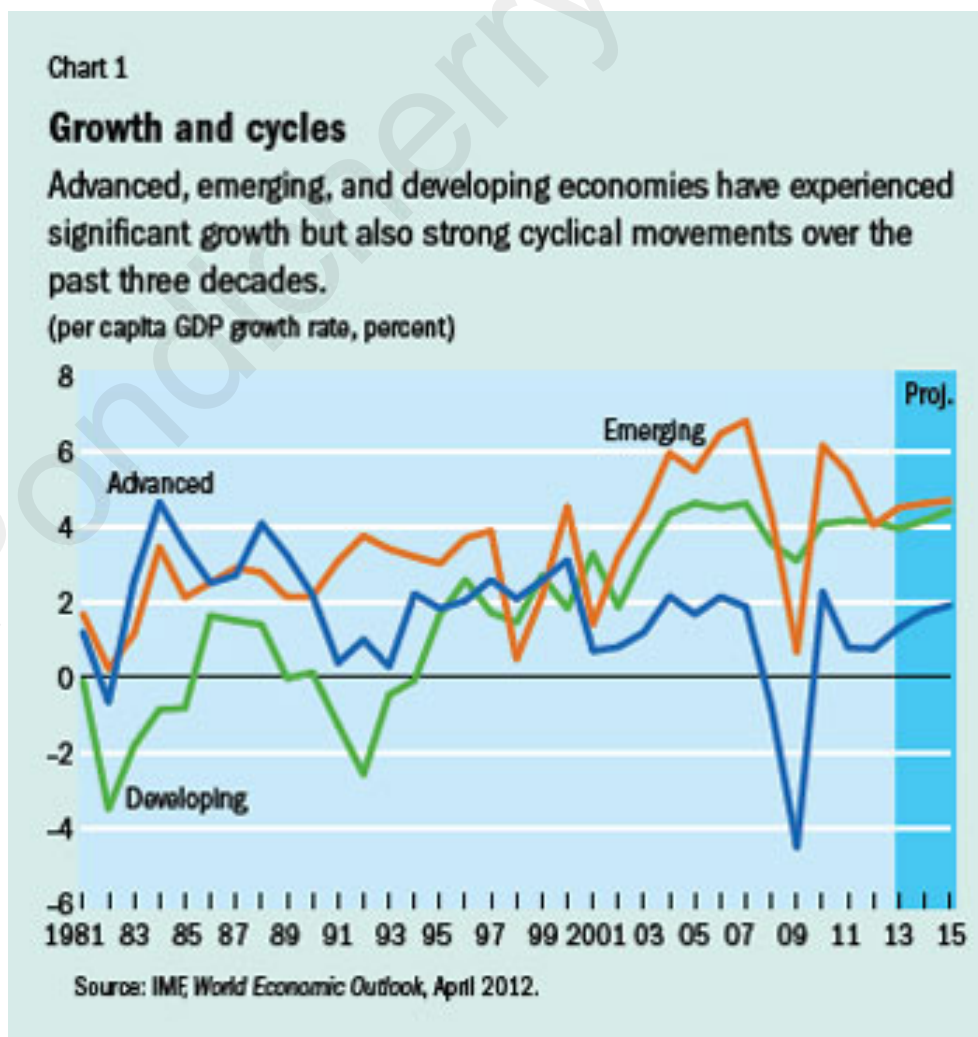**Overview of International Economics**

International Economics establishes the relationship between foreign trade and the welfare of the people by addressing issues relating to trade and commercial policies, issues relating to factor movements, constraints for multinational firms and issues relating to the exchange rates. All the above issues arise due to different categories of economies namely Low-

income economies, low-Middle income economies, High-Middle income economies and High-income economies.

Low-income countries with a per capita income of $1085 or less. Due to low per capita income, these economies experience several socio-economic problems like poverty, unemployment, illiteracy, malnutrition, inequalities and poor infrastructural facilities. Middle-income economies are further bifurcated into low-middle-income economies and high-middle-income economies. Low-middle-income economies are the nations whose per capita income is more than $1085 but less than $4255. Similarly, high-middle-income economies are the countries whose per capita income is more than $4255 but less than $13,205. Most of the fastest-growing economies and industrialised nations are occupying their spots under the category of middle-income countries. These countries have mixed characteristics of low and high-income economies. The majority of these economies still have poverty issues but the percentage of decreasing poverty rate over a period of time is very high. Likewise, all the other macroeconomic indicators are improving over a period of time. Nations with per capita income above $ 13,205 are defined as high-income countries. United States, United Kingdom, Nordic and Scandinavian countries are occupying their position under the high-income category. Naturally, the characteristics of their economies are exactly similar to the characteristics of a developed nation like no poverty, low unemployment, world-class health and education, high quality of physical and human capital, high level of technology and quality infrastructure. The differences in per capita income and characteristics of the economies cause the rich to become richer and the poor to become poorer. This is the reason why some of the low-income countries are reluctant to go for free trade. Because of the differences in per capita income, technology and quality of inputs, the benefits from trade to low-income economies differ from high-income economies. Specifically, high-income economies benefit more than low-income economies. In this context, the role of international institutions in influencing free trade is a challenging task in the contemporary world.

Over centuries, long-lasting inequalities have persisted in the global economy posing a serious question of why rich countries become richer and poor countries become poorer. Several empirical studies found that numerous factors are responsible for income differences between countries. Some of the important factors are variations in the features of factors of production, socio-economic, political and geographical factors

that cause the rich to become richer and the poor to become poorer. After the implementation of globalisational policies during the 90s, we can observe some kind of convergence taking place in the global economy.

Chart 1

Growth and cycles

Advanced, emerging, and developing economies have experienced significant growth but also strong cyclical movements over the past three decades.

(per capita GDP growth rate, percent)

Source: IMF, World Economic Outlook, April 2012.

The above figure indicates that the per capita GDP growth rate of Advanced, Emerging and Developing economies is projected to converge. Such convergence is taking place in the globalisational era evidenced that economic integration helps nations to increase gains from trade, especially since it benefits more for developing and emerging economies.

Importance of International Economics

International economics and its significance have increased over several decades, especially in the globalisational era that started in the 90s. Tremendous increases in global trade flows, capital flows, services flows and technology transfers are evidence of the importance of international economics.

International economics helps nations to achieve full employment and optimum utilization of the existing resources. For example, a hypothetical country called nation A has the resources to produce 100 X Commodity, but the demand for X Commodity in nation A is only 60X. Under a closed economy, nation A need to produce only 60 X Commodity and keep the 40 units of Commodity X resources idle causing unemployment, low GDP and less than the potential level of output. In the case of an open economy, the nation can produce 100 units of Commodity X, consume 60 units of Commodity X domestically and export 40 units of Commodity X to other countries. In this case, International economics helps nation A to realise the benefits of full employment, achieve the potential level of GDP, increase the per capita income of nation A and increase world trade and welfare.

International economics helps the nation to achieve organizational efficiency by choosing the best method of production and selling it in the appropriate market. For example, a nation can import the raw material from any Country where the material is cheaper. Similarly, they can export the finished product to the nation where it is higher in price. While doing so, the nation can produce the Commodity at a low price and sell it at a higher price abroad compared to the domestic market. The nation can realize organizational efficiency and profit maximization.

International economics helps the nation to achieve several other macroeconomic goals through trade, service and capital flows. For example, international trade allows the nation to produce the Commodity efficiently and fully by utilizing all its resources irrespective of domestic

demand. As a result, the usage of domestic factors of production will increase causing improvement in major macroeconomic indicators like the rise of real GDP, employment, per capita GDP, export earnings, income of the government and overall development of the nation.

International economics expands market access, diversifies specialization and spreads business risks across countries. It can be possible through trade flows, services and capital flows. Middle Eastern countries specialise in the production of petroleum products at a low price and they can sell them at low prices in any part of the world creating market access for them in the globalisational era. Similarly, Asian countries have market access for their agricultural commodities and European nations have access to their automobiles. Likewise, IT and IT-enabled service flows are taking place from Asia to the US and Europe. Even though the capital flows are not liberalized like trade flows, still nations enjoy capital flows indirectly through trade flows and FDI flows.

In the globalisational era, countries can diversify their specialization on many commodities by importing raw materials from other nations. India is one of the major importers of gems and jewellery and also a major exporter of gems and jewellery. It means, India imports raw products from abroad and then converts them into a finished product by including domestic value-added, finally exporting it abroad. This process makes India a specialised nation in the production of gems and jewellery through foreign trade.

International economics helps nations to diversify their risks across countries. It helps business enterprises to focus on various markets according to their economic stability and strengths. For example, if there is an inflationary pressure in one economy, the enterprise can focus on other economies where there is no inflationary pressure. Similarly, individual investments and institutional investments will take place according to GDP Growth and the overall performance of the economy.

International economics helps nations to generate foreign exchange reserves which are necessary to carry foreign trade. Suppose, India wants to import commodities from the United States means they have to settle the import bill through dollars. If the Reserve Bank of India does not have sufficient dollar reserve to settle the import bill, they have to purchase dollars in the currency market causing the exchange rate to rise. The rise

in exchange rate affects India's foreign trade by making imports costlier and exports cheaper. For example, the price of imported commodities is one dollar and the nation imports 100 units of Commodities from abroad. If the exchange rate is Rs. 82 equals Dollar 1, then the import bill is Rs. 8200. Suppose, the exchange rate rises to Rs. 90 equals dollar 1, then the import bill will increase to Rs. 9000, additionally Rs. 800 the nation have to pay even though the quantity of imports remaining the same.

International trade improves managerial efficiency by improving economies of scale. It means the nation can realise managerial efficiency through minimising costs by increasing the scale of operations. Free trade helps nations to produce maximum units of commodities using full employment of resources. Since the nation can produce maximum units of commodities under free trade can reduce the average cost of production. International economics also helps nations to improve their relations with several other countries irrespective of geographical borders. For example, India and China are considered to be rival nations and they always have tensions in the border areas but both of them are major trading partners exchanging several million dollars in trade annually. Likewise, the US and China, Russia and the European Union are some examples where the nations have better trade relations.

International Trade and Economic Growth

Economists from Mercantilism to Neo-Classism believed that there is a comprehensive role of international trade in influencing the economic growth and development of the countries. They strongly believe that liberal trade acts as an engine of economic growth. The contribution of trade to economic growth is mainly determined by several factors like full employment level of production, liberal imports of raw materials and technology, import intensity of exports, cheap capital from abroad and global market access. International economics and free trade permit all nations to specialise in production through the reallocation of resources to the comparatively advantaged Commodity. This will allow the trading nations to produce the commodities at low cost and enjoy economic welfare by producing and consuming more goods. Since the trading nations will increase their production and consumption through free trade causes increases in employment, welfare of the nation and world GDP.

Scope of International Economics

International economics predominantly focuses on Trade Theories, Trade Policies, Balance Payments and Exchange Rates, performances of macroeconomic indicators in a Open economy and the Role of International Institutions.

Trade Theories

International trade theory establishes the association among Free trade and the economic growth of the nation. Starting from Mercantilism to Heckscher-Ohlin theory, all the trade theories gave justification to several research questions about international trade. A trade theory answers the basis of free trade and why nations participate in free trade. It also found the factors that are responsible for the pattern of trade, Trade volume, positive trade ratio and welfare of small and large nations.

Trade Policies

From the agrarian economy to modern days, most of the trading nations impose different kinds of protectionist policies to promote exports and reduce imports. The protectionist policies are classified into two types, namely, Tariff Barriers and Non-Tariff Barriers (NTBs). A tariff is a method of imposing taxes on goods that cross a nation's borders. Import tariff means imposing taxes on the importable Commodity making the Commodity costlier. As a result, the consumers of importing nations may avoid buying importable commodities and they may prefer to buy domestically produced commodities. Nations use such policies to protect domestic producers and factors of production from external competition. Imposition of quota, export restraints and subsidies are the examples of NTBs. Initially, non-tariff barriers played a major role in protectionist policies, later, international agreements/institutions like GATT and WTO insisted their member countries shift from non-tariff barriers to tariff barriers. Because tariff barriers are less effective in controlling foreign trade compared to non-tariff barriers like quotas.

Balance of Payments and the Exchange Rate

The major objective of International economics is to strengthen the Balance of Payments (BOP) and to stabilize the currency in terms of other currency. BOP is a statistical statement that shows the complete economic

relations of one Country with the rest of the world. It is also called a double-entry bookkeeping system where all money inflows are called credit entry and all money outflows are called debit entry. For example, export income is called credit entry and is considered to be a positive item in the BOP account. Similarly, import payments are called debit entry and are considered to be a negative item in the BOP account. Likewise, in any form, if the nation receives money from abroad is called credit entry and all kinds of payments and outflows to abroad are called debit entry. Theoretically, BOP is always balanced but in reality, it may be balanced or in surplus. The surplus in BOP account does not create major issues in an economy but a deficit in BOP will always create a problem in the external sector. If the nation faces a BOP deficit, it will draw down the central bank's reserve or borrow from the IMF to settle the payments. If the deficit persists over a long period may drain the central bank's forex reserves or create an external debt burden for the nation. So the deficit in BOP needs to be eliminated through appropriate monetary and fiscal measures.

There is a nexus between the BOP account and exchange rate determination. Suppose a nation is facing BOP deficit, there will always be extra demand for foreign currency results pressure on the value of domestic currency to fall and the exchange rate will rise. If the value of domestic currency falls, exportable commodities become cheaper and importable commodities become costlier which led to a rise in nation's import bill and a decrease in the export earnings, if there are no changes in the quantity of exports and imports. For example, the exchange rate is assumed to be Rs. 82 equals dollar 1 in India, before the BOP deficit. Due to the BOP deficit, there will be excess demand for the dollar causing the value of a dollar to rise. Suppose the dollar value increased to Rs 90 equals dollar 1. In this case, India has to pay an extra Rs. 8 for every dollar value of imports. Alternatively, for every Rs.82 worth of exports, India will receive less than one dollar compared to dollar 1 in the pre-deficit period.

Sometimes, a rise in exchange rate may boost overall export earnings and decrease import bill of a nation, if there is a price elasticity between exports and imports. This is what the economists call an automatic adjustment mechanism in the BOP account. Suppose, if the exchange rate is Rs. 82 equals dollar 1 and the per unit price of Commodity X is Rs 82. Suppose, India exports 10 units of Commodity X to abroad when the exchange rate is Rs. 82 equals dollar 1. In this case, India receives export income of Rs. 820 or 10 dollars from abroad. If the exchange rate

increased to Rs. 90 equals dollar 1, then the export bill will decrease to 8.2 dollars instead of 10 dollars. If there is price elasticity, then the decrease in the price of exportable Commodities abroad will increase demand for Commodity X abroad, say 10 units to 15 units. Due to this, the export earnings will increase to more than 12 dollars. Alternatively, import bills decrease if there is a decrease in the quantity of imports.

Open-Economy Macroeconomics

With the rapid growth of the volume of trade and increased global service flows, the interdependence between economies has increased intensely since the 90s. Among all the transactions, trade flows alone have occupied 50 percent of the global GDP. In terms of overall flows between the countries, around 60 percent of the global economy is based on international economic transactions. The huge volume of trade and capital flows affects most of the macroeconomic activities, such as employment, organizational efficiency, financial market, inflation and economic growth. Nations adopt various kinds of macroeconomic policies to promote their economic growth and protect themselves from the failure of exposure to external competition if the domestic producers lack competitive efficiency. This creates a need for international economic cooperation and a well-designed monetary system that creates opportunities in the global arena.

International Institutions

Another important aspect of international economics is the establishment of new international economic institutions and organisations, a new international economic order, formation of customs unions and trade groups to solve disputes among the member and non-member countries. The functions of international institutions and organisations determine the success of free trade or impartial gains from trade. For example, the role of GATT and WTO are highly important to promote free and fair trade between the member countries. The role of the IMF is very crucial to promote monetary cooperation among the member countries, especially in times of BOP crisis. Likewise, IBRD and other associate institutions of the World Bank also play a crucial role in influencing international cooperation. All these institutions work together to promote economic growth and development in the world.

Purpose of Trade Theories and Policies

Economic integration helps nations to reap several benefits in the contemporary world and many bilateral and multilateral treaties have been taking place since the 90s. From the seventeenth century to Second World War, the major economies used several barriers to restrict foreign trade. Simultaneously, they were not self-sufficient to fulfil their domestic demand and the volume of world trade was very low compared to today's trade. Only a few countries are interested in international trade and they also use wrong policies like restrictive imports and encouraging exports. Third-world economies and many developing countries do not have faith in world trade and they believe that international trade is biased and favoured developed and industrialised economies.

To induce low-income economies and non-industrialised nations to adopt free trade policies, the role of trade theories and policies is always appreciable. The theory of Mercantilist believed wealth of the nation is mainly determined by the volume of precious metals like gold, silver and valuable stones kept in the forex reserves. They also believed that the nation could increase the stock of gold and silver through surplus trade. For this purpose, mercantilists strongly recommended foreign trade, especially encouraging export earnings through export-promotive measures. But Classical trade theories like the works of Adam Smith, David Ricardo, JB Say, JS Mill and others encouraged foreign trade in different aspects. Instead of promoting only exports and discouraging imports, they recommended free trade policies to boost the volume of trade and overall global trade. According to them, encouraging exports and restricting imports are biased and in favour of one Country against the other, which means, one nation's growth at the expense of the other nation. So they have recommended laissez faire and non-intervention policies in foreign trade. Almost all the Classical trade theories proved that economic interdependence and free trade help nations increase their economic growth and development. They also proved that free trade helps both small and large nations gain from trade irrespective of their size. Heckscher-Ohlin's theory and Stolper-Samuelson's theory argued in a different way that free trade benefits a nation's abundant factors and distributes income rationally to the majority of the people. This is possible only if the nation focuses on producing a Commodity that requires rigorous use of plenteous factors and imports the Commodity that requires to use nation's scarce factors. But, almost all the trade theories and policies evidence that free trade helps the nations to

achieve a potential level of GDP and reap the benefits from trade. The trade theories exposed negativities of restrictive trade and trade policies. Also, they have stated that the restrictive trade practices harm small nations more than large nations.

Current Issues in International Trade

There is no doubt that the role of international economics and the economic interdependence between countries are increasing significantly in the contemporary world. Initially, economic integration took place through trade flows, later it was extended to services flows and now capital flows are also increasing tremendously. The role of international institutions, organizations, bilateral and multilateral treaties influences the size of global trade, gains from trade and capital flows between the nations. Especially, classical trade theories, policies and international institutions simplified the gains from trade to low-income economies and removed their unwillingness to trade. As a result, volume of global trade, world GDP, resource utilization and employment has increased which benefits all nations, irrespective of whether the nation is small or large.

Recently, several issues and challenges have taken place in international trade. Some of the recent challenges in international trade are issues relating to Environmental Protection, Sanitary and Phyto-Sanitary Measures, issues relating to Labour Standards, Child Labour, Intra-regional Trading Groups and Bilateral Agreements, Removal of Subsidies and the artificial dominance of industrialised nations are some of the major issues and challenges in the international economics and free trade.

Environmental Protection

Once upon a time, economists gave priority to the economic growth and development of the nation. At present, they are not only focusing on growth and development but also aiming for sustainable development with proper utilization of resources without harming the environment. Global warming and greenhouse gas emissions are considered to be a major threat to the world today. There are two-way relationships that exist between environment and economic growth. First, higher economic growth without environmental protection may increase pollution, global warming, climate change, greenhouse gas emissions and resource depletion. Second, environmental degradation in turn affects economic growth negatively through a decrease in the quantity and quality of inputs,

air pollution, health issues and other factors that cause productivity to decline.

Global warming and biodiversity issues are considered to be a common international externality, all countries in the world have to pay attention to protect the environment. Most of the developing and emerging economies GDP growth is directly related to environmental degradation. Developed nations are blaming India, Mexico, China, Brazil and others are increasing their economic growth by burning huge quantities of fossil fuels and depleting natural resources. Developed countries are using several measures to control greenhouse gas emissions and focusing on sustainable development but emerging economies like India, China, Brazil, Mexico and others are focusing only on growth instead of sustainable development. Since it is a common problem in the world, the developed nations are putting pressure on the developing nations to focus more on environmental protection. As far as developing countries are concerned more about economic growth and development than environmental preservation. Some economists analyse the issue of environmental protection differently. According to them, the developed countries are the one who uses the resources intensively and realise tremendous growth by creating adequate damage to global warming. After realizing the growth with high per capita income, they are imposing restrictions on low-income countries on the usage of fossil fuels, biodiversity, forestation etc. Moreover, the developed nations are losing capital flows to developing countries due to severe environmental protection and taxes on greenhouse gas emissions. To enjoy fewer restrictions and to utilize abundant and cheap resources in developing nations, the producers of developed nations are shifting their business operations or expanding branches in developing countries. Economists who critically evaluate the environmental protection agreements view that the excessive protection of the environment is just artificially restricting capital flows from developed nations to developing nations.

Sanitary and Phyto-Sanitary Measures

As per the agreements of WTO and other international institutions, nations cannot restrict trade until and unless they have a BOP problem or the highest percentage of unemployment in the restricting Country. Many of the European Countries, Middle Eastern Economies and Developed Nations are imposing restrictions on free trade in the context of health

and hygienic grounds. They have set the highest standards and labelling requirements for all the importing commodities from developing nations. For example, European countries are restricting the imports of fruits and vegetables from India. According to them, the Commodity which they are importing from India is consisting chemical contents like fertilizers and pesticides. If they allow the commodities in the European market, it will harm the health of their people and may reduce domestic welfare. European countries set high standards for all importable commodities and these can be met only for organic goods that require a high cost of production. If the cost is high, naturally prices of the products will also be high and the Indian producer may not have advantage in exporting the commodity to Europe. In this case, the European producer will have a comparative advantage in producing the goods and selling them domestically. Producers of developing countries like India and other Asian producers suspect this restriction is artificially created by the European countries to dominate world trade. As per the WTO agreement, they cannot restrict trade using tariff and non-tariff barriers but they are restricting imports from the developing nations in the context of sanitary and phytosanitary measures. In the globalisational era, there is no specific support to the domestic producers to promote exports. Both domestic and foreign producers should be treated equally under the WTO agreement. In the present scenario, there is absolutely price competition taking place among the Producers. They compete with each other and succeed in the business, if they charge as low a price as possible. Since organic productions are very costlier and not feasible to produce and compete, the producers prefer to produce hybrid varieties like High Yielding Varieties (HYV) of commodities. High-yielding varieties require the application of more fertilisers and pesticides. Due to this, there will be a presence of some degree of fertilizer contents in the commodities.

Child Labour

As per the guidelines of the International Labour Organisation (ILO), using children for work harms their well-being, education and future livelihood. Not all child labours have adverse effects on their livelihood, light work child labour during extra time or leisure time to help their parent's business may have a positive effect on their livelihood and development. There is no different opinion on Child labour and it remains a common problem everywhere. According to the International Child Labour Organisation report published in 2017, there were about

152 million child labourers in the world and fifty percent of the children are employed in a hazardous job. Although international institutions are making extensive efforts to eliminate or reduce child labour, still child labours are employed in factory or small-scale industries like auto workshops and other service sectors. Many developed countries observed that using child labour in the production processes is considered an unfair trade practice in developing countries. As a result, their domestic producers have less scope in international trade. So, they want the child labour issue should be included in the international trade agreements or WTO charter under the social clause. Economists belonging to developed nations face child labour issues morally on humanitarian aspects. Another group of economists belonging to developing or low-income economies concerned with the issue of child labour is intensified to provide support to domestic producers of developed nations. One of the important characteristics of a developing Country is the highest percentage of dependent population and income from the heads of the family is not sufficient to run the family effectively. As a result, more child labourers are employed in developing countries compared to the developed Countries. Usually, producers will not treat adult and child labour equally for wages. Child labour gets low wages compared to adults causing decreases in the cost of production and the producers can charge low prices for their products creating a advantage in the production of a commodity. This is the reason why developed countries have ample concern about the inclusion of child labour in the WTO under the social clause.

Labour Standards

One of the important issues in international trade is a low standard of labour. Compared to developed Country standards, workers who produce goods in developing economies receive low wages and they are working under poor conditions. According to a report by the International Labour Organization, out of 28 developing countries in the sample study, 21 countries realised high income inequality from 90s. As in developed economies, free trade and global investment have improved the return to skilled labour and capital but it reduces the relative return to less skilled labour. Also, some studies found trade and financial liberalization rises income inequality in several middle-income economies.

Labour standards imposed by developed countries are opposed by the governments of low-income economies and developing nations. In

developing countries, the labour force is abundantly available and the wage rate offered to them is very low. Other facilities like gratuity, pensions, health insurance plus multiple allowances offered by developed countries are available to few labours in developing countries. This is mainly due to the differences in labour endowments in both economies. For example, labour-scarce developed countries are forced to give all the above benefits to their labourers. As a result, developing countries have a comparative advantage (low cost) in the production of labour-intensive commodities. Under free trade, the developed countries are insisting developing nations offer the same standards to their labourers which are very expensive for the producers of low and middle-income countries. Economists and policymakers in developing countries critically evaluate this move and consider that the developed nations are trying to remove the comparative advantage of low-income economies.

Intra-Regional Trading Agreements

The World Trade Organization (WTO) notified establishment of 25 new regional trade agreements since 2008. Later, the new trade agreements between inter-regional countries increased to nearly 300. The increasing regional trade agreements posed serious questions to economists to worry that regionalism could discourage the multilateral trading system. Several empirical studies proved that roughly one-half of global trade is now conducted through plurilateral trade agreements. Many countries prefer trade liberalization within their region instead of international basis. So, the question arises whether the expansion of regional trade agreements should be celebrated or should be considered a cause for distress in international trade.

Some of the policymakers observed that the reason for the stuck-in multilateral negotiations at the WTO is mainly because of the widespread regional trade agreements. Alternative worry is that the regional and bilateral trade contracts create interest groups that pose challenges for further liberalisational measures.

There is also a notion that the upsurge of regionalism is also favouring the world trading system. Empirical analyses specified that trade-creating regional agreements regulate other trade policies to modest the alterations from discrimination through negotiations. Although the regional trade agreements might likely jeopardize multilateralism. Regionalism will possibly persist as the ideal form of international trade for many

countries. No matter what the economists and policymakers perceive, the international institutions and regional economies must focus on ways to encourage regional trade agreements with multilateralism more effectively.

Removal of Subsidies

In the globalisational era, where the producers are competing with each other in the International market, subsidies and incentives for production create issues and disputes among the trading nations. For example, one nation provides subsidies and incentives to their producers and the other nations are not providing subsidies or domestic support policies to their producers means, the nation that provides subsidies to their domestic producers can create aa advantage in the production of goods. Economists call such practices as unfair trade and artificial comparative advantage created by the nation by providing cost-reducing domestic support. International institutions called WTO, IMF and IBRD are all against issuing subsidies or any other direct cost-reducing incentives to domestic producers. To control cost-reducing domestic support, the WTO included necessary steps to drop domestic subsidies and export subsidies in international trade. The Subsidies Contract delivers a classification of subsidies according to purpose and nature. For example, red box subsidy, green box subsidy and yellow box subsidy. Green and yellow box subsidies are permitted with limitations for boosting the domestic economy but red box subsidies are not permitted, because they reduce the production cost directly and such subsidised goods harm a competing domestic industry.

The Dominance of Industrialised Nations

Even though emerging economies like India, China and Brazil are frequently highlighted in World trade and considered to be a frontline in global trade, statistically three nations like United States, the European Union and China continued to dominate global economic activity.

From the above statistics, we can observe that rich powers like the European Union, China and the United States accounted for 40 percent of world exports in 2010. These three economies occupied 45 percent of the share of world exports in 2020, by increase of 5 percent. If we include 3 more rich nations called Japan, South Korea and Hong Kong, the share of world exports accounted for 53 percent in 2010 and nearly 60 percent in 2020.

Exports of goods, selected countries, 2010 and 2020
(share of world exports)
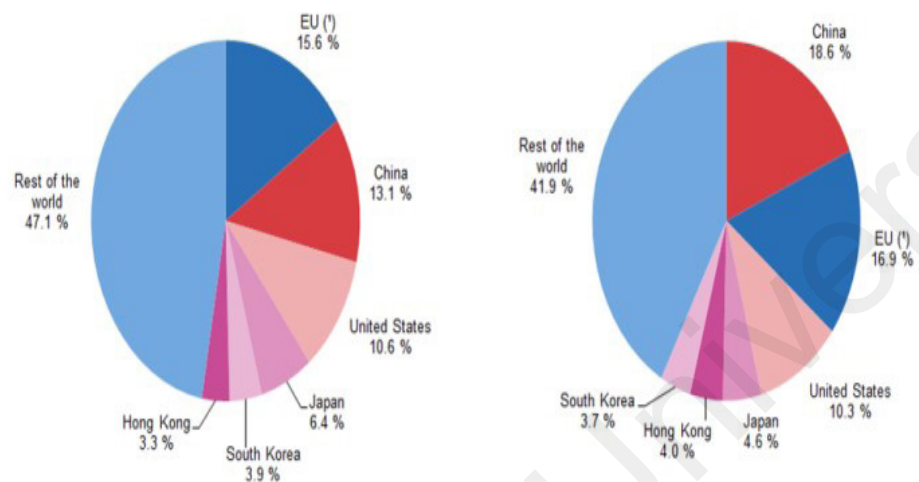
Out of 196 countries, six countries occupied nearly sixty percent share of world exports showing the dominance of rich industrialised nations in international trade. On one side, international institutions like the WTO are restricting subsidies and incentives to the producers in low-income economies. On the other hand, the rich industrialised nations that have abundant levels of capital with advanced technology are dominating world trade due to low-cost capital-intensive lines of production. As a result, many economists belonging to developing countries are arguing that free trade only benefits a limited number of developing economies and helps almost all the rich and industrialised nations.

Self-assessment Questions

1. Is international trade an opportunity or threat to the people, Firms and the Nation? Comment.

2. Do you think that more integration of the domestic economy into the world economy led to economic vulnerability?

3. Discuss the role and the importance of International Trade in the contemporary world.

4. How did international trade help nations to achieve economic growth?

5. Discuss the nature and the scope of international Economics.

6. Discuss the significance of trade theories and policies in international economics.

7. Do you think that economic interdependence between the economies will increase economic growth and development? Comment

8. Critically evaluate the policies relating to environmental protection and economic growth in low-income countries.

9. What are the challenges for implementing high labour standards in low-income countries?

10. Do you think that child labour is a serious global issue? Give reasons in support of your answer.

11. Discuss major issues and challenges in international trade and economic interdependence between the nations.

12. Interregional trade agreements are considered to be a stumbling block for international trade agreements. Do you agree?

13. Can a nation increase its welfare by enlarging its trade? Discuss the importance of the rise of new protectionism.

UNIT – II

Lesson 2.1 - Theories of International Trade

Reading Objectives:

After completing this chapter, readers will be accustomed to understand the importance of international trade theories. The objective of this unit is to assess the significance of trade theories in the context of small as well as large nations. In the common parlance, free trade helps only a large nation or multinational corporations and there is reluctance from small nations to liberalise their economy to the rest of the world. This unit deals with benefits from trade from the viewpoint of trade theories starting from Mercantilism to the Factor-Price equalization approach. The reader will be able to understand and analyse the consequence of free trade on gains from trade, terms of trade and the welfare of small and large nations. It also helps the reader to know the consequence of free trade on the income of factor owners in the small nation and the large nation.

Lesson Outline:

- ➤ Introduction
- ➤ Internal Trade Vs International Trade
- ➤ Free Trade Vs Restricted Trade Vs No Trade
- ➤ Mercantilism
- ➤ Absolute Advantage Theory
- ➤ Theory of Comparative Advantage
- ➤ Opportunity Cost Theory
- ➤ Heckscher-Ohlin theory
- ➤ Factor Price Equalisation Theory
- ➤ Self-assessment Questions

Introduction

Over centuries, Economists and international institutions have argued that free trade promotes economic growth and development across nations irrespective of the characteristics of an economy. It is also apparent that some countries gain one way or the other by exchanging goods and services.

This faith has altered over a period and encounters thoughts about the benefits of trade and the significance of liberal trade that originated from the earliest thoughts on free trade in attaining national goals. Some of the European thoughts were found in the writings of a group of traders called Mercantilism. Later these thoughts were challenged by a group of economists belonging to Classical School like Adam Smith, David Ricardo, J S Mill, J B Say and others and their thought is popularly known as Classical Revolution against orthodoxical mercantilism. During the seventeenth century, Smith and Ricordo's theory became more popular among the Classcissm. After removing some basic critics from the Ricardian theory that contemplate the Labour theory of value and assumed labour is the lone factor for manufacturing, Gottfried Haberler came up with a renowned version of trade theory by assuming both labour and capital are considered as factors of production using opportunity cost concept. Later, the Heckscher-Ohlin (H-O) theory came into effect and is considered to be a pioneering work that examined the reason for trading advantage in the context of factor endowments between the countries. This is the reason why the Heckscher-Ohlin Model of international trade is also called factor endowment theory. As an outcome of the H-O Model, Paul Samuelson proved the equalization of factor costs between the nations, if the nations adopt free trade policies. Finally, Stolper joined hands with Samuelson and demonstrated the variations in production prices that disturb the production cost when there is a progressive output and zero economic yield is retained in every industry. All these perspectives will be discussed in the following sections in detail with appropriate examples and adequate diagrams under the subsequent heads, namely;

Mercantilism

Absolute Advantage Theory

Comparative Advantage Theory

Opportunity Cost Theory

Heckscher-Ohlin Theory

Heckscher-Ohlin-Samuelson Theory

Stolper-Samuelson Theory.

Internal Trade Vs International Trade

Trade between two parties is characterised differently like, Internal Trade, External Trade, Inter-regional trade, Intra-regional trade, global

trade etc.. The free movement of goods and services between two parties (regions) within the same Country is called Internal Trade. Of which, one party belonging to another nation or out of the geography of one Country is called external trade. Trade between two parties and one of them belongs to different regions is called inter-regional trade. Say, for example, trade between Southeast Asian nations with South Asian Countries. Trade between two parties and both of them belong to the same regions but in different places is called intra-regional trade. Say, for example, trade between two parties and both of them belong to the Southeast Asian region. Trade between two or more parties between two or more regions is called international or global trade. To avoid ambiguity, we can simply classify trade into two main types namely, internal trade and international trade. The most important typical dissimilarities between domestic trade with foreign trade are given below;

Internal Trade	International Trade
Exchanges take place between two parties and both of them are residents of the same nation	Exchanges take place between two parties and both of them are residents of two different countries.
Free movement of factors between different regions within the Country	Factor movements are restricted between the countries
Single currency is used for all transactions in the case of internal trade	Whereas many currencies are used to buy goods and services in international trade
No trade restrictions between different regions in the same nation	Trade restrictions are there for some countries and liberalisations are there for some countries. For example; free trade between intra-regional trading countries but restricted trade for non-member countries.
No BOP problem in Internal Trade	Whereas the BOP problem persists between countries

| Internal Trade	International Trade
Political systems and economic policies are the same for a single nation	Different political ideologies and parties, the belief of several economic thoughts, controlled and regulated by several international institutions.
Internal trade takes place using a single currency, and it does not generate forex reserves	Where as international trade takes place with several currencies and the stock of forex reserves plays a major role in economic stability and sustainability.

Free Trade vs Restricted Trade Vs No Trade

Free trade and restricted trade are just two opposite cases where exchanges take place without and with conditions/barriers. Whereas restricted trade versus no trade needs more justifications. Free trade eliminates all kinds of barriers like removal of Tariffication, Quota system, Voluntary Export Restraints (VERs), Sanitary and Phytosanitary controls etc. whereas restricted trade increases the number of barriers to trade to protect domestic factors of production from external competition. No trade means using all forms of restrictive policies to prohibit exchanges of goods and services between nations. For example, under free trade, a nation will remove/eliminate duties (tariffs) for importing and exporting goods and services between the nations. Under restrictive trade, a nation uses barriers or duties to some extent to restrict trade. For example, imposing a 10 per cent duty on importable commodities makes the importable commodities costlier than domestically produced commodities than before. As a result of imposing duty and costlier imports, people will purchase domestically produced commodities. This will create opportunities for domestic factors of production and encourage the nation's GDP. Under no trade, tariff wall will be imposed on the exportable or importable Commodity or both the Commodity. For example, 500 per cent of advalorem duty on importable commodities makes imports impossible. Suppose, If the importable Commodity price is $ 10 per unit. Without trade restrictions, the price of the importable Commodity is $10 and $ 11 for restricted trade. Whereas the imported good is $ 60 under a no-trade regime making trade

impossible between countries. In the contemporary world, tariff wall or 500 per cent tariffications are not permitted by international institutions like WTO, UNCTAD and IMF.
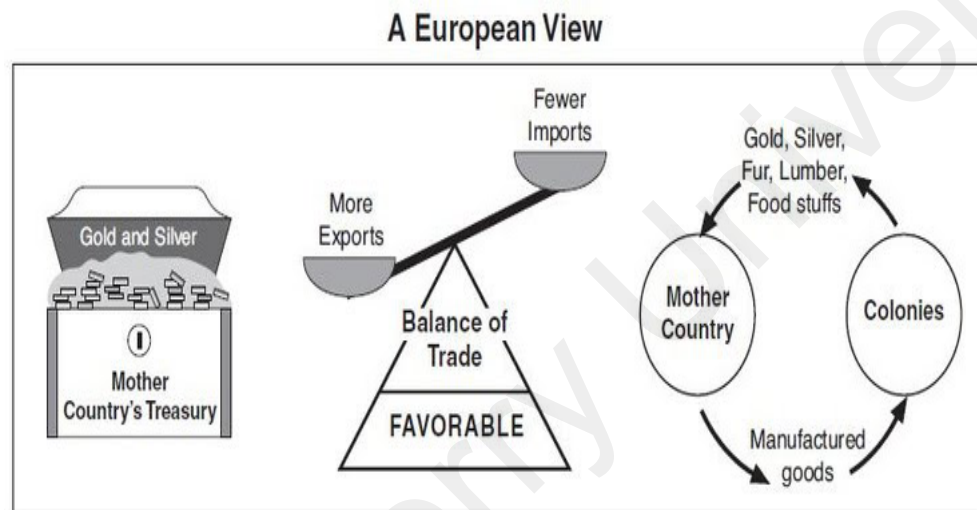
Mercantilism

During the 17th century, the European publicists Thomas Munn, Jean-Baptiste Colbert, and Antonio Serra advocated economic theory and practice which are popularly known as Mercantilism consisting of economists and traders from Europe. The mercantilist principles and ideology were widely accepted in Europe since 16th century to the beginning of the 18th century. Mercantilists strongly believed that the power of any nation rests on two forces, one is bullionism and the other is the need for state action.
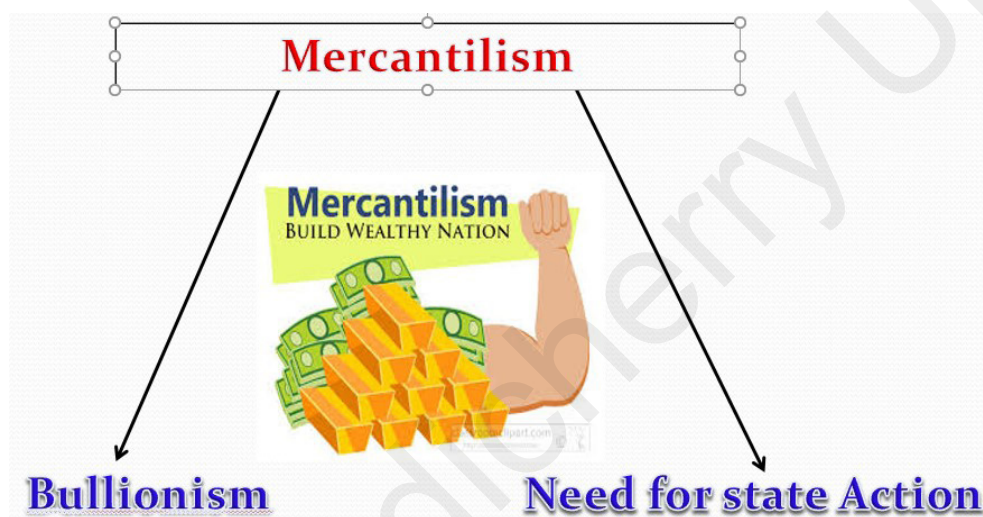
Bullionism refers to a situation where the nation acquires a huge quantity of the stock of valuable possessions like gold, silver, precious stones etc. Suppose, assume that there are two nations called the US and the UK. Also assume that the stock of gold, silver and other precious metals available in the UK is much higher than in the US. In this case, the UK is considered to be the most powerful nation. For this purpose, mercantilists recommend more exports and fewer imports subsequent excess would then be established by an inflow of gold, silver and other precious ornaments. The more gold and silver a nation possesses are considered as richer and powerful.

They also encouraged maintaining a larger and more powerful army with more gold and silver, so that they could merge their control at home and outside the Country by acquiring more colonies. To stimulate national output and employment they stressed the importance of foreign trade,

especially surplus trade through the interference of the government. The role of the state also plays an important part in influencing exports through several export promotive measures like subsidies and incentives to export-oriented units, removal of barriers for exports and other fiscal concessions for trading houses. Similarly, they recommended the need for state action to curb imports through the imposition of several barriers like tariffs, quotas and other import-restrictive and substitutive policies.

A European View

Modern economic theories believe that Population growth is considered to be the obstacle to growth but mercantilism is viewed differently that population growth is considered to be the *power of a nation.* With more labour and capital, nations can generate more income through output and exports. In this approach, Labour and Land are considered to be the medium of production. The 'Golden Principles' of Mercantilism contained its chief characteristics like **self-dependency, industrial growth, mining, commerce, naval power, colonies, etc**. Being guided by these principles, colonialism reached the pinnacle of success but world output and welfare decreased due to the policy called more exports and less imports. Until the beginning of the 18th century, most of the nations followed liberal exports and restrictive import policy results "one nation's benefits at the expense of another nation".

Absolute Advantage Theory (Adam Smith)

Smithian theory of trade states that some country have absolute advantage in the production of a commodity. Here absolute advantage means, a low cost of producing a Commodity in one Country compared to high cost of production in another nation. In this case, a nation with low-cost-advantage in the production of a Commodity is considered to be

a specialized Country. So Smithian theory states that the trade between two countries will be beneficial if the first Country focuses on producing a Commodity at an absolute advantage and the second Country produces any other Commodity where in which they have an absolute advantage (low cost) in producing that Commodity than the first nation.

For instance, there are two persons called James and Diana picking strawberries and apples from the plant. The wage rate remains the same for both James and Diana but the productivity differs due to their height. Usually, the height of a strawberry plant is less than 4 feet and the height of an Apple tree is more than 4 feet. James can pick 100 strawberries per minute but Diana needs 5 minutes to pick the same 100 units of strawberry because she has to bend several times to pick the strawberry. Similarly, the Apple tree yields from 4 feet and not a suitable height for James but Diana can pick apples relatively faster than James. Here, the cost of picking/producing strawberries is cheaper for James but costlier for Diana. Alternatively, the cost of picking/producing Apple is cheaper for Diana but costlier/not suitable for James. As per the absolute advantage theory, James should be involved in picking only strawberries and Diana should focus on picking only Apple.

The same concept can be applicable for a two-Country case. Assume that there are two hypothetical nations called Country A and B producing two commodities say Commodity X and Y. Here, Trade between the two nations will take place when they produce a Commodity at a comparatively low cost.

Absolute Advantage

James 4ft 10in — Strawberry Picking

Diana 6ft 2in — Apple Picking

Also, we have to remember that all the countries can produce most of the commodities they need, even though there is a resource constraint. For example, India can produce petroleum products on their own and Arab countries can produce agricultural commodities for their need, in the home Country itself. However, the cost of producing petroleum products in India may be costlier. To find oil resources, they have to dig borewells in 100s of places to find oil resources. But the resources are abundantly available in Middle Eastern countries and they found oil resources everywhere. As a result, the cost of producing oil in India must be Rs. 300 per litre and the imported price of oil must be Rs. 50 from Arab Countries. The imported price of Oil is Rs. 50 means, the price of oil in the domestic market must be cheaper, Say Rs. 30. Smithian absolute advantage theory is sensible for India to import oil from Arab countries instead of producing it domestically.

