

# **INTERNATIONAL TRADE (ECO3C09)**



## **STUDY MATERIAL THIRD SEMESTER**

**M.A. ECONOMICS  
(2019 Admission)**

**UNIVERSITY OF CALICUT  
SCHOOL OF DISTANCE EDUCATION  
CALICUT UNIVERSITY P.O.  
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# **School of Distance Education University of Calicut**

## **Study Material**

**Core Course : Third Semester**

**M.A. ECONOMICS  
(2019 Admission)**

**ECO3C09: INTERNATIONAL TRADE**

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# INTERNATIONAL TRADE

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## **MODULE 1**

# **INTERNATIONAL TRADE AND ECONOMIC DEVELOPMENT**

International economics is a field of study that assesses the implications of international trade, international investment, and international borrowing and lending. There are two broad subfields within the discipline: international trade and international finance. International trade is a field in economics that applies microeconomic models to help understand the international economy. Its content includes basic supply-and demand analysis of international markets; firm and consumer behavior; perfectly competitive, oligopolistic, and monopolistic market structures; and the effects of market distortions.

International finance applies macroeconomic models to help understand the international economy. Its focus is on the interrelationships among aggregate economic variables such as GDP, unemployment rates, inflation rates, trade balances, exchange rates, interest rates, and so on. This field expands basic macroeconomics to include international exchanges. Its focus is on the significance of trade imbalances, the determinants of exchange rates, and the aggregate effects of government monetary and fiscal policies. The pros and cons of fixed versus floating exchange rate systems are among the important issues addressed.

## **1.1. The Importance of Trade to Development**

- **Trade Theory and Economic Development**

According to traditional trade theory, if each nation specializes in the production of the commodity of its comparative advantage, world output will be greater and, through trade, each nation will share in the gain. With the present distribution of factor endowments and technology between developed and developing nations, the theory of comparative advantage thus prescribes that developing nations should continue to specialize primarily in the production of and export of raw materials, fuels, minerals, and food to developed nations in exchange for manufactured products. While this may maximize welfare in the short run, developing nations believe that this pattern of specialization and trade relegates them to a subordinate position vis-a-vis developed nations and keeps them from reaping the dynamic benefits of industry and maximizing their welfare in the long run. The dynamic benefits (to be distinguished from the static benefits from comparative advantage) resulting from industrial production are a more trained labor force, more innovations, higher and more stable prices for the nation's exports, and higher income for its people.

With developing nations specializing in primary commodities and developed nations specializing in manufactured products, all or most of these dynamic benefits of industry and trade accrue to developed nations, leaving developing nations poor, undeveloped, and dependent. This

belief is reinforced by the observation that all developed nations are primarily industrial, whereas most developing nations are, for the most part, primarily agricultural or engaged in mineral extraction or the production of simple manufactured goods. Thus, traditional trade theory was attacked for being static and irrelevant to the development process. According to this thesis, traditional trade theory involves adjustment to existing conditions, whereas development necessarily requires changing existing conditions.

In short, traditional trade theory was believed to maximize welfare at one point in time or in the short run but not over time or in the long run. These are serious charges, which, if true, would indeed make traditional trade theory irrelevant to the process of economic development. However, traditional trade theory can readily be extended to incorporate changes in factor supplies and technology over time. What this means is that a nation's pattern of development is not determined once and for all, but must be recomputed as underlying conditions change or are expected to change over time in the nation. For example, as a developing nation accumulates capital and improves its technology, its comparative advantage shifts away from primary products and simple manufactured goods to more sophisticated goods and services.

To some extent, this has already occurred in Brazil, Korea, Taiwan, Mexico, and many other developing nations. As a result, traditional trade theory remains very much relevant to developing nations and the development process.

Furthermore, the dynamic benefits from industry can theoretically be incorporated into the original calculations of comparative advantage and into subsequent changes in comparative advantage over time. This may indicate that the expansion of industrial production does not always represent the best use of the developing nation's scarce resources—as some of these nations have now come to realize. Thus, although the need for a truly dynamic theory cannot be denied, comparative statics can carry us a long way toward incorporating dynamic changes in the economy into traditional trade theory. As a result, traditional trade theory, with the qualifications as noted, is of relevance even for developing nations and the development process.