For more clarification about the theory of absolute advantage, we can use the hypothetical example given in Table 2.1.

Table 2.1: Illustration of Absolute Advantage Theory

	Country A	Country B
Commodity X (units/man-hour)	6	1
Commodity Y (units/man-hour)	4	5

Figure 2.1: PPF for Smithian Theory of Absolute Advantage
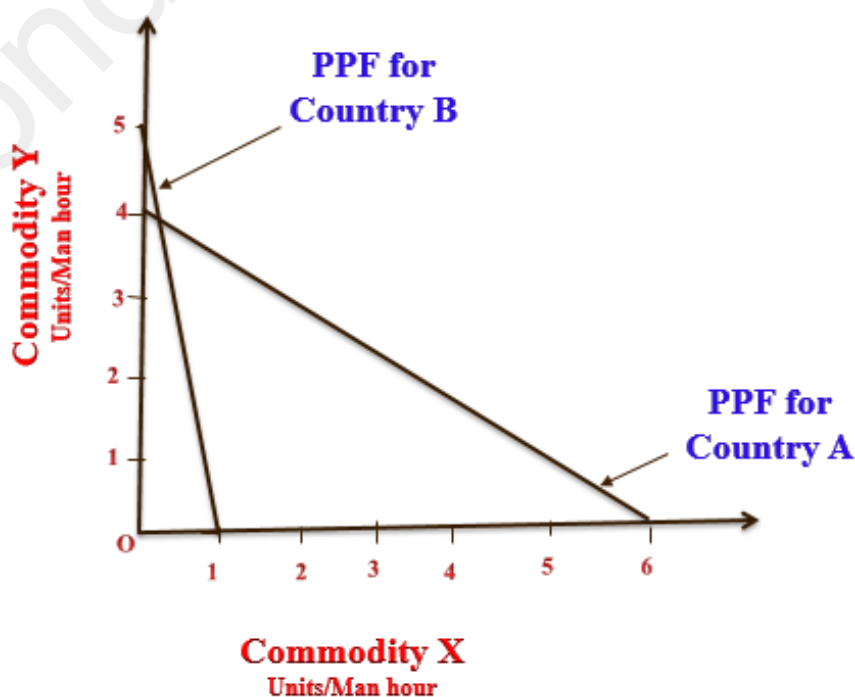

Commodity X
Units/Man hour

28

Table 2.1 shows that Country A can produce 6 units of X and 4 units of Y Commodity using one man-hour. Similarly, Country B can produce 1 unit of X and 5 units of Y Commodity using same one man-hour. From the figure 2.1, it is very clear that Country A has a comparative advantage in the production of X Commodity and Country B has a comparative advantage in the production of Y Commodity. As per the absolute advantage theory, Country A must concentrate on producing only X Commodity (using all its resources) and Country B should concentrate in the production of Y Commodity only (using all its resources). Country A should export all its surplus of X Commodity to Country B and in place of that, they should import required units of Y Commodity from Country B. While doing so both countries will get profit/gains from trade.

Explanations for gains from trade:

Suppose, Country A exchanges 6 units of Commodity X for 6 units of Commodity Y from Country B, Country A gains 1/2 man hour or 3 units of X Commodity, because using half man hour, Country A can produce 3 units of X Commodity. Similarly, Country B receives 6 units of X Commodity from Country A and gains nearly 5 man hours or 25 units of Y Commodity, because Country B requires 6 man hours to produce 6 units of X Commodity. Instead of producing X Commodity, they used 1 hour 10 minutes to produce 6 units of Y Commodity and saved 4 hours 50 minutes by exchanging 6 units of Commodity Y for 6 units of Commodity X. Who gains more and how much does not matter, what matters is both nations gain under free trade which is not possible under closed trade.

The basis for trade: If one country is more effective than the other nation in the production of one Commodity at low cost or low man hour, that nation has an absolute advantage in that Commodity.

The pattern of trade: Both nations can benefit by by producing a Commodity of its *absolute advantage* and exporting surplus Commodities beyond their domestic consumption to other nations for the Product of its *absolute disadvantage*.

Policy Recommendation: The theory of Absolute Advantage strongly recommends a free trade policy to make better use of global inputs and optimise global welfare. By specialization, resources are utilized efficiently and the production of both goods will increase.

Benefits from the Division of labour and the Economies of scale can also be shared in the form of price reduction so that both countries will benefit. So, Country A benefits to the magnitude that it can exchange 6 units of X Commodity for a minimum of 4 units of Commodity Y from Country B likewise Country B gains to the amount that it can give less than 30 units of Commodity Y for importing 6 units of Commodity X from Country A.

The Theory of Comparative Advantage (David Ricardo)

Smithian model of absolute advantage was popular and prevailed from 1776 to 1817 until Ricardo's work where he introduced the comparative advantage theory of international trade. First, he pointed out the defects of the Smithian theory of absolute advantage and then he formulated his work by comparing the level of advantages in the production of various commodities known as the theory of comparative advantage.

According to Smith, international trade is beneficial between countries if one nation specialises in producing a particular Commodity than the other nation. As per our example, Country A produce Commodity X cheaper than Country B, likewise, Country B produce Commodity Y cheaper than Country A. In this context is very clear and easy to understand that Country A should produce only Commodity X and export the same to Country B in place of importing Commodity Y from Country B. In this way, trade can be beneficial for both the nations. But the Ricardian theory is something different and exciting to appraise the benefits of trade. According to Ricardo, if one nation specialises in production of all the goods compared to other nation, then trade becomes possible and beneficial for both countries. This means that Country A produces Commodity X and Commodity Y cheaper than Country B, but Country A is willing to produce only one Commodity and import the other Commodity from Country B. While doing so both countries will benefit from international trade. Before proceeding to evaluate the Ricardian theory, let us explain some of the major assumptions that simplify the theory.

Assumptions

➢ Ricardian theory of comparative advantage assumes **Two by Two by one Model**. It means the theory assumes two countries world (Country A and Country B) Producing two commodities

(Commodity X and Commodity Y) but they use only one factor of production (labour).

➢ This theory assumes **Free Trade** between the countries and assumes that there are no tariffs or quotas or any other barriers in the movement of goods between the countries.

➢ The model assumes **Labour Mobility** between sectors within each nation but immobile among nations.

➢ This model also assumes that the prevalence of **Constant Costs of Production** and there is no increasing or decreasing costs while changing the output.

➢ It also assumes the **exclusion of transportation costs** for measuring the cost of production and price determination

➢ The model assumes that the **technical change remains the same** in both countries

➢ The theory assumes that the **labour is Homogeneous**.

➢ The critical assumption of the model is that it assumes **Labour is the only factor of production** and the assumption is derived from labour theory of value.

The Model.

The Ricardian theory of trade describes how mutually beneficial trade can occur between nations even in situations where one country's production of two commodities is at a complete disadvantage compared to the other. The less efficient country should import the Commodity with the higher level of disadvantage and specialize in and export the Commodity with the smaller absolute disadvantage. In this situation, a more productive country would focus on, import, and export the Commodity with the larger absolute advantage while importing the Commodity with the smaller absolute advantage. In a simplified way we can say that Country A can produce both commodities (X and Y) at a lower cost compared to Country B. But they will produce only one Commodity (either X or Y) according to the differences in cost between both commodities. If the cost difference is high for a Commodity X, then Country A will choose to produce Commodity X. This can be explained with appropriate examples and tabular data given below.

Table 2.2: Illustration of Comparative Advantage

	Country A	Country B
Commodity X (units/man-hour)	6	1
Commodity Y (units/man-hour)	4	2

Table 2.2 and Diagram 2.2 explain the law of comparative advantage. The table shows that in comparison to Country A, Country B is less productive in terms of both Commodity X and Commodity Y. Country B has a comparative advantage in the production of Commodity Y since its labour is half as productive in Commodity Y but six times less productive in Commodity X than in Country A.

Figure 2.2: PPF for Ricardian Theory of Absolute Advantage
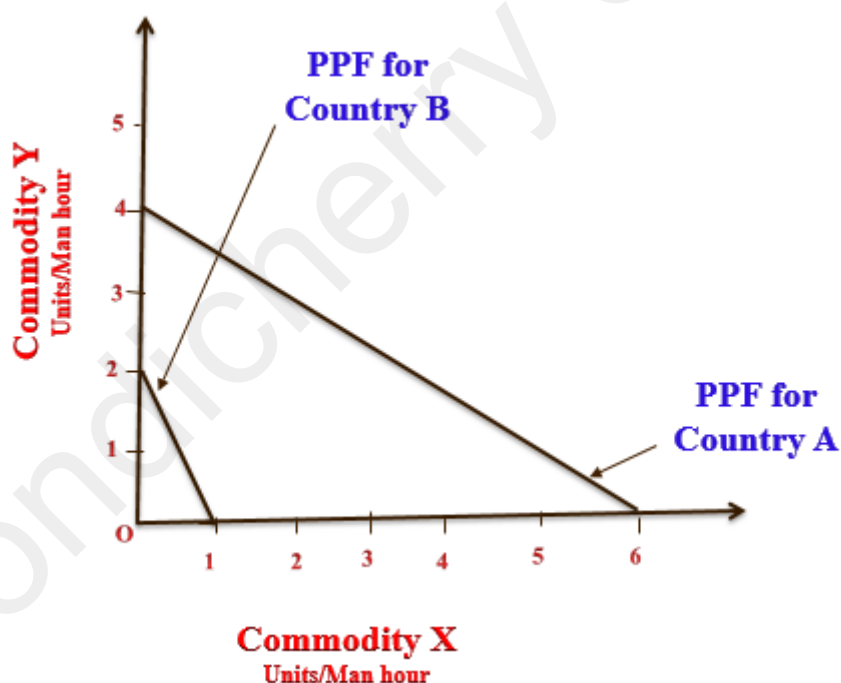
In contrast, Country A has a bigger absolute advantage in manufacturing Commodity X (6:1) than it does in producing Commodity Y (4:2), even though it has a greater absolute advantage in both Commodity X and Commodity Y relative to Country B. Thus, when it comes to the manufacture of Commodity X, Country A has a competitive advantage. To put it simply, the comparative advantage of Country A in the production of X Commodity is larger and said to be an advantaged nation. Country B has a comparative advantage in Commodity Y since its absolute disadvantage

is lower there. Country A specializes X Commodity and exports some of it to Country B in exchange of Y Commodity, then both countries stand to benefit from the law of comparative advantage. It is important to keep in mind that in a two-by-two-by-one model that assumes a world with two commodities, the assumption or observation that one nation has a comparative advantage in manufacturing X Commodity implies that the other nation must have a comparative advantage in producing Y Commodity, so that the trade can be feasible and balanced.

Example:

Assume that there are two professionals namely Professor and the Teaching Assistant. The role of the professor is to conduct lecture sessions using PowerPoint presentations. Since the professor is well-experienced in teaching and also preparing for lecture slides. He needs 1-hour of references and 1 hour for PowerPoint preparation for his lecture session. However, the inexperienced teaching assistant requires 5 hours of references and 2 hours for a PowerPoint presentation for his lecture session. In this context, the professor specialises in both lecture sessions and PowerPoint preparations (which require less time). Due to the differences in pay/allowances for lecturing and PowerPoint preparations, the professor may choose only lecturing and give the responsibility of preparing slides to a teaching assistant, because the pay for lecturing is assumed to be $ 1000 per hour and $ 200 will be given for basic MS office work includes PowerPoint preparations. As a result of this, the net gain for a Professor is $ 800 and $ 200 for a teaching assistant. Here, who gains how much does not matter, but both the parties gain if they allocate their timings according to the degree of advantages.

Gains from Trade using the above tabular data.

As per the Ricardian theory, both nation gains by producing and exporting the Product of their comparative advantage and leave disadvantaged commodities from the production process. As per table 2.1, Country A would be uninterested in going for a transaction if it receives only 4 units of Y Commodity from Country B in place of 6 units of X Commodity because Country A produces exactly 4 units of Commodity Y on its own by using its resources that is giving up to produce 6 units of Commodity X. So Country A would be disengage trade if it receives less than 4 units of Y and 6 units of Commodity X. Similarly, Country B would

be uninterested to trade if they give up 2 units of Commodity B for each unit of Commodity X it receives from Country A. So Country B would disengage trade if they give up more than 2 units of Commodity Y for each unit of Commodity X.

Suppose Country A exchanges 6 units of Commodity A for 6 units of Commodity Y with Country B. In this case, Country A gains 2 units of Commodity Y and saves 1/ 2 hour of labour time. Similarly, Country B also gains because Country B requires six hours of labour to produce 6 units of Commodity X. If Country B employs six hours of labour to manufacture twelve units of Commodity Y and only forfeits six units of Commodity B in exchange for six units of Commodity X from Country A, then Commodity A would not be produced. As a result, Country B would save three hours of labour time or obtain six units of Commodity Y. In this instance, trade benefits Country B more than Country A, however, the exact amount of gains is unimportant. In this case, trade can benefit both countries even if one is not as skilled as the other in producing both goods. We can see from the tabular data that trading 6 units of X for 6 units Y would benefit both nations. Nonetheless, there exist other Commodity units wherein mutually advantageous transactions can occur. Country A would benefit if it could exchange 6 units of X for more than 4 units of Y from Country B since it could exchange 6 units of X for 4 units of Y, but domestically they can produce 4 units of Commodity Y utilizing 1 unit of labour. However, since it takes six hours of labour to manufacture six units of Commodity X, Country B may exchange six units of Commodity X for twelve units of Commodity Y. Country B is able to manufacture 12 units of Commodity Y with the same quantity of labour. Therefore, Country B gains from trade if it can give up fewer than 12 units of Commodity Y in exchange for 6 units of Commodity X from Country A. In summary, the benefit to Country A is such that it can convert 6 units of X into more than 4 units of Y from Country B. Country B benefits to the extent that it can exchange six units of Commodity X from Country A for less than twelve units of Commodity Y. Thus, $4C < 6W < 12C$ is the range for mutually beneficial commerce. The difference among 12C and 4C is the total trade gain that both countries may split by exchanging 6W.

Conclusion:

Country A benefits to the point that it can interchange 6 units of Commodity X for additionally 4 units of Commodity Y from Country B.

Likewise Country B get an advantage to the point that it can offer up fewer than 12 units of Commodity Y for 6 units Commodity X from Country A. While doing so, both countries can save labour time which can be used productively to produce the specialized Commodity.

Comparative Advantage in terms of Money

As per the law of comparative advantage, a nation named Country A can have a basis for mutually beneficial commerce even if it has an absolute advantage over another nation named Country B in producing both commodities. But given their deficit in producing both goods, it is a recurrent question how Country B can sell anything to Country A. If the wage rates in Country B are sufficiently lower than the wage rates in Country A, then Country B is able to export goods to Country A. Therefore, if both commodities are stated in terms of a single currency, Commodity X may be cheaper in country A and Commodity Y may be lower in country B.

Example: Assume that the labour in Country A can produce six units of Commodity X in an hour at a wage of $6 per hour. Because this theory presupposes that labour is the only factor of production, the price per unit of Commodity X in country A is $1. In a similar vein, Country A's labour force can generate four units of Commodity Y in an hour. According to Table 2.3, the cost of Commodity Y in Country B is $1.50. Assume additionally that Country B's hourly pay is €1 at the same time. One unit of Commodity X is produced by labour in country B in an hour, and Commodity X costs €1 in country B. Similar to this, Country B's labour generates two units of Commodity Y in an hour at a cost of €0.5 per unit. If $2 = €1 is the currency rate between the dollar and the euro, then the cost of Commodity X is $2 = €1, while the cost of Commodity Y is $1 in Country B ($0.5 = €0.5). The dollar prices for wheat and textiles in both nations when the currency rate is €1 = $2 are shown in Table 2.3.

Table 2.3: Illustration of Comparative Advantage in terms of money

	Country A	Country B
Unit Price of Commodity X	$1.00	$2.00
Unit Price of Commodity Y	$1.50	$1.00

Table 2.3 shows that, as a result of the disparities in wage rates, Commodity X is priced less in Country A than in Country B (i.e., in

terms of the common currency known as the dollar). However, Country B offers Commodity Y at a lower dollar price. The traders would purchase Commodity X and sell it in Country B since the dollar value of Commodity X is lesser in Country A than it is in Country B. In the same way, the traders will purchase Commodity Y in Country B and sell it in Country A. The important observation is that low wage rates in Country B make up for labour's inefficiency in producing Commodity Y as compared to labour in Country A. As a result, Country B is able to export Commodity Y to Country A because its dollar price is lower there.

As long as the wage rate in Country B falls between one-sixth and one-half of the wage rate in Country A, this is always the case.

The dollar price of Commodity X in Country B would be Px = €1 = $1 if the currency rate among the dollar and the $ and € was instead €1 = $1. At this exchange rate, Country A is unable to export wheat to Country B because the prices of Commodity X are the same in both countries (see Table 2.3). But at this exchange rate, Py = €0.5 = $0.50 in Country B, and Country B would export even more units of Commodity Y than before to Country A (due to low price and high demand for Country B's Commodity in Country A). In this scenario, trade imbalances in favour of Country B will result in an increase in the dollar's value relative to the euro. On the other hand, the price of Commodity X in Country B would be Py = €0.5 = $1 if the exchange rate was €1 = $3. Country B was consequently unable to export Commodity Y to Country A. Trade would be uneven in this scenario as well, but it would be in Country A's advantage, which would lower the exchange rate. Eventually, the dollar-to-euro exchange rate will level off at a place where trade is balanced.

Opportunity Cost Theory (Gottfried Haberler)

Gottfried Haberler has sought to restate Ricardo's comparative theory in terms of opportunity cost. The labour theory of value serves as the erroneous foundation for the Ricardian theory. However, opportunity cost theory restates in a realistic manner, doing away with such irrational assumptions. According to Haberler, labour costs alone—as noted by David Ricardo—do not influence the relative prices of various goods; rather, the entire cost of production does. According to this approach, opportunity cost is the primary metric used to compare overall cost disparities. The quantity of a second Commodity that must be released in order to obtain the resources needed to create one more unit of the first or

other Commodity is known as the opportunity cost of that Commodity. The opportunity cost theory and classical comparative theory are different in this regard.

Opportunity cost is the price of a good or service expressed in terms of another good or service that must be given up in order to receive the first good or service. It is the amount of one Commodity that has to be forfeited in order to free up resources sufficient to generate one additional unit of the original Commodity. A nation that produces a certain Commodity at a lower opportunity cost has a comparative advantage in that Commodity and a comparative disadvantage in another.

To simplify the Opportunity Cost theory, we need to use some basic assumptions. Some of them are as follows;

Assumptions

- Opportunity cost theory also assumes two countries world (Country A and Country B) Producing two commodities (Commodity X and Commodity Y) using several factors of production like, capital, labour, raw materials etc.
- This theory also assumes Free Trade between the countries and no barriers between them.
- The Haberler model assumes that Labour is immobile between countries.
- This model also assumes Constant Costs of Production and there is no increasing or decreasing costs while changing the output.
- Transportation costs are excluded from measuring the cost of production and price determination
- The model assumes that the technical knowledge remains the same in both countries
- The theory also assumes that the Homogeneous labour.

The Model

The Haberler model of opportunity cost theory is explained in two dimensions namely, under autarky and under free trade. By differentiating the production and consumption under autarky and free trade helps us to understand the outcome of free trade on global production, consumption and the world's well-being. For this purpose, we use the below tabular data and Production Possibility Frontier (PPF).

**Table 2.4 Production Possibility Schedule for Country A
and Country B**

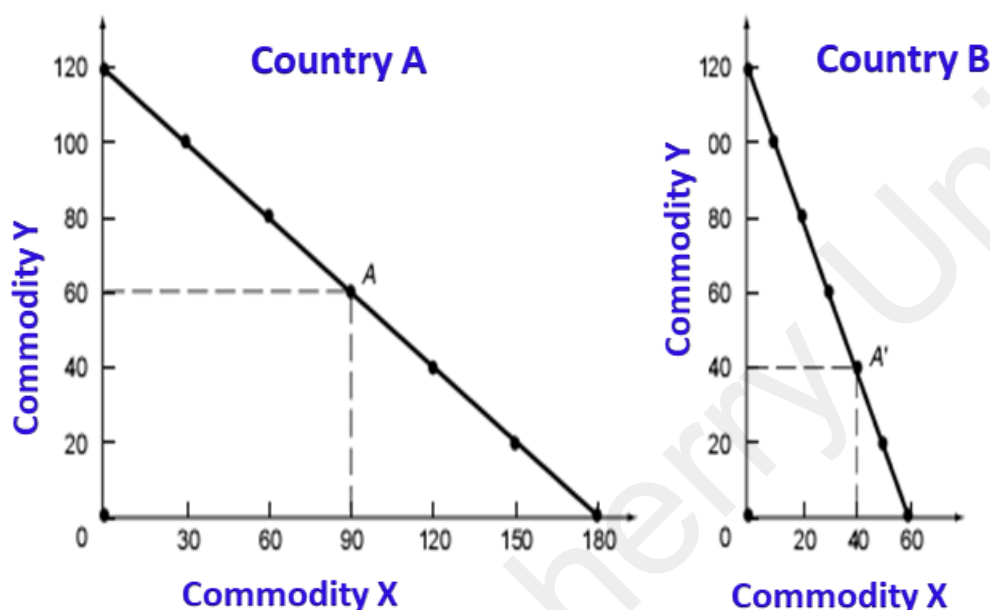| Country A		Country B	
Commodity X	Commodity Y	Commodity X	Commodity Y
180	0	60	0
150	20	50	20
120	40	40	40
90	60	30	60
60	80	20	80
30	100	10	100
0	120	0	120

In Fig 2.3, the PPF has been derived for both countries under autarky using tabular data from Table 2.4. The opportunity cost of Commodity X and Y is higher in country B and lower in country A, according to a comparison of the PPF shapes of the two countries. Stated differently, Country B is better suitable for producing Commodity Y, while Country A is better suited for producing Commodity X.

At point A, when the country is producing and consuming 90 units of X and 60 units of Y, autarky is in balance for Country A. At point A', where the country is producing and consuming 40 units of Commodity X and Y, Country B is in equilibrium. The production possibility frontier, often known as the consumption frontier because it is a closed trade situation, requires the nation to consume at any point on the PPF or within it; they are not permitted to cross the PPF for consumption.

The opportunity cost of Commodity A and B for Country A is 120/180, which is equal to 2/3 of the opportunity cost of Commodity X in Country A, according to the provided tabular data and PPF. In contrast, the opportunity cost of Commodity X in country B is equal to twice the opportunity cost of Commodity A in terms of Commodity B for country B, which is 120/60. Given that 2 is more than 2/3, Country A has a comparative advantage in terms of manufacturing Commodity X since its opportunity cost of production is lower. Alternatively, the value of Commodity X in relation to Commodity Y is 2/3 in Country A, while the value of Commodity Y

in relation to Commodity X in Country A is 3/2 or 1.5. In this case, the cost of manufacturing determines the price, and the Commodity's price directly represents the opportunity cost. Similarly, in Country B, the price of Commodity Y in terms of Commodity X is 1/2 and the opportunity cost of producing Commodity X in terms of Commodity Y is 2.

**Figure 2.3: Production Possibility Frontiers for Country A and Country B**

Under autarky Production Possibility Frontier is also called Consumption frontier.

As can be seen from figure 2.3 and the description above, Country A should focus solely on producing Commodity X because they have a comparative advantage in doing so (2/3 against 2). In a similar vein, Country B should focus solely on producing Commodity Y because they have a comparative advantage in doing so (1/2 versus 2/3). Following domestic consumption, both countries can benefit and raise national welfare by exchanging the excess Commodity.

It is perceived from figure 2.4 that Country A produces and uses a combination of 90X and 60Y on its PPF at point A without engaging in any trade. Comparably, on its PPF at point A', Country B generates and uses a blend of 40X and 40Y. Through trade, Country A would focus on producing solely Commodity X, generating 180X and 0Y combined at Point B. Only Commodity Y would be the focus of Country B's production, which would combine 120Y and 0X at Point B′. At point E, if they trade 70 X for 70 Y,

Country A will have consumed 110 units of X and 70 units of Y at point E, whereas Country B will have consumed 70 units of Commodity X and 50 units of Y at point E$^{/}$.

Figure 2.4: Benefits from Trade under Constant Costs
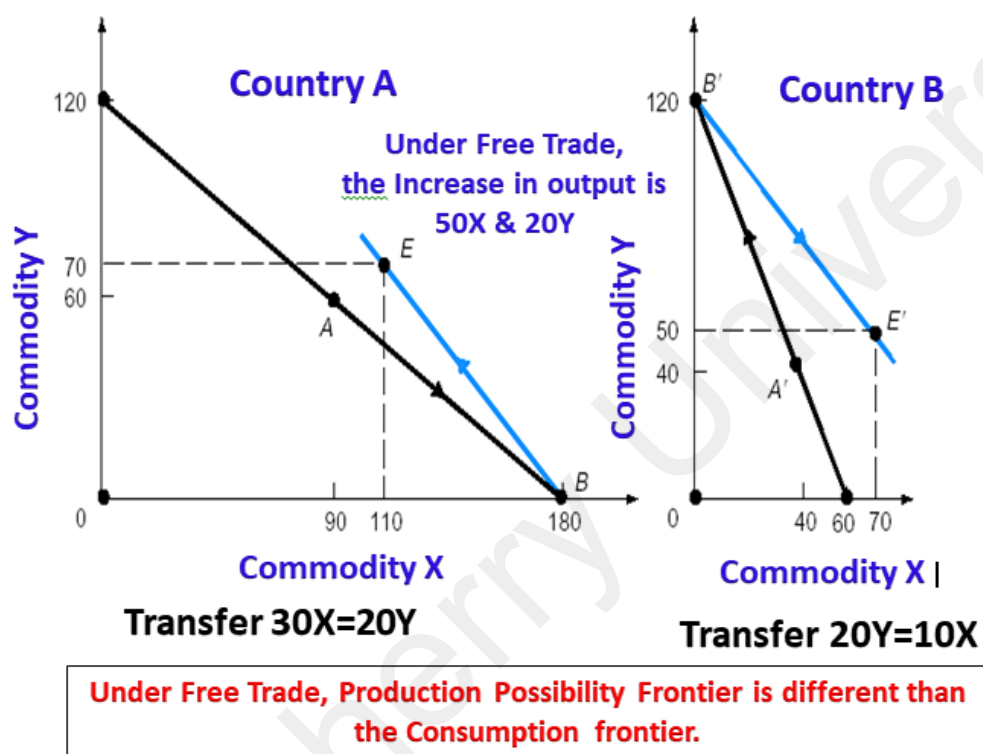
Under free trade, Country A gains 20X and 10Y which can be observed by comparing no-trade consumption point A with free-trade consumption point E. Likewise, Country B gains 30X and 10Y which is also observed by comparing no trade consumption point A$^{/}$ with free trade consumption point E$^{/}$.

The two countries' specialization led to an increase in global consumption and welfare. Commodity X has a global production of 130 (90+40) with autarky, but with trade, Country A produces 180 of it. Similar to this, under autarky, Commodity Y's total output is 100 (60+40), but with trade, Country B produces 120 of it. Both countries benefit from trade when there is free trade because it increases the output of the 20 common commodities Y and an additional 50 units of Commodity X. Since both countries need to consume some units of the other Commodity, autarky prevents any country from becoming an expert in the production of any one Commodity. Under free trade, the nations are consuming more of both commodities demonstrates their comparative advantage, which serves as the foundation for profitable trade and raises global well-being.

Heckscher-Ohlin Theory

From Adam Smith's absolute advantage theory to Haberler's opportunity cost theory, it is clearly stated that one Country has a specialization/comparative advantage in the production of a particular Commodity and has a disadvantage in the production of other commodities. They also illustrated different slopes of production possibility frontier for different nations. Based on the above notions, they have recommended producing advantaged commodities and recommended to import disadvantaged commodities from other countries to maximize trade and domestic welfare. Almost all the theories explain that the major reason for trade between nations is due to the magnitude of differences in the production of some goods. However, no earlier theories answered the major reasons for specialisation. Also, they have not given proper justification for different slopes of production possibility frontiers.

Eli Heckscher and Bertil Gotthard Ohlin attempted to justify the unanswered questions by formulating a novel concept of international trade popularly known as the H-O theorem. It offers the most modern and standard explanation for international trade. The monumental work of Heckscher and Ohlin's theory is classified into two propositions namely the H-O theorem (which focuses and envisages trade patterns) and the factor-price-equalisation model (which evaluates the outcome of free trade on the prices of factors). The first model explains the basis of comparative advantage in the context of the variations in comparative Commodity prices that gave specialisation to some countries. The second model evaluates the consequence of free trade on the income of factor owners in the trading countries.

Before discussing the H-O theorem, we need to focus on several simplified assumptions of the H-O model that give more clarity to understand the concepts without any ambiguity.

Assumptions of the Model

1. The HO model assumes two country world say Country A and Country B, producing two commodities, say Commodity X and Commodity Y and using two factors of production namely capital and labour. So this model is also called the 2x2x2 Model.

2. The HO theory assumes both countries use similar technologies. It means both countries use the same production techniques if the availability of resources is equally likely in both countries.

3. It is assumed that X is a labour-intensive Commodity and Y is a capital-intensive Commodity.

4. The theory also assumes constant returns to scale even if the nations increase the input.

5. The H-O model assumes perfect competition conquers all the marketplaces and that the producers, consumers and all input owners are rational.

6. The model assumes that the tastes and preferences in both countries are the same.

7. The H-O model also assumes incomplete specialization in production in both countries. This means both nations produce both commodities, no one has complete specialisation in the production of any commodities.

8. This theory assumes full employment, no transportation cost or other cost barriers and trade is balanced between countries.

9. The H-O model assumes perfect factor mobility within an economy between various sectors but is restricted between countries.

10. The most important assumption of the H-O model is that the Factor endowments vary among countries. This means the availability of resources and factor usage between countries differs.

Factor Intensity

The H-O theory was predicated the idea that, although the production functions for each goods in two countries are different, they are the same for different products. Put otherwise, one good is labour-intensive and requires a lower capital-labour ratio to manufacture than another good that is capital-intensive and requires a higher capital-labour ratio in one country. It is important to realize that a good that requires a lot of capital in one nation must equally require a lot of money in another. In the same way, a good that requires a lot of labour in one nation must also require a lot of labour in another.

For instance, in a universe where there are two factors (let's say L&K) and two commodities (let's say X & Y), Commodity Y is capital intensive if its (K/L) is higher than that of Commodity X. If two units of capital

and labour are needed to produce a unit of Commodity Y, then the K/L ratio is 1. Similarly, 1 unit of capital and 4 units of labour to produce a unit of Commodity X, then the L/K is 4 or K/L is 1/4. In this instance, Commodity Y might be considered capital-intensive while Commodity X can be considered labour-intensive.

It is important to realize that the ratio of capital to labour, not the sum of labour and capital, determines how intensely labour and capital are measured. If Country A produces 1 unit of Commodity Y with 2 capital and 2 labour units, and 2 units of Commodity Y with 4 capital and 4 labour units, then the K/L is 1. If the K/L ratio is 1/4 for Country A, they can produce 1 unit of Commodity X with 1 unit of capital and 4 units of labour, and 2 units of Commodity X with 2 units of capital and 8 units of labour. Likewise, for Country B, it is presumed that the K/L is 1/4 for Commodity Y and 1 for Commodity X. It makes sense that in Country B, X is a labour-intensive Commodity and Y is a capital-intensive Commodity. Country B utilizes a larger capital ratio than Country A, despite the fact that Commodity Y is more capital-intensive than X in both the nations.

Now the prominent questions that arise here is why Country B is more capital-intensive for both commodities than Country A. Why is capital comparatively low-priced in Country B?

To get a solution to the above questions, it is necessary for us to understand what is factor abundance and how it affects factor prices and factor usages.

Factor Abundance

The H-O model's central claim is that the two nations can be identified by their disparities in factor endowments. It is supposed that one country has an abundance of capital, while the other is thought to have an abundance of labour. What is meant by factor abundance is explained in detail by two different definitions. The first is expressed in terms of physical units, or the total quantity of labour and capital (TK/TL) that is accessible in each nation, while the second is expressed in terms of relative factor prices, or the cost of labour (PL) and the price of capital (PK) in both nations.

In terms of physical units: As per the definition provided, Country B is considered capital plentiful if the ratio of its total capital to its total labour availability is higher than that of Country A. In this case, the ratio is more important than the exact figures. It indicates the TK/

TL ratio rather than the sum of labour and capital available in each nation. Thus, if TK/TL in Country B is greater than TK/TL in Country A, then Country B—even with less capital than Country A—is still regarded as a capital-abundant nation. For example, Country B can have 5 capital and 5 labour. Country A can have 6 capital and 60 labour. In the absolute sense, Country A has 1 capital more than Country B and Country B is capital abundant because the capital-labour ratio is higher in Country B.

In terms of relative factor prices: By this definition, if Country B has a smaller ratio of capital prices to labour prices (PK/PL) than Country A, then Country B is K plentiful. If we assume that the interest rate (i) represents the capital rental price and the salary (w) represents the cost of labour, then PK/PL equals i/w. A country's capital abundance is determined by its ratio of i/w rather than its absolute value of i. While the second definition considers both supply and demand, the first explanation solely reflects the input supply. The necessity for the end Commodity that requires influence throughout manufacturing leads to the desire for production factors.

Slope of the Production Possibility Frontier (PPF)

Since Commodity Y is presumed to be a capital-intensive Commodity based on our previous discussions, Country B 2 is able to manufacture comparatively more of Commodity Y than Country A. Similar to this, Country A is thought to have an abundance of labour, and as Commodity X is thought to require a lot of labour, Country A is able to create a greater number of units of Commodity X than Country B.

Based on the above statement, we can derive a production possibility frontier for Country A that will be comparatively flatter and wider than that of Country B. Alternatively for Country A and it can be observed from Figure 2.5.

The Model:

As per the H-O model, a nation should import a commodity that require intensive use of expensive factor and they should export a commodity that require intensive use of cheap factor makes trade becomes beneficial among the nations.

Comparably labour-rich countries import items from other countries that are comparably capital-intensive and export goods that are relatively labour-intensive. Country A has a comparative or low cost advantage in the production of X, according to our examples, it is considered a labour-abundant country where labour is cheap due to its abundance. Since Commodity X requires a lot of labour and country A has a low cost advantage in producing it, they are able to produce and export Commodity X.

Figure 2.5: PPF for increasing Opportunity costs for Country A and B
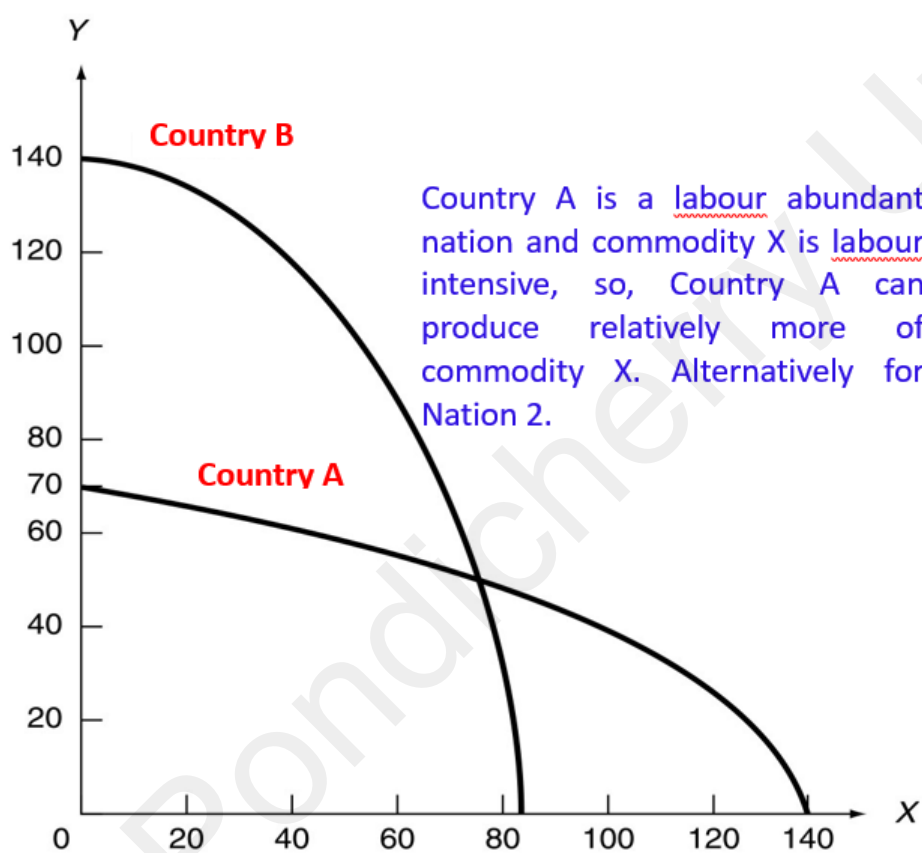
Similarly, Country B is thought to have an abundance of capital, and as a result, capital is more affordable there, giving them a competitive edge in the manufacturing of Commodity Y. Since Commodity Y requires a lot of money to create and Country B has a comparative advantage in doing, so they are able to produce and export Commodity Y.

The H-O hypothesis clearly distinguishes the quantity of factors available in each country and holds that the fundamental cause of comparative advantage amongst nations. The H-O model is frequently known as factor-proportions theory or factor-endowment model for this

reason. Pre-trade price disparities between Country A and Country B are explained by the theory as resulting from variations in cost and factor availability.

Equilibrium under Autarky

The equilibrium of Country A and Country B under autarky is illustrated in Figure 2.6. The PPF which is flatter to the X axis is a PPF for Country A and steeper and bulges towards the Y axis is a PPF for Country B. As per the assumption, both the countries have the same tastes and preferences, so there is only one Indifference Curve (IC) that is curvature to both the PPF at points A and A$^{\prime}$ respectively. The tangency of the Indifference Curve, price line and PPF gives equilibrium under autarky at points A and A$^{\prime}$. Point A indicates that the MRTS of labour for capital in Country A is equivalent to the MRS of Commodity X and Y in Country A. It must be equal to the price of Y in terms of the price of X. Therefore, point A and A$^{\prime}$ satisfies the autarky equilibrium condition for both Countries. At its autarky equilibrium, Country A manufactures and consumes 100X and 40Y at full employment level. Similarly, Country B produces and consumes 80X and 80Y at full employment of resources.

Figure 2.6: Autarky Equilibrium
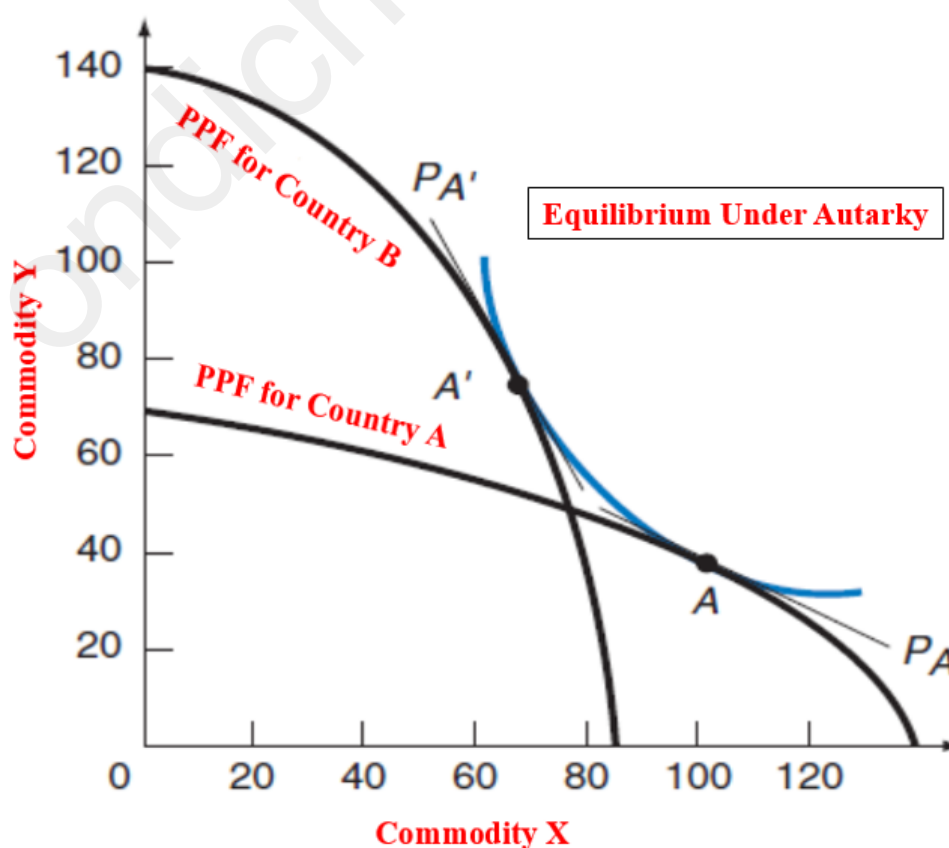
Free Trade Equilibrium

During the free trade regime, both nations can extract their potential level of output by focusing more on comparatively advantaged Commodities and reducing the output of disadvantaged commodities. So that they can produce at lower cost, by exchanging the same both the countries can be befitted through trade.

The above statement is illustrated with the help of the given below;

Figure 2.7: Equilibrium under Free Trade
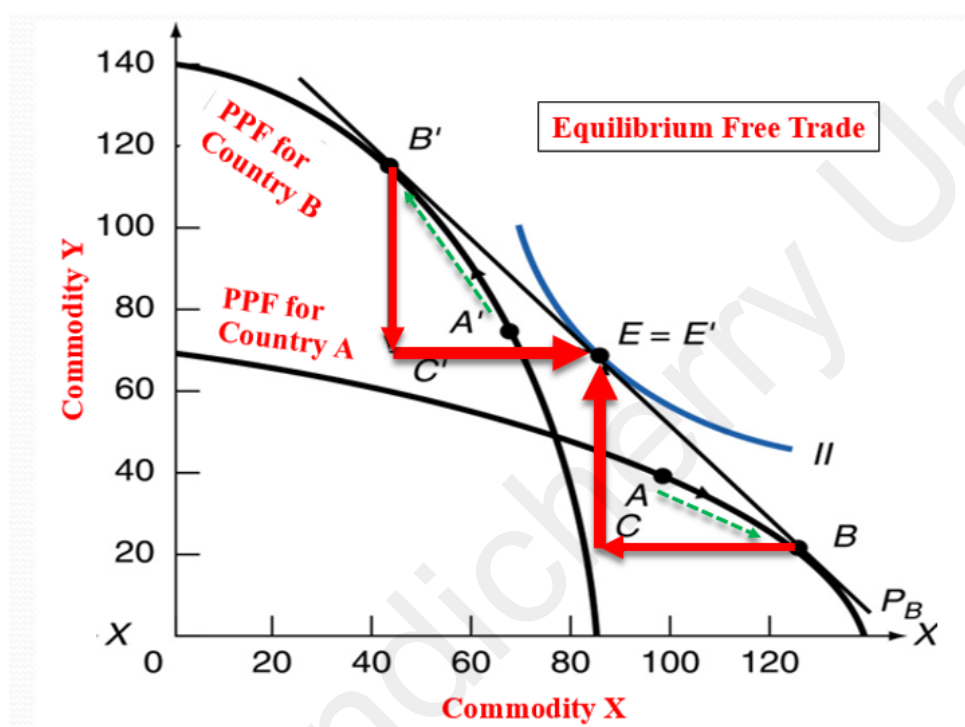
Figure 2.7 shows the equilibrium between Country A and B under free trade. The quantity of Commodity X and Y produced by both countries is indicated by the X and Y axes, respectively. We aware that, in the absence of trade, points A and A$^{/}$ signify the locations of production and consumption for Countries A and B, respectively. Both countries face the same indifference map under closed trade, but two distinct combinations because their tastes and preferences are equal.

Under free trade, Country A specializes and manufactures more units of X and produces fewer units of Y by transferring its excess Y resources to the X sector. Likewise, Country B specializes in the production of Y and they produce more units of Y and than X by transferring its surplus X resources to the Y sector. The Specialization in producing the respective

commodities continues until Country A reaches from point A to B and Country B reaches from A$^/$ to B$^/$ where the PPF is tangent to the shared price line P$_B$ indicates common Commodity prices. Specifically, Country A produces 100 units of X and 40 units of Y under autarky. But during free trade, Country A shifted its production point to B stating that the nation increased its out of Commodity X from 100 units to 130 units and decreased its output of Commodity Y from 40 units to 20 units.

Likewise, Country B produces 70 units of X and 80 units of Y under autarky. But during free trade, Country B shifted its production point to B$^/$ stating that the nation increased its output of Y from 100 units to 120 units and decreased its output of X from 70 units to 40 units.

Country A exported B to C amount of X to Country B in place of importing C to E amounts of Y from Country B and reaches the consumption point at E on the IC. Likewise, Country B exported B$^/$ to C$^/$ amounts of Commodity Y (which is exactly equal to C to E) in place of importing C$^/$ to E$^/$ amounts of Commodity X (which is exactly equal to B to C) from Country A and reaches to the consumption point E$^/$ on the same indifference that validates tastes and preferences of both countries are similar.

Once again remember that Country A's exports of Commodity X are exactly equal to Country B's imports of Commodity X (i.e. BC=C$^/$E$^/$). Correspondingly, Country B's exports of Commodity Y equals Country A's imports of Commodity Y (i.e. B$^/$C$^/$=CE). Finally, we can compare the pre-trade consumption point of A and A$^/$ with the free trade consumption point of E and E$^/$, we can conclude that the free trade consumption point increases national welfare even though both nations consume fewer units of some Commodity. Because, under free trade, the consumption point is revealed on the highest IC which gives a higher level of satisfaction to both the nations compared to their pre-trade consumption point.

Factor Price Equalisation Theory

The Heckscher-Ohlin-Samuelson (H-O-S) theorem, often recognized as the factor price equalization theorem, was rigorously demonstrated by Paul Samuelson. The factor-price equalization theorem states that when free trade results in equal prices for commodities X and Y between nations A and B, then the prices of the factors of production will likewise be equalized between the two nations. This suggests that global free trade will

level the rents on homogeneous capital and the salaries of homogeneous labour. H-O-S theorem identified that the Free trade equalizes the absolute and relative returns to homogenous factors of production.

Assumptions of the H-O-S Theorem

Some of the basic assumptions of the H-O-S theorem;

1. It is assumed that Commodity X and Commodity Y are produced by two countries, let's call them Country A and B, utilizing two factors of production, labour and capital.

2. Consumers in both nations have similar tastes and preferences.

3. Country A is labour abundant and Country B is capital abundant.

4. Factors are assumed to be mobile between sectors within an economy but are restricted between countries.

5. Factors of production are assumed to be homogenous.

6. Homogenous production in degree stating that there is a constant return to scale in production

7. Production functions for Commodity X and Commodity Y are different but they are identical in both countries.

## Explanation of H-O-S Theorem

Country A's relative price of Commodity X is lower than Country B's, under autarky, Country A's relative labour cost is lower. Likewise, under autarky, Country B's relative price of capital is lower than Country A's since Commodity Y's relative price is lower in Country B. Under a free trade agreement, Country A focuses on producing Commodity X since labour costs are lower there and it is a labour-intensive good. Due to which, Country A reduces its production of the capital-intensive Commodity Y. At the same time, the price of capital in Country A declines and the relative demand for capital lowers as a result of increased labour demand brought on by increased output of Commodity X. While Commodity X, which requires a lot of labour, is produced less in Country B, the demand for capital increases as a result of Commodity Y's increased output, which lowers wages while driving up the price of capital in Country B. In a free trade agreement, labour costs increase in nation A and decrease in nation B, resulting in wage rate parity between the two. Similarly, the capital price will increase in Country B and decrease in Country A causing equalization of capital prices in both countries will take place.

Under autarky, we have a certain set of assumptions like Country A is a labour-abundant but capital-scarce Country where the prices of labour are cheaper and the prices of capital are costlier. Hence, the K/L is slightly low. Under free trade, labour becomes relatively scarce, and labour costs will rise. In the same vein, capital will become more affordable and more plentiful. The Heckscher-Ohlin model clearly indicates that labour-surplus countries will focus on producing and exporting labour-intensive items to labour-scarce countries. Stated differently, a country's K/L will increase relative to another if the plentiful factor converts to limited and the scarce factor becomes abundant.

On the other hand, because labour is scarce in Country B, it costs more in the capital-surplus country. with autarky, the K/L will be high; however, with free trade, Country B will become an expert in producing capital-intensive commodities, which will result in a rise in capital demand relative to labour demand. This creates scarcity of capital and its cost goes up simultaneously, the cost of labour goes down due to a fall in the demand for labour, results K/L will tend to decrease. To sum up, we began our discussion by considering the situation where Country A has a low K/L and Country B has a high K/L under autarky. However, in a free trade environment or following trade, Country A's capital-to-labour ratio will rise while it falls in Country B. This process keeps going until both countries' capital-to-labour ratios are equal. This is the method via which commerce equalizes the factor prices in two nations. One thing to keep in mind is that factor price equalization occurs independently of factor mobility across nations. we can contend that the international trade is considered to be a substitute for international factor movements. It can be well explained using the Edgeworth-Bowley box diagrams.

Figure 2.8 displays the points of origin for Commodity X and Commodity Y. The above box diagram's horizontal and vertical sides are used to measure capital and labour. The country in question is labour-rich, with a greater labour force than capital. When it comes to K/L in the production of Commodity X and Y, there are three possible outcomes;

Figure 2.8: Capital-Labour ratio in the production of Commodity X and Y
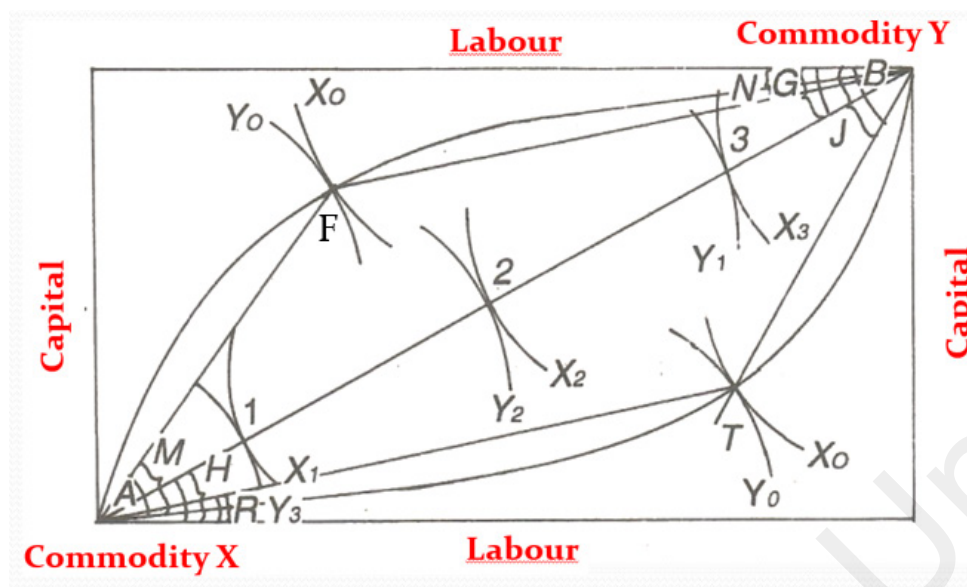
(i) The capital-labour ratios of the two commodities will be identical and will not change if more units of Commodity X or Y are produced, if we observe optimal efficiency locus in the linear straight line, such as AB. To put it another way, the equality of the angles representing the sizes of H and G indicates that the K/L ratio for Commodity X and Y will be same regardless of where we produce on line AB—that is, at points 1, 2, or 3.

(ii) The product contract arc is non-linear located on the line AFB in Figure 2.6, Commodity X is capital-intensive and Y is labour-intensive, because K/L for X is greater than the K/L for Y.

(iii) We note that Commodity X is a labour-intense and Commodity Y is capital-intense if the contract curve has also a non-linear form and is represented by ATB. According to the contract curve indicated on the line ATB, Commodity X is labour-intensive and Y is capital-intensive throughout the remainder of this discussion. As long as we have a contract curve with the shape of the ATB, as illustrated in Figure 2.8, Commodity X will continue to be labour-intensive and Commodity Y to be capital-intensive, even if the country has more capital and less labour.

This implies that Country B is a capital-abundant country in our model, and Country A is a labour-abundant country. Similarly, despite the variations in factor proportions and prices between the two countries, Commodity X is a labour-intensive Commodity and Commodity Y is a

51

capital-intensive Commodity in both countries. We will now go into more detail on the process of factor price equalization that occurs when commerce between nations opens. Using different diagrams, we will first concentrate on the outcomes of trade on factor prices in each country before assembling them into a single composite diagram.

Country A: The Case of Labour Abundant Country

The box ADBC in Figure 2.9 below depicts supply of factors in Country A, a labour-rich nation. Shape of the product contract curve is ATB. For Commodity X, the production isoquants are X_0 and X_1, while for Commodity Y, they are Y_0 and Y_1. At a factor price denoted by the line $P_0 P_0$, Country generates at point T where X_0 is perpendicular to Y_0 under autarky. At this time, T is the angle TAC for Commodity X and TBD for Y. The K/L for X is equal to the angle TAC. Given that Commodity X is labour-intensive and Y is capital-intensive, the amount of TBD is bigger than the size of TAC.

At point A, when the country is producing and consuming 90 units of Commodity X and 60 units of Y, autarky is in balance for Country A. At point A', the nation is producing and consuming 40 units of X and 40 units of Y, where country B is in equilibrium. The production possibility frontier, often known as the consumption frontier because it is a closed trade situation, requires the nation to consume at any point on the PPF or within it; they are not permitted to cross the PPF for consumption.

Figure 2.9: Increase in Capital-Labour Ratio in Country A
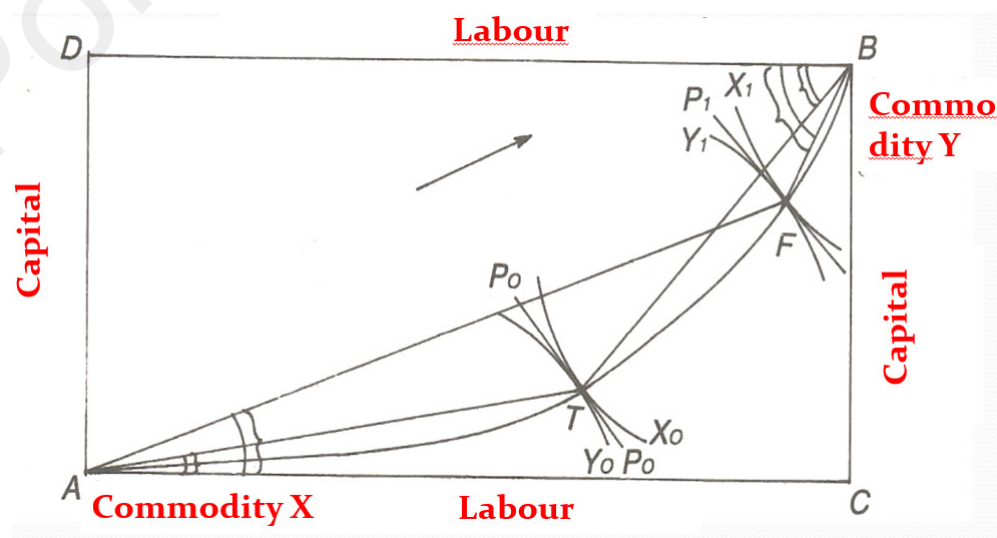
It is observed from figure 2.9 that the nation is specialised in the production of Commodity X under a free trade agreement. As a result, the contract curve would moves from point T to F, or to the right. The X isoquant is rising higher, while the Y isoquant is moving lower, indicating that as one moves from point T to point F, the production of Commodity X is increasing and Y is decreasing. Two rays, FA and FB, are visible from point F and represent the new K/L in the manufacture of Commodity X and Y. As we move from T to F point, we can see that the K/L has increased for both Commodity X (TAC to FAC) and Commodity Y (TBD to FBD). As a result, under free trade, Country A's K/L in the manufacturing of both items has increased. It is specified through variation in the slopes of a price line from P_0 to P_1 under free trade.

Country B: The Case of Capital Abundant Country

Assuming Country B is a capital-rich country, the box ADBC in Figure 2.10 below indicates the factor supply in that country. Diagram 2.8's Point T depicts Country A's output under autarky. When Commodity X was produced, the K/L was equal to the angle TAC, and when Y was produced, it was equal to TBD. Free trade has led to a shift in the production point from point T to F and a rise in Y's specialization. In capital-rich nations, the K/L in the production of both Commodity X and Y has dropped as a result of production changes. With regard to Commodity X, the K/L has shrunk from TAC to FBD. The dissimilar K/L in the output of both X and Y is depicted by various slopes of the relative factor price line from P_0 to P_1.

Therefore, the capital-abundant Country, K/L has decreased the output of X and Y under free trade. This outcome is combined with a rise in K/L in the output of both goods, we eventually get to a point where the K/L are equalized in both countries.

A composite view of Factor Price Equalisation

In our previous discussions, there are two different Edgeworth box diagrams for both countries. ow onwards, we will focus on the combined effect in a combined graph which is given below.

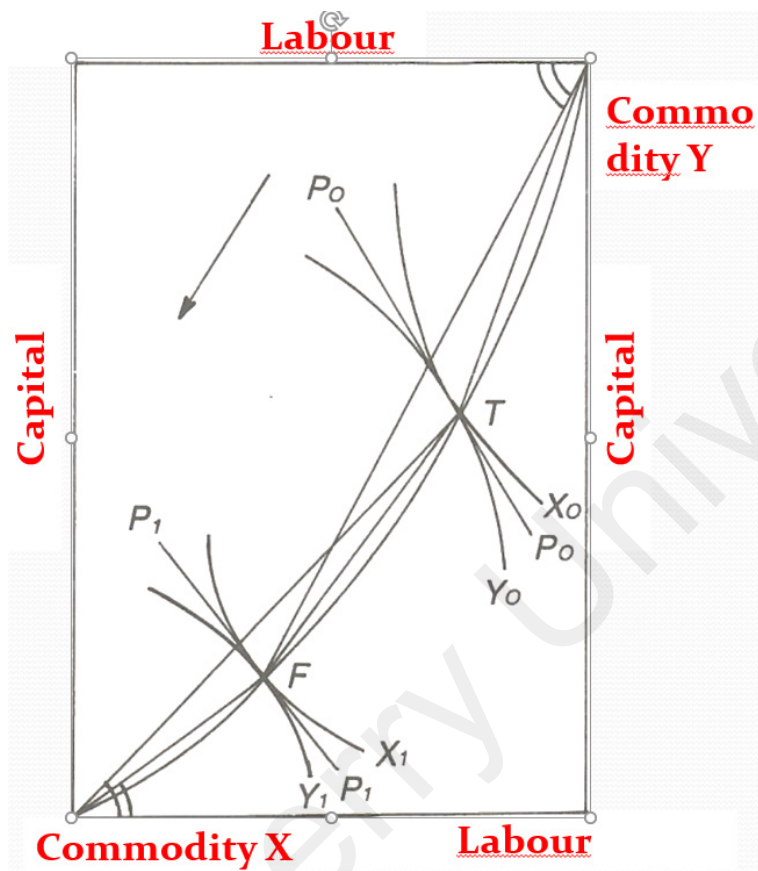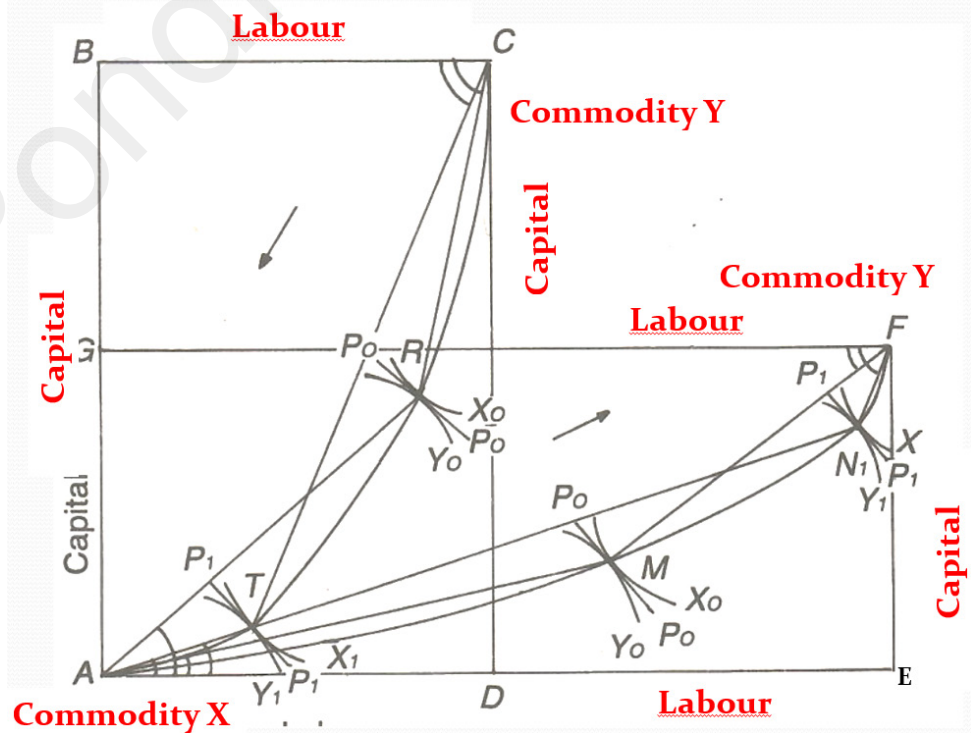**Figure 2.10: Decrease in Capital-Labour ratio in Country B**

Figure 2.11: Factor Price Equalisation

The box ABCD represents Country B is supposed to be the capital-abundant country and the box AEFG indicates Country A is a labour-abundant country. The labour surplus country, or place of origin A, is shared by everybody. Commodity X, the labour-intensive item, has a common point of origin of A; however, the origin of Commodity Y, the capital-intensive Commodity, is at F in the case of Country A and X for Country B. According to the contract curves in two nations, at all factor price ratios, Commodity X is labour-intensive Y is capital-intensive in both countries. The production function must be the same throughout all countries, regardless of the factor prices between countries. This holds true if one country is capital-abundant and the other is labour-abundant.

Country A produces at point M and B produces at R in a closed trade scenario. The slope P0 in two countries indicates that factor price ratios were different. The equilibrium point shifts under free trade from point R to T in Country B and from M to N in Country A. $P_1 P_1$ factor price line in Country A is similar to $P_1 P_1$ line for Country B indicating that the trade trade equalises factor prices in both countries.

Now, we compare K/L for both commodities in two nations during before and after free trade for factor price equalisation.

(i) The K/L in Country A is equal to MFG in Y output and to MAE in X output at pre-trade equilibrium point M. In the context of free trade, the K/L rises to NFG in Y output and NAE in X output when the nation reaches production equilibrium point N.

(ii) In Country B, the angles RAB and RCD measure the K/L in the production of X and Y at the pre-trade equilibrium point R. Under free trade, K/L in the output of X and Y has decreased to the size of TAE and TCD, respectively.

(iii) Likewise, Country A's capital-labour ratio for producing X is TAE, while Country B's is NAE. We can conclude that the factor prices in manufacturing X is similar in both nations since NAE = TAE. Similarly, in a free trade agreement, Country B's capital-to-labour ratio is TCD, whereas Country A's is NGF. TCD equals NFG and indicates that the factor price ratio in output in both nations has equalized.

Therefore, it is evident from the aforementioned claims that during restricted factor movements, free trade equalises factor prices between the nations. We conclude that free trade serves as a stand-in for cross-border

labour and capital flows. Stated differently, free trade results in price parity for both factors and products.

Obstacles to factor price equalization theorem

Remember that after the trade was established, factor price equalization would suggest that. In both nations, the capital-to-labour ratio used to produce goods will be the same. This does not imply that the two items' production processes will have an equal labour-to-capital ratio. It is necessary to confirm this question as it presents difficulties for factor price equalization.

The factor price equalization theory is predicated on some assumptions that aren't really justified in practical terms. The following points are important to note because it represents roadblocks to real-world factor price equalization.

First, total free trade—that is, the lack of tariffs and other trade barriers—is assumed by the theory. Additionally, it assumes that there are no expenses associated with importing and exporting goods and services between nations. It is an unusual instance in the actual world. will therefore stop the factor price equalization that would have resulted from unfettered trade. Ohlin and others excluded the likelihood of total factor price equalization because of this. They thought that there was a chance for partial equalization. In reality, they also asserted that factor price equalization tend to occur. Only in the event that the factors of production are totally mobile worldwide and there is a possibility of complete equalization of factor prices. Therefore, trade in products and services cannot completely replace international factor mobility.

Second, there would be no way to fully achieve production specialization through free trade; it would only result in partial or incomplete specialization. Thus, the prospect of total factor price equalization will be eliminated. The assumption that decreasing returns to scale in the production of all commodities in all nations serves as the foundation for this conclusion.

Thirdly, perfect competition and diminishing returns are the major assumptions of the model. The production of most things in the modern world is characterized by increasing returns and imperfect competition. This could make the factor price equalization less credible.

Fourth, the number of factors should not be greater than the quantity of products in order to achieve complete factor price equalization. This model represents a two-country world with two factors and two items by assumption. However, it is not possible for us to demonstrate perfect equalization of factor pricing in the real world, which is a multi-country situation with several factors and a multitude of goods and services.

Fifth, once we demonstrate that the production functions of each of the nations involved in international trade differ, the theorem will fall apart. If there is a factor intensity reversal, the theory will not hold since capital-rich and labour-rich countries will export the same items using dissimilar production methods that are appropriate for their respective factor endowments. Factor price equalization is hampered by factor intensity reversal.

Lastly, the theorem assumes that the factor supply in each country will never change. This is unfeasible in the modern world since, as we all know, labour and capital supply fluctuate over time in practically every nation.

Since the real world does not have a belief on the presumption that factor price equalization, so we infer that factor price equalization is unrealistic. This does not imply that the theory is wholly implausible; rather, it indicates that the theorem's underlying assumptions are impractical, which raises the likelihood of experimental inconsistencies.

International commerce would provide the best opportunity for factor prices and factor income to equalize among all nations in the world, given the relative factor immobility among them. Without international commerce, factor price differentials would be far more pronounced than they would be in the presence of trade.

Effect of Trade on Income Distribution

As we have discussed previously, free trade drives up the cost of a country's abundant and inexpensive factors while driving down the cost of its rare and expensive ones. Thus, in labour-rich countries, wage rates rise and capital returns decrease. In countries with ample capital, wage rates also decline while capital prices and returns increase.

Furthermore, trade liberalization raises labourers' real income in labour-rich nations while lowering capital owners' real income in labour-rich nations. According to this, in capital-rich nations, real income from assets increases while real income from labour decreases.

Leontief's Paradox

American economist Wassily Leontief received his degree in economics from the University of Berlin in 1928, having previously studied in Russia. He began working as a faculty member at Harvard University in 1931, and in 1946 he received a promotion to professor. Most people associate Leontief with his seminal work on the input-output technique of economic analysis, which is used by nearly all industrialized countries to forecast and plan for economic growth. For the same work, he was granted Nobel Prize in Economic Sciences in 1973.

Professor Leontief came to a counterintuitive result about the H-O theorem. He used the H-O theorem for the US economy for testing. From the perspective of both importing and exporting labour-intensive goods, he noted that the United States is a capital-rich in the globe. As per the H-O theorem, the US should export capital-intensive commodities as it is a capital-rich nation. However, the H-O theorem is invalidated because they are importing capital-intensive commodities and exporting labour-intensive commodities. The Leontief Paradox is the name given to his theory as a result.

The H-O theory predicted that free trade and trade patterns would be based on comparative advantage in particular inputs like capital and labour, was challenged by a number of economists as being invalidated by Leontief. Many economists around the world also rejected the H-O theory in favour of the Ricardian model, which determines comparative advantage based on technological differences, as a result of Leontief's findings.

These economists also contended that, in terms of a highly skilled labour force relative to capital, the United States has an advantage. This indicates that they made an effort to defend the H-O paradigm in light of labour efficiency. They claim that US labour is eight times more productive than labour in other nations; so, if we multiply the US labour force by eight, the US is regarded as a labour-abundant nation, and the H-O model is relevant and true in this situation. Some economists, however, disagreed with this claim, claiming that since US capital is eight times more developed than that of other nations and multiplied by eight, the US would once more become a capital-rich nation. Leontief's research raises questions about the H-O theory in this regard.

Review Questions

1. Discuss and differentiate internal trade from international trade.

2. Do you think that there is a relevance of Mercantilism in the Globalisational era? Use an appropriate example in today's world.

3. Based on the given information in the table, indicate which Commodity India has an absolute and comparative advantage with respect to Britain and which Commodity India should export to Britain?

Commodities	A		B		C	
	India	Britain	India	Britain	India	Britain
Wheat/Labour hour	4	2	4	1	4	2
Cloth/Labour hour	3	2	1	1	2	1

4. Suppose, a professor earns Rs. 2000 per lecture session and can also prepare PowerPoint slides faster than his secretary who receives Rs. 100 per hour. Do you recommend the professor dismiss his secretary and do his PowerPoint presentations? Also, explain the principle of comparative advantage using the above statement.

5. Differentiate Smith's absolute advantage theory from the Ricardian theory of comparative advantage.

6. Illustrate Heberler's opportunity cost with appropriate examples.

7. Almost all the trade theories proved that free trade increases demand for factors of production and world GDP and benefits all nations irrespective of their size and location. If it is true, why many countries are imposing some kind of restrictions on free trade?

8. Does international Trade is possible if they have identical production possibility curves? Under what conditions no trade can take place between two nations with different production possibility curves?

9. Develop an arithmetic example that illustrates how comparative advantage is suitable to explain multi-country cases.

10. Suppose Country A and B have an equal population and capital. It is also assumed that the labour is homogeneous and technology is given in both countries. Still, comparative

advantage and trade become possible between the two countries. Illustrate.

11. As per the H-O model, India exports only agricultural commodities to the European Union and imports only automobiles (not agricultural commodities) from Europe. But in the contemporary world, India and Europe engage in trade by exporting and importing both commodities. Comment.

12. Differentiate between the H-O and the S-S theorem concerning the impact on returns of the Factors of production.

UNIT – III

Lesson 3.1 - Economic Growth and International Trade

Reading Objectives:

After completing this unit, the readers will be accustomed to the foundations and benefits of intra-regional trading groups in the contemporary world. In the globalized world, foreign trade acts as an engine of economic growth. There is a necessity for household and business units to understand the importance of free trade, growth and technical progress in the economy. This unit is very interesting to the readers to evaluate the effect of factor growth on the volume of trade, terms of trade and welfare of the nation. Usually, the effect of factor growth in a small nation differs from the a large nation. The readers will be able to analyse and differentiate the impact of labour growth, capital growth and technical progress on the welfare of a large nation as well as a small nation.

Lesson Outline:

- ➤ Trade as an Engine of Growth
- ➤ Effect of Growth on Terms of Trade and Welfare
- ➤ Immiserizing Growth
- ➤ Effect of Technical Progress Trade
- ➤ Export and Import Strategy
- ➤ Gains from Trade
- ➤ Customs Union
- ➤ Self-assessment Questions

Introduction

Economic growth and international trade are interdependent factors significantly impacting the global economy. Over the years, nations have recognized the significant impact of economic growth on trade and vice versa, resulting in developing policies and strategies designed to maximise their mutual benefits.

There is a symbiotic relationship between economic growth and international commerce. Economic growth, which is characterised by an increase in a nation's productivity and consumption, has a substantial impact on international trade. As nations develop, their demand for goods and services increases, creating opportunities for trade between domestic and foreign producers. Similarly, trade functions as a growth engine by stimulating economic activity, fostering innovation, and driving gains in productivity.

The combined impact of production and consumption growth on international trade is crucial. As economies expand, they typically produce more goods and services to satisfy rising domestic and international demand. This increased production generates a surplus that can be exported, thereby fostering international trade. In addition, as incomes rise as a result of economic expansion, consumers' purchasing power increases, resulting in a rise in the consumption of both domestic and imported goods.

While economic growth and commerce provide numerous benefits, they also present obstacles that must be managed with care. One such difficulty is the impact of growth on trade terms. The ratio at which a Country can trade its exports for imports is called its terms of trade. Rapid economic growth can increase a nation's import demand, potentially worsening its trade balance. This phenomenon, known as immiserizing growth, can lead to a Country's deterioration despite economic growth.

The advancement of technology also plays a vital role in propelling international growth and trade. Technology advancements increase productivity and efficiency and permit nations to specialise in producing products and services with a comparative advantage. This specialisation promotes international commerce because countries can export their specialised products while importing less efficient goods.

Import substitution and export promotion strategies are frequently employed in pursuing economic development. Import substitution aims to lessen reliance on imports by promoting domestic production of previously imported products. On the other hand, export promotion strategies aim to increase a nation's export capabilities and global competitiveness. Both approaches seek to boost economic growth through international trade.

The benefits of trade are fundamental to economic expansion and international commerce. Through trade, nations can access a greater

variety of products and services, resulting in greater prosperity and consumer satisfaction. Multiple factors, including comparative advantage, economies of scale, resource endowments, and institutional factors that facilitate trade, determine the benefits of trade.

Measuring trade benefits requires evaluating the changes in consumer welfare, producer surplus, and national income caused by international trade. Economists use a variety of indicators and models to quantify the contribution of trade to economic growth and societal well-being.

The formation of customs unions is another significant aspect of international commerce. In customs unions, a group of countries establishes a common trade policy, thereby eradicating trade barriers among member nations. By eliminating tariffs and implementing harmonized trade rules, customs unions seek to improve economic integration, stimulate trade flows, and stimulate economic growth among member nations.

Economic expansion and international trade are interdependent forces that influence the global economic landscape. Economic growth drives trade, while trade drives economic growth. Utilising production and consumption effects, technological advancement, import substitution, and export promotion strategies, nations can utilise the benefits of trade to stimulate economic growth. Ensuring inclusive and sustainable growth in a globalised world, however, requires the prudent management of obstacles such as trade terms and the pursuit of balanced policies.

Effect of Growth on Trade

Economic growth results in the accumulation of resources and technological advancements, which in turn have effects on trade by changing the way goods are produced, consumed, and traded internationally. This impact on trade can be observed through shifts in production patterns, consumption behaviour, and the terms of trade between countries.

Production Effects of Growth:

As an economy grows, it gains access to more resources and inputs, allowing for increased production of goods that can be exported. This expansion in exportable commodities subsequently boosts trade volume. On the other hand, when a considerable number of importable goods are produced, it reduces the overall volume of trade

H.G. Johnson conducted a more comprehensive analysis of the impact of factor growth on production, building upon the earlier work of Rybczynski. While Rybczynski's analysis was relatively straightforward, Johnson's analysis delved deeper into this issue and identified different growth effects. Johnson categorized the effects of factor growth as neutral, export-biased, ultra-export-biased, import-biased, and ultra-import-biased. This expanded analysis provides a more nuanced understanding of how factor growth can influence production differently.

According to the analysis by H.G. Johnson, different types of growth effects can be observed based on the changes in the output of exportable and importable goods resulting from factor accumulation and overall economic growth.

Neutral growth: Neutral growth occurs when there is an overall increase in economic output, and both exportable and importable goods experience proportional growth due to the accumulation of factors and the economy's expansion.

Export-Biased Growth: Growth is export-biased or pro-trade if the increase in the production of exportable goods exceeds the increase in the production of importable goods. This means that a larger proportion of the growth is focused on expanding exports.

Ultra-Export-Biased Growth: Ultra-export-biased or ultra-trade-biased growth refers to a situation where the rise in the production of exportable goods leads to a decrease in the output of importable goods. This type of growth heavily prioritizes and emphasizes the expansion of exports while simultaneously reducing the volume of imports.

Ultra-Import-Biased Growth: Ultra-import-biased or ultra-anti-trade-biased growth refers to the situation where growth leads to a decrease in the production of exportable goods. This type of growth is characterized by a reduction in exports and can be seen as unfavourable for trade.

Import-Biased Growth: Import-biased or anti-trade-biased growth occurs when the increase in the output of importable goods surpasses the increase in the output of exportable goods. This implies that a larger proportion of the growth is directed towards expanding imports.

Assumption:

1. Country A is currently undergoing consistent economic growth and serves as the home Country in this context.

2. In this scenario, there are two productive factors available, namely labour and capital.

3. As the economy grows, both the quantities of labour and capital increase.

4. The focus of trade is on two specific commodities, namely X and Y.

5. Commodity X represents the exportable good, while Y represents the importable good within the home Country.

6. Commodity X is labour-intensive, while Y relies more on capital-intensive production.

7. Throughout the growth process, the production techniques remain unchanged.

8. The concept of incomplete specialization applies, indicating that not all production is solely dedicated to one good.

9. The international terms of trade, which is the ratio of the exportable Commodity's price to the importable Commodity's price, remain constant.

In Figure 3.1 illustrates the connection between two goods, X and Y. Commodity X, which relies more on labor, is the one exported, while Commodity Y, relying more on capital, is imported. The initial curve, PP1, shows the maximum production levels given available factors and technology. The line representing TOT, TT1, displays the exchange rate between X and Y in international trade. At point R, where the term of trade line touches the "production possibility curve"(PPC), production reaches equilibrium.

As the economy grows, there's an increase in the availability of production factors, causing the production possibility curve to shift rightward. This shift results in a new TOT line, "T2T3", which remains parallel to the original TT1 line, suggesting that the international price ratio of commodities X and Y stays the same despite the economics expansion. When the production equilibrium moves to point S, it signifies neutral growth, as both commodities see an equal rise in output, and the factors of production expand proportionally.

Figure 3.1: Production Effects of Growth
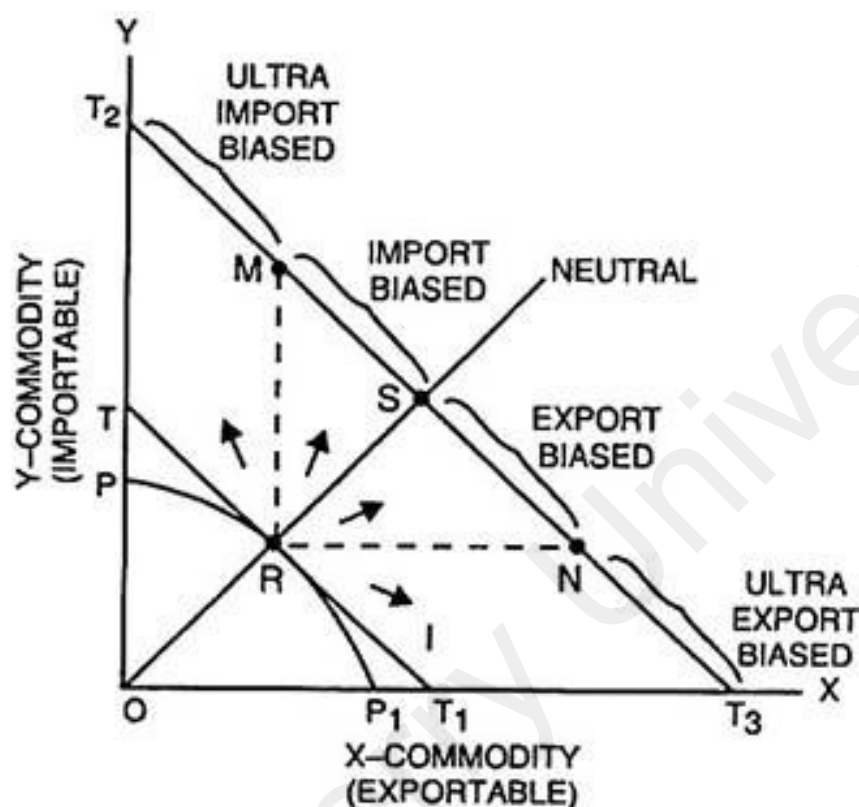
Export-biased growth occurs when the production equilibrium lies between points S and N. During this interval, the increase in output for exportable Commodity X exceeds that of importable Commodity Y proportionally. This scenario also indicates a relatively higher utilization of labor compared to capital.

Ultra-export biased growth occurs when the production equilibrium is positioned between points N and T3. This signifies that the expansion of exportable Commodity X occurs at the cost of decreased output of importable good Y. Conversely if the production equilibrium falls within the range from "S to M", the growth is more towards import. During this interval, the output of importable 'Commodity Y' rises proportionally more than the increament in the output of exportable 'Commodity X'. Such growth is characterized by a relatively higher utilization of capital compared to labor.

When production equilibrium occurs between M and T2, it signifies either 'ultra-import-biased" or "ultra-anti-trade-biased" growth. In this situation, heightened outcome of importable Commodity Y results in decreased output of exportable Commodity X. Production in this range

involves increased capital utilization, potentially without a rise in labor input. It's important to note that both "ultra-export-biased and ultra-import-biased" growth patterns represent extreme cases in terms of their impact on a growing country's self-sufficiency or trade reliance. These occurrences are infrequent and unusual.

Consumption Effect on Growth:

Factor growth in a Country can lead to changes in its consumption pattern. When the consumption of importable commodities increases, it tends to expand the trade volume. On the other hand, when the consumption of exportable goods rises, it often leads to a fall in overall trade volume. Just as with production effects, H.G. Johnson has divided the impact of consumption on growth into several categories: "neutral", "export-biased", "ultra-export-biased", "import-biased", and " "ultra-import-biased". These categories illustrate the diverse effects of factor growth on a country's consumption behaviors.

As a nation undergoes economic expansion owing to increased factors of production, its real income also rises. This heightened income subsequently affects the consumption of both exportable and importable goods to different degrees. The shifts in consumption patterns of these goods delineate the nature of the growth process and its ramifications for global trade.

When the demand for both exportable Commodity (X) and importable Commodity (Y) increases equally, the growth process is termed neutral. Conversely, if the demand for importable goods grows at a slower pace than the demand for exportable goods, the growth process is categorized as 'import-biased/anti-trade-biased'.

On the other hand, if there is an absolute decrease in the demand for importable commodities, the growth process is labeled as 'ultra-import biased'/'ultra-anti-trade biased'. When the consumption of importable goods rises more rapidly than the risen consumption for exportable goods, the growth process is categorized as export-biased or pro-trade-biased. Finally, if there is an absolute decrease in the demand for exportable commodities, the growth process is termed 'ultra-export-biased' or 'ultra-pro-trade-biased'.

According to H.G. Johnson, analyzing the response to output demand for importable goods helps determine the trade-oriented nature of growth.

If the output elasticity of demand for importable commodities is less than one, the growth process is considered 'import-biased'. If it equals one, the growth process is considered neutral; if it exceeds one, the growth process is seen as 'export-biased' A negative production elasticity of demand for importable goods indicates a growth process heavily inclined towards imports. Conversely, if the production elasticity of demand for exportable goods is negative, the expansion process is heavily skewed towards exports.

The impact of growth on consumption, assuming constant preferences, terms of trade, and income distribution, can be illustrated below figure.

Figure 3.2: Impact of Growth on Consumption
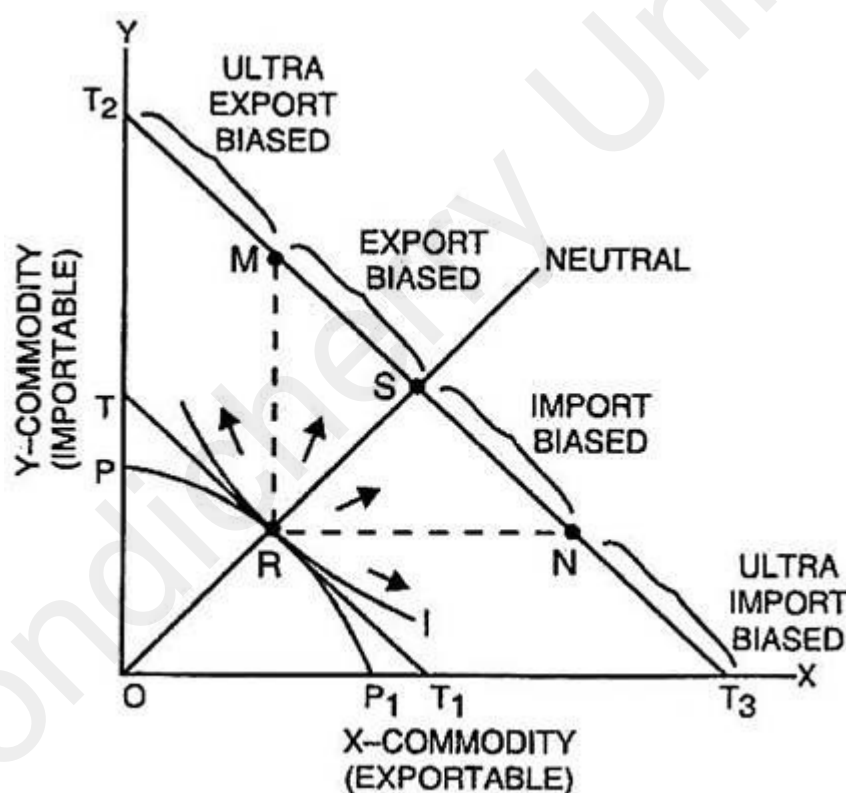
In Figure 3.2, we begin with the initial equilibrium of production and consumption represented by point R. At this juncture, the TOT line TT1 intersect both the PPC PP1 and the community indifference curve(CIC). When economic growth is happening there, the production equilibrium shifts to point S. Throughout this growth process, it is assumed that the 'terms of trade' remain constant, leading to the emergence of a parallel term of trade line called T2T3.

The consumption equilibrium can be established at any intersection point of the T2T3 line with a higher Commodity indifference curve. If the

consumption equilibrium aligns with point S, where both commodities experience proportionate demand increases, the growth is classified as neutral. If consumption falls within the range from S to M, it signals growth that favors exports, as the consumption for importable good Y rises at a higher rate compared to the consumption for 'exportable Commodity X'.

When consumption falls between 'M and T2', the growth pattern displays an extremely export-oriented consumption impact. Conversely, consumption between S and N suggests a consumption effect biased towards imports. Lastly, consumption within the range from N to T3 signifies an extremely import-oriented consumption effect in the growth process.

Another way to assess how growth affects trade is to look at how much the demand for imports changes with the output or income level, assuming that the growth is not caused by population increase. H.G. Johnson argued that if the demand for imports rises a lot with income, meaning that imports are seen as luxury goods, then the growth will favor more trade. But if the demand for imports rises little with income, meaning that imports are seen as necessary goods, then the growth will favor less trade (anti-trade-biased). If the demand for imports falls with income, meaning that imports are seen as inferior goods, then the growth will favor even less trade "ultra-anti-trade-biased", while if demand for exports falls with income, meaning that exports are seen as inferior goods, then the growth will favor even more trade (ultra-pro-trade-biased)

It is important to note that the analysis assumes constant taste patterns and income distribution. However, as income expands following growth, there can be changes in taste patterns and income distribution, this can greatly change the proportionate demand for both goods.

Combined Production and Consumption Effects of Growth:

A country where there is economic progress, the is influenced by how it affects both production and consumption. If a Country specializes exclusively in producing one Commodity and does not produce the importable Commodity, then the overall effect of growth depends solely on the shift in consumption equilibrium resulting from increased income.

However, if a Country engages in more specialization and produces both commodities, the measurement of import demand involves calculating the gap between the total demand for the importable goods and

its domestic supply. The overall impact on import demand encompasses both 'production effect' and 'consumption effects'. This combined effect influences the shift in the country's offer curve, thus affecting international trade volume and terms. When both production and consumption effects are neutral, resulting in a neutral overall growth effect, the domestic supply of the importable commodity may be relatively smaller compared to import consumption. Consequently, the price of the importable commodity is likely to rise compared to previous levels, potentially worsening the country's terms of trade, despite the overall growth being deemed neutral.

If any of the following conditions are present, the overall effect of growth in a Country will be export-biased:

(i) The impact of production is biased towards exports, while the effect of consumption remains neutral,

(ii) The production effect has a neutral impact, whereas the consumption effect is biased towards exports.

(iii) Both the consumption and production effects favor exports.

The overall or total effect of growth will be import-biased if:

(i) The production effect tends to favor imports, while the consumption effect remains neutral.