- **Trade and Development**

International trade is closely linked to development. Most fast growing economies also have a dynamic trade sector. When a firm or an individual buys a good or a service produced more cheaply abroad, living standards in both countries increase. There are other reasons consumers and firms buy abroad that also make them better off—the product may better fit their needs than similar domestic offerings or it may not be available domestically. In any case, the foreign producer also benefits by making more sales than it could selling solely in its own market and by earning foreign exchange (currency) that can be used by itself or others in the country to purchase foreign-made products. The gains(importance) of trade is generally reflected in the following manner.

**Acquisition of Capital Goods Industries:** The under-developed countries (UDCs) are enabled by foreign trade to obtain in exchange for their goods capital equipment and heavy engineering machines to foster their countries' economic development. For example, India exports spices, cotton and cotton textiles, marine products, germs and jewellery and in exchange we import heavy machinery, defence equipments, and other capital equipment from the developed countries.

**Market Extension:** The foreign trade can extend the scope of the business to the international market. The domestic market is limited; the foreign trade sector opens new vistas, new marketing channels and new markets. When the markets are extended, the economies of scale are reaped; the efficiency and productivity will increase. Accordingly, the forces of development will set themselves in motion.

**Foreign Investment:** The foreign trade is also helpful in attracting foreign investment. The foreign investors are attracted towards active trading countries and invest in the form of capital goods and technical expertise. In this way, the assembling plants, the manufacturing plants and the latest technology will come into the country. Foreign Direct Investments and off shoring will stimulate the economic climate of a nation.

**National Income:** When there is imports and exports of goods and services, the government can earn the revenue in form of tariffs, custom duty, import licence fees, etc.

Employment Opportunities: Moreover, the external sector also opens the employment opportunities for the country-men in the foreign countries. Hundreds of thousands of Indians are working abroad. India is earning billions of dollars through foreign exchange remittances and stands in the second position just behind China. Therefore, such remittances are proved to be a major source of foreign exchange earnings.

## **1.2. Trade as an Engine of Growth**

During the nineteenth century, most of the world's modern industrial production was concentrated in Great Britain. Large increases in industrial production and population in resource-poor Britain led to a rapidly rising demand for the food and raw material exports of the regions of recent settlement (the United States, Canada, Australia, New Zealand, Argentina, Uruguay, and South Africa). For example, during the century from 1815 to 1913, Britain's population tripled, its real GNP increased 10 times, and the volume of its imports increased 20 times. The stimulus provided by their rapidly expanding exports then spread to the rest of the economy of these newly settled lands through the familiar accelerator- multiplier process. Thus, according to Nurkse (1970), the export sector was the leading sector that propelled these economies into rapid growth and development. That is, international trade functioned as an engine of growth for these nations during the nineteenth century.

The regions of recent settlement were able to satisfy Britain's burgeoning demand for food and raw materials (and

in the process grow very rapidly) because of several favorable circumstances. First, these countries were richly endowed with natural resources such as fertile arable land, forests, and mineral deposits. Second, workers with various skills moved in great waves from overpopulated Europe to these mostly empty lands, and so did huge amounts of capital. Although data are far from precise, it seems that from 30 to 50 percent of total capital formation (i.e., investments) in such nations as Canada, Argentina, and Australia was financed through capital inflows. The huge inflows of capital and workers made possible the construction of railroads, canals, and other facilities that allowed the opening up of new supply sources of food and raw materials. Finally, the great improvement in sea transportation enabled these new lands to satisfy the rising demand for wheat, corn, cotton, wool, leather, and a variety of other foods and raw materials more cheaply than traditional sources of supply in Europe and elsewhere. Thus, all “ingredients” were present for rapid growth in these new lands: The demand for their products was rising rapidly; they had great and unexploited natural resources; and they received huge amounts of capital and millions of workers from Europe.

To be sure, there are some economists, notably Kravis, who believe (and have presented data that seem to show) that the rapid growth of the regions of recent settlement during the nineteenth century was due primarily to very favorable internal conditions (such as abundant natural resources), with trade playing only an important supportive role. Be that as it may, it is generally agreed that today’s developing nations can rely

much less on trade for their growth and development. This is due to less favorable demand and supply conditions. On the demand side, it is pointed out that the demand for food and raw materials is growing much less rapidly today than was the case for the regions of recent settlement during the nineteenth century. There are several reasons for this: (1) The income elasticity of demand in developed nations for many of the food and agricultural raw material exports of developing nations is less (and sometimes much less) than 1, so that as income rises in developed nations, their demand for the agricultural exports of developing nations increases proportionately less than the increase in income. (2) The development of synthetic substitutes has reduced the demand for natural raw materials; for example, synthetic rubber has reduced the demand for natural rubber, nylon the demand for cotton, and plastics the demand for hides and skins. (3) Technological advances have reduced the raw material content of many products, such as tin-plated cans and microcircuits. (4) The output of services (with lower raw material requirements than commodities) has grown faster than the output of commodities in developed nations. (5) Developed nations have imposed trade restrictions on many temperate exports (such as wheat, vegetables, sugar, oils, and other products) of developing nations.

On the supply side, Cairncross (1962) has pointed out that most of today's developing nations are much less well endowed with natural resources (except for petroleum-exporting nations) than were the regions of recent settlement during the nineteenth century. In addition, most of today's developing

nations are over-populated, so that most of any increase in their output of food and raw materials is absorbed domestically rather than exported. Furthermore, the international flow of capital to most developing nations today is relatively much less than it was for the regions of recent settlement in the nineteenth century, and today's developing nations seem also to face an outflow of skilled labor rather than an inflow. Finally, it is also true that until the 1990s, developing nations have somewhat neglected their agriculture in favor of more rapid industrialization, thereby hampering their export (and development) prospects.

### **1.3. The Contributions of Trade to Development**

Even though international trade cannot in general be expected to be an “engine of growth” today, there are still many ways (besides the static gains from comparative advantage) in which it can contribute to the economic growth of today's developing nations. Haberler, among others, has pointed out the following important beneficial effects that international trade can have on economic development:

(1) Trade can lead to the full utilization of otherwise underemployed domestic resources. That is, through trade, a developing nation can move from an inefficient production point inside its production frontier, with unutilized resources because of insufficient internal demand, to a point on its production frontier with trade. For such a nation, trade would represent a vent for surplus, or an outlet for its potential surplus of agricultural commodities and raw materials. This

has indeed occurred in many developing nations, particularly those in Southeast Asia and West Africa.

(2) By expanding the size of the market, trade makes possible division of labor and economies of scale. This is especially important in the production of light manufactures in small economies in the early stages of development.

(3) International trade is the vehicle for the transmission of new ideas, new technology, and new managerial and other skills.

(4) Trade also stimulates and facilitates the international flow of capital from developed to developing nations. In the case of foreign direct investments, where the foreign firm retains managerial control over its investment, the foreign capital is likely to be accompanied by foreign skilled personnel to operate it.

(5) In several large developing nations, such as Brazil and India, the importation of new manufactured products stimulated domestic demand until efficient domestic production of these goods became feasible.

(6) international trade is an excellent antimonopoly weapon because it stimulates greater efficiency by domestic producers to meet foreign competition. This is particularly important to keep low the cost and price of intermediate or semi-finished products used as inputs in the domestic production of other commodities.

However, since a developing nation can refuse to trade if

it gains nothing or loses, the presumption is that it must also gain from trade. It is true that when most of the gains from trade accrue to developed nations, there is a great deal of dissatisfaction and justification for demands to rectify the situation, but this should not be construed to mean that trade is actually harmful. One can, of course, always find cases where, on balance, international trade may actually have hampered economic development. However, in most cases it can be expected to provide invaluable assistance to the development process. China, which for security and ideological reasons strove for self-sufficiency during most of the postwar period, during the 1990s came to appreciate the potential contribution of trade to its growth and development and is indeed now reaping major benefits from international trade—as are the former communist countries of Eastern Europe after the fall of communism.

#### **1.4. The Terms of Trade and Economic Development**

The theory terms of trade and commodity terms of trade are the integral parts of international economics. Terms of trade refers to the rate at which goods of one country is exchanged for the goods of another country. It is a measure of the purchasing power of exports of a country in terms of its imports, and is expressed as the relation between export prices and import prices of the goods. The terms of trade of a country are influenced by various factors such as reciprocal demand, changes in factor endowments, changes in technology, changes in tastes, economic growth, tariffs and devaluation etc.