(ii) The production effect has no bias, while the consumption effect favors imports.

(iii) Both the production and consumption effects favor imports.

When growth is labelled as "ultra-export-biased," it means that the increase in a Country's GDP brings a proportionally greater rise in the demand for imports compared to the overall income increase. Additionally, the supply of exports also increases more significantly compared to growth that is simply "export-biased." This results in a significant expansion of trade volume, but it also causes the TOT (the ratio of export prices to import prices) for the home Country to deteriorate further when compared to export-biased growth.

Conversly, when there's a significant rise in domestic production of importable goods, labeled as "ultra-import-biased," it results in reduced "demand for imports" and "export supply". However, if the quality of exportable goods isn't inferior to those of other countries, it could lead to better TOT for the home country.

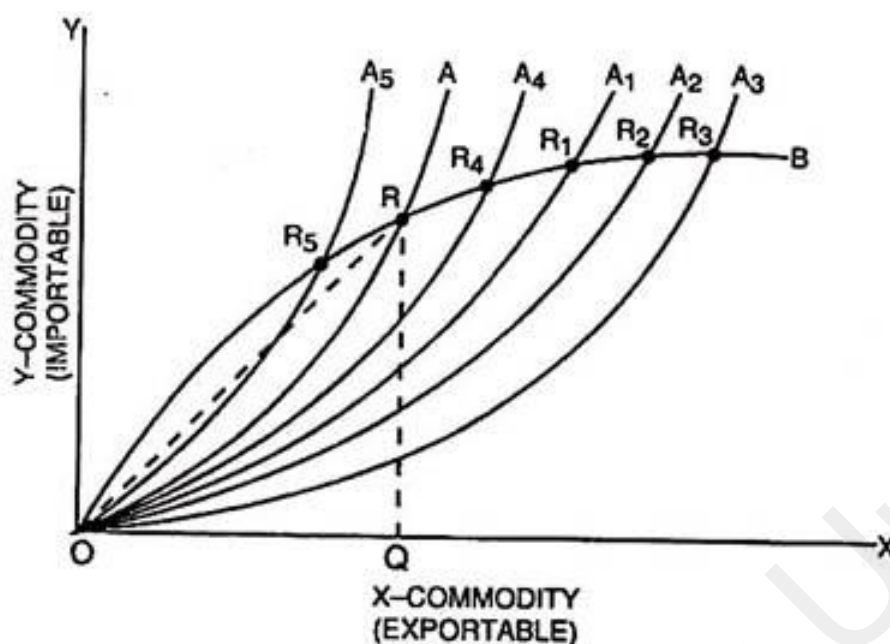**Figure 3.3: Trade Patterns of Country A and B**

Figure 3.3 illustrates the trade patterns of two countries, say 'Country A' and 'Country B'. 'Country A' is considered as the home Country and its trade is represented by the offer curve OA, while Nation B is considered a foreign Country and its trade is represented by the offer curve OB. At the initial equilibrium point R, Country A exports a quantity of 'Commodity X' equivalent to OQ and imports a quantity of 'Commodity Y' equivalent to RQ. The terms of trade, indicated by the slope of the line, are established by the OR ratio.

When Country A undergoes growth, its offer curve (OA) will adjust, indicating changes in its trading patterns. Conversely, the offer curve of Country B, what isn't undergoing growth stays unchanged.

As growth's overall impact is deemed neutral, Country A's offer curve shifts to OA1, resulting in a new equilibrium at point R1. This alteration signifies a boost in trade volume; however, Country A's TOT deteriorate. Consequently, the advantages of growth progressively favor the foreign country, implying that Country A benefits less from the growth in comparison to its trading partner.

In the case of import-biased growth, Country A's offer curve shifts leftward from OA1 to OA4, though it remains to the right of the original curve OA. This indicates that the growth in demand for imports(M) and the supply of exports(X) rise at a lower rate compared to the overall output growth. Despite an increase in trade volume, there is a bias against trade

in either production, consumption, or both. In this scenario, the TOT may still deteriorate for Country A.

In case of 'ultra-import-biased growth', Country A's offer curve could shift leftward from OA to OA5. This adjust brings a deaccerlerate in both the absolute demand for imports and the supply of exports, ultimately reducing overall trade volume. Nonetheless, a favorable consequence is that the TOT(terms of trade) improve for Country A, thereby benefiting from better trading conditions.

In general, alterations in Country A's supply curve, influenced by the nature of growth, dictate the extent and conditions of changes in international trade volumes.

Trade as an Engine of Growth: Haberler

Trade is frequently cited as a critical factor in economic growth for nations worldwide. It alludes to international trade in products and services made possible by imports and exports. Trade may help a Country's economy grow overall and have several beneficial consequences on economic development.

Adam Smith and David Ricardo were the first economists to be interested in the role of trade in economic development. They have sung the praises of comparative advantage-based free trade. The principle of comparative advantage states that each nation will benefit from specialising in the production and export of relatively inexpensive goods. Inversely, each nation will benefit from importing products that it produces relatively inexpensively.

1. Developing nations argue that specialization and trade often place them in a subordinate position, preventing them from fully enjoying the long-term benefits of industrial development and maximizing their overall welfare. These benefits include a better-educated workforce, increased innovation, more stable and lucrative prices for exported goods, and higher incomes for their citizens. While traditional trade theories may optimize welfare at a given moment, they may not necessarily do so over time. As such, developing nations advocate for alterations in trade patterns and reforms within the current international economic framework to address their specific developmental requirements.

2. **Trade and Full Resource Utilization:** Trade can help developing nations fully utilize their otherwise underemployed domestic

resources. When a developing nation engages in trade, it can move from an inefficient production point inside its production frontier (where resources are underutilized due to insufficient internal demand) to a point on its production frontier with trade. By accessing larger markets through trade, the nation can sell its products to other countries, effectively utilizing its resources more efficiently and producing at a higher level of output.

3. **Division of Labour and Economies of Scale:** Trade expands the size of the market for developing nations, allowing for the division of labour and the realization of economies of scale. When a Country specializes in producing certain goods for which it has a comparative advantage, it can produce more efficiently and at a larger scale. This specialization enables them to trade these goods with other countries, leading to increased productivity and economic efficiency.

4. **Diffusion of Ideas and Technology:** International trade serves as a vehicle for the transfer of new ideas, technology, and managerial skills to developing nations. When engaging in trade, countries are exposed to innovations and advanced techniques from more developed trading partners. This technological transfer can lead to increased productivity, improved production methods, and better managerial practices, which are essential for long-term economic development.

5. **Foreign Direct Investment (FDI) and Capital Inflows:** Trade also stimulates the flow of capital from developed to developing nations, especially through Foreign Direct Investment (FDI). Foreign companies may invest in developing countries to take advantage of their resources, labour force, or strategic location. With FDI, the foreign investment is often accompanied by skilled personnel from the investing Country, which can further enhance the developing nation's capabilities and knowledge base.

6. **Stimulating Domestic Demand:** Importing new products can stimulate domestic demand in large developing nations. When a developing Country starts importing new and advanced products, it can create demand for these goods among its population. This demand can serve as an impetus for the development of domestic industries that can eventually produce these goods more efficiently, reducing the reliance on imports.

7. **Promoting Efficiency through Competition:** International trade acts as an antimonopoly weapon, promoting greater efficiency in domestic industries. If domestic firms face competition from foreign companies, they are incentivized to become more efficient to meet the challenges posed by international competitors. This increased efficiency can lead to better quality products, lower prices for consumers, and an overall improvement in the competitiveness of the domestic economy.

In summary, trade plays a vital role in the economic prosperity of developing nations. It enables these countries to optimize their resource utilization, benefit from economies of scale, adopt new technologies and skills, attract foreign investment, stimulate domestic demand, and foster greater efficiency through competition. While some developing nations may express concerns about potential subordination, when approached strategically and with sound policies, international trade can offer dynamic benefits and support long-term economic growth and welfare.

International Trade and Endogenous Growth Theory

The endogenous growth theory's framework heavily emphasizes international trade. The internal forces that propel long-term economic growth, such as technical advancement and knowledge accumulation, are the subject of endogenous growth theory, developed by economists like Paul Romer and Robert Lucas.

It holds the belief that reducing trade barriers will accelerate long-term economic progress and development:

1. **Technology Transfer and Absorption**: By lowering trade barriers, developing nations can access and adopt foreign technologies at a faster rate. Openness to trade allows these countries to import advanced technologies and knowledge, which can significantly contribute to improving their productivity and efficiency. This technology transfer process enables developing countries to "leapfrog" certain stages of development and catch up with more advanced economies.

2. **Benefits from Research and Development (R&D)**: Trade liberalization fosters increased international collaboration in research and development activities. When countries are open to trade, they can benefit from the innovations and advancements made in other nations. As knowledge and technology are not rival

goods, multiple countries can simultaneously benefit from the same advancements, leading to a collective increase in global knowledge and economic progress.

3. **Economies of Scale in Production**: Trade liberalization allows firms to access larger markets, both domestically and internationally. Larger markets enable firms to take advantage of economies of scale, where the average cost of production decreases as the volume of production increases. This results in cost efficiencies and lower prices for consumers, driving higher consumption and investment, and ultimately contributing to economic growth.

4. **Efficient Resource Allocation**: Reduced trade barriers lead to more efficient allocation of domestic resources across sectors. When countries engage in international trade, they specialize in producing goods and services that they can produce most efficiently, while importing goods that others produce more efficiently. This specialization based on comparative advantage ensures that resources are utilized more efficiently, leading to increased overall productivity and growth.

5. **Specialization in Intermediate Inputs**: Trade liberalization encourages countries to specialize not only in final goods but also in the production of intermediate inputs, which are used in the production of other goods. This specialization can lead to increased efficiency in the production process, reducing costs and improving productivity in various industries.

6. **Faster Introduction of New Products and Services**: Openness to trade exposes domestic industries and consumers to a broader range of products and services from different countries. This exposure encourages domestic firms to innovate and adapt their products to meet international standards and consumer demands. As a result, there is a more rapid introduction of new and improved products and services, which can drive economic growth through increased consumer welfare and business opportunities.

In summary, endogenous growth theory highlights the significance of internal factors such as technological advancements, knowledge accumulation, and efficient resource allocation in driving sustained economic growth. By promoting international trade and reducing trade barriers, countries can benefit from knowledge diffusion, specialization, economies of scale, and innovation, results in expedited economic prosperity and development over the long term.

Effect of Growth on Terms of Trade and Welfare:

Labour: Population increases over a period of time

Capital: It encompasses all human-created resources utilized for production, including machinery, industrial facilities, transportation, and communication systems, as well as investments in education and skill development for the workforce, collectively enhancing a nation's capacity to generate goods and services.

Assumptions:

➢ All labour and capital are *identical*.

➢ Commodity X relies heavily on labor, while Commodity Y relies heavily on capital.

➢ Nations see an increase in the creation of both good X and goody Y when operating under constant returns to scale.

➢ Assumes Full Employment

➢ When both labor (L) and capital (K) increase proportionally, and there are constant returns to scale in producing goods, the productivity and returns of both labor and capital remain unchanged after growth, compared to their initial levels before growth occurred.

➢ If the ratio of dependents to the total population, known as the dependency rate, stays constant, then the real per capita income and overall welfare of the nation are likely to remain stable

Growth and Trade: The Small-Country Case

When a country is too insignificant to affect global commodity prices, it becomes a passive participant in the international market, known as a price taker. This suggests that regardless of its levels of production and consumption, the nation's TOT, representing the ratio of its "export prices to import prices", remain steady. In such a situation, we can examine how growth impacts production, consumption, trade, and overall welfare.

The Effect of Growth on Trade

Until now, we have observed that as factors of production grow and technological advancements occur, a nation's production frontier expands outward. The trade volume is influenced by how quickly the output of

exportable and importable commodities grows and by the nation's consumption patterns as its national income increases due to the growth of labour, GDP and trade.

If a nation sees a greater expansion in its exportable goods compared to its importable goods, all while maintaining stable relative prices,.it will lead to a significant increase in trade and is considered pro-trade. Conversely, if the growth in exportable Commodity is less than that of the importable Commodity, trade expansion will be limited, and it is categorized as antitrade or neutral. When the expansion of output results in the same rate of trade growth, it is considered to have a neutral trade effect. Moreover, if a country's usage of its importable commodity rises at a greater rate than its usage of the exportable commodity at constant prices, it will lead to a considerable growth in trade and is referred to as pro-trade. Conversely, if the consumption growth of the exportable Commodity exceeds that of the importable Commodity, the expansion in trade will be limited, and it is categorized as antitrade or neutral.

Therefore, both production and consumption can have three potential trade effects: pro-trade "when they lead to a greater than proportionate increase in trade at constant relative Commodity prices", "antitrade", or "neutral". Production is considered pro-trade when the growth in the nation's exportable Commodity output surpasses the growth in its importable Commodity output. On the other hand, consumption is pro-trade when the increase in the nation's consumption of importable Commodity outpaces the increase in consumption of its exportable Commodity.

Trade volume changes during economic growth are influenced by the joint impact of "productioneffect" and "consumption effects". When both production and consumption support trade, trade volume increases more rapidly than the overall output. On the other hand, if both production and consumption hinder trade, trade quantity grows at a slower pace than output and could even decrease. When production is pro-trade while consumption is restrictive trade (or vice versa), the direction of quantity of trade depends on the net effect of these contrasting forces. In the exceptional scenario where both "production" and "consumption" have a neutral effect, trade rises at the same rate as output rises.

Figure 3.4: (a) & (b) Labour Growth, Trade and Welfare:
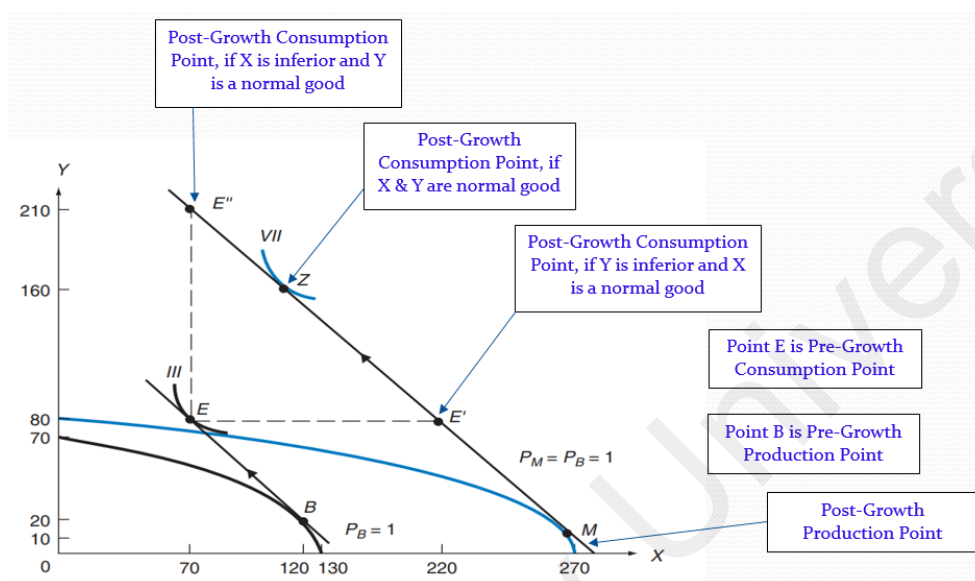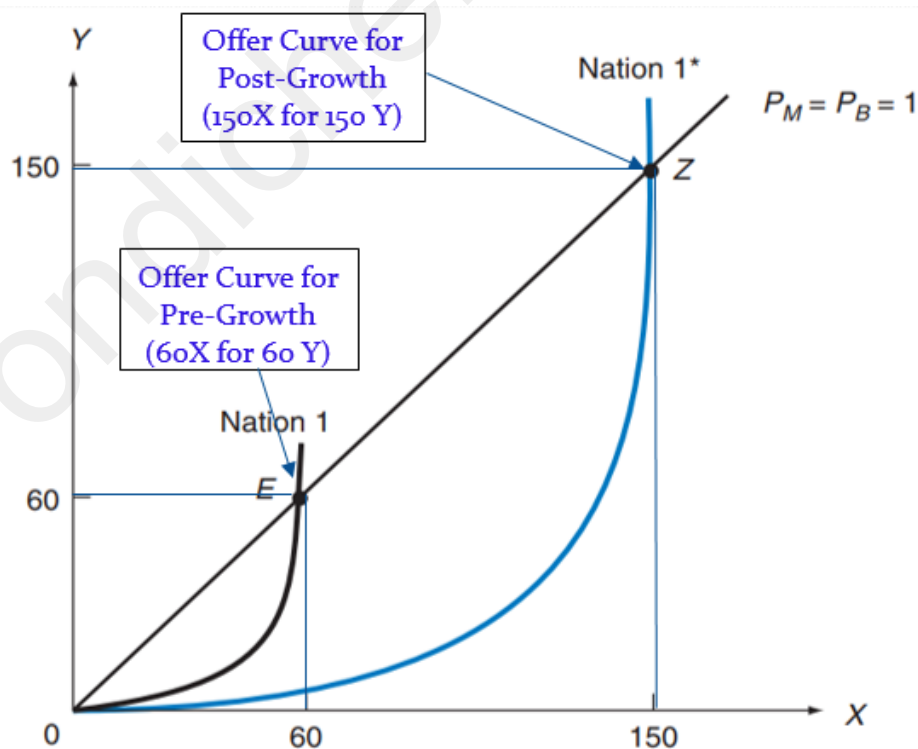**The Nation is assumed to be a small nation:**

Figure 3.4: (a) & (b)

The top panel of Figure 3.4 (a) illustrates how country 1 experiences a doubling of labour (L) and how its TOT remain untouched by growth and trade. This is seen from the perspective of the top panel. In the past,

when this expansion occurred, Nation 1 produced at point B, exchanging "sixty units of good X" for "sixty units of good Y" at a price ratio of sixty to one (PB = 1) and reaching indifference curve III simultaneously. The production frontier of country 1 stretches outward as a result of the doubling of the number of workers in that nation. In the event that Nation 1 is not large enough to have an impact on the relative prices of commodities, it will produce at point M, which is the location where the new extended production frontier is perpendicular to PM is equal to "PB = 1". In accordance with the postulations of the Rybczynski theory, Country 1 manufactures over double the amount of good X in comparison to point B, yet it produces a smaller quantity of good Y. This is the case at point M. At the point where PM equals PB equals 1, Nation 1 trades "150 units of Commodity X" for "150 units of Commodity Y" and consumes at the point Z on its community indifference curve VII.

The expansion in output is pro-trade, as evidenced by the fact that the output of good X (exported good of country 1) has increased while the output of Commodity Y has decreased simultaneously. Additionally, the fact that the increase in consumption of good Y (Imported goods of country 1) is bigger than the increase in usage of good X (that is, point Z is located to the left of a ray that extends from the origin to point E) demonstrates that the increament in consumption growth is too favourable to International Trade. Due to the fact that both production and consumption are friendly towards trade, quantity of trade increased at a rate that was more proportional to the increament in output of good X.

With the advancement in economics progress and commerce, country 1's consumption frontier is denoted by the linear PM, intersecting the newly expanded production frontier at point M. Both commodities experience increased consumption, suggesting they are normal goods. If Commodity Y were inferior, Nation 1 would have consumed less of it, positioned to the right and below point E on line PM. Likewise, if Commodity X were inferior, Nation 1 would have consumed less of it, positioned to the left and above point E2.

The lower section of Figure 3.4 (b) depicts how growth affects trade for Nation 1 while keeping the terms of trade constant. Prior to growth and under free trade, Nation 1 traded '60 units of Commodity X for 60 units of Commodity Y at a price ratio of $PX/PY = PB = 1$'. Following growth and maintaining free trade, Nation 1 exchanged 150 units of Commodity X for 150 units of Commodity Y at a price ratio of $PX/PY = PM = PB = 1$.

The constant terms of trade line coincides with the linear section of Nation 2's offer curve, which represents the larger nation. As Nation 1 is comparatively smaller, its offer curve intersects with Nation 2's linear segment both before and after growth. This alignment guarantees that despite Nation 1's growth and increased trade, the TOT remain constant.

Following the growth phase, country 1 faced a deteriorating situation. Despite doubling its workforce and population, total consumption of the country increased by less than double. For instance, compare the consumption at point Z after growth, with 120 units of Commodity X and 160 units of Commodity Y, to point E before growth, with "70 units of good X" and "80 units of Commodity Y". Consequently, the consumption and overall well-being of the typical citizen of Nation 1, whose preferences and consumption patterns mirror those of the entire population but with scaled-down quantities, declined as a result of this form of growth.

Growth and Trade: The Large-Country Case:

In the context of economic expansion and international commerce, the large-country scenario involves a major influential nation undergoing growth and participating in global trade. In such a setting, the policies and decisions of this prominent nation can significantly shape worldwide trade dynamics and trade conditions.

When a Country experiences growth, no matter where it comes from or what form it takes, its overall trade increases at unchanged prices, bringing to a decline in its TOT. Conversely, if there is reduction in volume of trade in the country at constant prices, the TOT improve. This phenomenon is considered as the "Term of trade effect of growth".

The terms-of-trade effect and the wealth effect are the two primary determinants of how economic expansion affects a country's welfare. There are two effects of growth on trade circumstances: the terms-of-trade impact and the wealth effect. The former describes how growth affects trading conditions, while the latter describes how growth affects production per worker or per person. An increase in national welfare is typically the result of a positive wealth impact, in which production per worker or per person rises. On the flip side, when wealth has a negative impact, national wellbeing often goes down or stays the same. The wellbeing of a nation is sure to rise when growth and commerce lead to an improvement in the TOT and a positive wealth effect. Conversely, if the wealth impact

and the TOT effect are both negative, then the welfare of the country will definitely fall. Depending on the relative strength of the wealth impact and the TOT effect, the nation's welfare can worsen, increase, or remain unchanged when they move in opposite directions.

Figure 3.5: (a) and (b) Labour Growth, Trade and Welfare: A Nation is assumed to be a Large Nation:
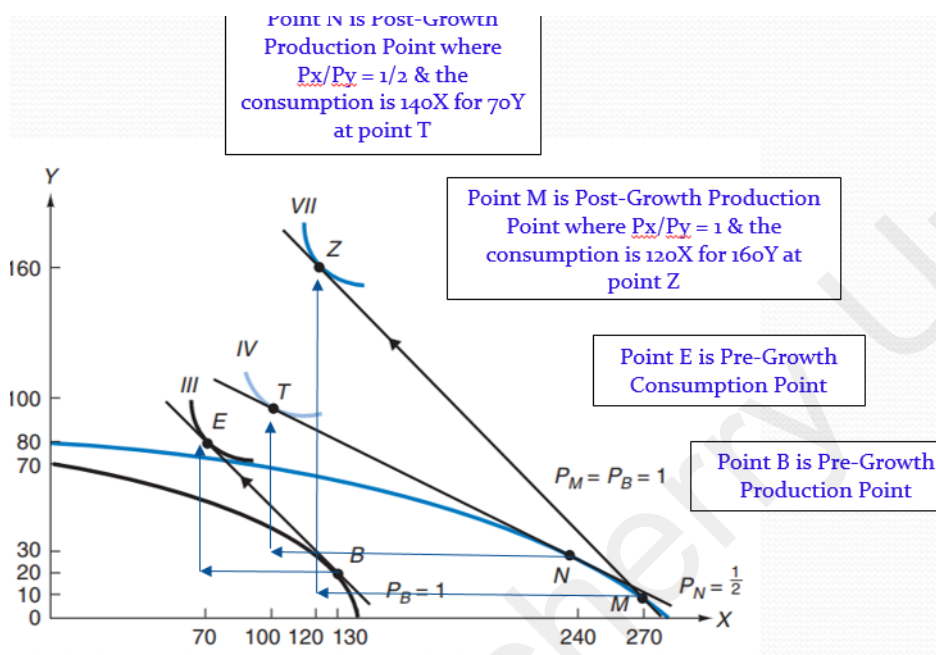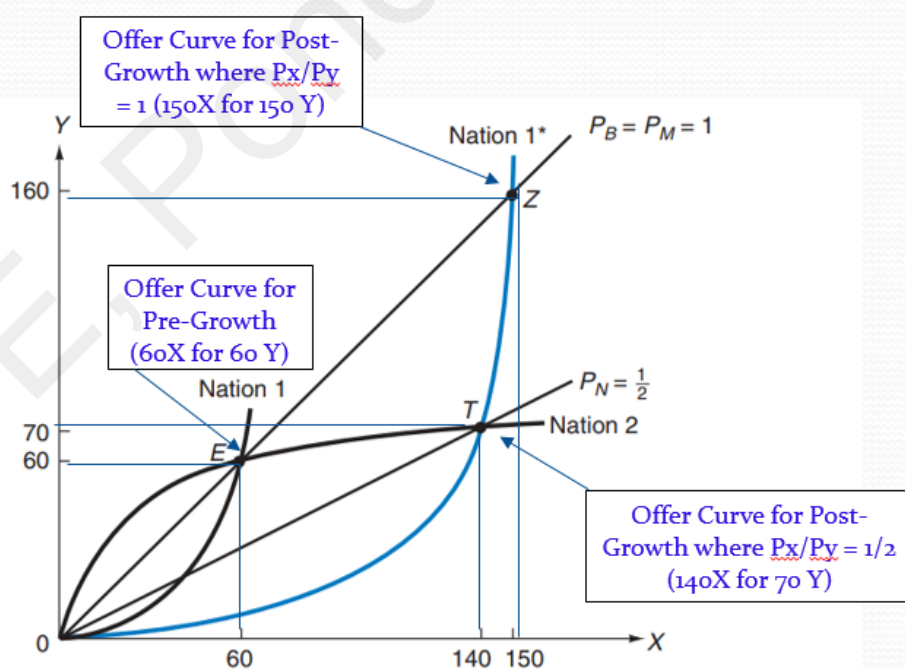

Figure 3.5: (a) and (b)

Let's consider Nation 1 and only focus on the doubling of its labour (L) without any other factors changing. The wealth effect alone will lead to a reduction in Nation 1's overall well-being. This scenario is depicted in Figure 3.5.

Moreover, this particular type of growth in Nation 1 causes an expansion in its trade volume at constant prices (PM = PB = 1), bringing to a decline in its TOT. Consequently, Nation 1's welfare will be adversely affected for both reasons, as shown in Figure 3.5

Figure 3.5 (a) demonstrates how labor growth impacts Nation 1, which is considered sizable enough to impact relative commodity prices. With economic prosperity and commerce, the TOT deteriorate, transitioning from a situation where the price of imports (PM) equals the price of exports (PB) equals 1 to a new scenario where the price of imports (PN) equals 1/2. In this altered context, Nation 1 now produces goods at point N, where it exchanges "140 units of Commodity X" for "70 units of Commodity Y" with Nation 2. Consequently, the consumption point shifts to T on indifference curve IV.

Despite Nation 1's limited impact on its TOT initially, its welfare had already decreased due to the negative wealth effect as previously discussed. Now, with further deterioration in its TOT, country 1 is witnessing an even more pronounced decline in welfare. This is highlighted by the position of indifference curve IV being situated below indifference curve VII, signaling a reduced level of well-being for Nation 1.

The lower section of Figure 3.5 (b) demonstrates how changes in labor growth influence both the quantity of trade and the trade ratio for country 1 across two distinct scenarios. The first scenario is when country 1 does not have any influence on its terms of trade. The second scenario occurs when Nation 1 does indeed influence its TOT. The offer curves depicted in the lower section illustrate these impacts for both situations.

Explanation of Beneficial Growth and Trade:

Now, let's consider a scenario where only the scarce factor K in Nation 1 doubles. As a result, the wealth effect on its own tends to increase the nation's overall welfare. Similarly, if there's neutral technical progress only in producing 'Commodity Y', which is K-intensive, the results would be comparable. In both cases, these types of growth likely lead to a reduction

in trade volume at constant prices, resulting in an improvement in Nation 1's TOT. Combining the favourable effects of increased wealth and improved TOT, Country 1's overall welfare would undoubtedly improve. This is depicted in Figure 3.6

Figure 3.6: (a) & (b) Beneficial Growth and Trade
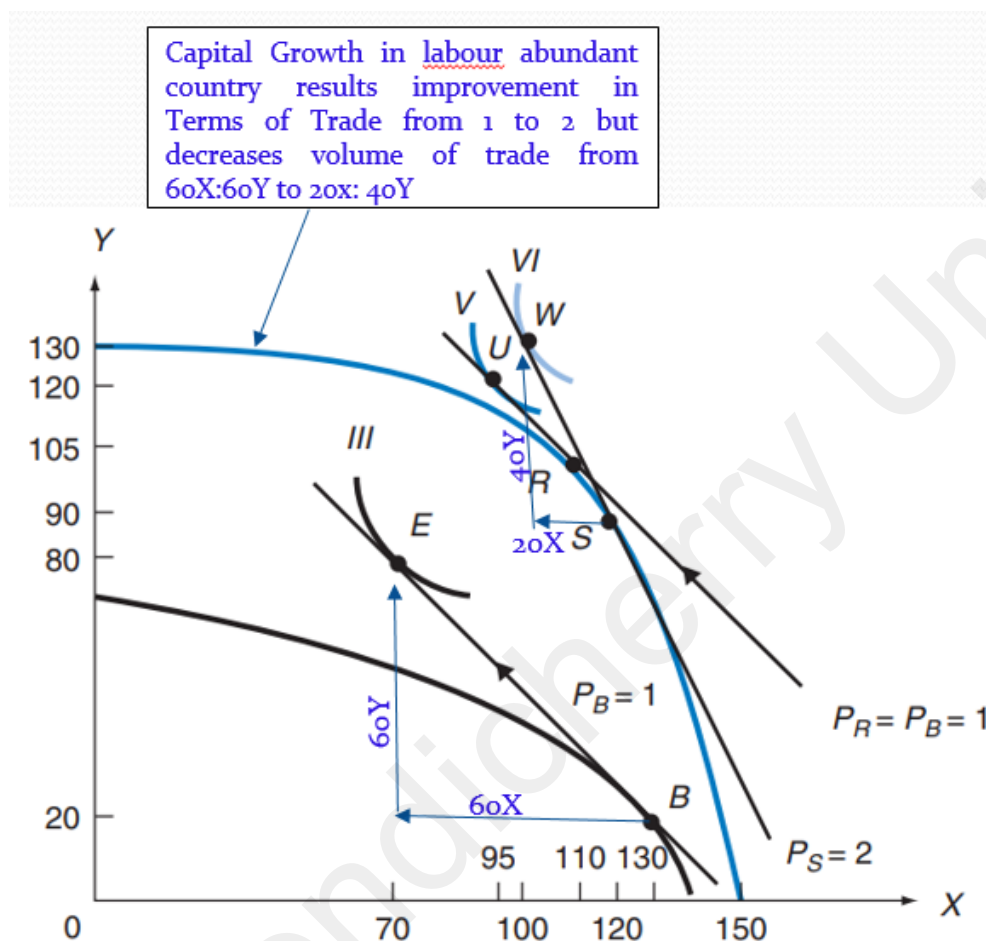
The upper portion of the diagram illustrates country 1's production possibilities frontier before and after a doubling of the scarce factor K, as indicated by the dashed line. Assuming a "constant relative price of PB = 1", country 1 would produce "110 units of good X" and "105 units of Commodity Y", represented by point R on the top panel. Subsequently, Nation 1 would engage in trade with Nation 2, exchanging 15 units of X for 15 units of Y, resulting in consumption at point U on indifference curve V. Despite maintaining constant levels of labor and population, this form of growth would enhance the overall welfare of Nation 1.

Figure 3.6: (a) & (b)
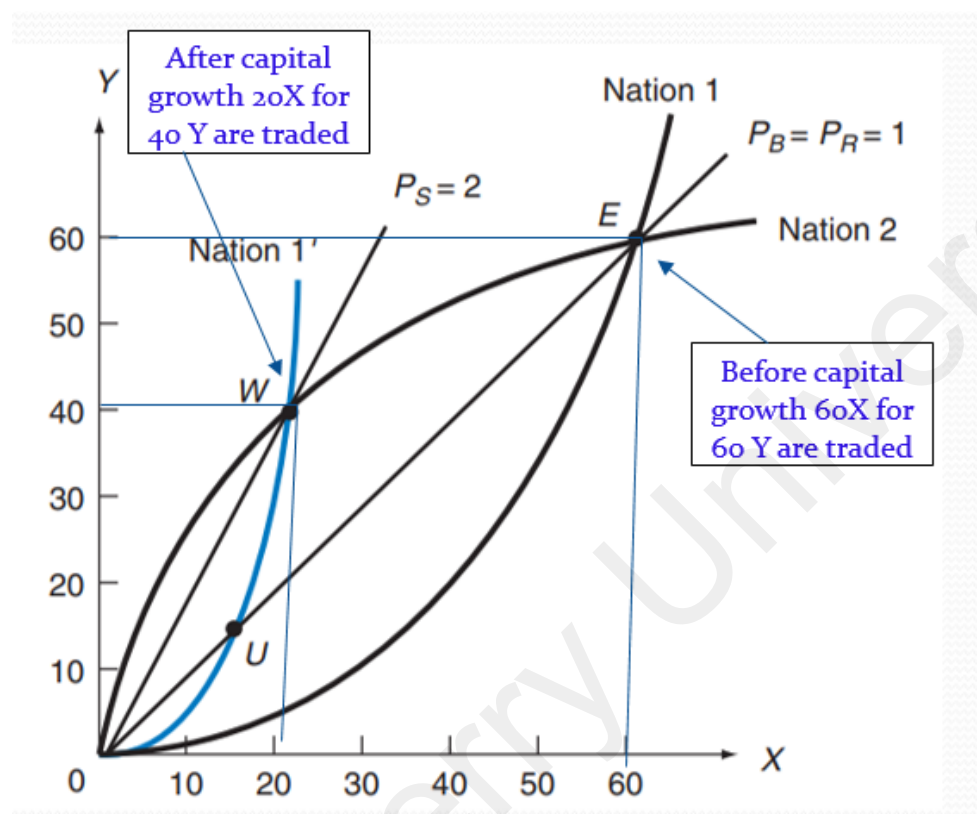
Moreover, with Nation 1 experiencing a decrease in its trade volume at constant prices compared to its state before growth at point E, where free trade prevailed, its terms of trade have also seen an enhancement from 'PR = PB = 1' to 'PS = 2. At PS = 2', country 1 now produces 120 units of Commodity X and 90 units of Commodity Y, positioned at point S, and participates in a trade where it swaps 20 units of X for 40 units of Y. Consequently, the consumption point shifts to W on indifference curve VI. This leads to an elevation in Nation 1's welfare attributed to both the wealth effect and the advancement in terms of trade.

Growth, Change in Tastes, and Trade in Both Nations:

When there is growth happening solely in Nation 1, leading to shifts in only its production frontier and offer curve. We aim to broaden our examination by incorporating growth in both country 1 and country 2. Consequently, the production frontiers and offer curves of both nations will experience shifts. To analyze the impact of this combined growth and changes in preferences in both countries, we will utilize offer curves as our analytical tool.

Growth and Trade in Both Nations:

After undergoing various types of growth, the offer curves of both Nation 1 and Nation 2 are represented by '1*' and '2*' respectively, while '1' and '2' denote their original offer curves before growth. Additionally, the offer curves "1'" and "2'" depict the post-growth offer curves for country 1 and country 2. It is assumed that both nations are large economies. Figure 3.7 illustrates the effects of these different growth scenarios on the trade volume and TOT

In the illustration, we refrain from adding relative Commodity price lines through each equilibrium point to prevent overcrowding. However, one can determine the terms of trade for Nation 1 "By calculating the ratio of the amount of Commodity Y to the amount of Commodity X exchanged at each equilibrium point", denoted as "P_X/P_Y". Conversely, the terms of trade for Nation 2 at the corresponding equilibrium point are merely the reciprocal of Nation 1's "terms of trade".

At the outset, utilizing the initial pre-growth offer curves "1" and "2," country 1 exchanges "60 units of Commodity X" for "60 units of Commodity Y" with Nation 2, establishing a relative Commodity price (PB) of 1, evident at equilibrium point E1.

When the labor force (L) in country 1 doubles, as illustrated in Figure 3.7, its supply curve shifts 'clockwise' from "1" to "1*." Consequently, country 1 now exports "140 units of Commodity X" for "70 units of Commodity Y", reaching equilibrium at point E2. In this scenario, country 1's commerce conditions declinee to "$P_X/P_Y = 70Y/140X = \frac{1}{2}$", meaning it now must export twice the quantity of Commodity X to acquire one unit of Commodity Y. Conversely, country 2's trade conditions enhance to "$P_Y/P_X = 2$", indicating it can now obtain two units of Commodity Y for every unit of Commodity X exchanged.

If economic expansion occurs solely within Country 2, leading its offer curve to rotate in a counterclockwise direction from "2" to "2*," equilibrium point E3 is attained. This scenario might arise, for example, from a twofold increase in the abundant factor (K) in Country 2. At E3, Country 2 trades with Country 1, swapping 140 units of Product Y for 70 units of Product X. As a result, Country 2's trade terms worsen to $P_Y/P_X = 1/2$, indicating that it now must export double the quantity of Product Y to acquire one unit of Product X. Conversely, Country 1's trade terms

improve to "PX/PY = 2", suggesting that it can now secure two units of Product X in exchange for one unit of Product Y.

Figure 3.7:

> ➤ 1 is Offer of Nation 1 and 2 is offer curve of Nation 2
> ➤ E1: Pre-Growth in both the nations
> ➤ E2: Labour growth in Labour abundant country (N1) and N1 is assumed to be Large
> ➤ E3: Capital growth in Capital abundant country (N2) and N2 is assumed to be Large
> ➤ E4: Labour growth in Labour abundant country N1 & Capital growth capital abundant country N2, Both N1 and N2 are assumed to be a small country because there is no change in terms of trade.
> ➤ E5: Capital Growth in Labour abundant country causes improvement in terms of trade of N1 but decreases volume of trade
> ➤ E6: Labour Growth in Capital abundant country causes improvement in terms of trade of N2 but decreases volume of trade
> ➤ E7: Capital Growth in N1 and Labour growth in N2 causes fall in volume of trade but terms of trade remains constant, because there is a simultaneous growth in both the nations

On the other hand, as growth occurs in both countries and we study the offer curves that are marked "1*" and "2*," we arrive at the equilibrium point E4. By the time we reach E4, the volume of trade has increased to "140 units of Commodity X" being exchanged for "140 units of 'Commodity Y". Despite this surge in trade, the TOT stay cinsistent at 1 in both countries, indicating that the relative prices of good X and Y have not been impacted by the combined growth in both nations.

Contrarily, in the event that the limited element K experienced a twofold increase within country 1, and supply curve of the nation 1 would pivot anticlockwise from "1" to "1'" resulting in the "equilibrium point E5". At E5, country 1 would exchange "20 units of Commodity X" for "40 units of Commodity Y" with ncountry 2, thereby enhancing country 1's TOT to 2, while country 2's TOT would decline to '½'.

Alternatively, when labor in country 2 undergoes growth exclusively, causing its offer curve to pivot in a clockwise direction to "2'", a new equilibrium would be achieved at point E6. This growth scenario, for instance, might arise from a twofold increase in the scarce factor L in country 2. At E6, country 2 could exchange "20 units of Commodity Y" for "40 units of Commodity X" with country 1, resulting in an upsurge in country 2's trade ratio to 2, while country 1's 'trade ratio would decrease to ½.

Furthermore, should both countries experience economic expansion in a manner that causes offer curve "1" to pivot to "1'" and offer curve "2" to pivot to "2'", then equilibrium point E7 would be achieved. Under these circumstances, the volume of trade would be constrained to "15 units of Commodity X" for "15 units of Commodity Y", and the trade ration for both country would persist at the level of 1.

Change in Tastes and Trade in Both Nations:

Gradually, economies experience growth and changes in national tastes. Economic growth impacts a country's offer curve by influencing its 'production frontier'. The expansion of the production possibilities frontier due to growth alters the quantities of goods and services a country can produce and trade. On the other hand, changes in national tastes affect a nation's offer curve by modifying its indifference map. A shift in consumer preferences leads to a different set of consumption choices, which in turn affects the combinations of goods a nation is willing to trade at various price levels. Therefore, both economic growth and changes in tastes have distinct effects on a nation's offer curve, shaping its trade patterns and economic interactions with other countries.

When Nation 1 desires Commodity Y more strongly (which is Nation 2's exportable commodity), it becomes more willing to exchange a greater amount of its own exportable Commodity X for each unit of Commodity Y it imports. In other words, Nation 1 is willing to accept less Commodity Y in return for a given quantity of Commodity X that it exports. This change in preferences leads to a clockwise rotation of Nation 1's offer curve (from 1 to 1* in Figure 3.7), resulting in increased trade volume but a decline in Nation 1's terms of trade. As a consequence, while trade volume increases between the two nations, Nation 1 must export a larger quantity of Commodity X to obtain a fixed quantity of Commodity Y. This trade-

off reflects the balance between increased trade and the relative prices of the traded goods.

In contrast, if Country 2 develops a greater liking for Commodity X, its offer curve will shift counterclockwise, transitioning from "2" to "2*." This change will boost trade volume between the two countries. However, it will also result in a decrease in Country 2's terms of trade, meaning that Country 2 will have to export a higher quantity of Commodity Y to acquire a fixed amount of Commodity X.

Likewise, if preferences shift in the opposite direction for either country, the offer curves will adjust correspondingly. If both countries undergo changes in preferences, both offer curves will rotate accordingly.

The influence on trade volume and trade ratioo in these situations will be determined by the nature and degree of the shifts in preferences happening within each country, akin to how it affects economic growth. The direction and magnitude of these taste changes will influence how much each nation is willing to trade and how it values the exchanged commodities relative to one another. This interplay of changing preferences will determine the overall trade patterns and whether there will be an expansion or contraction in trade volume and terms of trade between the nations.

In summary, as economies grow or consumer preferences change in both nations, the offer curves will adjust, impacting the volume and trade ratio. If a country's offer curve shifts towards the axis representing its exports, regardless of the origin, it tends to improve the terms of trade in favor of commodities while diminishing the nation's overall "terms of trade"

Adjustments in a country's offer curve that go against the norm tend to reduce trade volume without affecting prices, yet they enhance the country's "terms of trade". If the trade partner's offer curve is more curved, the nation experiences a more significant change in its trade ratio when its offer curve shifts.

Immiserizing Growth

Despite the potential positive impact of the wealth effect on a nation's welfare in isolation, Jagdish Bhagwati points out that the terms of trade (TOT) may worsen, ultimately causing a decline in overall national

welfare. In essence, Bhagwati's argument underscores the tension between the wealth effect and the TOT effect on a nation's welfare, as seen in the concept of immiserizing growth.

The wealth effect refers to the positive impact of economic growth on a Country's overall welfare or standard of living. When a Country experiences economic growth, it generally increases income, employment, and consumption levels. This can contribute to improved living standards, increased access to goods and services, and enhanced well-being for the population.

However, Bhagwati points out that the positive wealth effect can be outweighed by the negative impact of deteriorating terms of trade (TOT) on a nation's welfare. The concept of TOT pertains to the exchange ratio between a country's exports and imports. A deterioration in a country's terms of trade indicates a decline in the prices of its exports compared to those of its imports. This can lead to various negative impacts on the country's overall welfare

Export Earnings Decline: A worsening terms of trade means that the Country receives lower prices for its exported goods. This reduces the revenue earned from exports, leading to a decline in the Country's export earnings.

Increased Import Costs: At the same time, a deteriorating term of trade implies that the Country has to pay relatively higher prices for its imports. This increases the cost of imported goods and services, potentially leading to a decline in the purchasing power of the population.

Net Welfare Loss: The combination of reduced export earnings and increased import costs can result in a net welfare loss for the Country. The negative impact on the balance of trade can outweigh the positive wealth effect of economic growth, leading to a decline in overall welfare or standard of living. This can be better understood with this diagram.

The above Figure 3.8, depicting Nation 1's production frontier before and after a neutral technological advancement greatly enhances labor (L) and capital (K) productivity in producing Commodity X. This advancement results in increased output while maintaining a constant labor force and population, leading to improved welfare for Nation 1 at consistent prices due to the wealth effect.

Figure 3.8: Technical Progress and Immiserizing Growth
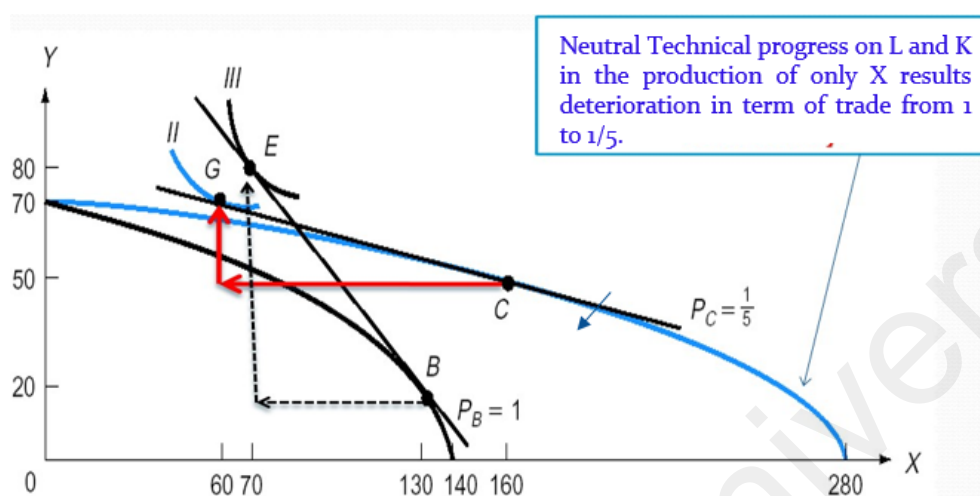
Advancements in technology often lead to increased trade activity, which in turn can negatively impact the terms of trade. This means that the exchange ratio between goods may decline significantly. For instance, if initially one unit of product B could be traded for one unit of product C, it might shift to where one unit of B can only be exchanged for one-fifth of a unit of C. Consequently, Nation 1 would adjust its production to point C, exporting 100 units of X in return for only receiving 20 units of Y. This shift would result in the nation's consumption moving to point G on indifference curve II, representing a lower level of welfare compared to the benefits of free trade prior to the growth and technological progress

Immiserizing growth in Nation 1 is more likely to occur under the following circumstances:

(a) When its economic growth significantly boosts exports in absolute terms but maintains a constant level of terms of trade.

(b) When country 1 is so economically dominant that any attempt to massively increase exports results in a decline in its terms of trade.

(c) When the income elasticity of demand for Nation 1's exports from country 2 (the rest of the world) is exceptionally low, leading to a considerable deterioration in country 1's "terms of trade".

(d) When a country 1 heavily depends on international trade, a significant drop in its terms of trade leads to a decrease in the country's overall well-being.

There are certain prerequisites for the relevance of Immiserizing growth, which are as follows;

(a) **When growth tends to significantly boost the exports of country 1.**

(b) Efforts by country 1 to significantly increase its exports will likely result in a decline in its terms of trade **due to its large size**.

(c) Country 1's terms of trade are expected to worsen significantly because Country 2's **demand for its exports shows a very low-income elasticity**.

(d) **Country 1 relies so much on trade** that a significant drop in its terms trade ratio would result in a decrease in overall national well-being.

Bhagwati's argument suggests that even if a Country experiences an increase in national income and consumption due to economic growth, the negative effects of deteriorating terms of trade can offset or even reverse the positive gains. In such cases, the Country may find itself in a situation of immiserizing growth, where the net result is a decline in welfare despite the increase in wealth.

It's important to note that immiserizing growth is not a common occurrence and depends on specific circumstances, including the size and openness of the Country's economy, the elasticities of demand and supply for its exports and imports, and the initial terms of trade. Nonetheless, Bhagwati's argument highlights the importance of considering the effects of changes in terms of trade when evaluating the overall welfare implications of economic growth.

Effect of Technical Progress Trade:

Numerous research studies have consistently shown that technical progress is the primary driver of growth in real per capita income in industrialized nations. At the same time, capital accumulation plays a relatively smaller role. However, analyzing technical progress is more intricate than studying factor growth. This complexity arises from multiple definitions and types of technical progress, which can occur at different rates in producing one or both commodities. Technological change is a critical determinant of economic growth, surpassing the significance of capital formation. It plays a crucial role in driving continuous increases in output per capita, making it the primary driver of economic growth.

Technological change, also known as technological progress, refers to the discovery of new and improved methods of producing goods.

Occasionally, technological advances lead to an expansion of available natural resources. However, more commonly, technological changes result in enhanced productivity of labour, capital, and other resources. The combined productivity of all inputs is referred to as total factor productivity, and technological progress signifies an increase in this measure. Consequently, technological advancements enable the production of more output with the same resources or the same level of output with fewer resources.

Technical advancement is typically classified as 'neutral', 'labor-saving', or 'capital-saving'. Regardless of its classification, all types of technical progress lead to decreased requirements for both labor and capital to produce a given level of output. The different forms of Hicksian technical progress specify how this reduction happens in particular ways.

"**Neutral technical progress**" enhances the productivity of both labor (L) and capital (K) equally, maintaining the ratio of capital to labor (K/L) unchanged. No substitute of L for K.

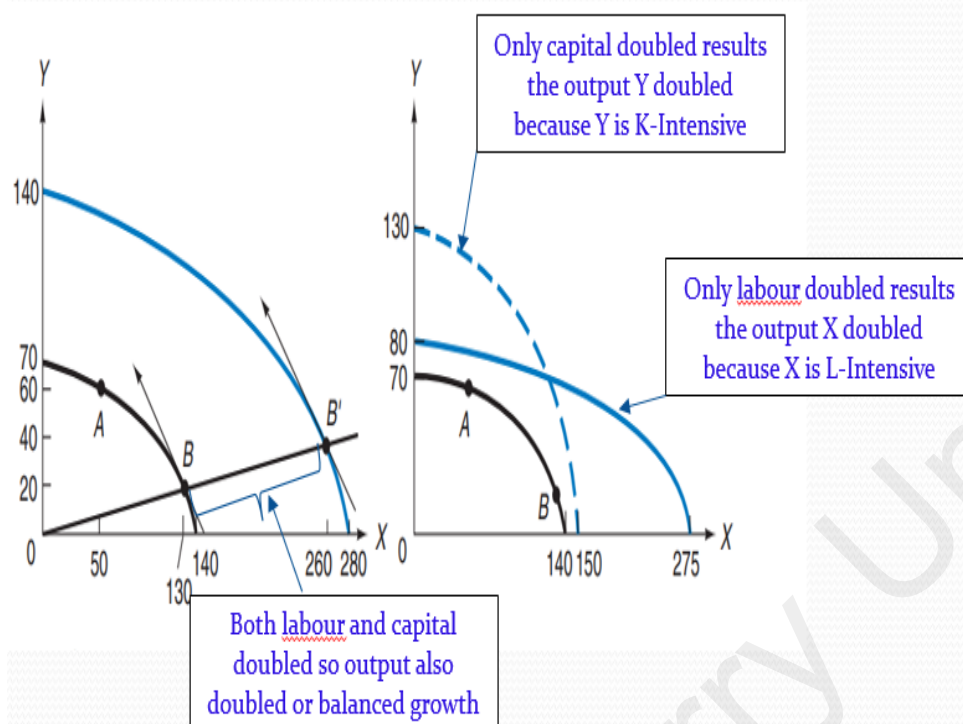*Ex: Mini Tractor to Large and heavy tractor*

"**Labor-saving technical progress**" boosts the productivity of capital (K) by a greater proportion compared to the productivity increase of labor (L). So K is a substitute for L and K/L rises.   *Ex: FTF Learning to Virtual Learning.*

"**Capital-saving technical progress**" increases the productivity of labor (L) by a greater proportion compared to the productivity increase of capital (K). So L is a substitute for K and L/K rises. *Ex: High-Tech machine + qualified L Vs Traditional.*

All forms of technological advancement result in the outward expansion of the Production Possibility Frontier (PPF). The nature and extent of this expansion are determined by the type and pace of technological progress in one or both goods

If "technical progress" occurs equally for both commodities, the production possibilities frontier (PPF) will expand uniformly in all directions at the same pace as the technical progress. The slope of the nation's original and updated PPF will remain consistent at any point where they intersect with a line originating from the origin.

Figure 3.9: Effect of Technical Progress on Trade

Only capital doubled results the output Y doubled because Y is K-Intensive

Only labour doubled results the output X doubled because X is L-Intensive

Both labour and capital doubled so output also doubled or balanced growth

Left Panel of the Figure 3.9 illustrates balanced growth where both labor (L) and capital (K) in Nation 1 double, leading to a doubling of the maximum quantity of each commodity produced due to constant returns to scale. For example, Commodity X's production increases from 140 to 280 units, while Commodity Y's production increases from 70 to 140 units. Notably, the expanded production frontier retains the same shape as before growth. Consequently, the "slope of the production frontiers", represented by the relative price ratio "PX/PY", remains unchanged at specific points like B and B' where they intersect with a ray from the origin.

The right panel depicts Nation 1's initial production frontier, showing intercepts at "140 units of Commodity X" and "70 units of Commodity Y". It then presents two additional production frontiers: one where only labor (L) doubles {shown as a solid line}, and another where only capital (K) doubles {shown as a dashed line}. When only labor (L) doubles, the production frontier shifts more noticeably along the X-axis, which represents the commodity that is more "labor-intensive". However, despite this shift, the maximum output of Commodity X does not double; it only increases from "140 units to 275 units". To achieve a doubling of Commodity X, both labor (L) and capital (K) must double simultaneously.

Likewise, when only capital (K) doubles, the production frontier shifts predominantly along the Y-axis, indicating an increase in the production of the capital-intensive commodity. However, the maximum output of Commodity Y falls short of doubling; it increases from 70 units to 130 units. To double the production of Commodity Y, both labour (L) and capital (K) must double together.

The post-growth productivity and returns of both labour and capital are assumed to be constant when capital (K) and labour (L) expand at the same rate. This is based on the premise that there are constant returns to scale in the production of both items. Real per capita income and national well-being are expected to be steady if the dependence rate (the proportion of dependents to the total population) stays stable.

But if just labour (L) rises, or if L grows at a faster rate than K, the capital-to-labor ratio (K/L) will fall, which means that labour productivity, returns to labour, and real per capita income would all fall. The national welfare might take a hit if this happens since lower labour productivity would lead to lower economic output per person.

Conversely, real per capita income, returns to labour, and productivity of labour would all improve if the capital-to-labor ratio (K/L) grew, which would happen if either the endowment of capital (K) or K grew at a faster rate than L. As a result of increased economic production per capita as a result of more productive labour, the standard of living of the country is likely to rise.

Neutral technical Progress on Commodity X and Commodity Y

The production frontier will extend along the axis that indicates the quantity of X or Y if the technical advancement in production only occurs on L and K.

Figure 3.10 shows the production frontier of country 1 before and after technological advancement. The dashed line represents the production frontier in cases where the productivity of labour (L) and capital (K) doubles in the production of "Commodity X" or "Commodity Y".

When L and K's productivity in producing Commodity X alone doubles, the output of Commodity X also doubles for every level of Commodity Y's output. For example, at point A in the picture, we can see that Commodity

X's output goes up from 50 units before technical advances to 100 units thereafter, whereas Commodity Y's output stays the same at 60 units. As shown at points B and B', respectively, the output of Commodity X increases from 130 to 260 units when the output of Commodity Y remains constant at 20 units

Figure 3.10: Neutral technical Progress on X and Y
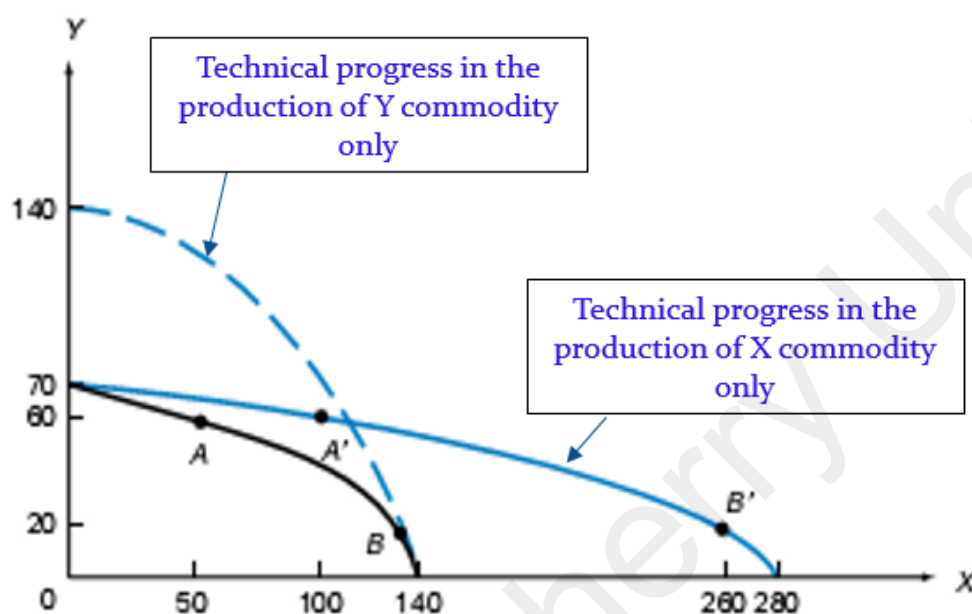
Additionally, Commodity X's output doubles from 140 units to 280 units if all of Nation 1's resources are used to produce it. Specifically, the 70-unit output of Commodity Y has not altered in this instance. The reason behind this outcome is that the technological advancements were limited to Commodity X and had no impact on Commodity Y.

Without trade, technological advancements of any kind usually boost national well-being. Each citizen may end up better off after growth if the government implements a suitable redistribution programme, given a greater production frontier and constant levels of labour and population.

Import Substitution or Export Promotion Strategy

What steps can emerging nations take to strengthen their home economies?

In order to achieve industrialization, since the vast majority of developing countries still rely on agriculture for their economy.

Import Substitution

To produce products to replace imports.

Three advantages of this strategy:

(1) Setting up an industry to replace imports entails lower risks since there is an established market demand for the product, demonstrated by the existing importation of the commodity.

(2) Developing nations find it less challenging to shield their domestic market from foreign competition compared to compelling developed nations to reduce trade barriers and subsidies on their manufactured exports.

(3) Developing countries encounter fewer difficulties in protecting their domestic market from foreign competition than in persuading developed nations to decrease trade barriers and subsidies on their manufactured exports.

Disadvantages of import substitution policy:

(1) Once domestic industries become used to being shielded from international competition, they may lose motivation to improve their efficiency.

(2) Inefficient industries can result from importing goods.

(3) After the simpler manufactured imports are replaced by domestic production, import substitution becomes more and more *difficult and costly* (in terms of the higher protection and inefficiency) as more capital-intensive and technologically advanced imports have to be replaced by domestic production.

Export Promotion Strategy

Every nation tries to create a favourable trade by exporting more than its imports. To achieve the targeted export growth, they implement severalexport promotion strategies, such as export subsidies, reimbursement of import duties and other infrastructural support which reduces cost and creates competitive advantage to the producers.

Advantages of export-oriented industrialization:

(1) By surpassing the limitations of the local market size, it enables a developing country to capitalize on economies of scale. This

holds particular significance for numerous developing nations characterized by both extreme poverty and limited size

(2) The manufacturing of goods intended for export demands and encourages efficiency across the entire economy. This becomes especially crucial when the products of one industry serve as inputs for another domestic sector.

(3) Unlike import substitution, the growth of manufactured exports isn't constrained by the expansion of the domestic market.

Disadvantages:

(1) Establishing export industries in developing countries could pose significant challenges due to the competitive advantage enjoyed by well-established and more efficient industries in developed nations.

(2) Advanced economies frequently offer substantial protection to their industries engaged in the production of basic labor-intensive goods, a sector where developing countries either possess or can swiftly attain a comparative advantage.

In the initial phases of development, import substitution could yield some advantages, particularly for larger developing countries, whereas a shift towards an export-focused approach becomes essential only as the development progresses further

Instead of being seen as mutually exclusive options, import substitution and export orientation policies could be strategically implemented in sequence, particularly in larger developing countries, to yield profitable outcomes to some extent.

Gains from Trade:

"Gain from trade" is also known as the "principle of comparative advantage", is the economic theory that suggests that all parties involved in voluntary trade can benefit and improve their overall well-being by specializing in the production of goods or services in which they have a relative efficiency, and then trading those goods or services with others who have different comparative advantages.

The size of gain from international trade is determined by several factors which are discussed below

1. **Terms of Trade:**

    The TOT are the prices at which goods from one Country can be traded for goods from another Country. The biggest factor in how much a Country makes from trade is the terms of trade. The bigger the gains from trade may be, the better the terms of trade. Even if a Country has bad trade terms, that doesn't mean it doesn't get anything out of trade.

    It just means that the amount a Country gets from trade is a smaller part of the total amount. If a Country's trade terms are closer to its home exchange rate for two goods, it makes less money from trade, and vice versa (see Fig. 3.11).

Figure 3.11:
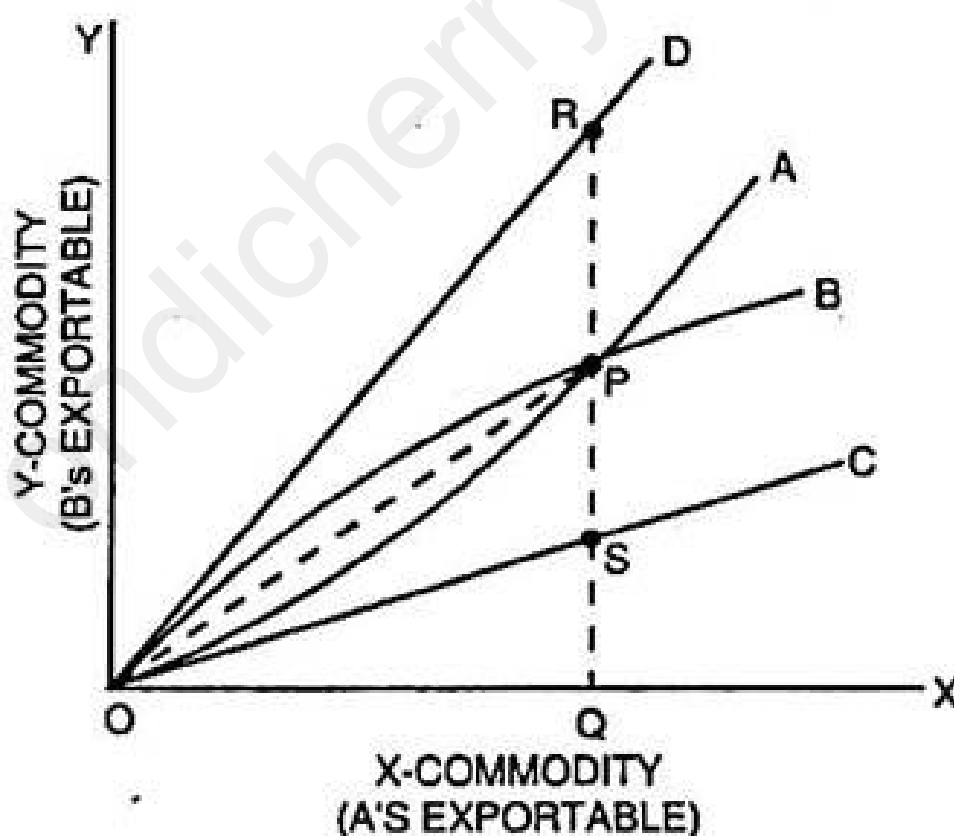
2. **Differences in Cost Ratio:**

    The benefits of international trade hinge largely on the variations in comparative cost ratios between the trading nations for the goods they

manufacture. If one country (A) can produce a particular item (like cloth) more efficiently compared to another country (B), while country B has a comparative cost advantage in producing a different item (such as steel), both countries stand to gain from focusing on their respective strengths and engaging in trade.

Through specialization, each Country focuses on producing the good in which it has a comparative advantage, leading to increased efficiency and productivity. As a result, the cost of producing cloth in Country A and steel in Country B will decrease relative to their domestic production levels.

The greater the cost of cloth in Country A compared to the decrease in the cost of steel in Country B, the more significant the gain from trade for Country A, and vice versa. This difference in cost ratios is a crucial determinant of the gains each Country can obtain through international trade.

In the words of R.F. Harrod, a Country benefits from foreign trade when its traders find that the price ratio of the goods they can sell abroad significantly differs from the ratio, they are accustomed to in their domestic market. The larger the difference in these price ratios, the greater the potential gain from trade for a Country compared to its trading partner.

3. **Reciprocal Demand:**

Reciprocal demand pertains to how the demand for one country's products is affected by another country's demand. In the realm of international trade, it specifically denotes the sensitivity of demand for a country's exported goods in foreign markets. When the demand for a particular product (such as cloth, an export of Country A) exhibits relatively low elasticity in the foreign country (Country B), consumers in Country B are less responsive to fluctuations in the price of cloth.

In this scenario, Country B will be willing to offer a larger quantity of steel (it's exportable) in exchange for a fixed amount of cloth. As a result, TOT (the ratio at which two countries exchange their goods) will shift in favour of Country A, meaning Country A will receive more steel for the same amount of cloth. This shift in terms of trade benefits Country A, as it can acquire more steel with the same amount of its cloth exports.

On the contrary, if the demand for steel in Country A is less elastic or more intense, it means that consumers in Country A are not very

responsive to changes in the price of steel. As a result, Country A will be willing to offer more cloth in exchange for a fixed quantity of steel from Country B. In this situation, the TOT will move in favor of Country B, allowing Country B to gain more from the trade by receiving more cloth for the same amount of steel exports.

4. **Size of Country:**

In a small country with limited domestic market size and specific productive resources, the benefits of specialization and exchange within the Country itself are quite limited. Nevertheless, when a nation participates in global trade, it can realize substantial benefits by concentrating entirely on producing goods in which it holds a comparative advantage relative to other nations. The wider the disparity between the international price and domestic price of the goods it exports, the larger the portion of trade gains accrues to this smaller nation.

On the other hand, a large Country has a sizable domestic market and diverse productive resources. If trade begins, the large Country will only partially specialize in certain goods since it can meet a significant portion of its domestic demand from its production. Due to the large domestic market, the Country can consume a considerable amount of the goods it produces for export, and only a smaller portion needs to be sold in international markets. Therefore, while the large Country can gain substantially from specialization and exchange within its domestic borders, the gains from international trade will be relatively smaller compared to those of the small Country.

5. **Level of Income:**

The level of money income in a Country plays a significant role in determining the gains it can achieve from international trade. When the products of a Country are in high demand and this demand is stable over time, an increase in exports will lead to higher incomes from those exports. As a result, industries producing these goods will expand their output, leading to an increased demand for labour and subsequently higher money wages for workers. Other sectors will also boost salaries to retain their highly skilled and productive employees, leading to a general rise in incomes nationwide. When a country's domestic incomes are elevated, the importation of less expensive goods signifies a benefit from trade. Conversely, if a country faces diminished incomes due to low exports or

substantial imports at steep prices, overall welfare levels will decrease, and the advantages of trade will be diminished

6. **Productive Efficiency:**

When a country improves its productivity, costs and prices decrease, making its goods more affordable for foreign countries to import, thus shifting the terms of trade in favor of those foreign nations. This results in a greater portion of trade gains accruing to the importing countries. Conversely, if a foreign country enhances its productivity, it allows the home country to import goods at reduced prices, thereby improving its terms of trade and enabling it to capture a larger share of the trade benefits.

7. **Endowments and Technological Conditions:**

A Country that is rich in capital and technologically advanced tends to engage in a substantial amount of foreign trade. The larger the volume of its foreign trade, the greater its share of gains from international trade is likely to be. In other words, the more extensive its trade activities, the more significant the benefits it can derive from global trade. On the contrary, a labor-abundant Country that is economically and technologically less developed will have a relatively smaller volume of foreign trade. As a result, the gain from trade for such a Country will also be limited in comparison. In simpler terms, a less advanced Country with abundant labour will have a smaller size of foreign trade and, consequently, a relatively smaller gain from participating in international trade.

8. **Nature of Products Exported:**

When a Country mainly exports primary products, it will experience unfavourable terms of trade, leading to smaller gains from trade. Conversely, if a Country's exports primarily consist of manufactured goods, it will enjoy a favourable terms of trade, resulting in a relatively larger share of the gains from international trade.

Measurement of Gains from Trade:

In the context of trade between two countries, similar to two traders within a Country exchanging goods to achieve a profit, economists have examined the benefits of such transactions from various perspectives. Classical theorists believed that the benefits of trade come from increased productivity and specialization.

Jacob Viner noted that classical economists assessed the benefits of trade based on specific measurements

(i)   Growth in the total income of a nation.

(ii)   Variations in comparative expenses

(iii)   Terms of trade.

Modern theorists viewed the benefits of trade as the advantages arising from trading and specialization.

Here, the different perspectives of understanding the benefits from trade and their techniques for evaluation are examined.

(i) **Adam Smith's Approach:**

According to Adam Smith, international trade results in gains through two main aspects: First, it increases the value of products and enhances the productive capacity of each participating Country. This occurs because countries export commodities that have low demand in their home markets and import those with high demand. As a result, each Country can maximize its welfare and boost its export earnings.

Secondly, when countries specialize in producing goods where they have a cost advantage, it leads to an efficient allocation of productive resources. Specialization also fosters increased division of labour, reducing overall cost structures and expanding the market size for each Country involved in the trade. Consequently, international trade maximizes global production and welfare, benefiting all participating nations.

(ii) **Ricardo-Malthus Approach:**

Ricardo's perspective on gains from trade was based on objective factors. He believed that specialization in production and trade, guided by the principle of comparative costs, leads to resource and cost savings. By acquiring needed commodities at lower prices from other countries, each nation can enhance both the overall "sum of enjoyments" and the quantity of available goods.

David Ricardo stated that the advantage for both trading partners lies not in an increase in the value of goods but in their ability to consume and enjoy a larger quantity of commodities with the same value. Similarly, Malthus shared views similar to Adam Smith, stating that gains from trade

involve exchanging what is in lesser demand for what is in higher demand, leading to an increase in value.

Ronald Findlay illustrated the Ricardo-Malthus approach to gains from trade using the diagram below;

Figure 3.12: Ricardo-Malthus approach
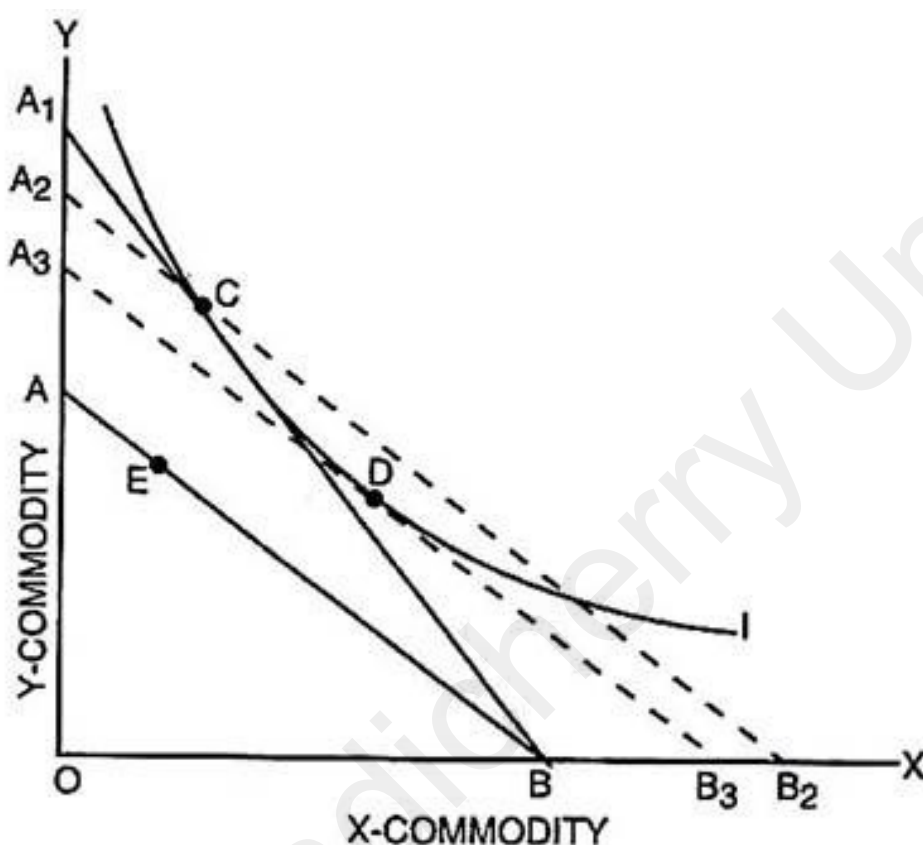
In Figure 3.12, the production possibility curve (PPC) is AB before trade under constant cost conditions. Production occurs at point E. Production of commodities X and Y now occurs at point C, and the international exchange ratio line swings to A1B, when the country engages in trade. The PPC must be moved to A2B2 in order to attain production at point C, which requires a substantial increase in manpower input. One way to estimate the advantage from trading is by dividing BB2 by OB. Nevertheless, Malthus deemed this estimation to be exaggerated. According to his argument, point C cannot be the equilibrium position if the PPC shifts to A2B2, since the relative prices along A2B2 are more favourable to the export good X than along the line A1B. Therefore, the community would prefer a point to the right of C. As a consequence, the increase in labour input in the ratio BB2/OB cannot be used to precisely

measure the gain from commerce along the line A1B; rather, it overstates the actual gain..

Ronald Findlay attempted to address this issue by introducing the community indifference curve in his analysis. In the community indifference curve model, the equilibrium shifts from point C, as seen in the Ricardian trade equilibrium, to point D, where the PPC A3B3 intersects the community indifference curve I. At point D, every individual within the community experiences a higher level of satisfaction compared to point C. The measure of gain from trade, represented by" BB3/OB", better reflects the Malthusian criticism, suggesting that the previously used Ricardian measure (BB2/OB) overestimated the benefits of trade.

(iii) J.S. Mill's Approach:

The Ricardian model fell short in elucidating the distribution of trade gains among participating nations. J.S. Mill sought to rectify this by delving into both the benefits of trade and their allocation among trading partners. He introduced the notion of reciprocal demand, which shapes the terms of trade. These terms, reflecting the ratio of imported to exported goods by a country, dictate how trade gains are divvied up between trading counterparts.

As an illustration, let's look at the following: With a local exchange ratio of 1 unit of X = 1 unit of Y, Country A's production of Commodity X and Commodity Y can be achieved with 2 units of labour. In Country B, the domestic exchange ratio is 1 unit of X = 1.5 units of Y. This is because 2 units of labour may generate 12 units of X and 18 units of Y. The real exchange rate or trade terms will be decided within these bounds defined by these domestic exchange ratios.

Each trading country's demand for the other's products, or the elasticity of demand, will affect the real exchange rate of the two commodities. The terms of trade will be closer to Country A's internal exchange ratio (1 unit of X = 1 unit of Y) if the demand for Commodity Y is less elastic. If this happens, Country A will have unfavourable trade conditions whereas Country B will enjoy them. If commodity Y's demand is less elastic, then country B will benefit more from trade in terms of the amount of gain. This means that the trade conditions will be more in line with Country B's internal exchange ratio, where X is equivalent to 1.5 Y units per unit. So, compared to Country A, Country B will reap more benefits from trade.

In contrast, the terms of trade will be more in line with Country B's domestic exchange ratio of 1 unit of X = 1.5 units of Y if the country's demand for Commodity X is less elastic. Under such circumstances, Country A will benefit from the terms of trade while Country B will suffer. As a result, Country A will share more of the benefits of trade than Country B.

The Marshall-Edgeworth offer curve (Fig. 3.13) explains the distribution of trade benefits.

Figure 3.13: Offer Curve
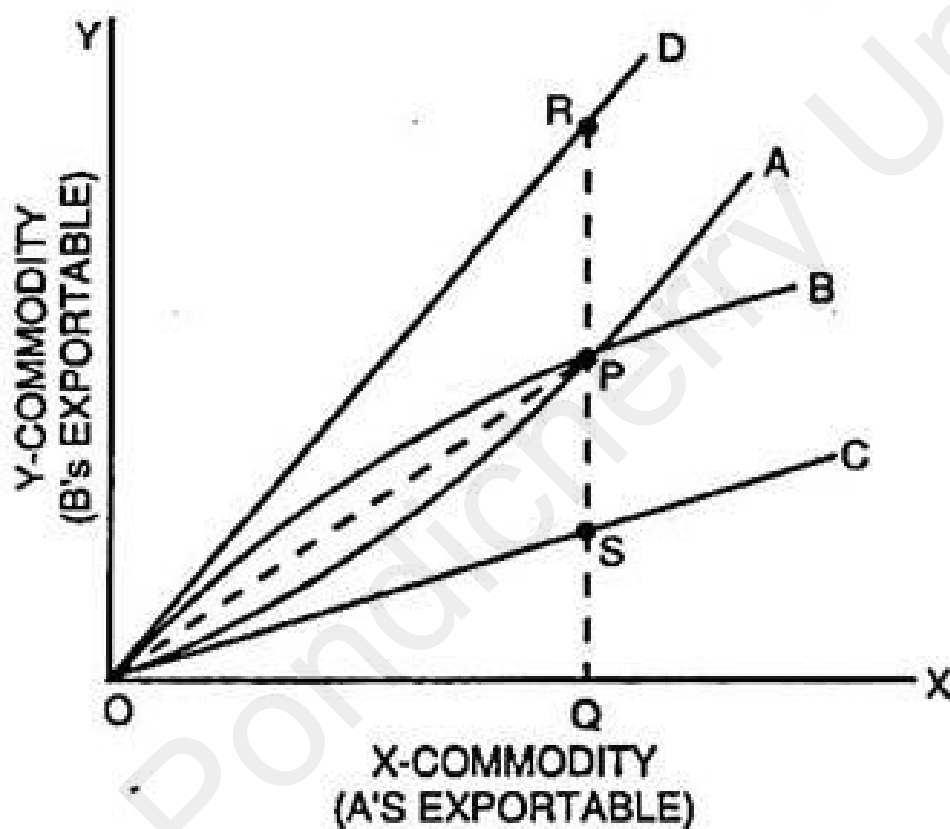
The domestic exchange ratio lines of nations A and B are represented by OC and OD, respectively, in Figure 3.13. The offer curves for Country A are represented by OA and Country B by OB, respectively. At point P, where the two offer curves converge, trade takes place. The PQ quantity of Y is now imported by Country A, whereas the OQ quantity of X is exported.

The slope of line OP determines the terms of trade for Country A at point P, which are (QM/QX) = (PQ/OQ). As line OP approaches OD, Country A benefits from improved trade terms while Country B suffers.

As a counterexample, the terms of trade shift in favour of Country B when line OP approaches OC, which represents Country A's domestic exchange ratio.

In the pre-trade negotiations, Country A had offered to swap SQ Y units for OQ X units. It gets PQ Y units after the deal for OQ X units. To calculate Country A's share of the overall trade benefit (RS), we subtract SQ from PQ, which equals PS units of Y. However, at first, Country B swapped RQ units of Y for OQ units of X. Following the transaction, it will only have to sell PQ Y units in order to buy OQ X units. So, RQ minus PQ equals RP units of Y, which is Country B's benefit via trade. As the point of exchange (P) approaches the line of distribution (OD), the benefit from trade will accrue to Country A at a higher rate than to Country B, and vice versa.

(iv) **Taussig's Approach:**

The benefits of international trade, according to Taussig, can show up as higher national income. Companies raise wages to get more workers to work in the export business when trade boosts its growth. So, in order to prevent inefficiency in their operations, other industries raise their money wages. A widespread increase in earnings across the economy is the end outcome.

With higher income levels due to trade, people in the Country can afford to make larger purchases of both domestically produced and imported goods, ultimately leading to an enhanced level of welfare and well-being for the population.

(v) **Modern Approach:**

The contemporary perspective emphasizes that international trade yields two distinct benefits: gains achieved through exchanging goods and gains attained through specialization. These combined advantages collectively enhance the overall benefits associated with participating in international trade. As trade begins, consumers experience increased satisfaction, which is partly attributed to improvements in terms of trade and partly due to enhanced specialization in the efficient utilization of the Country's economic resources.

When looking at Figure 3.14, the X-Commodity is depicted on the horizontal scale, while the Y-Commodity is shown on the vertical scale. In this diagram, the production possibility curve is represented by the symbol AA1, and the domestic price ratio line is represented by the symbol P0P0.

This line is tangent to the production possibility curve at point E, which represents the equilibrium between production and consumption when there is no trade..

Figure 3.14: Gains from Trade
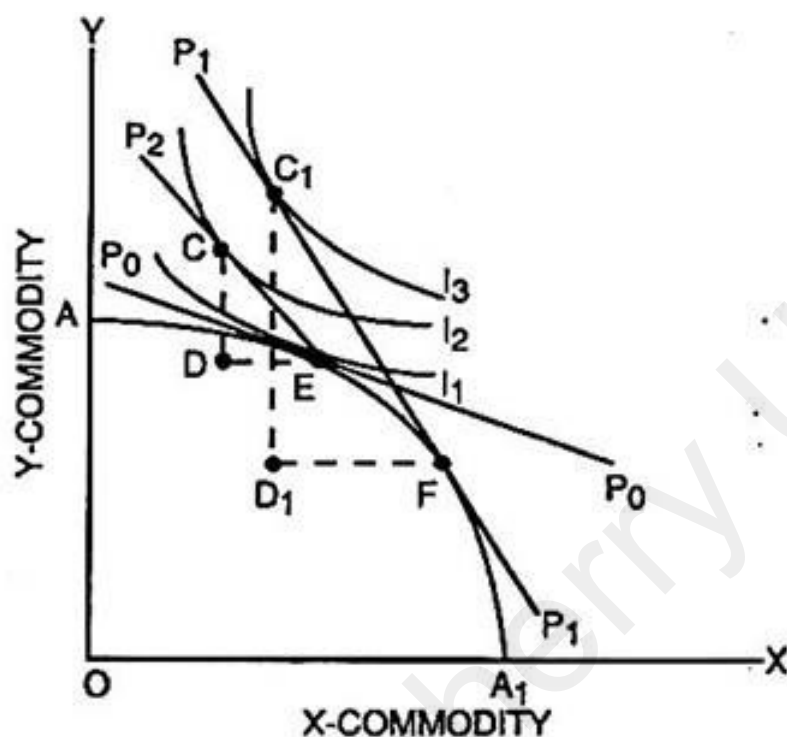
Upon the commencement of international trade, a new exchange ratio line, denoted as P1P1, emerges. This line is tangent to both the production possibility curve at point F and the community indifference curve I3 at point C1. Consequently, point F now represents the new production equilibrium, while point C1 signifies the new consumption equilibrium post-trade. The trade operation entails exporting D1F units of X-Commodity and importing C1D1 units of Y-Commodity.

Trade induces two changes in the Country's condition: firstly, the production point shifts from E to F as a result of specialization in X-Commodity production and the efficient utilization of resources (production effect). Secondly, the consumption point shifts from E, located on indifference curve I1, to C1, situated on the higher indifference curve I3, indicating an enhancement in satisfaction (consumption effect). These combined shifts denote the benefits derived from international trade

At the onset of international trade, the exchange ratio line P1P1 is introduced, intersecting the production possibility curve at point F and

the community indifference curve I3 at point C1. Consequently, point F transitions into the new production equilibrium, while point C1 becomes the new consumption equilibrium post-trade. The trading process involves exporting a quantity of X-Commodity equal to D1F and importing a quantity of Y-Commodity equal to C1D1.

Following trade, as specialization in production and efficient utilization of resources take place, the production equilibrium moves from point E to point F along the same production possibility curve. Simultaneously, the consumption equilibrium shifts from point C to point C1. This alteration in consumption equilibrium from C to C1 signifies the trade benefit derived from specialization, wherein C1D1 units of good Y are imported, while D1F units of good X are exported

### Gains from Trade for Large and Small Country:

According to H.R. Heller, when certain conditions are met, such as constant opportunity cost and unchanged terms of trade, trade between a large Country and a small Country can lead to an interesting outcome. Specifically, in this scenario, the large Country does not experience any gain from participating in trade, while the entire benefit of trade goes exclusively to the small Country. This situation can be better understood by referring to Figure 3.15.

Assuming opportunity costs remain constant, Figure 3.15 shows the trade outcomes for two countries, A and B. When trade is not in existence, Country A's production potential curve (AA1) meets the community indifference curve (I) at point R, and consuming and production take place at point U. As soon as commerce starts, Country A keeps its trade terms the same and decides to incorporate imports from Country B into its production pattern. At point P, Country A might start importing SR quantities of Commodity Y and exporting PS quantities of Commodity X. But Country A gets nothing out of this deal, even though they trade with each other..

However, under constant cost conditions, the production possibility curve (or domestic price ratio line) for small Country B is shown as BB1. The point R1 represents the production and consumption equilibrium in the absence of trade, as shown by its tangency with the community indifference curve I1. Not long after trade begins, Country B decides to focus only on producing Commodity Y. As long as line BB2 stays parallel

to AA1, its trading circumstances will be determined by the international price ratio. Point B is when Country B produces, and R1 is when their consumption is at equilibrium.

Figure 3.15: Gains from Trade for Large and Small Country
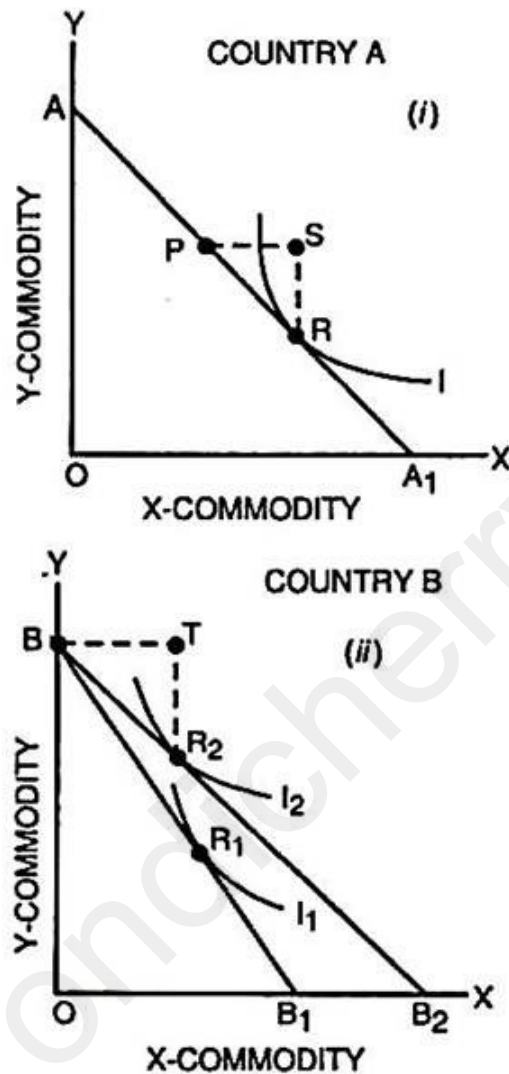
Country B now export SR quantity of Commodity Y to Country A through trade, while Country A receives BT quantity of Commodity X. Gains from specialisation and interchange through international trade are demonstrated by Country B's transition from R1 to R2. The trade terms improve for Country B when it may import Commodity X at a reduced international price. This demonstrates that big Country A gets nothing out of the trade deal, while little Country B reaps all the benefits.

Potential and Actual Gain from Trade:

The actual gain from trade (Ga) is determined by the difference in price ratio of two commodities called X and Y in two countries. Thus

$$G_a = \left(\frac{P_X}{P_Y}\right)_A - \left(\frac{P_X}{P_Y}\right)_B$$

Under the conditions of perfect competition and free trade, the cost ratio equals the price ratio of two commodities in each Country such that (CX/CY) = (PX/PY). Consequently, the accrual gain becomes equal to the potential gain

Gp = Ga

where Gp – Potential gain Cx Cost per unit of X Commodity, Cy – Cost per unit Y Commodity. The subscripts 'A' and a signify the two countries.

In the absence of tariffs and other trade restrictions, the 'actual gains from trade' align with the 'potential gains'. This means that both trading countries can fully benefit from trade, and the price ratio "(PX/PY)" matches the cost ratio "(CX/CY)".

When there's imperfect competition and trade barriers like tariffs, differences emerge between the cost and price ratios for trading countries. In such cases, the price ratio "(PX/PY)" surpasses the cost ratio "(CX/CY)", resulting in the actual gain from trade (Ga) surpassing the 'potential gain' (GP) In other words, the real benefits derived from trade go beyond what could have been achieved under ideal conditions with no trade restrictions.

Customs Union

A customs union give special status to its member countries by allowing *no tariffs and other barriers to trade.* In addition to that it complements favourable trade policies such as setting common tariff rates to the rest of the world.
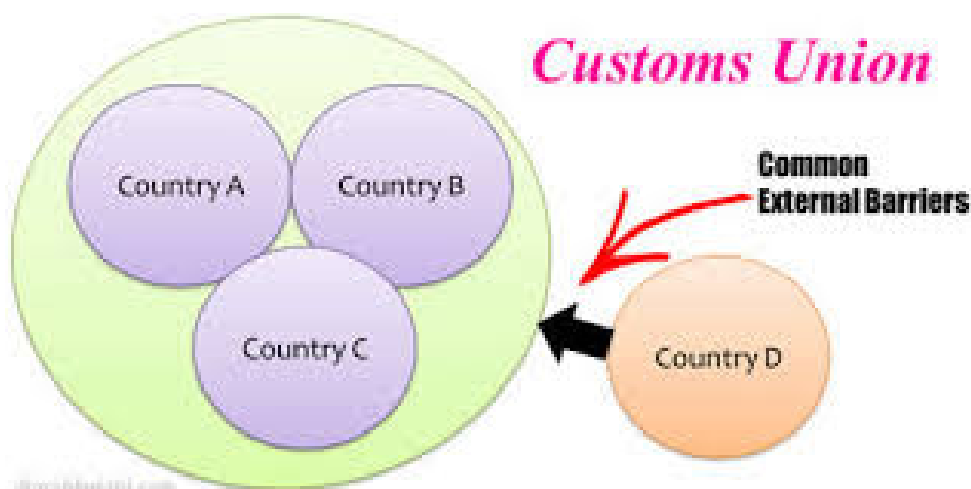
Customs Union are of two types, namely, Trade Creating Customs Union and Trade Diverting Customs Union.

Trade Creating Customs Union

In a trade-creating customs union, all countries benefit from increased trade, not just the members but also those that aren't part of the union.

Trade creation happens when domestic production within a member country is substituted by imports from another member country at a lower cost.

By way of illustration, a customs union will lead to more specialisation from comparative advantaged production, which will result in an increase in the welfare of member states. This is the case in a nation where all of the resources are fully utilised both before and after the formation of a customs union.

The trade-creating customs union will also increase the welfare of nonmember countries because the increase in real income will impact an increase in imports from the rest of the world.

The impacts of a trade-creating customs union on Commodity X among three nations (Country 1, Country 2, and Country 3) are depicted in the diagram 3.16 that can be found above. In the beginning, Nation 2 imposes a non-discriminatory ad valorem tax of one hundred percent on all imports of Commodity X. As a consequence of this, the cost of Commodity X that is imported from Nation 1 is reduced to $2 in Nation

Figure 3.16: Trade Creating Customs Union
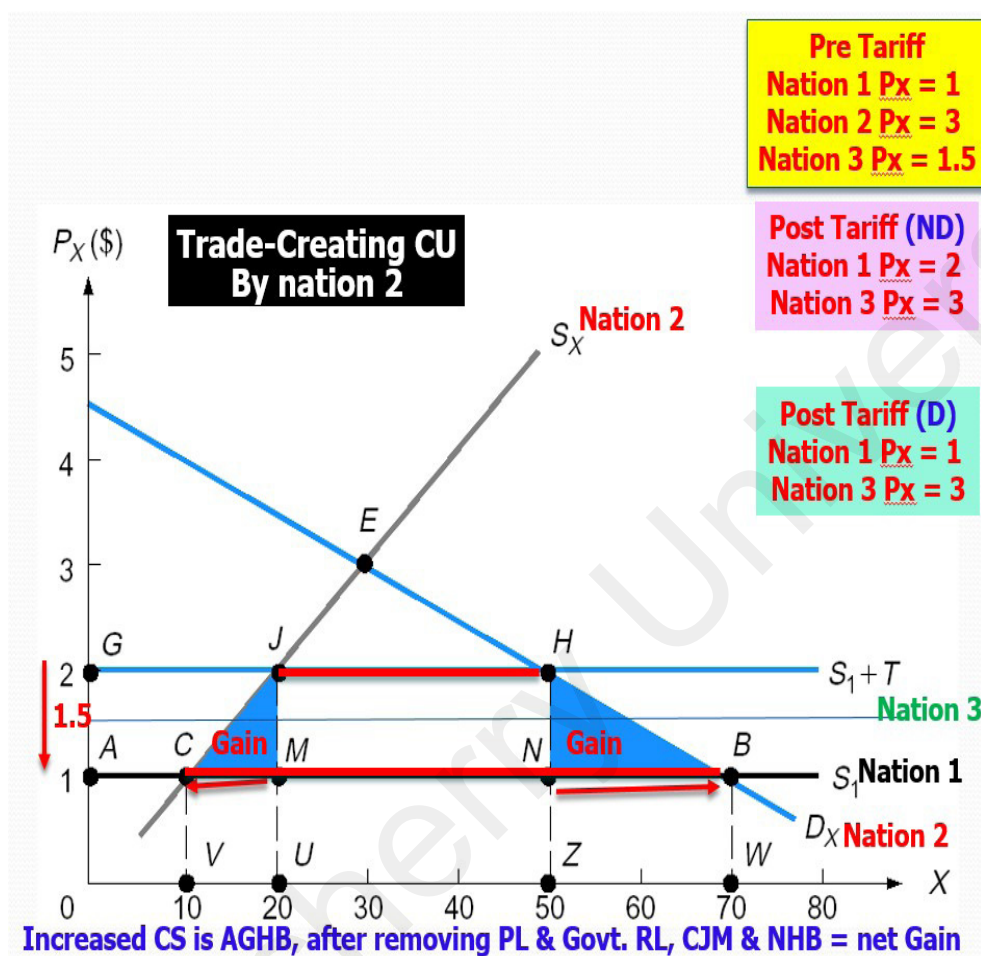
2. At this price, Nation 2 uses 50X units, of which 20X units are produced domestically (GJ) and 30X units are imported from Nation 1 (JH). Each of these 30X units is imported from Nation 1. According to MJHN, the tariff results in a revenue of thirty dollars. For the reason that the tariff-inclusive price of Commodity X from Nation 3 would be $3, Nation 2 does not import it from Nation 3, despite the fact that the free trade price in Nation 1 is $1 and in Nation 3 it is $1.50. Under the conditions of free trade, the graph illustrates the supply curve (S1) of Commodity X to Nation 2 that is fully elastic. The supply curve that includes tariffs is shown by S1 plus T along the graph.

After forming a customs union with Nation 1, Nation 2 eliminates tariffs on its imports from Nation 1, resulting in a lower price of $1 for Commodity X within Nation 2. As a consequence, Nation 2's consumption of Commodity X increases to 70X units, with 10X units being domestically produced (AC) and 60X units being imported from Nation 1 (CB). Unlike the previous scenario, there are no tariff revenues collected in this case.

The area "AGHB", which corresponds to the increase in consumer surplus (specified in Section 8.2b), is a representation of the advantage given to consumers in Nation 2 as a result of the customs union. On the other hand, it is vital to keep in mind that not all of these benefits will result in a net gain for Nation 2 as a whole by any means. Specifically, the area "AGJC" reflects a decrease in rent or producer surplus, whereas the area "MJHN"represents a loss of tariff income. Both of these areas are represented by lower prices.

The total of the shaded triangles "CJM" and "BHN", which amounts to $15, calculates the net static welfare gain for Nation 2, which takes into account both the gains to consumers and the losses in producer surplus and tariff revenues. This gain takes into account both of these factors. As a result of the establishment of the customs union, Nation 2 has experienced an overall improvement in its standard of living, which is represented by this fifteen dollars. The production component and the consumption component are the two components that are the consequence of the welfare gain that is brought about by the formation of commerce inside the customs union

It is represented by the triangle "CJM", which stands for the production component. It is the result of moving the manufacture of 10X units (CM) from local producers in Nation 2 who are less efficient and incur a cost of "VUJC" to producers in Nation 1 who are more efficient and incur a cost of "VUMC". As a result of this change, there is an increase in overall welfare because production is made more efficient

This triangle, "BHN", represents the consumption component of the equation. This circumstance emerges as a result of the rise in the consumption of 20X units (NB) in Nation 2, which results in the provision of "ZWBH". On the other hand, the real expenditure that is necessary for this increased consumption is just "ZWBN", which results in a positive net welfare gain.

In summary, the "welfare gain" from trade creation in the customs union is comprised of the production component (triangle CJM) resulting from efficient production shifts, and the consumption component (triangle BHN) arising from increased consumption with a smaller expenditure than the benefits received.

Trade Diverting Customs Union

A customs union can result in both trade expansion and trade diversion, potentially affecting the welfare of member countries positively or negatively, depending on whether the benefits of increased trade outweigh the drawbacks of diverted trade "denoted as G or L".

Trade diversion happens when cheaper imports from non-member countries are substituted with more expensive imports from within the union due to the preferential trade benefits provided to member nations.

Trade diversion diminishes overall welfare by relocating production from more efficient producers located outside the customs union to less efficient producers within the union. As a result, trade diversion worsens the global distribution of resources and steers production away from areas of comparative advantage.

Figure 3.17: Trade Diverting Customs Union
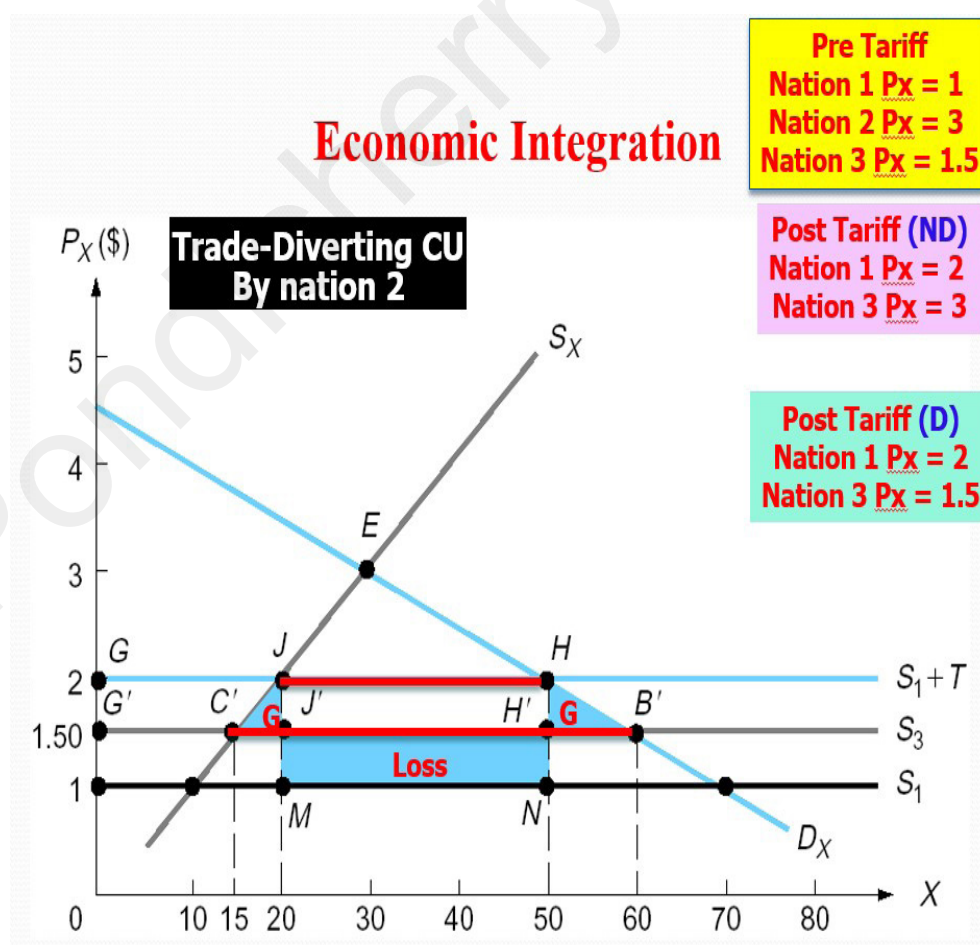
The diagram 3.17 depicts how a customs union that diverts trade affects Nation 2. It shows Nation 2's "domestic demand (DX)" and "supply

(SX)" curves for goods X, along with the perfectly elastic supply curves of country 1 (S1) and country 3 (S3) under free trade conditions

When a uniform 100 percent tariff is applied to imports of Commodity X without discrimination, country 2 begins to import "Commodity X" from country 1 at a price of "PX = $2", following the supply curve S1 + T, as illustrated in the figure. At this price point, Nation 2's consumption of Commodity X is 50X (represented by segment GH), with 20X (shown by segment GJ) being domestically produced and 30X (displayed as segment JH) imported from Nation 1. As a result of this tariff, Nation 2 collects $30 in tariff revenues (indicated as JMNH).

The price of Commodity X from Nation 3 drops to PX= $1.50 when Nation 2 and Nation 3 create a customs union and remove duties on imports from Nation 3. Consequently, at this new price level, Nation 2's consumption of Commodity X increases to 60X (illustrated as segment GB), with 15X (depicted as segment GC) being domestically produced, and 45X (shown as segment CB) imported from Nation 3. As a result of forming this customs union, Nation 2 no longer collects any tariff revenue.

Commodity X imports are redirected from the more efficient producers in Nation 1 (which is outside the customs union) to the less efficient producers in Nation 3 as a result of the removal of tariffs. Both of these nations are outside the customs union. This occurs as a result of the tariff, which discriminates against imports from Nation 1 and favors imports from Nation 3 within the union. Notably, before to the formation of the customs union, the imports of Commodity X into Nation 2 were at a rate of 30X, but after the union was established, the imports climbed to 45X. Therefore, the trade-diverting customs union not only results in the formation of new trade, but it also leads to the redirection of trade flows to producers inside the union that are less efficient.

The impact of the customs union with Nation 3 can be measured by analyzing the shaded regions depicted in Figure 3.17. The total area covered by the shaded triangles CJJ and BHH, totaling $3.75, illustrates the welfare improvement attributed to pure trade creation. This improvement stems from the ability to access more affordable imports from Nation 3.

On the other hand, there is a loss of welfare that occurs when the initial 30X (JH) of imports are transferred from the more cost-effective Nation 1 to the more expensive Nation 3. This loss is represented by the area of the shaded rectangle MNHJ, which is equivalent to $15.

No net gain or loss occurs for the nation as a whole since the component represented by "GGJC" is just a shift from producer to consumer surplus inside Nation 2, within the increase in consumer surplus of "GGHB" that results from the customs union creation.

Moreover, the tariff income of "JMNH", which was thirty dollars, was collected by Nation 2 before the formation of the customs union with Country 3. Immediately upon the establishment of the customs union, the share of this money that is attributed to "JJHH" is distributed to consumers in country 2 in the form of a reduction in the price of Commodity X. It can be deduced from this that the only triangles that contribute to the net gain for Nation 2 are the shaded triangles "CJJ" and "BHH". On the other hand, the shaded rectangle "MNHJ" is responsible for the remaining loss of tariff income that has not been accounted for.

Due to the fact that the combined areas of the shaded triangles depicting the benefits of pure trade creation ($3.75) and the shaded rectangle representing the losses from trade diversion ($15) are greater than each other, the net welfare loss for Nation 2 as a result of the trade-diverting customs union as described is $11.25. It should be mentioned that this result may not necessarily hold true in all cases.

The effects of a trade-diverting customs union are influenced by factors illustrated in the figure above. Specifically, if Nation 2's domestic demand and supply curves (DX and SX) are more elastic in the relevant range, and if Nation 3's supply curve S3 closely aligns with Nation 1's S1, then the total area of the shaded triangles representing welfare gains increases, while the area of the shaded rectangle representing welfare loss from trade diversion decreases.

Under certain circumstances, a customs union that diverts trade can actually benefit the nation joining it by providing access to cheaper imports from within the union. In these situations, the advantages of accessing lower-priced goods may outweigh the downsides of trade diversion, leading to an overall improvement in welfare for the participating nation. Therefore, factors such as the shapes of demand and supply curves, as well as the proximity of supply sources within the customs union, are key determinants of the overall welfare impact of this economic arrangement

Self-assessment Questions

1. Discuss the effect of factor growth on international trade.

2. Examine the impact of various types of growth on the Volume of Trade, Gains form Trade and Terms of Trade.

3. Differentiate trade creating and trade diverting economic integration. According to you, which type of integration is more ambiguous. Why?

4. How does the customs union differ from free trade areas? Among the two types of integration, which one has less national sovereignty? Why?

5. Critically assess the distribution of gains from trade to the member countries in the free trade area.

6. Exlain how trade creating and trade diverting economic integration is taking place in the real world using appropriate examples.

7. Explain how trade creating customs union increases the welfare of the nations forming it as well as the welfare of the rest of the world. Also, explain why WTO is insisting on free trade when customs union increases welfare.

8. Illustrate the effect of technical progress on trade and national welfare.

9. Do you think that the import substitutional policies and export promoting policies will always increase national welfare?

10. Discuss the merits and demerits of custom unions. Also discuss its challenges to international trade agreements in the contemporary world.

11. Do you agree with the view that the growth of nations abundant factor causes decrease in the volume of trade, terms of trade and national welfare?

12. Illustrate the effect of population growth in international trade of a labour abundant Country.

13. What will happen to volume of trade and terms of trade in a labour abundant Country, if capital growth takes place.

14. Illustrate the effect of capital growth in international trade of a capital abundant Country.

15. Diagrammatically discuss the theory of Immeserizing growth.

UNIT – IV

Lesson 4.1 - Terms of Trade, Tariff and Protection

Reading Objectives:

At the end of this unit, readers will be able to understand various concepts of terms of trade and their importance in international trade. Also, they will be able to understand various theories of terms of trade and their relevance in the context of a developing and developed economy. This unit mainly focuses on trade policies which are broadly classified into two categories namely tariff barriers and non-tariff barriers. Usually, a small nation imposes tariff and non-tariff barriers to protect their producers from external competition. But this unit invalidates all kinds of trade barriers even for a small nation and justifies that the small nations gain more from free trade than the large nations. Finally, the readers will be able to differentiate the impact of tariffs with quotas and other non-tariff barriers.

Lesson Outline:

- ➤ Introduction
- ➤ Various concepts of Terms of Trade
- ➤ Theories of Terms of Trade and its relevance to less developed countries
- ➤ Tariffication
- ➤ Effect of Tariff on Terms of Trade and Income Distribution
- ➤ Non-Tariff Barriers
- ➤ Quota Vs Tariffication
- ➤ Effective Rate of Protection
- ➤ Self-assessment Questions

Introduction:

The concepts of terms of trade, tariffs, and protection play a significant role in international trade and economic policies, particularly for less developed countries. The terms of trade are the rate at which a Nation can trade its goods sold abroad for goods bought from overseas.

Understanding the implications and limitations of terms of trade is crucial for policymakers, as it affects nations' economic well-being and development prospects.

This introduction will provide an overview of the terms of trade, its uses, limitations, and empirical relevance. Furthermore, we will delve into the theories surrounding terms of trade, including the perspectives of the British School, Rawl, and Singer, and Prebisch. Additionally, we will explore the theory of intervention and its policy implications. Finally, We will explore how tariffs affect the income of a country, the exchange rate of its goods, and the distribution of its wealth, as well as the impact of quotas and the concept of an effective rate of protection.

Examining these interrelated topics aims to illuminate the complexities and dynamics of international trade and protectionist measures. The analysis will provide insights into the challenges and opportunities faced by less developed countries and the potential policy interventions that can be employed to address them. Ultimately, understanding the nuances of terms of trade, tariffs, and protection is crucial for formulating effective trade policies that promote sustainable economic growth, poverty reduction, and improved living standards.

Various concepts of Terms of Trade

1. **The Commodity Terms of Trade (CTOT):**

   It represents the percentage value obtained by multiplying 100 with the ratio of a nation's export price index (denoted as Pe) to its import price index (denoted as Pi).

   It can be referred to: $CTOT = (Pe/Pi)100$

2. **Income Terms of Trade (ITOT):**

   It can be referred to: $ITOT = (Pe/Pi) Qe$ (Qe denotes quantity of Exports)

3. **Single Factoral Terms of Trade (SFTOT):**

   It can be referred to: $SFTOT = (Pe/Pi) Ze$ (Ze denotes productivity index of exports)

4. **Double Factoral Terms of Trade (DFTOT)**

   It can be referred to: $DFTOT = (Pe/Pi) (Ze/Zi) 100$ (Zi denotes productivity index of imports)

1. The Commodity Terms of Trade (CTOT):

It represents the percentage value obtained by multiplying 100 with the ratio of a nation's export price index (Pe) to its import price index (Pi). That is:

$$CTOT = (Pe/Pi) \ 100$$

For Example, if the Prices of exports Fell by 5% from 1980 to 2020, Similarly the prices of imports rose by 10% during the same period. Then the Commodity TOT will decrease by 14%

CTOT= (95/110)100 = 86.36 *(Leads to a fall in Forex reserves, and this situation is not good for an economy)*

2. Income Terms of Trade (ITOT):

It corresponds to the Commodity terms of trade multiplied by the volume of exports. That is: <u>Income from International Trade</u>

It can be referred to: ITOT= (Pe/Pi) Qe *(index of volume of exports)*

Suppose the Qe index rose from 100 in 1980 to 120 in 2020. Then the ITOT will Increase to 3.2 %

ITOT= (0.86)120 = 103.2 *(In this case, the Capacity to import of a nation will be increased by 3.2%)* ITOT is very important for a nation to go for devaluation measures and also for developing nations to understand the effect of the elasticity of exchange rate depreciation.

3. Single Factoral Terms of Trade (SFTOT):

A Single Factoral Terms of Trade implies that the ratio of the export price index and import price index is accustomed to variations in the productivity of factors used in the production of export goods only. That is:

SFTOT= (Pe/Pi) Ze *(Productivity index of exports)*

For example, If the productivity index increases from 100 in 1980 to 130 in 2020. Then the Single factoral terms of trade will increase to 12%. It means an increase in the productivity of the exportable sector which will reduce cost and promote competitiveness between the nations.

SFTOT= 0.86 x 130 = 112 *(14% decrease in TOT but overall 12% positive)*

This result is very good for all nations especially, developing countries.

4. Double Factoral Terms of Trade (DFTOT):

The double factorial terms of trade measure how the prices of a country's exports and imports change relative to the productivity of the factors used to produce them in both the home and foreign countries. DFTOT = (Pe/Pi) (Ze/Zi) 100 *(Ze/Zi denotes the Productivity index of exports and productivity index of Imports)*

Suppose the productivity index of exports rose from 100 in 1980 to 130 in 2020 and the productivity index of imports rose from 100 in 1980 to 105 in 2020. Then the double factoral terms of trade will Increase by 6 %. In this case, there is a *Net benefit of 6% increase in Productivity.*

DFTOT= 0.86 x 1.24 x 100 = 106 *(Net benefit of 6% increase in productivity of tradeable commodities with other nations)*

The crucial indicators for assessing a country's foreign trade performance are CTOT, ITOT, and SFTOT, while DFTOT holds limited relevance for developing nations and is seldom utilized in the realm of international trade. For these nations, the most significant terms of trade are ITOT and SFTOT. Due to its straightforward measurement, much of the economic discourse predominantly focuses on CTOT, often being termed as "the terms of trade."

In our illustrations, it is possible for both ITOT and SFTOT to increase even if CTOT decreases. This is seen as advantageous for developing countries. The most favorable scenario occurs when CTOT, ITOT, and SFTOT all experience growth. Conversely, the least desirable outcome for a developing nation is when its terms of trade worsen.**. This may lead to immiserizing growth.**

Theories of Terms of Trade and its Relevance to Less Developed Countries

Prebisch and his contemporaries argue that the terms of trade for developing nations typically worsen over time. This is because advancements in productivity predominantly benefit workers in developed countries through increased wages and income, whereas in developing nations, such improvements primarily result in decreased prices.

Therefore, developed nations enjoy a double advantage. They keep the rewards of their own efficiency gains as higher wages and income for their workers. And they also benefit from the efficiency gains happening

in developing nations by paying lower prices for agricultural imports. Another factor that leads to the worsening of developing nations' trade conditions is that their appetite for the industrial goods of developed nations grows much quicker than the latter's appetite for the farm goods of developing countries.

The disparity in the income elasticity of demand between manufactured goods and agricultural commodities is a key factor leading to the decline in the terms of trade for developing nations. This situation can potentially render these countries worse off with trade than without it. The phenomenon arises from the combination of price inelastic demand in developed countries and income elastic demand in developing nations, contributing to the deterioration of the terms of trade for the latter.

Problems of Developing Nations

1. Many nations are plagued by widespread conditions of extreme poverty.

2. Most developing countries are burdened by significant international debt.

3. Developed nations are using protectionism against exports from developing countries.

Demands of developing nations

In the contemporary world, a new global economic structure centered on creating international commodity agreements, enhancing their exports to enter into developed countries' markets, and boosting the influx of foreign aid.

The supply of the primary exports of developing countries exhibit price inelasticity due to internal constraints and inflexibilities in resource allocation, particularly notable in tree crops with extended gestation periods. The instability or fluctuation in supplies is attributed to weather variations, pest infestations, and other factors..

Measures to Control Instability

➤ Buffer stocks

➤ Export controls

➤ Purchase contracts

Buffer Stock

This refers to buying a commodity when its price drops below a set minimum and selling it from inventory when the price rises above a predetermined maximum due to a shortage in supply.

Disadvantages

(1) high cost;

(2) If the minimum is established above the point of equilibrium, the stock will increase in size as time progresses

Export Control

➤ "It aims to control the amount of a product exported by individual countries to stabilize the prices of that product."

➤ Advantage: Lowering the expenses associated with inventory maintenance.

➤ Disadvantage: This results in inefficiencies and necessitates the involvement of all significant exporters of the commodity

Purchase contracts

➤ These are extended international agreements that establish a set minimum price for which importing countries commit to buying a certain quantity of a commodity, while also setting a maximum price at which exporting nations agree to sell specified amounts of the same commodity.

➤ It circumvents the drawbacks associated with buffer stock and export controls, yet leads to the establishment of a dual pricing system for the commodity.

Theories of Terms of Trade: Overview of British School and Prebisch-Singer Thesis

Two schools of thought become popular in the context of terms of trade. One is the British School of Thought and the other is Raul Prebisch-Singer Hypothesis.

The British school of thought mainly focuses on the decreasing returns in Agriculture. Whereas the Prebish-Singer hypothesis focuses on

the relative price of Agricultural commodities in terms of manufacturing commodities which has a negative relation.

Based on the British School of Thought, the prominent classical economist David Ricardo developed the income distribution theory. According to him, the income distribution would move in favour of the rich landlords because of the decreasing returns scale in agriculture. Ricardo has observed that the population would increase over a period of time and the capitalists squeeze the wage rate at minimum subsistence level. Due to this, the capitalists always enjoy leisure at the expense of the efforts of a working community.

British School of Thought states that the population grows faster and the demand for food grains rises causes increasing the rent share as a percentage of GDP. Due to this, the rent cannot fall below the subsistence level resulting in a profit decrease.

Robert Torrens (1821) stated that the decreasing returns to scale in agriculture had negative consequences on the terms of trade in England. He also predicted that the terms of trade would deteriorate against the industrialised nations, including England.

The British school of thought argued that the price of industrialised goods in terms of food products and other intermediate goods would steadily decrease. The exports of industrialised countries would also suffer from such kind of development until the volume of trade decreases to the extent that every Country will reach self-sufficiency in trade.

Even though this concept is simple and straightforward, but it fails to focus on the impact of technology on agricultural production. Because, technological upgradation or innovation will increase production and productivity and will reduce the operation of the law of diminishing returns in agriculture.

Terms of Trade: Prebisch-Singer hypothesis

Raul Prebisch and Man Singer have developed a theory that states that the relative price of agricultural commodities in terms of manufacturing commodities has a negative relation. More precisely, The Prebisch-Singer theory explains that the prices of primary products tend to decrease relative to the prices of industrialised goods over a period of time. It means that the relative fall in the prices of agricultural goods has a negative consequence

for emerging and low-income countries because agricultural commodities are considered to be a major exporting Commodity of emerging and low-income countries. Usually, the non-industrialised countries import high-priced manufacturing commodities from the industrialised countries. To pay the import bill, they have to export more quantity of primary commodities. As a result, the prices of exportable primary Commodities is relatively cheaper than the imported manufacturing Commodities. To solve the problem of deterioration in terms of trade and to promote the trade account of non-industrialised countries, the Prebisch-Singer theory suggested to use of import substitutional policies and export promotive measures.

There are several reasons why the Prebisch-Singer hypothesis may be true. First, it is well understood that the people of developed countries or rich people spend a small portion of their income on food. It indicates that the higher the economic growth lesser the demand for food compared to the demand for manufacturing goods. Secondly, the industrialised countries find numerous substitutes in the production of manufacturing goods.

Tariffication

According to the theory of tariffication, Free Trade increases world GDP and world welfare irrespective of a small nation or a large nation. Still several nations, small as well as large nations impose tariffs and some kind of non-tariff barriers are always debatable among the economists.

A tariff is a type of tax that is applied to goods that are traded across national borders. When goods are imported, they are subject to an import tariff, and when they are exported, they are subject to an export tariff. Countries impose tariffs according to the price of the Commodity or units of Commodity or both can be possible. A tariff according to the price is called ad valorem tariff, which means a tariff based on the value of the Commodity, for example, a 10 percent tariff based on the value of the Commodity. If the price of Commodity X is Rs. 100, and the tariff rate is 10 per cent, i.e., Rs 10 is the advalorem duty. The second one is called a specific tariff because the duty is imposed based on the unit. For example, a Tariff rate of Rs. 10 will be imposed on every unit of Commodity X. In this case, the price of the commodity does not matter, the unit does matter. There is also a tariff called compound tariff where the tariff is imposed based on price as well as unit. As per the above example, the

compound tariff rate is Rs. 20, including an advalorem duty of Rs. 10 plus a specific duty of Rs. 10.Any nation-imposed tariff on an importable Commodity produces effects on four factors, namely the Consumption effect, Production effect, Trade effect and Revenue effect.

Imposing tariffs on imported commodities causes the price of imported Commodities to rise. As a result of increased price reduces the demand for imported Commodity leads to a decrease in consumption is called the Consumption effect of tariffication.

Since the price of imported commodities increases after tariffication, will induce the demand for domestically produced commodities. As a result, domestic production will increase. This is called the production effect of the increase of domestic production resulting from the tariff.

The demand for high-priced imported Commodities after tariffication reduced the quantity of imports and volume of trade between the nations is called the trade effect.

Two major reasons for imposing tariffication are to protect domestic producers from external competition and to raise the revenue of the government. The rate of increase in tariff will lead to an increase in customs duty and revenue to the government is called the revenue effect of tariffication. All the four effects of tariff can be illustrated with the help of partial equilibrium analysis, which are as follows;

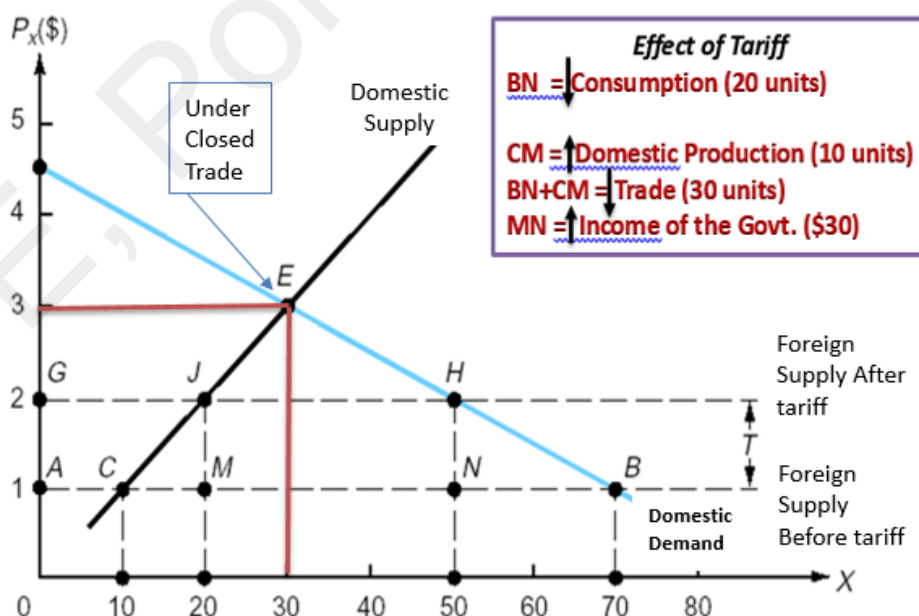**Figure 4.1: Partial Equilibrium Effects of a Tariff**

Figure 4.1 illustrates the partial equilibrium effects of a tariff on the economy. The demand curve for Commodity X and the supply curve for Commodity X are represented by (DX) and (SX) for a hypothetical economy. Here, we assume that the hypothetical nation and the Industry producing Commodity X are assumed to be small. Under autarky, the equilibrium point E is determined by the joining of the domestic demand and supply curves called DX and SX respectively. At this point, the hypothetical economy demanded and supplied 30 units of Commodity X at an equilibrium price of $3 per unit.

Under free trade, the international price of Commodity X is decreased to $1 per unit. The hypothetical economy will consume 70 units of Commodity X (distance between A and B). Out of this, 10 units of Commodity X (AC) are produced domestically and the remaining 60 units of Commodity X (CB) are imported from abroad, as shown in Figure 4.1. The dashed horizontal supply curve represents the infinitely elastic free trade foreign supply of Commodity X to the hypothetical economy, also referred to as Foreign Supply Before Tariff (FSBT), indicating that foreign suppliers are willing to supply any quantity at the international price of $1 per unit.

After the hypothetical nation imposes a 100 per cent ad valorem tariff on Commodity X, the price of Commodity X in the hypothetical economy increases to $2. Therefore, the domestic consumption of Commodity X reduces from 70 units of Commodity X to 50 units of Commodity X units (GH). Of which, 20 units of Commodity X (GJ) are domestically produced, and the remaining 30 units of Commodity X (JH) are imported from foreign Country.

The horizontal dashed line at Px $2 represents the new tariff-inclusive foreign supply curve of Commodity X in the hypothetical economy, also referred to as Foreign Supply after Tariff (FSAT). This curve takes into account the impact of the tariff on the price of imported goods.

Now we can point out the effects of the tariff with reference to Production, Consumption, Foreign trade, income and domestic protection.

Consumption Effect: The tariff leads to a reduction in domestic consumption, which equals 20X units (BN). This is the difference between the initial consumption level under free trade without tariff (70 Units) and the new consumption level with the tariff (50 units).

Production Effect: The tariff stimulates domestic production of Commodity X, resulting in an expansion of output by 10X units (CM). Domestic producers will increase their output to encounter the higher demand resulting from the tariff-induced price increase (movement from C to J on the supply curve).

Trade Effect: The imposition of the tariff reduces imports by 30 units of X Commodity. The area of BN and CM is the amount of decrease in imports. This is the collective effect of the deterioration in consumption of imported Commodity and the increase in domestic production due to tariff protection.

Revenue Effect: The government collects more tariff revenue, which amounts to $30 ($1 on each of the 30X units imported, or MJHN). The 30$ worth of tariff revenue is generated by the government on each unit of imported Commodity X.

The imposition of tariff leads to a $1 increase in Commodity X's price (PX) in the hypothetical economy and its impact usually depends on the elasticity and steepness of the demand curve and supply curve.

If the demand curve (DX) is more elastic and flatter, the tariff will have a greater effect on reducing domestic consumption. In other words, consumers are more responsive to price changes, resulting in a larger decrease in the quantity demanded of the imported Commodity X.

On the other hand, if the supply curve (SX) is more elastic, the tariff will have a greater effect on stimulating domestic production. Domestic producers are more willing and able to increase their output in response to the higher price of Commodity X.

When both the demand curve (DX) and supply curve (SX) are more elastic in Nation 2, the trade effect of the tariff becomes more significant. This means that the reduction in Nation 2's imports of Commodity X will be greater, as both consumers and domestic producers adjust their behavior more significantly in response to the tariff-induced price change.

Conversely, when both the demand curve (DX) and supply curve (SX) are more elastic, the revenue effect of the tariff becomes smaller. This is because a larger portion of the tariff-induced price increase is absorbed by changes in consumption and production, leading to less tariff revenue collected by the government.

Finally, the elasticity of both the demand and supply curves in Nation 2 plays a crucial role in determining the extent of the tariff's impact on consumption, production, trade, and government revenue. More elastic curves lead to more pronounced changes in these economic factors in response to the tariff.

Effect of Tariff on Terms of Trade and Income Distribution

- Different types of trade restrictions affect the exports and imports of a nation. For example, Advalorem duty, specific duty, compound duty, tariff wall and others affect the level of trade as per the elasticity of exports and imports.
- Imposing tariffs leads to winners (some producers and the government of a tariff-imposing nation) and losers (Some producers abroad).
- Net welfare is negative if the Country is 'small' because no change in terms of trade but a decrease in the volume of trade will reduce the quantity of consumption resulting from welfare loss.
- Net welfare effect is potentially positive if the Country is 'large' because the large nation can influence the world relative price level; 'optimal' tariff)
- The net welfare effect is also negative for large countries if they go for retaliation measures.

Non-Tariff Barriers:

Non-tariff barriers (NTBs) are obstacles to trade that limit the importation or exportation of goods and services between nations without resorting to tariffs (import taxes). These barriers come in diverse forms and are enforced by governments to safeguard domestic industries, guarantee product safety, or tackle other trade-related issues.

Some of the most important non-tariff barriers are;

Import Quotas:

A quota stands out as a significant non-tariff obstacle to trade. It directly limits the quantity of a commodity permitted for importation or exportation. Hence, there are import quotas, regulating inmorted goods (for Dp), and export quotas, controlling exported commodities (for Dc).

Import quotas are employed to safeguard domestic industries, agricultural sectors, and to address balance-of-payment concerns.

Voluntary Export Restraints

These instances involve a situation where a country that imports a commodity persuades another nation to decrease its exports of that commodity "voluntarily," using the leverage of potential broader trade restrictions if such exports jeopardize a domestic industry as a whole.

Since the 1950s, Voluntary Export Restraints (VERs) have been arranged among developed nations to limit the exportation of various goods like textiles, steel, electronics, automobiles, and more, particularly from countries like Japan and Korea. These industries, which have reached maturity, experienced significant declines in employment within industrialized nations during the 1980s.

Import License System

An import license system is a non-tariff barrier that requires importers to obtain a license or permit from the government before they can import specific goods into a Country. The purpose of an import license system is to regulate and control the inflow of goods, ensuring that they comply with certain requirements or restrictions set by the government.

Example- Textiles Import License: A Country may require importers of textiles and apparel to obtain a license before bringing in these goods. This helps regulate the textile industry, monitor the quantity and quality of imported goods, and prevent the dumping of cheap textiles that could harm domestic manufacturers.

Foreign Exchange Control

Foreign exchange controls refer to government-imposed restrictions on the flow of capital and foreign currencies in and out of a Country. These controls are implemented to regulate the exchange rate, stabilize the economy, and manage the balance of payments.

Let's consider a fictional Country called "Pakistan." Pakistan is facing economic instability due to a rapid depreciation of its currency against major international currencies. The government decides to implement foreign exchange controls to manage the situation. For example, in

Pakistan, the government limits the import of luxury goods by imposing high tariffs and requiring importers to acquire special permits. This helps to reduce the outflow of foreign currency and conserve reserves.

Government Procurement Policy

Government Procurement Policy refers to the set of rules, regulations, and guidelines established by a government to govern the procurement process for goods, services, and construction projects. The policy aims to ensure transparency, fairness, and efficiency in government procurement and promote competition and value for money.

Example- Another aspect of government procurement policy is to promote sustainable and socially responsible procurement. For example, some governments have policies that prioritize environmentally friendly products and services, fair labour practices, and local economic development. These policies aim to align government procurement with broader social and environmental goals.

Minimum Support Price

The minimum support price refers to the lowest possible price at which a product or service can be sold. It is typically determined by various factors such as production costs, competition, market demand, and desired profit margins. Setting a minimum price ensures that a business can cover its costs and achieve a reasonable level of profitability.

Here's an example to illustrate the concept of a minimum price:

Let's consider a company that manufactures a popular electronic gadget called "Tech X." The company incurs various costs in producing each Tech X gadget, such as raw materials, labour, manufacturing overhead, and distribution expenses. These costs amount to $50 per unit.

In addition to the production costs, the company aims to achieve a minimum profit margin of 20% on each Tech X gadget sold. Therefore, they need to factor in a profit of $10 per unit. Considering the production costs and desired profit margin, the minimum price for the Tech X gadget would be $60 per unit. Selling the product below this price would result in the company not covering its costs and not meeting its profit objectives.

Prohibitive Import

The term "prohibitive import" refers to a situation in which the government places significant limitations or high barriers on importing specific items or products. Prohibitive import controls aim to discourage or prevent specific commodities from entering the domestic market. Typically, these regulations are implemented to preserve domestic industries, protect national security, or address health and safety concerns.

Here's an example of a prohibitively expensive import:

Assume that Country X is well-known for its domestic vehicle sector, which employs a large number of people and contributes significantly to the Country's GDP. However, the government is concerned about the increased competition from international automakers, which could undermine the indigenous industry.

To protect the native vehicle sector, Country X's government imposed import restrictions on foreign autos. They levy prohibitive import tariffs or limits on imported automobiles, making it financially impossible for foreign automakers to export their vehicles to Country X. Imported cars are much more expensive than domestically built cars.

Advanced Deposit

A non-tariff barrier (NTB) is any policy or measure implemented by a nation to restrict imports or exports without using traditional tariffs. An example of a nontariff barrier is a requirement for importers or exporters to make a prepayment or deposit before engaging in international trade. This deposit functions as a financial guarantee to ensure compliance with various trade regulations or to cover any potential risks related to the trade transaction.

Consider an example to convey the concept of a required advance deposit: Suppose that Country A requires a 10% advance deposit on the total value of imported products. Imagine that a company in Country B wishes to export a product worth $10,000 to Country A. Before the products are permitted to enter Country A, the company from Country B would be required to pay an advance deposit of 10% of $10,000, or $1,000, to the Country's authorities. This deposit serves as a guarantee that the importation company will comply with regulations, such as paying customs duties and meeting quality standards.

Once the goods have been effectively imported and all requirements have been met, the deposit will be refunded or applied to any remaining payments or fees associated with the trade transaction.

Customs Valuation

Determining the value of things for customs is called "customs valuation." It is necessary to find out the customs duties, taxes, and fees that need to be paid when importing or exporting goods across international borders. Customs officials use different ways to figure out the customs value of goods. This is to make sure that the value declared by the person importing or exporting the goods is fair and represents the real value of the goods.

The transaction value method is a popular way for customs to figure out how much something is worth. This method is based on the price that was paid or will be paid for the goods being valued. For the transaction value method to work, certain conditions must be met. For example, the things being valued must be sold or given to someone else.The people who are buying or selling must not know each other. Extra costs that aren't directly related to the things being valued can't be added to the price.

To understand how customs assessment works, let's look at an example:

Let's say that a company in Country A called XYZ Corporation wants to bring in a load of electronics from Country B. The company spends $100,000 to buy 1,000 smartphones from a seller in Country B. If the above factors are met, the transaction value method can be used to figure out the customs value in this case. However, some extra costs that come with importing, such as freight, insurance, and customs taxes. To figure out the customs value, add these prices to the value of the transaction. Let's say the extra costs add up to $5,000.

With the transaction value method, the following steps are taken to figure out the tariff value:

Find out the value of the transaction: The price that was paid or owed for the goods is the deal value. It is $100,000 in this case.

Add up the extra costs: Add the prices of importing to the total value of the transaction. In this case, the extra expenses add up to $5,000. So, the total amount for customs would be $100,000 plus $5,000, or $105,000.

Once the customs value is determined, customs authorities can apply the appropriate customs duties, taxes, and fees based on the value of the goods.

Technical Barrier to Trade

In international trade, a technical barrier to trade (TBT) is any technical restriction or standard that imposes a heavy cost on goods, services, or production procedures. While TBTs are typically implemented for humanitarian reasons (such as protecting people or the environment), they can also serve as protectionist measures (by limiting imports) if necessary.

Here are a few examples of technical barriers to trade:

Product Standards: Countries may impose different product standards and regulations, such as safety requirements, quality specifications, labelling requirements, or packaging standards. These varying standards can create difficulties for exporters who need to comply with multiple sets of regulations to access different markets.

Technical Regulations: Governments may establish technical regulations that prescribe specific characteristics or performance criteria for products, processes, or production methods. These regulations can be related to product design, testing, certification, or conformity assessment procedures. Compliance with these regulations can be costly and time-consuming, acting as a barrier to entry for foreign firms.

Quota Vs Tariffication

The First Difference: An import quota means that when demand goes up, the domestic price and output will also go up more than if there was an import tariff of the same amount. An import quota also means that the domestic price will change according to any shifts in DX or SX, and the import quota will determine the quantity of imports instead of the market forces. An import tariff means that when demand goes up, the domestic price and output will stay the same, but the consumption and imports will go up more than if there was an import quota of the same amount.

The Second Difference: In the context of quotas, the allocation of import licenses occurs, and if the government doesn't utilize a competitive market for auctioning these licenses, firms obtaining them may gain monopoly profits. Consequently, the government must determine the criteria for distributing licenses among potential importers of the commodity.

The Third Difference:

An import quota ensures a definite restriction on imports to a predetermined level, whereas the impact of an import tariff on trade may be ambiguous or unpredictable..

Effect of a Tariff Vs Quota

We can use the figure below to show how an import limit affects Commodity X. The Demand curve (DX) is the curve that shows how much people want to buy, and the Supply curve (SX) is the curve that shows how much is produced in the country.

When there is no trade restriction and the price is $1, the country buys 70X (AB) in total. Only 10X (AC) comes from local production, and the rest 60X (CB) comes from foreign trade. If the country limits the imports to 30X (JH), the price will go up to $2, the same as if the country charges a 100 per cent tax on imports of X (as Figure 4.2 shows).
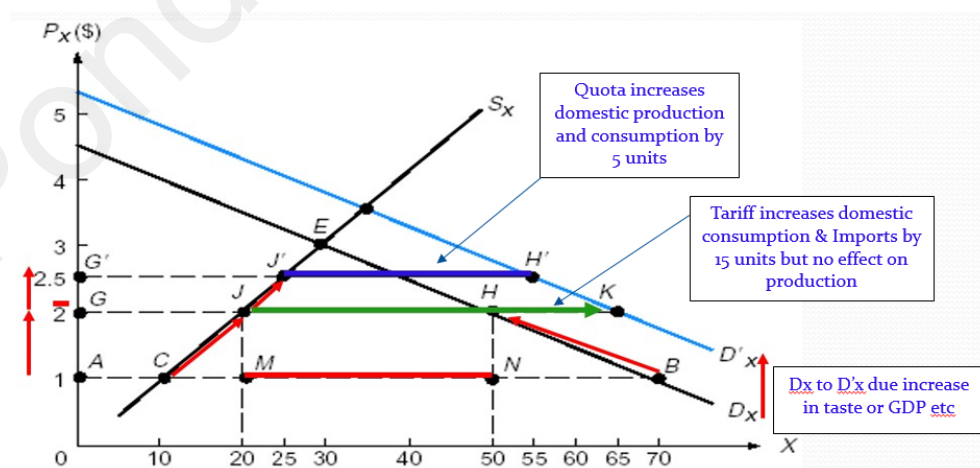
The price hike is attributed to the point where the demand for 50X (GH) matches the combined output of domestically produced 20X (GJ) and the 30X (JH) permitted by the import quota, which occurs at a price of $2 per unit. As a result, consumption drops by 20X (BN), while domestic

production rises by 10X (CM) due to the import quota's allowance of 30X (JH), reflecting the impacts akin to a 100 percent import tariff.

Moreover, if the government were to sell import licenses to the highest bidders in a competitive market, the revenue generated would be $30 (equivalent to $1 for each of the 30X units within the import quota), depicted by the area JHNM. Under this circumstance, the import quota of 30X would essentially equate to an "implicit" 100 percent import tariff, as it would yield identical economic consequences.

If the demand curve for Commodity X shifts upward from DX to D'X, maintaining the existing import quota of 30X (JH) would result in the domestic price of X climbing to $2.50. Additionally, domestic production would elevate to 25X (GJ), while domestic consumption would expand from 50X to 55X (GH).

However, if the identical upward shift from DX to D'X is countered with a 100 percent import tariff rather than an import quota, the price of X would remain unchanged at PX = $2. This would result in domestic production remaining steady at 20X (GJ), while domestic consumption would surge to 65X (GK), and imports would rise to 45X (JK).

In summary, when faced with an upward shift of the demand curve, the import quota results in a higher domestic price of X, increased domestic production, and a moderate rise in domestic consumption. On the other hand, implementing a 100 per cent import tariff under the same demand curve shift leads to no change in the price of X, a limited increase in domestic production, but a more substantial increase in domestic consumption and imports.

Effective Rate of Protection

Frequently, countries adopt the practice of exempting raw materials from import duties or applying lower tariff rates to their importation compared to the final goods produced using those materials. This approach is typically employed to promote domestic processing and boost employment within the Country. For instance, a nation may allow duty-free importation of wool while imposing tariffs on the importation of cloth, to encourage domestic clothing production and generate employment opportunities. However, we have a nominal tariff & effective rate of Protection.

Nominal tariff: It is determined based on the value of the ultimate product. This is significant for consumers as it signifies the rise in cost.

The effective rate of protection is determined based on the domestic value added within the country, serving as a crucial indicator for producers to assess the level of protection afforded to domestic processing and import-competing goods.

If $80 worth of imported wool is utilized in producing a suit domestically, and the suit's free trade price is $100, but the nation imposes a 10% nominal tariff on each imported suit, the price of suits for domestic consumers would consequently be $110. Within this price, $80 accounts for the imported wool, $20 is attributed to domestic value-added, and $10 represents the tariff.

The $10 tariff imposed on every imported suit is deemed to be a 10 percent nominal tariff rate, as it is calculated based on the final commodity price (i.e., $10 out of $100 equals 10%). However, in terms of effective tariff rate, it translates to 50 percent since it's calculated on the domestically added value to the suit (i.e., $10 out of $20 equals 50%).

The formula for an effective rate of protection:

$$ERP = \frac{NTFC - CII * NTII}{1 - CII}$$

ERP = Effective Rate of Protection

NTFC = Nominal Tariff rate on Final Commodity

CII = Cost of the Imported Input to the price of the final Commodity in the absence of tariffs

NTII = Nominal Tariff rate on the Imported Input

Suppose NTFC = 10 % or 0.1, CII = $80 / $100 = 0.8, NTII = 0

$$ERP = \frac{0.1 - (0.8)\,(0)}{1.0 - 0.8} = \frac{0.1 - 0}{0.2} = \frac{0.1}{0.2} = 0.5 \text{ or } 50\%$$

Self-assessment Questions

1. Discuss various concepts of terms of trade with examples.

2. Illustrate the effect of tariffication on consumer surplus and producer surplus.

3. Differentiate net barter terms of trade with income terms of trade.

4. In a small country, tariff is fully reflected in their domestic prices. A tariff drives a wedge between foreign and domestic price levels, raising the domestic price but by less than the tariff rate.

    (a) Analyze the partial equilibrium effect of a tariff.

    (b) Also, Illustrate the net cost of a tariff

5. (a) Define the rate of effective protection in stimulating domestic production and employment.

    (b) Calculate the Effective Rate of Protection when the nominal tariff on the final Commodity is 40%, the ratio of the cost of imported input to the price of the final Commodity in the absence of tariff is 0.5, and the nominal tariff on imported input is 40%.

6. Do you think that the small Country would always be worse off when the government imposed tariffs? Also, discuss the consequences for large countries as well.

7. Suppose, the free trade price of grapes is $10 in New Zealand. The government imposes a 10 per cent ad valorem duty on the import of grapes from Australia. As a result, domestic production increased from 1000kg to 1200kg and imports fell from 800kg to 400kg. Who gains from tariffs and who loses? Distribute the gain and loss in terms of US $.

8. Assume yourself as an entrepreneur of a company in India. Also, assume that the GOI is inviting suggestions from the entrepreneur to promote domestic industries from external competition. The GOI is planning to use nominal tariffs, procurement policies, subsidies, Optimum tariffs, Quota's, and VER. As an entrepreneur, what will be your recommendations for the government of India? Why?

9. Calculate the effect of tariffication on consumer surplus, producer surplus, government revenue, protection cost and deadweight loss from the diagram below. Also, calculate and justify the overall loss of the nation.
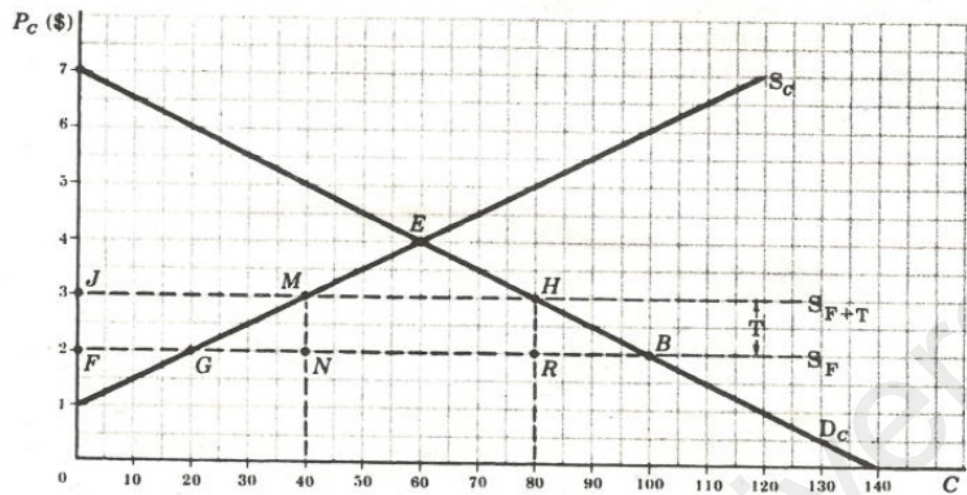
10. Diagrammatically differentiate the effect of Tariff with quota in international trade.

11. Tariff or quota, which is more effective to restrict trade.

12. In today's world, international trade encourages free trade on one side and several new protectionist measures on the other side. Do you agree? Argue using trade practices in the contemporary world.

13. Do you think that export subsidies are also considered to be a type of dumping in international trade?

14. An effective rate of protection incurs costs for the nation and simultaneously it promotes benefits to the nation. Justify.

UNIT – V

Lesson 5.1 - Balance of Payments and Trade Policies

Reading Objectives:

The major objective of this unit is to understand the significance of the Balance of Payments (BOP) on the external sector front. The BOP account is classified into three components namely, Current Account, Capital Account and Official Reserve Account. There is a necessity for economics students and scholars to understand the sustainability of current account and capital flows between the nations. After completing this unit, the students will be familiar with apprehending various factors that are responsible for disequilibrium in the BOP and measures that are available to unearth BOP disequilibrium. Expenditure-changing and expenditure-switching policies are the appropriate policies that are used to achieve internal balance without inflation and external balance with BOP equilibrium. Readers will also be able to identify the effect of macroeconomic policies on the external sector with reference to the Indian Economy since the BOP crisis in 1991.

Lesson Outline:

- ➢ Balance of Payments
- ➢ Components of Balance of Payments
- ➢ Disequilibrium in Balance of Payments
- ➢ Measures to correct disequilibrium in Balance of Payments
- ➢ Expenditure Switching Policies
- ➢ Expenditure Changing Policies
- ➢ Trade Policies of Internal and External Balance
- ➢ Changing Trade Policies of India
- ➢ Self-assessment Questions

Introduction

The Balance of Payments (BOP) is a statistical summary that systematically describes current account flows, capital account flows and official reserves of one country with the rest of the world, during a specific

period– Manual of Balance of Payments of IMF. More specifically, every dollar that crosses a nation's border during a specific period is recorded in the BOP account.

These transactions comprise the inflow and outflow of the nation's currency for merchandised trade, service flows, and all financial transfers. The Inflow of dollar for a nation, like export income or borrowings and investments is documented as a positive item or credit entry. The outflow of funds, such as import payments or investments in foreign countries is recorded as a negative item or debit entry. For this reason, The BOP account is also called a double-entry bookkeeping system. All monetary inflows are considered credit entries and outflows are considered debit entries.

For example, if a nation imports more than it exports, it is defined as a trade deficit, but the deficit will have to be adjusted through accommodating flows such as rate of return from foreign investments or by running down the forex reserves of the central bank or by borrowing from other countries.

Components of Balance of Payments

All the transactions entering into the BOP account are grouped under three broad categories namely Current Account, Capital Account, and the Official International Reserve Account. However, these accounts are further vertically separated into several subcategories and specific transactions. The subcategories are trade flows, invisible flows or service flows, Current Account Balance, Foreign investment, Loans, Banking Capital, debt services, Capital Account Balance, official reserve flows and Overall Balance of Payments.

Balance of Trade and Current Account

The current account is considered to be the most important component of the BOP account. It shows the actual economic performances of a nation with other nations during a specific period. Usually, the IMF and other international institutions measure the strength of a nation in terms of the status of its current account. If the current account shows a surplus, the resident of the reporting Country earns more than what they pay to the rest of the world. In a simpler term, it is denoted that the income of a reporting Country is higher than the expenditure made to other countries. We cannot

draw inferences in a similar fashion for capital flows, because it is just an inflow and outflow of capital consisting of foreign investment, lending and borrowing etc. So a nation can increase the surplus in its capital account by borrowing loans from IMF, IBRD and other international institutions/countries. Similarly, a surplus in an official reserve account can take place by borrowing SDR from the IMF. In this context, the performance in the current account variables always does matter to measure the economic strength and competitiveness of the reporting Country.

The current account registers merchandise and service flows including unilateral transfers. The merchandise trade account focuses on Commodity trade also referred to as visible account flows. If the export earnings are equal to import payments, it is described as a trade balance. If the export earnings are greater than the import payments, it is referred to as trade surplus and alternatively for trade deficit. Whereas the service account focuses inflow and outflow of services like Travel, Transportation, Insurance, Investment Income, government not included elsewhere (g.n.i.e), Miscellaneous flows, and Private and Official transfers. Distinct from visible merchandise trade, services flows are considered as invisible flows and they help the nation to reduce the burden of trade deficit. Service flows are not recorded at the port of entry but both accounts contribute a larger part in the BOP account of many countries. All monetary inflows are registered under the credit entry category and monetary outflows are registered under the debit entry category. This is the reason why a BOP account is also called a double-entry bookkeeping system.

A glance at India's Balance of Payments from 2019 to 2022 is given in Table 5.1. evidenced that the current account flows for all three years are dominating with capital flows. Similarly, the burden of the merchandised deficit is balanced by the surplus in the invisible flows. Invisible trade is more useful for economic purposes and is also used to distinguish between factor services with non-factor services. The service account is a very important component because it includes the rate of return from the capital flows. Invisible account not only focuses income from travel, transportation, insurance, remittances and miscellaneous, it also includes investment income. This means, all kinds of capital transactions are measured under capital flows but the rate of return from that capital is measured under investment income. Hence, the service flows occupy a higher level of significance in the BOP account.

Table – 5.1: India's Balance of Payments during 2019-21

TABLE 129 : INDIA'S OVERALL BALANCE OF PAYMENTS - RUPEES (Concld.)

(₹ Crore)

Item/Year	2019-20			2020-21			2021-22		
	Credit	Debit	Net	Credit	Debit	Net	Credit	Debit	Net
1	11	12	13	14	15	16	17	18	19
A. Current account									
1. Merchandise	2270919	3385822	-1114902	2193253	2946318	-753065	3199115	4613049	-1413934
2. Invisibles (a+b+c)	2281179	1338706	942474	2278625	1343490	935135	2755292	1632174	1123118
a) Services	1511659	909278	602381	1528236	871336	656900	1897558	1096248	801311
i) Travel	212684	155741	56943	62900	85360	-22460	67899	121416	-53517
ii)Transportation	148761	172134	-23373	162013	146410	15603	243582	267395	-23813
iii) Insurance	17238	12335	4903	17625	15246	2379	24719	15468	9251
iv) G.n.i.e.	4677	7841	-3164	4672	7594	-2923	5976	7217	-1241
v) Miscellaneous	1128298	561226	567072	1281026	616725	664301	1555383	684752	870630
of which: Software services	660148	60024	600124	741557	75926	665631	910096	93615	816481
Business services	324150	332437	-8287	364553	367352	-2800	439668	385257	54411
Financial services	33519	20803	12716	32166	35301	-3135	40805	41900	-1096
Communication services	19297	9196	10101	20791	10661	10130	23369	8416	14953
b) Transfers	590992	57786	533206	595789	50867	544922	665791	66175	599616
i) Official	1138	8296	-7158	1061	8327	-7266	1456	7284	-5828
ii) Private	589854	49490	540364	594728	42540	552188	664334	58891	605444
c) Income	178528	371642	-193114	154600	421288	-266687	191943	469751	-277808
i) Investment income	138648	352530	-213882	110143	400495	-290352	144554	446919	-302365
ii) Compensation of employees	39880	19112	20768	44457	20793	23664	47390	22832	24557
Total Current account (1+2)	4552099	4724528	-172429	4471878	4289808	182070	5954407	6245223	-290816
B. Capital account									
1. Foreign investment (a+b)	2614747	2302532	312215	2962726	2370869	591856	3561413	3400485	160928
a) Foreign direct investment (i+ii)	551647	246827	304820	639521	314139	325382	657396	369930	287467
i) In India	527347	130392	396955	607771	201006	406765	632047	213284	418763
Equity	366490	129168	237322	452767	200543	252224	444457	202679	241778
Reinvested earnings	100561	0	100561	125600	0	125600	144219	0	144219
Other capital	60296	1224	59072	29404	463	28941	43371	10605	32766
ii) Abroad	24300	116435	-92135	31750	113133	-81383	25349	156645	-131296
Equity	24300	53771	-29471	31750	41415	-9665	25349	74920	-49571
Reinvested earnings	0	22338	-22338	0	22364	-22364	0	25173	-25173
Other capital	0	40326	-40326	0	49354	-49354	0	56551	-56551
b) Portfolio investment	2063100	2055705	7395	2323205	2056730	266474	2904017	3030555	-126539
i) In India	2015956	2014755	1200	2310454	2024824	285630	2873927	2980213	-106286
of which: FIIs	2015956	2014755	1200	2310454	2024824	285630	2873927	2980213	-106286
GDRs/ADRs	0	0	0	0	0	0	0	0	0
ii) Abroad	47144	40949	6194	12751	31907	-19156	30090	50342	-20253
2. Loans (a+b+c)	668960	486712	182248	634710	584127	50583	787108	535905	251203
a) External assistance	66039	39536	26503	125583	42578	83005	82048	41891	40157
i) By India	56	803	-747	284	611	-327	379	481	-102
ii) To India	65983	38733	27250	125299	41967	83332	81669	41410	40259
b) Commercial borrowings	328239	164791	163448	231890	233902	-2012	224781	164160	60621
ii) By India	48723	39538	9185	21199	24085	-2886	14021	8619	5403
ii) To India	279516	125253	154263	210691	209817	874	210760	155542	55218
c) Short term to India	274682	282385	-7704	277237	307647	-30411	480279	329854	150425
i) Suppliers' Credit >180 days & Buyers' Credit	264945	271324	-6378	261995	296295	-34299	339086	329854	9232
ii) Suppliers' credit up to 180 days	9737	11062	-1325	15241	11353	3889	141194	0	141194
3. Banking capital (a+b)	601082	639907	-38825	551356	706588	-155231	766628	717339	49289
a) Commercial banks	600265	634474	-34209	546792	700765	-153973	763736	711096	52639
i) Assets	189723	222176	-32453	175636	333005	-157369	377142	362114	15028
ii) Liabilities	410542	412298	-1756	371156	367760	3396	386594	348983	37611
of which: Non-resident deposits	394304	333182	61123	344627	289505	55121	338520	314513	24007
b) Others	817	5433	-4616	4564	5823	-1259	2892	6242	-3350
4. Rupee debt service	0	483	-483	0	484	-484	0	527	-527
5. Other capital	446158	312730	133428	289780	306298	-16518	558286	382560	175727
Total capital account (1 to 5)	4330947	3742363	588584	4438572	3968366	470206	5673435	5036815	636620
C. Errors & omissions	13260	6210	7051	7040	9636	-2595	10628	7313	3314
D. Overall balance (A+B+C)	8896306	8473100	423206	8917490	8267810	649681	11638469	11289351	349119
E. Monetary movements (i+ii)	0	423206	-423206	0	649681	-649681	120545	469664	-349119
i) I.M.F.	–	–	–	0	0	0	0	0	0
ii) Foreign exchange reserves (Increase- / Decrease+)	0	423206	-423206	0	649681	-649681	120545	469664	-349119
of which: SDR Allocation	–	–	–	–	–	–	–	132346	-132346

G.n.i.e.: Government not included elsewhere.
Notes : 1. Data for 2021-22 are preliminary estimates.
2. Total may not tally due to rounding off.

(Source: Handbook of Statistics on the Indian Economy, RBI)

Theoretically, the BOP components are comprised and duty sum to zero without any deficit or surplus. It means that the balance of payments is balanced at all times. If there is a mismatch in the BOP account, the central bank will intervene and bring it back to zero by borrowing and lending activities. But in reality, almost all the nations maintain a BOP surplus through autonomous flows and accommodating flows and it is also evidenced by Table 5.1.

A surplus in the BOP account may not be harmful to an economy and it can be controlled through monetary measures. However, a deficit in the BOP account is unavoidable for an emerging and growing economy. Some of the important factors that are accountable for a deficit in the BOP account are as follows;

Population Growth: Countries like India and other Asian economies always face disequilibrium in their BOP account. One of the important factors is population growth associated with a huge volume of imports. Naturally, a high level of population requires a huge volume of output with different varieties. It is very difficult for a domestic economy to fulfill the needs of a high population with rising per capita income. As a result, the nation imports more from other countries causing disequilibrium in the balance of payments.

Developmental Programmes: Emerging and fastest-growing economies need to undertake developmental projects and have to improve the capital-labour ratio through capital goods imports and technology. In a globalisational era, almost all domestic producers are allowed to compete with foreign producers without any domestic support. Since the producers of European Countries use abundant capital lead low cost of production creates a comparative advantage in international trade. To overcome this issue, the producers of developing and low-income economies are forced to import capital and technology from advanced economies causing a trade deficit.

Demonstration Effect: Over a period of time, the imports and volume of trade of major economies have increased drastically. The major reason for rising imports and global trade is that the people in India and other Asian economies are copying the consumption pattern of the Western world associated with increasing per capita income. Once upon a time, nations imported essential commodities for their livelihood which cannot be produced domestically. Nowadays, the

demonstration effect takes place on all the commodities to import even though domestic production is possible.

Natural Factors: Many Latin American and third-world economies depend on export income from agricultural commodities. Agriculture production and productivity depend mainly on monsoon and natural forces. If nature supports, the nations can get export income to pay their import bill. If monsoon doesn't support these economies, may lead to disequilibrium in the balance of payments account.

Cyclical Fluctuations: It mainly focuses on the effects of the four phases of the business cycle on economic activity as well as on the balance of payments. The four phases are Boom or prosperity, recession, depression and recovery. During these phases, economic activities vary and create consequences for the external sector. For example, during the prosperity period when the economy realizes full employment and inflation will lead to a surge in the demand for importable commodities and reduce exportable goods leading to a trade deficit or BOP deficit.

Poor Marketing Strategies: One of the major reasons for trade deficit and reduced export earnings of a nation is poor market access due to a lack of advanced marketing techniques for their products in the international market. Countries like China, Japan, the U.S. and other European countries use the best marketing techniques to reach people all over the world. So the low-cost advantage in the production of a good plays a major role in the international goods market, equivalently advanced marketing practices create opportunities to acquire a share in the international goods market.

Inflation: In the globalisational era, the rise in prices leads to a fall in the volume of trade and deteriorates terms of trade. When the prices are high in the domestic market may discourage exporters from focusing on foreign markets for their commodities. They will be attracted by the high prices in their home country and forced to sell their commodities in their home Country only. Similarly, the rise in prices will encourage the foreign seller to focus on our market for their products. The above two forces will decrease export income and increase import payments, thereby causing a deficit in the current account. This is the reason, why the Central Bank of Country is very cautious and active on inflation targeting policies.

Capital Flight: The sudden outflow of huge capital is always dangerous for any economy. Such kind of capital flows puts heavy pressure on the value of domestic currency causing the exchange rate to overshoot. When the domestic currency loses its value in terms of foreign currency, capital outflow will take place and the stock of forex reserve will get depleted. For example, a foreigner came to India with one dollar and converted it to Rs. 82 when the exchange rate of rupee-dollar is Rs. 82 equals 1 dollar. Suppose, the foreigner invested Rs. 82 in Indian securities and expected to receive Rs. 85 with interest rate. If the exchange rate stays at 82, he will get more than one dollar after the maturity period. If the exchange rate increases from Rs. 90 equals 1 dollar, then the investor will get less than one dollar. In such circumstances, a rational investor predicts that the value of the rupee will fall further and they will quit from the Indian market causing capital flight and disequilibrium in the BOP.

National Income: Theoretically, it is defined that the imports are directly correlated to national income. As per the Keynesian theory, when income rises consumption of the people will also increase. Here the consumption is composed of both domestic Commodity as well as foreign Commodity. When national income and per capita income increase, naturally imports of the nation will also increase, resulting in a trade deficit and disequilibrium in the external sector will take place.

Political conditions: Political instability is always considered precarious for any economy. Foreign investment usually takes place at a larger pace after numerous assurances from the ruling party or President or Prime Minister relating to business easing. If the ruling party have an absolute majority in the decision-making process, it will promote the inflow of foreign investment and may strengthen the balance of payments account. Alternatively, if the government is not stable enough to bring business-related enactment, it will affect foreign investment and other capital flows adversely causing a deficit in the capital account and overall balance of the Country.

Globalisation: Now-a-days, almost all countries are almost integrated in all respects. Starting from European nations to third-world economies, all are integrated in trade, services and capital flows. Due to openness and other globalisational policies, most of the emerging and low-income economies' imports have increased since the 90s

causing disequilibrium in the external sector. But we cannot simply criticize such kind of trade deficit. Several empirical studies proved that the trade deficit of emerging economies is increasing in the globalisational era, simultaneously their international competitiveness is also increasing during the same period. This means, a trade deficit caused by capital goods imports may create a burden on the current account but it may improve or create opportunities for an emerging economy in the long run.

BOP on Capital Account

Another important constituent of the BOP account is the capital account and it records all kinds of capital inflows and outflows of the residents of a reporting nation with the rest of the world. All capital transactions are classified under five heads, namely; Loans, Foreign Investment including FDI and FPI, Banking Capital, Rupee Debt Service for borrowed capital and other capital flows (Table 5.1).

As current account flows, we cannot use capital flows or capital accounts as a yardstick to measure the economic strength of the reporting Country. The significancece of the current account is that it displays the actual performanceof the nation during that specific year. Whereas the capital account just registers the inflow and outflow of capital and it does not register even the return of invested capital from foreign soil. The rate of return from the capital outflows is registered under investment income and it is a part of current account flows.

In the contemporary world, some of the empirical studies viewed capital account variables in different aspects to measure the economic strength of the nation. Those studies classified the entire capital flows into two heads namely, debt-creating capital flows and non debt-creating capital flows. Under non-debt capital flows, foreign direct investment and foreign portfolio investment are the most important flows which are not considered as a debt variable. The other three variables loans, banking capital and rupee debt service are considered as debt-creating capital flows. If the former outweighs the latter, then it is considered a favourable capital flow that may uplift the overall BOP position of the Country. Alternatively, debt-creating capital flows are greater than non-debt-creating capital flows means, the nation is going through a difficult situation on the BOP front. This is the way the empirical studies justified economic performances using capital account variables.

BOP surplus is not a problem for any Country but a deficit in the BOP account needs special attention and appropriate policy measures should be implemented to overcome the deficit in the BOP account. Some of the important measures to curb the deficit in BOP account are as follows;

Automatic Adjustment Mechanism under Balance of Payments

Volatility in the BOP account is sometimes eliminated automatically through appreciation and depreciation of currency. Disequilibrium is a situation where the BOP account is in surplus or deficit. Suppose the economy is facing a BOP deficit means the nation has excessive demand for foreign currency. For example, If we assume a two-country case where India and the U.S.A are trading with each other using the rupee and dollar for trade. Also, we assume that India is facing a BOP deficit with the U.S.A. The demand for the dollar is greater than the demand for the rupee. As an outcome, the rupee-dollar exchange rate will increase leading to the depreciation of the rupee. When the rupee depreciates, imported commodities from the U.S.A. become costlier in India and Cheaper in the U.S.A in terms of their currency called the dollar. Due to this, the demand for US-made commodities in India will decrease and the demand for Indian-made commodities in the US market will increase. This causes the overall export earnings of India will rise and the export earnings of the US will fall. This process continues until the restoration of the balance of payments account takes place in India.

Alternatively, if we assume that India is facing a BOP surplus with the U.S.A., the dollar supply must be greater than the demand for the dollar, resulting in the appreciation of the rupee will take place causing the value of a domestic currency to appreciate. So the importable commodities become cheaper in India and costlier in the United States. Due to this, more imports will take place in India and fewer imports will take place in the United States. This process continued until the restoration process took place. Without any interference from the central bank, the disequilibrium in BOP will be automatically restored through the market forces on the foreign currency.

Monetary Measures

If the automatic adjustment mechanism fails to clear the imbalance in the BOP account, the central bank and the government will interfere using appropriate monetary and fiscal policies. The Central Bank will

interfere in the external sector using monetary contraction for the BOP deficit and monetary easing for the BOP surplus. Suppose, the nation is facing a BOP deficit and the central bank tightens the money supply in an economy, which in turn decreases the price level and increases the interest rate. A decrease in price level will create favourable trade, services and decrease import bills causing favourable trade flows and a surplus in the current account. Similarly, the increase in interest rate will motivate foreign investors to choose the Indian market for investment and higher returns causing a surplus in the capital account. Both the surplus in the current account and the surplus in the capital account make the overall BOP account surplus. Alternatively for BOP surplus and expansionary monetary policy.

Devaluation or Revaluation: If the Central Bank deliberately decrease or increases the currency value relating to the foreign currency is called devaluation/revaluation. To eliminate the problem of BOP deficit, the central bank uses devaluation and they also use revaluation for BOP surplus. Devaluation is a method of decreasing the external value of a home currency in order to make importable commodities costlier and exportable commodities cheaper on foreign soil. While doing so, the demand for foreign commodities will fall and the demand for a domestic Commodity will rise in the home Country. As a result, investment, employment and GDP will increase in the home Country. In terms of foreign currency, the devaluing country's commodities become cheaper in the foreign market causing demand to rise, as well as the export earnings of the devaluing Country. Alternatively for Revaluation and is a rare measure because no nation will be interested in decreasing BOP surplus.

Exchange Control: The Central banks very often use the above two monetary measures to control imbalances in the BOP account. However, the exchange control measures are not popular in any growing economy. Unless the economy is facing extreme exchange crises and severe depletion in its forex reserves, the central bank rarely uses exchange control policies. However the exchange control policies not only control the disequilibrium in its BOP account, but it also regulates the external sector according to the objectives of the policymakers. This is a direct control measure to regulate foreign trade in favour of a domestic economy. For example, placing capital goods and technology imports under open general license and finished consumption goods/

cosmetics under a restrictive list may regulate the appropriate use of forex reserves and help the nations to reduce the BOP deficit. Likewise, permitting the use of foreign currency for importing textbooks and other merit goods from foreign countries and restricting the use of foreign currency for the purchase of Harley Davidson bikes and others may regulate the proper usage of hard-earned foreign currency and reduce BOP problems.

Fiscal measures/ Trade policies: In order to eliminate the trade deficit and to create a favourable trading environment, respective nations use appropriate fiscal measures like Export promotive policies and Import restrictive or substitutive policies. Some of the export promotive policies are exemption from import and export duty to export-oriented firms, reduction in corporate profit tax, subsidies and incentives to export-oriented units, tax exemption and reimbursement of duty paid on imports, giving high priority to export-oriented units in the special economic zones etc. All the above supportive measures will reduce the cost of production of export-oriented units and create an excellent competitive advantage.

Similarly, imposing a duty on importable commodities or applying quotas and restricting the usage of forex reserves for unnecessary imports may reduce the burden of trade deficit. This helps the nation to regulate foreign trade in accordance with the objectives of the domestic economy. Through this, a nation can enhance the volume of trade without disturbing the growth of the economy. In fact, restricting or reducing unnecessary imports and promoting overall exports are always beneficial for all nations. But implementing such kinds of policies is challenging for all nations in the globalisational era, especially, since imposing any kind of barriers is not acceptable.

Other Wide-ranging Measures: Several other domestic promotive measures help nations to overcome BOP deficits. Some of the prominent measures are Import Substitution policies like the make in India Initiative, Incentives for Foreign investment, Foreign Loans, Infrastructural development, Tourism Development, etc.

Recently, the government of India has implemented the Make in India Initiative which aims to encourage and produce commodities within the nation instead of importing from other countries. Under this initiative, the government of India gave wide-ranging supportive measures for the

domestic production of importable commodities. The Indian Government relaxed all kinds of restrictions for foreign investment under the make in India initiative and enlarged business easing policies. Firms who are operating under the make-in-India scheme are eligible to get easy finance from the government, tax holidays for the initial period, world-class infrastructural support, liberal import of raw materials and liberal export for their finished products etc are some of the supportive policies to promote business in India.

Gold Standard

The gold standard system gained popularity between 1870 and 1914, during the same period there was a large-scale exchange of commodities and services took place. Following a brief four-year period during which several trading nations engaged in competitive devaluations, the gold standard system was reinstated in 1918 when a number of countries and their central bank fixed the value of their currencies in relation to the quantity of gold by exchanging domestic assets for gold. For instance, the Bank of England set the price of gold at £14.58 per ounce, while the Federal Reserve declared a fixed price of $35 per ounce. The $/£ exchange rate was subsequently fixed at $2.40 per pound.

Under the gold standard system, monetary policy becomes less efficient for the central banks of various economies. If one country lost its official international gold reserve, resulting in a decrease in its money supply, another gained it, increasing its money supply. The gold standard system also served as an automatic check on raising money supplies at a quicker rate by lowering inflation targeting rules.

However, the restrictions on monetary policy prevented central banks from building up the money supply in order to raise output and employment by boosting aggregate demand. The price of gold in relation to other commodities and services is determined by the supply and demand for gold under the gold standard system. Because the currency price of gold was fixed, a fresh and increased supply of gold drives down its price while driving up the cost of other products and services. On the other hand, because gold had a fixed currency price due to the strong demand for gold jewellery, gold became more expensive and the prices of other goods and services decreased.

In order to maintain the gold standard, more money would need to be created when economies and populations expanded. In this instance, the global financial and macroeconomic environment provided undue support to nations that produce gold, like South Africa, the US, Russia, and others. Since the number of currencies kept as reserves may fluctuate, a system of international reserves under the gold exchange standard permits greater flexibility in the expansion of international reserves and macroeconomic conditions in both a group of currencies with fixed gold prices. In addition to using gold, the fixed exchange rate system in place from 1944 to 1973 operated more like a gold exchange standard than a system of currency reserves.

## Expenditure Changing and Expenditure Switching Policies

For any Country, the most important issue in the economic policy-making process is to achieve internal balance without inflation and external balance with BOP equilibrium. Inflation can be an obstacle to the proper use of monetary policy and fiscal deficit is a major constraint for the appropriate use of fiscal policy. Now, we will examine how an economy can accomplish internal balance without inflation and external balance with BOP equilibrium using proper economic policies called expenditure-changing and expenditure-switching policies.

Expenditure Changing Macroeconomic Policies

Expenditure-changing policies are proposed to alter the total spending in the economy over the appropriate use of monetary and fiscal policies to eliminate BOP disequilibrium. The expenditure-changing policies use the **IS-LM-BP** technique to solve BOP imbalances. IS-LM technique focuses on simultaneous achievement in both product market and money market equilibrium, also called general equilibrium and internal balance. Whereas the BP technique focuses on the BOP equilibrium. This model assumes capital is relatively mobile and no change in government spending or taxation.

Expenditure Changing Monetary Policy

The model uses the following diagram to explain economic policies that change expenditure on domestic-made commodities over foreign-made commodities.

Figure 5.1: Monetary Policy and BOP Equilibrium

(a) Expenditure Reducing

(b) Expenditure Increasing Monetary Policy
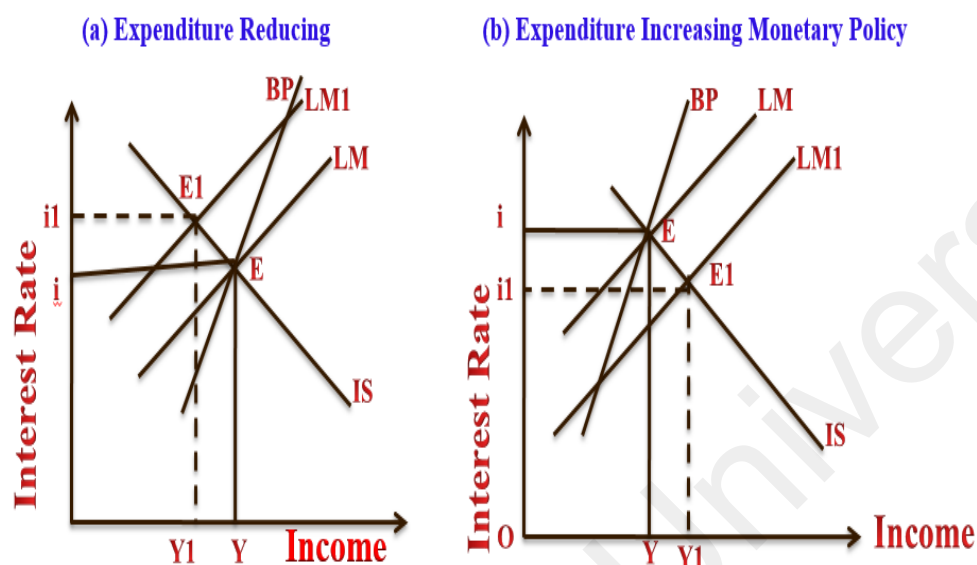
Panel (a) of the diagram explains the effect of expenditure-reducing monetary policy (Contractionary Monetary Policy) on the BOP and panel (b) explains the effect of expenditure-increasing monetary policy (Expansionary Monetary Policy) on the BOP. In both the diagrams, real income is measured in the X axis and the interest rate is measured in the Y. The IS curve slopes downwards from left to right stating that there is a negative association among interest rate and real income. It means when interest rate decreases, the cost of borrowings also decreases but it increases investment, employment and real GDP. Any point on the IS curve indicates investment is equal to savings or goods market equilibrium. The LM curve inclines upward stating that there is a positive relation between interest rate and real GDP. With the given money supply when income increases, money demanded for transaction purposes also increases. But money supply is given and the restoration requires the interest rate to rise so that the speculative money demand will decrease exactly equal to the amount of increase in transaction money demand causing uniformity in the money market at a high interest rate. Any point on the LM curve indicates liquidity preference money demand which equals money supply. Similarly, the BP curve slopes upwards stating that the capital is relatively mobile and all points on the BP curve indicate BOP equilibrium. Any point above the Payments curve indicates a surplus in BOP and below indicates a deficit in BOP. So, the expenditure-changing macroeconomic policy affects BOP disequilibrium. The joining of the IS-LM-BP curve at E indicates internal as well as external balance.

If the economy faces a BOP deficit, contractionary monetary policy would be effective in eliminating BOP disequilibrium. Similarly, monetary easing is used to eliminate the BOP surplus but no Country worries about BOP surplus. When the Central bank pursues contractionary monetary by reducing the money supply (LM to LM1) results interest rate to increase from i to i1 and the real income to decrease from Y to Y1. The reason is when the interest rate increases, the cost of borrowing also increases, and as a result investment and national income decrease. Due to rise in interest rate and decrease in income causes a surge in capital inflows and also it improves the current account balance, which in turn improves the BOP position and shifts equilibrium from point E to E1. Every central bank tries to increase real income by pursuing expansionary monetary policy. Panel (b) demonstrates the outcome of expenditure expenditure-increasing monetary strategy on the economy. When the central bank increases its money supply causes the LM curve to shift to LM1 indicating that there is a decrease in interest rate and an increase in income. This causes a movement from E to E1 indicating a BOP deficit because E1 is below the BP curve. This happens due to capital outflows and increases in import bills because capital outflows are negatively related to the interest rate and imports are positively related to income. In order to curb the BOP deficit, a nation should decrease the money supply for a BOP surplus and it can be inferred that monetary expansion is effective.

Expenditure Changing Fiscal Policy

The expenditure-changing fiscal policy also uses the **IS-LM-BP** technique to solve BOP disequilibrium. This model uses two BP curves assuming that the capital is relatively mobile (elastic BP curve) and less mobile (relatively less elastic BP1 curve), and no change in money supply, so there is only one LM curve.

Panel (a) of the diagram illustrates the impact of expenditure-reducing policies on the external sector or BOP equilibrium. Similar to the previous diagram 5.1, variables in the X axis, Y axis and other properties are same in the diagram 5.2 except for two BP curves. The flatter BP curve indicates capital movements are very sensitive to interest rate changes whereas the steeper BP curve indicates the capital flows are less sensitive to interest rates. Panel (a) analyses the impact of contractionary fiscal policy (Expenditure reducing) on the BOP account using two BP curves. If the finance ministry adopts contractionary fiscal policy by reducing Government spending

causes shifts in the IS curve to IS1 at point E1. The reason for decreasing income is due to decreased government spending and aggregate demand. Similarly, the lack of demand for household savings from the government side results a fall in the interest rate. Point E1 indicates the BOP deficit in terms of a flatter BP curve and the BOP surplus in terms of a steeper BP curve. The Flatter BP curve indicates that the capital is more delicate to the variations in the interest rate compared to the steeper BP curve. Here, the effect of contractionary fiscal policy decreases both interest rate and real income level. A decrease in the interest rate leads to induce capital outflow and creates a BOP deficit. However, a decrease in income causes imports to fall and recover from the trade deficit thereby causing a BOP surplus. So the effect of fiscal policy on the BOP account is governed by two opposing forces called capital outflows and improvement in trade account. Moreover, the elasticity of capital flows plays a major role in influencing BOP accounts. For example, the contractionary fiscal policy creates a BOP surplus in terms of the steeper BP curve indicating that the outcome of fiscal expansion on capital outflows is lesser than the amount of decrease in import bill. Alternatively, the effect of fiscal expansion and a decrease in the interest rate on capital outflows are greater than the amount of decrease in import bill due to a decrease in income for a flatter BP curve.

Panel (b) demonstrates the impact of expenditure-increasing fiscal measures on the economy. When the finance ministry increases its money supply resulting the IS curve to shift to IS1 indicating that there is a simultaneous surge in real income and interest rate. This shifts the equilibrium from E to E1 indicating BOP deficit in terms of a steeper BP curve and BOP surplus in terms of a flatter BP curve. It means the effect of fiscal expansion and rise in interest on capital inflows are greater than the amount of increase in import bill associated with the rise in income for a flatter BP curve.

It is clear from the previous consideration of spending-changing policies that contractionary monetary policy works well to close a BOP deficit. Similar to monetary policy, it is impossible to say with certainty whether expansionary or contractionary fiscal policy contributes to the removal of BOP disequilibrium; rather, it is contingent upon the interest elasticity of capital flows between countries that changes in fiscal policy can either improve or aggravate a BOP deficit.

Figure 5.2: Fiscal Policy and BOP equilibrium
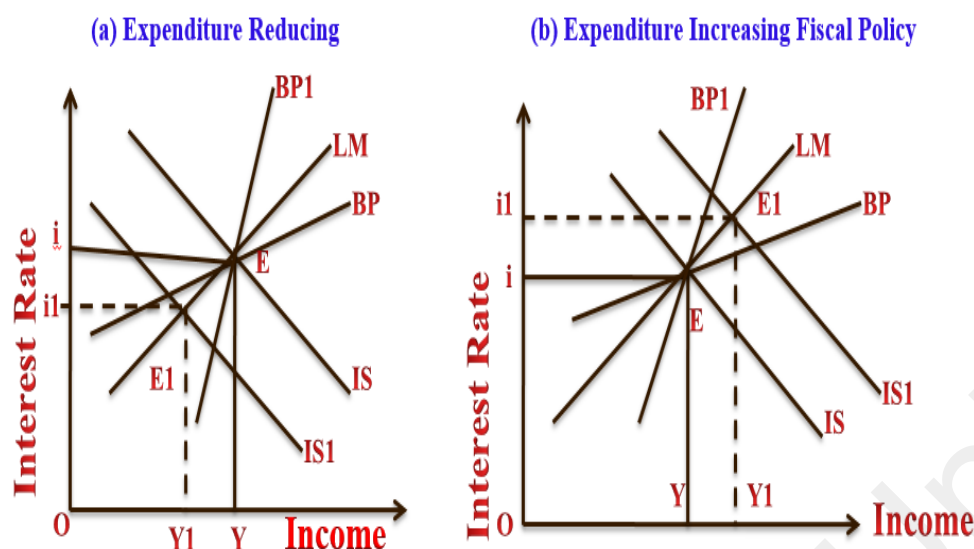
A short-term surplus is produced in the capital account by an increase in interest rates, while a current account deficit is produced by an increase in income. An expansionary fiscal policy will boost BOP if the former effect is more prominent. If the latter effect is more prevalent, the same will not be accomplished. In order to close the BOP gap and bring internal balance without inflation and external balance with BOP equilibrium, the majority of the policymakers are suggesting a policy mix.

Expenditure Switching Policies

Currency Devaluation is a cautious downward alteration of the value of a nation's currency compared to another currency. It is a government policy that switches expenditure on foreign-made commodities to domestic-made commodities. For example, if the value of domestic currency decreases means, importable commodities become costlier and exported goods in the foreign market, in terms of their currency, become cheaper. This type of policy change redirects domestic customers' spending from imported goods and services to those produced domestically. The J-curve impact of devaluation is a concept that can be used to illustrate this idea.   The j-curve effect shows that a country's trade deficit will deteriorate first, and then subsequently, when its currency depreciates, trade will be favourable since, in the short run, higher import prices will have a bigger influence on total nominal imports than lower import volume. When the nominal trade balance is projected as a line graph, as shown below, produces a representative letter J form.

Figure 5.3: Effect of Devaluation on the BOP
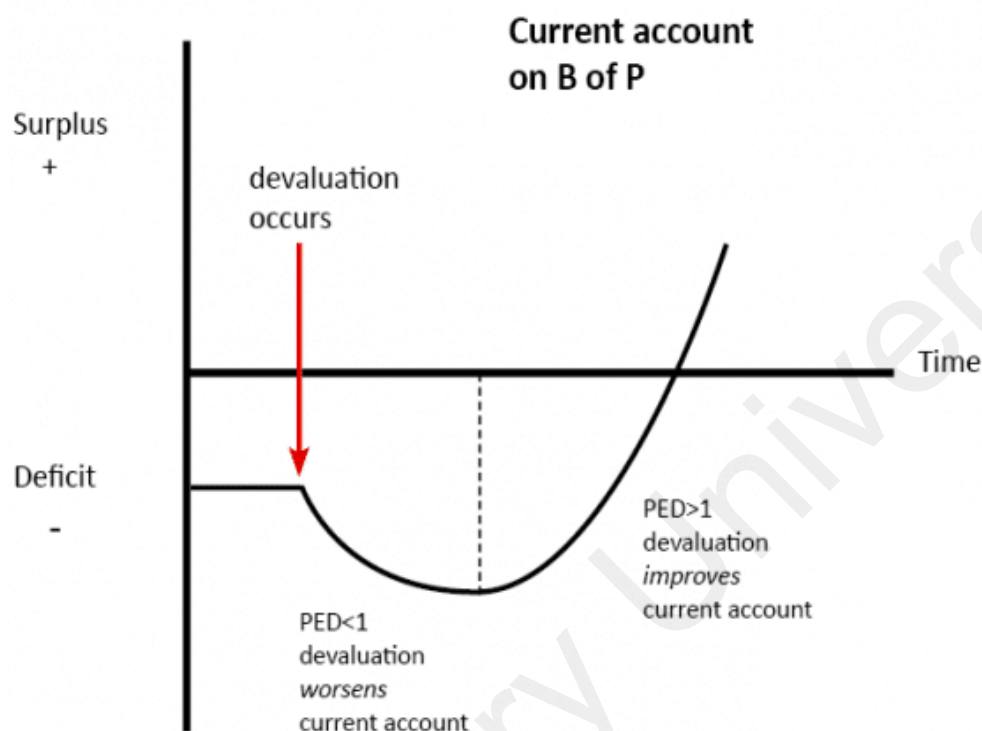
A decrease in export prices will only result in a smaller percentage increase in the amount requested in the near run. A higher import price will result in a lower percentage decline in the demand for imports. As a result, imports become more valuable in the near term. The current account may deteriorate after depreciation if the price elasticity of demand is inelastic. Over time, however, price elasticity of demand for imports and exports will likely to increase. Consequently, a decrease in export prices will lead to a greater percentage increase in the quantity demanded. The value of exports and total export earnings increase under an elastic demand environment, improving the current account position. Conversely, if the imports are price elastic, the imports will fall to a greater extent.

Direct Control for BOP Adjustment

Apart from the above expenditure changing and switching policies, several other policies are used to curb the BOP deficit. Some of the direct control measures to curb the BOP deficit are foreign exchange control, Fiscal control like imposing taxes on importable commodities, providing subsidies to import-substituting industries, commercial controls like quantitative restrictions, and other restrictions/regulations on capital movements. Already we have discussed extensively exchange controls

where the central bank regulates the appropriate use of forex reserves for productive purposes. For example, the classification of imported goods into different categories and their importance to domestic value added. Commodities under Open General License (OGL), Commodities under duty-free, restricted commodities, prohibited commodities etc. Some of the imported commodities help nations to add domestic value to the imported goods and it can be exported to other countries. Such kinds of commodities are kept under the OGL category and no restriction for the use of foreign currency for importing such kinds of commodities. However, imposing severe restrictions on other commodities can help nations to improve their BOP position. Likewise, effective use of fiscal policies can control trade deficits directly. For example, imposing tariffication on importable commodities, using Quantitative Restrictions (QRs) and providing domestic support to Export export-oriented units (EOUs) can strengthen the BOP position of the nation. Finally, the government may regulate capital flows between countries. For example, introducing and enlarging the Non-Resident External (NRE) account, FDI under the automatic route, imposing restrictions on the outflow of capital and capital controls can improve the capital account as well as the BOP account.

Trade and Economic Policies for Achieving Internal and External Balance

Various schools of economic thought recommended different policies and approaches to achieve internal sector growth without inflation and external balance without a BOP defiict. Of which the most important and renowned theory is the Mundell-Fleming open economy model. This model was developed by J.M. Fleming and R.A. Mundell in the early 1960s to evaluate the effectiveness of macroeconomic policies in the context of an open economy. The model analyses the relationship between two instruments and two targets. The model assumes that the Monetary policy is represented by interest rate and fiscal policy represented by government expenditure which is also considered to be the two most important instruments in an economy. Likewise, real GDP growth without Inflation (internal balance) and BOP equilibrium (external balance) are the two most important targets in an economy. To achieve the above two targets, the Mundell-Fleming model proposes a rule to assign monetary policy for external balance and fiscal policy for internal balance.

The model assumes;

 ➢ Monetary policy is associated with changes in interest rate

 ➢ Fiscal policy is associated with a budget deficit or budget surplus

 ➢ Exports are exogenously determined variable

 ➢ Imports are a positive function of income and

 ➢ International capital movements depend on the changes in domestic interest rates.

Model

According to the Mundell-Fleming principle, "monetary policy must be used to attain the desired level of Balance of Payments and fiscal policy for maintaining internal stability under the conditions assumed in the model in countries where employment and Balance of Payments policies are controlled to monetary and fiscal instruments." The assignment rule may be effective in providing the changes to fiscal and monetary policy are made consistently, smoothly, and without delays. This implies that fiscal and monetary policy can eliminate internal and external imbalances.

The model explains the role of macroeconomic policies on BOP under fixed and flexible exchange rates with perfect & relative capital mobility. This model also uses the IS-LM-BP technique technique assuming capital is perfectly and relatively mobile under fixed and flexible exchange rate systems. This model illustrates all the situations in a step-by-step method using simplified enlightenment.

1. **IS-LM-BP model with Perfect Capital Mobility under a Fixed Exchange Rate System.**

The first method evaluates the success of macroeconomic policies on the economy under a fixed exchange rate regime. The most significant assumption of this method is perfect capital mobility, resulting horizontal BP curve.

In both the diagrams (panel left and panel right), real income is measured in the X-axis and the interest rate is measured on the Y-axis. IS curve slopes downwards from left to right stating that there is a negative relationship between interest rate and real income. It means when interest rate decreases, the cost of borrowings also decreases but investment, employment and real income of an economy will increase. Any point on the IS curve indicates investment is equal to savings or goods

market equilibrium. LM curve slopes upward stating that there is a direct correlation among interest rate and income level. It means, with a given money supply, when income increases, money demanded for transaction purposes also increases. But money supply is given and the restoration requires the interest rate to increase so that the speculative money demand decrease and it will be exactly equal to the amount of increase in transaction money demand causing evenness in the money market at a high interest rate. A speciality of this diagram is that the BP curve is horizontal and sensitive to the changes in interest rate, which states that the capital is flawlessly movable and any point on the BP curve indicates BOP balance. BOP surplus means, the points above the BP curve and a BOP deficit means all the points below the curve. The adjoining of the IS-LM-BP curve at E indicates internal as well as external balance.

Figure 5.4: Perfect Capital Mobility under a Fixed Exchange Rate System.
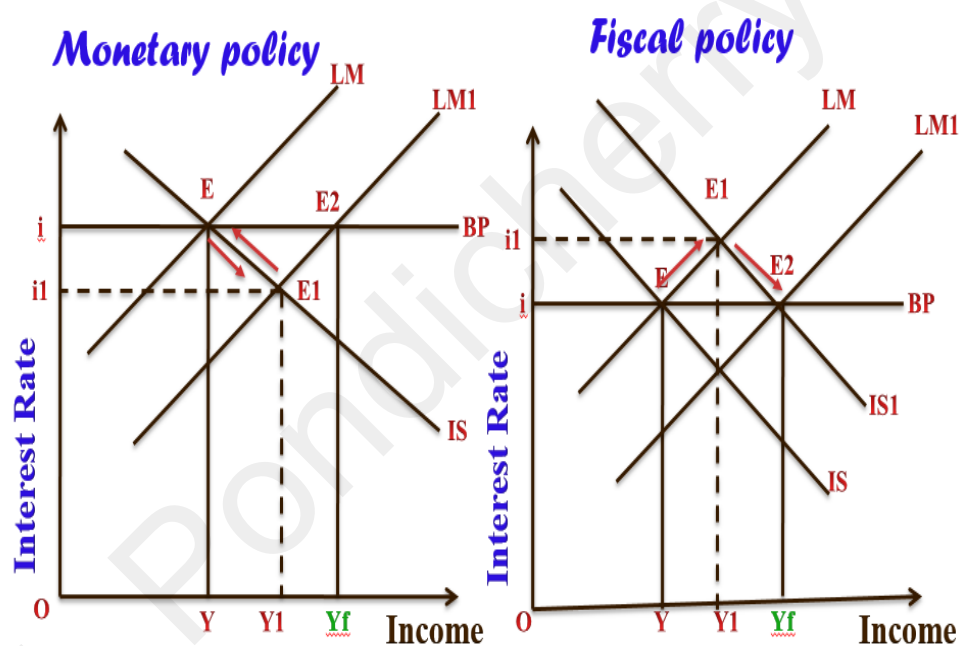
Monetary policy is ineffective and Fiscal policy is effective

In the above diagram, the IS-LM-BP curve at point E denotes an external balance in the absence of full employment in terms of production or national income. The country wishes to shift its equilibrium state from E to E2 in order to achieve internal balance with full employment (Yf level of output) without jeopardizing external balance (point on the BP curve). For this reason, if a country adopts an expansionary monetary policy by

raising its money supply, the LM curve is shifted from LM to LM1, which lowers interest rates and boosts income. Consequently, there will be a shift from E to E1, which will seriously disrupt the economy. Point E1, which indicates a BOP deficit or equilibrium and general equilibrium with less than full employment in this instance, is below the BP curve. The money supply expansion leads to a fall in interest rates, which in turn leads to a rise in income and investment. There will be a capital outflow as a result of a drop in interest rates and a rise in income, and an increase in imports leads to a BOP deficit at point E1. When there is a BOP deficit, there is more demand than supply for foreign currency, which could lead to an increase in the exchange rate.

A fixed exchange rate system reduces the money supply by having the central bank buy domestic currency and release an equal amount of foreign currency from its official reserves. With this central bank action, the economy returns to point E, its starting point. In this instance, the economy remains at point E both before and after policy action, indicating that monetary policy is ineffectual in moving the economy to point E3.

Fiscal policy is the alternative to monetary policy, and its role needs to be assessed. If the federal government/Finance ministry uses expansionary fiscal policy by increasing government spending shifts the IS curve from IS to IS1 causing interest rate and real GDP to increase. As a result, a movement from E to E1 causing a BOP surplus. Point E1 is above the BP curve states BOP surplus and general equilibrium with less than full employment. The rise in government spending causes an aggregate demand and interest rate to rise with the given money supply. Due to the increase in interest rate and increase in income, there will be a capital inflow but the import bill will rise. Since capital movements are very sensitive to alterations in interest rate causes huge capital entries compared to the small rise in import bill resulting in a BOP surplus at point E1.

At the time of BOP surplus, the inflow of foreign currency is always greater which puts pressure on the exchange rate to fall. If the economy follows a fixed exchange regime, the central bank will have to release an equal amount of home currency to buy an overseas currency causing a money supply to increase that shift the LM curve from LM to LM1 affecting interest rates to fall and income to increase. As a result, there will be a movement from E1 to E2 helping the economy to accomplish internal stability at full employment level of GDP without compromising

external balance. Hence, fiscal measures will be effective in reaching point E3 under a fixed exchange rate system.

2. **IS-LM-BP model with Perfect Capital Mobility under a Flexible Exchange Rate system.**

The second method evaluates the efficacy of macroeconomic policies on the economy under a liberalised exchange rate regime. The most important assumption of this method is that there is a liberal capital flow and a high response with interest rate, resulting horizontal BP curve.

Figure 5.5: Perfect Capital Mobility under a Flexible Exchange Rate System.
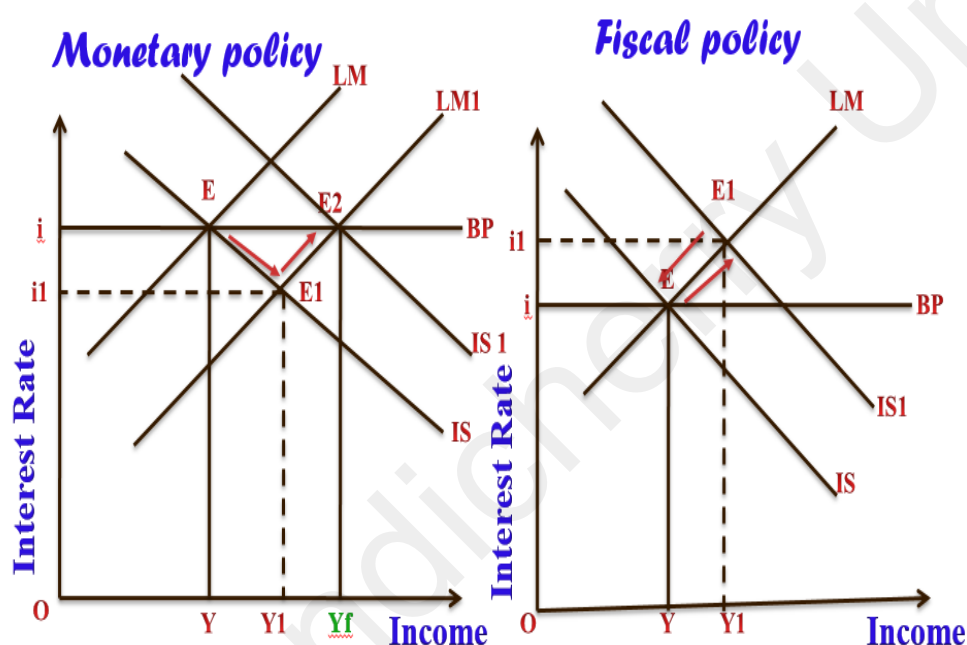
Fiscal policy is ineffective and Monetary policy is effective

To achieve macroeconomic goals, the nation will try to adopt a suitable policy aiming to move its equilibrium condition from E to E2. If the nation uses monetary easing that shift the LM curve from LM to LM1 causing the interest rate to fall and income to increase. Due to this, there will be a movement from E to E1 causing severe disturbances in the economy. In this case, Point E1 is below the BP curve stating BOP deficit/disequilibrium and general equilibrium with less than full employment level of GDP. A monetary easing leads to a reduction in the interest rate which in turn increases Investment and real GDP. A decline in the interest rate and an increase in income causes capital outflow and an increase in import resulting

163

BOP deficit at point E1. A BOP deficit is a condition where the demand for overseas currency is larger than its supply and that puts pressure on the exchange rate to rise. **Under a liberalised exchange rate system**, the central bank will not interfere in the forex market. So, the excess demand for foreign currency during the BOP deficit period puts pressure on the exchange rate to rise and decrease the value of domestic currency resulting in importable commodities costlier and exportable commodities cheaper in the overseas market. This move increases the demand for commodities internally as well as externally causing by fluctuating the IS curve to IS1. The given money supply and increase in demand caused an increase in income and interest rates. The rise in income creates a shortfall in the current account by increasing imports and the rise in interest rate creates excess capital inflows. Here, the increase in income effect on imports is lesser than the effect of an increase in the interest rate on capital inflows results upward movement from E1 to E2 making monetary policy more effective in the liberal exchange regime.

Instead of monetary policy, if the finance ministry pursues an expansionary fiscal policy, the result will be different. Suppose, the finance ministry adopts an expansionary fiscal policy by increasing government spending shifting the IS curve from IS to IS1 causing interest rates and income levels to increase. As a result, there will be a movement from E to E1 causing a BOP surplus. With the given money supply, the increase in public expenditure led to an increase in interest rate and real GDP causing a capital inflow but the import bill will also rise. Since capital movements are very sensitive to interest movements, the rise in the interest rate causes huge capital inflows compared to the small rise in import bills resulting in a BOP surplus at point E1. **Under a liberalised exchange rate regime**, the surplus in BOP puts pressure on the exchange rate to decrease and makes home currency stronger because exports become costlier in the overseas market and imports become cheaper in the internal market. This causes a backward shift in the IS curve and moving towards the initial point E makes fiscal measures ineffective under a flexible/liberal exchange rate system.

3. **IS-LM-BP model with Relative Capital Mobility under a Fixed Exchange Rate system.**

The third method evaluates the usefulness of macroeconomic policies on the economy under a fixed/stabilised exchange rate regime. The most

central assumption of this method is that the capital is not perfectly mobile, but relatively mobile resulting in an upward-sloping BP curve.

Figure 5.6: Relative Capital Mobility under a Fixed Exchange Rate System.
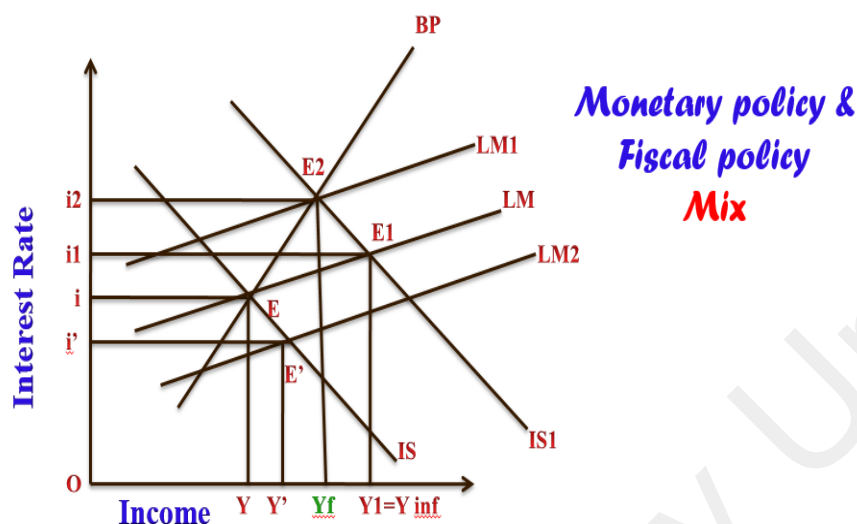
Monetary policy is ineffective and Fiscal Policy or policy MIX is effective

The basic properties of the IS-LM curve are similar to the previous diagrams. The major difference between the above diagram with the previous two cases are upward sloping BP curve. In this case, the reaction of the variations in the interest rate on capital flows is less sensitive compared to the horizontal BP curve.

Here also the initial balance starts from point E where the monetary authorities are trying to shift the equilibrium condition to E2. Point E2 states that the economy reaches the full employment level of real GDP (Yf). For this purpose, if the monetary authorities pursue expansionary monetary policy, the result will be similar to perfect capital mobility, i.e., E to E' and again E' to E due to the interference of the central bank under a stable exchange rate regime. In this case, also, monetary policy is also ineffective in accomplishing real GDP growth at full employment level.

Instead of applying monetary policy, if the finance ministry adopts a fiscal expansion that shifts the IS to IS1 and the balance position will move from E to E1. Point E1 is below the BoP curve indicating a BOP deficit in an inflationary level of output (Y_{inf}). As a result, the income-increased effect on import bills is greater than the interest-attracting capital inflows causing a BOP deficit at point E1. The BOP deficit will put a burden on

the currency rate to rise but under the stabilized exchange rate regime, the central bank will interfere in the forex market by releasing an equal amount of forex reserves thereby purchasing domestic currency causing a backward swing in the LM and money supply to fall. So the decline in the money supply results decline in income and a rise in the interest rate. If Point E2 of the BOP equilibrium is reached when the interest rate rises, causing capital inflows, and the income to fall that lowers the import bills. Point E2 shows both internal and external balance at full employment level of output. Therefore, under a fixed/stabilised exchange rate system where capital is somewhat mobile and the fiscal is most successful in achieving economic goals.

4. **IS-LM-BP model with Relative Capital Mobility under a Flexible Exchange Rate system.**

The fourth method also appraises the efficacy of macroeconomic policy on the economy but under a flexible exchange rate system. Here, the most significant supposition is that the capital is not perfectly mobile, but relatively mobile resulting in upward sloping and shifts in the BP curve.

Figure 5.7: Relative Capital Mobility under a Flexible Exchange Rate System.
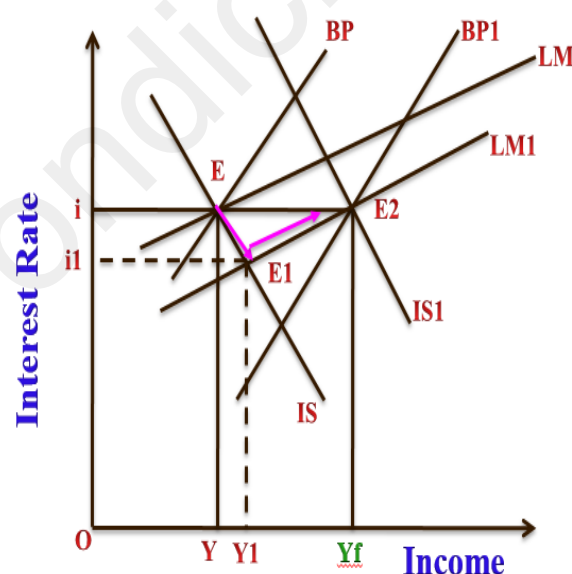

Monetary policy is effective

The IS-LM-BP approach with relative capital mobility under the flexible exchange rate system is an interesting case and applies to several capitalist economies today. In the modern world, the majority of countries are not interested in a stabilised exchange rate system and the central bank's interference in the forex market. The main reason is market clearing function in this system is very effective and there is no burden for the central bank. In this context, the above diagram evaluates the efficacy of both macroeconomic policies on the economy during a flexible exchange rate regime. Before the policy actions, the economy was at point E indicating the connection of IS-LM-BP but it is below the full employment level of GDP. Now the policymakers try to achieve an equilibrium condition from E to E2. If they go for fiscal policy, the results will be similar to perfect capital mobility where a forward change in the IS curve will take place due to fiscal expansion and an immediate backward shift in IS will also take place due to the increase in the value of home currency. Even after the expansionary fiscal policy, there won't be any change in the equilibrium condition at point E evidenced by the ineffectiveness of fiscal policy under a flexible exchange rate system. However, the outcome of monetary policy would be different in that there is a possibility to shift the equilibrium condition from E to E2.

The monetary easing shifts LM to LM1 causing income level to increase from Y to Y1 resulting from a fall in the interest rate from i to i1. As a result, there will be a movement in the equilibrium from E to E1 causing a BOP deficit at less than the potential level of real GDP. The monetary expansion will promote Investment and income in the home country resulting in capital outflow, current account deficit and BOP deficit at point E1 putting a burden on the exchange rate to increase. With the rise in the exchange rate and fall in the value of a domestic currency, importable goods become costlier and exportable commodities become cheaper in the foreign market creating opportunities for real sector growth from Y1 to Y_f. Due to currency depreciation and the expansion in the real sector shifts the IS curve to IS1 and improves the BOP position from BP to BP1. The given money supply and increase in real demand lead to an increase in income and interest rates. The rise in income creates CAD by increasing imports and the rise in interest rate creates excess capital inflows. Here, the former effect is lesser than the latter effect making monetary policy more effective under the market-determined exchange rate regime.

The Assignment Problem (Policy Mix)

In the context of the assignment rule, now we can evaluate the effectiveness of economic policies on the internal sector and external sector equilibrium using a single graph. In the below diagram, movement from the origin to upward on the Y axis measures the pursuance of contractionary monetary policy and movement towards the right on the X axis measures the pursuance of expansionary fiscal policy. The Internal Balance (IB) curve and the External Balance (EB) curve intersect at point F indicating macroeconomic equilibrium. Zone I and IV indicate unemployment and Zone II and III indicate inflation with respect to IB Curve. Similarly, zone I and II indicates BOP surplus and Zone III and IV indicates BOP deficit with respect to EB Curve. Any point on the IB and EB curve represents the internal sector and external sector balance. Both the curves divide the diagram into four zones.

Figure 5.8: Assignment Rule
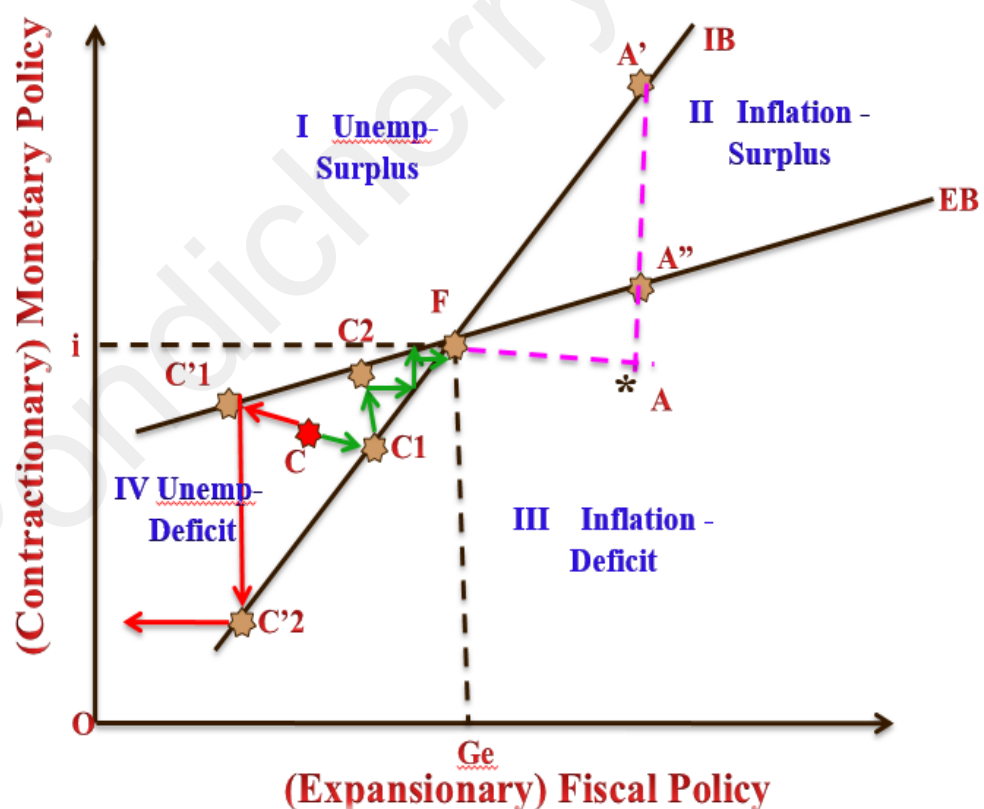
Zone I denotes a case of unemployment and BOP surplus because any point in this zone is left and above of IB and EB curve. The expansionary fiscal and monetary policy action is needed to restore equilibrium at point F. The expansionary fiscal policy increases aggregate demand and output,

thereby decreasing the problem of unemployment. Likewise, expansionary monetary policy reduces interest rates and increases income thereby causing capital outflows and a rise in imports may turn BOP surplus to balance. Zone III is situated on the right side of both the curve, indicating inflation and BOP deficit. The contractionary monetary and fiscal policy action is needed to restore equilibrium at point F. The contractionary monetary policy raises interest rates and reduces income thereby causing capital inflows and a fall in import bill may turn BOP deficit to balance.

Likewise, contractionary fiscal policy reduces aggregate demand and output, thereby decreasing the problem of inflation. So the zone I and zone III cases are straightforward because they require both policies to be either contractionary or expansionary and they do not encompass any complicated assignment problem. However, the assignment problem occurs in the case of zone II and zone IV where the disequilibrium lies between the IB and EB curves. Zone IV is a case of unemployment-BOP deficit because it reflects in the left side of the IB curve but it is also reflected on the right side of the EB curve. Zone II represents a case inflation-BOP surplus. Cases represented in zones II and IV require cautious assignment of appropriate policy instruments to realize balances simultaneously. If policymakers adopt inappropriate rule action may aggravate the disequilibrium and cause severe damage to the economy. Suppose the economy lies at point C indicates unemployment and BOP deficit because point C lies above the internal balance and below the External Balance. Here, the policy maker first assigns the expansionary fiscal policy for internal balance and then the contractionary monetary policy for external balance again expansionary fiscal policy for internal balance and then the contractionary monetary policy for external balance, likewise, the policymakers have to adopt both the policies continuously without any time gap, they can reach the target of internal and external balance at point F. Instead of applying expansionary fiscal policy for internal balance if the policymakers first adopt a contractionary fiscal policy for external balance and expansionary monetary policy for internal balance, the economy will move further and further away from macroeconomic equilibrium. To achieve macroeconomic equilibrium and to protect the economy from oscillations, the policymakers should follow the assignment rule.

Changing Trade Policies of India

After setting up a planning commission, the government of India has changed its trade policies several times according to various situations and the recommendations of the planning commission.

Initially, the government of India did not give much importance to the external sector and they focused more on socio-economic indicators in the context of domestic producers, domestic consumers and domestic raw materials. During the first plan period, the exports and imports of India witnessed sluggish growth. During the same period, less than 88 per cent of the import bill was paid from the export earnings, the rest all went to the trade deficit and paid through borrowings. The second five-year plan gave importance to rapid industrialization and some relaxations were given to imports to support industrialization in India. Under a rapid industrialization strategy, the government of India liberalized the import of machinery, capital equipment, spare parts components, materials, intermediate goods and, technical know-how. As a result, the stock of foreign exchange reserves started falling at a faster pace during 1957. To overcome the shortage of forex reserves and to utilise the forex reserves effectively, the government of India has classified imports into different categories called, essential imports, non-essential imports, prohibitive list, restrictive list and other categories. All the above categories are regulated by two prominent policies Import restrictive policies and import substitutive policies. Under these policies, the Indian policymakers picked allocation of forex reserves amongst diverse users through import authorizations. The importers are permitted to use a stated quantity of foreign currency according to the purpose of the specified sources of the supply of foreign currency. Such kind of import-restrictive policies were rigorously followed by the government of India for two decades from 1958 to 1978. The import policies from 1980 to 85 focused liberal approach aiming to provide necessary imports for industrial growth. Some of the important import liberalization policies introduced under EXIM policies are the Import policy for registered exporters, the import of capital goods, export trading houses, the import of intermediate goods and the import of technology. Under these five policies, India's imports were liberalized intensively in the context of export promotion and enhancing competitiveness.

Like the import policies, the government of India also paid special attention to promoting exports since the first five-year plan. We can classify the export policies in India during the pre-reform period into three segments according to the performances of the export sector. Phase I focuses on a period from the first five-year plan to 1973 when passive export policies were followed. During the first phase, the export sector contributed extensively to support India's growth except few sectors like iron ore and traditional export items. Phase II focuses on a period from 73 to the 80s when the export sector did not show much progress in almost all the key sectors of the economy agricultural and allied products, engineering and manufactured goods showed a declining trend. The GOI took a series of measures to boost exports like a cash compensatory scheme, duty drawback system, replenishment licenses, fiscal concessions for exports and trading houses, setting up of export processing zones etc.. are some of the export promotive measures were introduced to boost exports in India. Phase III focuses on a period from the 1980s to the '90s and observes a positive approach to all the export promotion strategies implemented by the government of India during the 70s. Huge sums of incentives for export production have been enhanced and export promotive policies are considered an integral part of industrial and developmental policies.

The period after the 1990s are considered as a liberalized trade policy regime in India. The main features of the new trade policies since 90 are as follows:

Liberal exports and imports: India has had a somewhat convoluted and awkward trade policy system since the 1990s. Different importer classifications, import license types, and EXIM scrips have all been categorized by them. In 1996, 6160 tariff lines were removed in order to liberalize commerce; by 2000, that number had risen to 8070. On 1430 items, quantitative limits were eliminated under the EXIM policy 2000. The quantitative restrictions on all import items have been loosened in accordance with WTO recommendations.

Reforms in the tariff policies: According to the Rajah Chellaiah committee, the rupee's significant depreciation in the 1980s and 1990s worried Indian companies and warranted some sort of safeguard. In order to achieve price parity between items produced domestically and abroad, the committee suggested that the current import taxes be dramatically reduced in 1999. In response to the committee's

recommendations, the Indian government lowered the levy rate from 11% to 85%. On non-agricultural items, the maximum import tariff has dropped to 10%.

Current account convertibility: On July 1st and July 3rd, 1991, the Government of India (GOI) adjusted the rupee's currency rate in two steps, each time taking a 19% drop. The implementation of the rupee's partial convertibility in 1992 came next. The dual exchange system fixed the rate at 40% and required the remaining 60% to be converted at a rate set by the market. Complete current account convertibility was allowed under the 1993–1994 budget.

Trading Houses: A broad range of goods could be imported by trading and export houses thanks to the new trade regulations that were implemented in 1991. The Indian government was allowed to establish a trading company with fifty-one percent foreign equity capital in order to encourage exports. The benefit of self-certification under the advanced licensing system was made available by trade policy in 1992, allowing trading houses to import intermediate items duty-free and without restriction.

Special Economic Zones and Export-Oriented Units: In addition to SEZs, the Indian government also introduced EOUs in the early years of 1981 as part of the EXIM strategy, which was implemented in 2000. Regarding aspects like new material supplies, export ports, hinderland amenities, availability of technological skills for industrial development and international competitiveness offers several supports to EOUs. Similarly, SEZs offer top-notch infrastructure and a globally competitive setting. In order to draw investment into SEZs and to support SEZ developers, a range of incentives and amenities are provided to both SEZ units and developers.

Export Zones: In order to promote agricultural exports and refocus our export efforts on certain goods and geographic regions, the EXIM strategy of 2001 created the idea of agricultural export zones. The plan is centered on the cluster approach, which identifies viable products, the location in which they are cultivated, and the adoption of an end-to-end strategy, which integrates the entire process from the point of production until the product is sold.

Initiatives on market access: In 2001–2002, a market access program was established to support international marketing and promotion initiatives. The main components of the program include conducting in-depth market research on specific products in targeted nations to gather information for boosting exports from India; supporting India's international trade; and showcasing Indian brands and products through showrooms and warehouses set up in rented space, as well as planning trade shows and fairs.

Concessions and Exemptions: In order to encourage exports, numerous tax breaks and exemptions were provided throughout the 1990s. One of the main factors in the concessions made to make Indian products competitive internationally was the EXIM policies of 1992–1997 and 1997–2002. Every year, these policies are reviewed and updated in the EXIM policies that are released. Annual union budgets have given exporters several tax breaks and benefits over the years. These include lowering the top rate of customs duty to 10%, significantly lowering the duty rates on essential IT inputs, giving developers of Special Economic Zones (SEZs) a 10-year tax break in exchange for concessions towards infrastructure development, etc. We can evaluate the effect of recent trade policies on current account variables in India since 2000. The below trend line analysis exposes the growth rate of India's exports of goods and services, trade deficit and current account performances since 2000.

From the above discussions on the foreign trade policies of India, it is observed that the government of India has introduced several liberalisational policies to promote foreign trade. As a result, there is a positive growth in India's merchandise and service trade which can be seen from the trend line analysis. Even though the economic policies promote a positive impact on India's foreign trade, the progress magnitude of imports is increasing much faster than the progress percentage of exports causing the current account deficit to widen. Interestingly, the service account which is also called service trade is also progressing in the post-reform period. Especially, the net service trade is always positive and plays a major in reducing the burden of trade deficit and current account deficit.

Figure 5.9: Trends in Current Account in India since 2000.
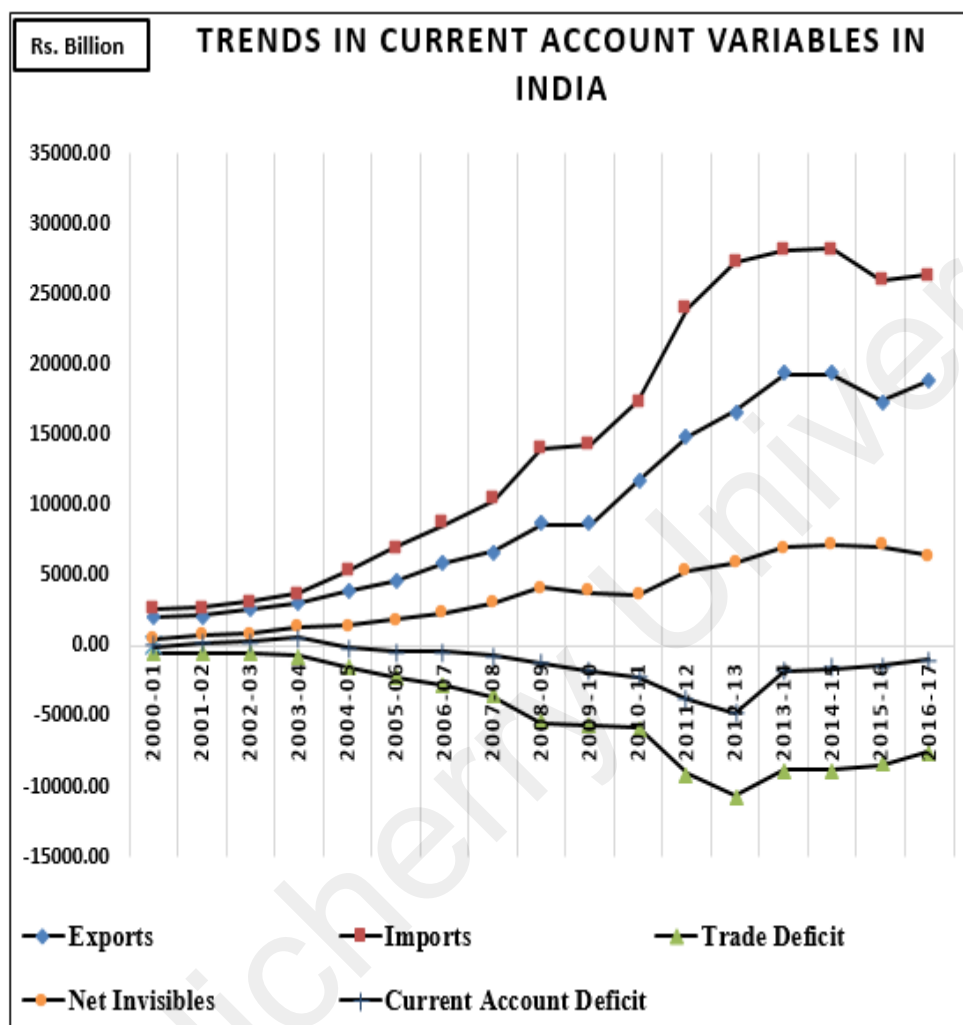
(Source: Computed from the RBI Handbook of Statistics)

Review Questions

1. Discuss and differentiate internal trade from international trade.

2. Explain the terms Balance of Payments settlement and Adjustment with suitable examples.

3. What is Balance of Payments? Discuss various components of the Balance of Payments. Also, explain the factors which are responsible for disequilibrium in the Balance of Payments.

4. Discuss in detail about the effect of devaluation on national income, domestic consumption and current account balance.

5. Is BOP deficit necessarily bad and surplus necessarily good?

6. What is Devaluation? Explain J curve effects of Devaluation. When devaluation will be more effective in solving BOP disequilibrium.

7. Devaluation improves the current account balance and overall BOP of the nation. Will you recommend the same to improve India's BOP? Why or Why not?

8. Discuss in detail about the effects of devaluation on the economy. Also, highlight the importance and relevance of Harry Johnson's views on the problem of BOP.

9. Explain what are the variables that reduce the strain on the current account deficit. Also, list the supportive measures by the government of India for its sustainable Balance of Payments position.

10. Examine the role of expenditure switching and expenditure changing policies for BOP adjustment. Also indicate the way and the extent to which macroeconomic instruments could be successfully used to bring internal and external equilibrium in the context of an open economy under different exchange rate regimes.

11. The Central bank of several developing countries was running short of foreign exchange reserves in 90s. Following a fixed exchange rate regime was one of the important reasons for declining forex reserves. Such kind of policies may lead to the occurrence of a BOP Crisis. Comment.

Self-assessment Questions

1. Salvatore, D. (2016), International Economics, Wiley.

2. Krugman, Paul and Maurice Obstfeld (2006), International Economics: Theory and Policy, Addison Wesley.

3. Meade, J. E (1952): A Geometry of International Trade, George Allen and Unwin, London

4. Bo O Sodersten and Geoffrey Reed (1994) International Economics, Macmillan, 3rd Edition.

5. Lindert, P.H and Charles P Kindleberger (1998), International Economics, AITBS, 8th Ed.

6. Thomas A Pugel (2007). International Economics, 13th edition

7. Sodersten Bo and Geoffrey Reed (1999), International Economics, Palgrave MacMillan.

8. Dennis Appleyard and Alfred Field, International Economics (8th Ed), McGraw Hill Pub.

9. Carbaugh.R.J (2014), International Economics, 12th Edition, South-Western, USA.

10. Barbara Ingham (2015), International Economics, Prentice Hall, England.

11. GoI, Annual Reports, Ministry of Commerce and Industries, Various issues.

12. Katsioloudes. M.I and Hadjidakis. S (2007) International Business: A Global Perspective, Elsevier, UK.

13. Cherunilam.F (2016) International Economics, The McGraw-Hill, New Delhi.

14. Mannur HG (2010) International Economics, Vikas Publishing House Pvt Ltd, New Delhi