Terms of trade refers to the rate at which the goods of one country is exchanged for the goods of another country. As such, terms of trade is expressed as the relation between export price and import price. When export prices of a country rise relatively to its import prices, the terms of trade is said to have improved as the country can have larger quantity of imports in exchange for a given quantity of exports. On the other hand, when its import prices rise relatively to its export prices, its terms of trade are said to have worsened. The country's gains from trade is reduced because it can have a smaller quantity of imports in exchange for a given quantity of exports than before.

The gains from trade refer to the net benefits or increase in goods that a country obtains by trading with other countries. It also means the increase in consumption of a country resulting from exchange of goods and specialisation in production through international trade.

- **The net barter or commodity terms of trade:**

It is the ratio between the price of a country's export goods and import goods. To measure the changes in commodity terms of trade over a period, the ratio of change in export prices and import prices is taken. The formula which is used to measure the commodity terms of trade is:

$$T_c = \frac{\frac{P_{x1}}{P_{x0}}}{\frac{P_{m1}}{P_{m0}}}$$

where  $T_c$  stands for the commodity terms of trade,  $P$  for the

price, the subscript x for exports and m for imports, 0 for the base year and 1 for the current year. The concept of the commodity or net barter terms of trade has been used by the economist to measure the gain from international trade.

- **Gross Barter Terms of Trade**

To make up for the deficiency realised in the net barter terms of trade, Professor Taussig devised the concept of gross barter terms of trade. He pointed out that instead of relating import and export prices, we should relate quantities of imports and exports. The gross barter terms of trade is the ratio between the quantities of a country's imports and exports. Symbolically,

$$TC = \frac{Q_m}{Q_x}$$

where, TC stands for gross barter terms of trade;  $Q_m$  for quantities of imports,  $Q_x$  for quantities of exports. It can be easily accessed from the above equation that higher the ratio between quantities of imports and exports, the better the gross barter terms of trade. To measure the changes in gross barter terms of trade over a period, the index number of the quantities of imports and exports in base period and the end period are related to each other. The formula which is used for measuring gross barter terms of trade is:

$$T_g = TC = \frac{\frac{Q_{m1}}{Q_{m0}}}{\frac{Q_{x1}}{Q_{x0}}}$$

Taking 2001 as base year and expressing India's both import and export quantities as 100, if we find that the index of quantity imports had risen to 160 and that of quantity exports to 120 in 2011, then the gross barter terms of trade has changed as follows:

$$T_g = \frac{\frac{160}{120}}{\frac{100}{100}} = 133.33$$

It implies from the above equation that the gross barter terms of trade has registered an improvement by approximately 33 percent in 2011 compared with 2001. On the other hand, if the quantity of import index has risen by 130 and that of quantity exports by 180, then the gross barter terms of trade would be 72.22.

$$T_g = \frac{\frac{130}{180}}{\frac{100}{100}} = 72.22$$

The above equation implies that there was deterioration in the terms of trade by 18 percent in 2011 over 2001.

- **Income Terms of Trade**

It was the famous economist Dorrance who has improved upon the concept of the net barter terms of trade by formulating the concept of the income terms of trade. The index takes into account the volume of exports of a country and its export and import prices (the net barter terms of trade). It shows a country's changing import capacity in relation to

changes in its exports. Thus, the income terms of trade is the net barter terms of trade of a country multiplied by its export volume index. It can be expressed as:

$$T_y = T_c \cdot Q_x = \frac{\text{Index of export Prices} \times \text{Export Quantity}}{\text{Index of Import Prices}}$$

where  $T_y$  is the income terms of trade,  $T_c$  the commodity terms of trade and  $Q_x$  the export volume index. It is required to mention here that H. Imlah calculates this index by dividing the index of the exports by an index of the prices of imports. He calls it the "Export Gain from Trade Index"

As for example, taking 2001 as base year, if  $P_x = 140$ ,  $P_m = 70$  and  $Q_x = 80$  in 2001, then:

$$P_y = (140 \cdot 80) / 70 = 160$$

It implies that there is improvement in the income terms of trade by 60 percent in 2011 compared with 2001. A rise in the index of income terms of trade implies that a country can import more goods in exchange for its exports. A country's income terms of trade may improve but commodity terms of trade may deteriorate. Taking the import prices to be constant, if export prices fall, there will be an increase in the sales and value of exports.

#### **1.4.1. Factors Affecting Terms of Trade**

The terms of trade of a country are influenced by a number of factors which are discussed below.

- **Reciprocal Demand:** The terms of trade of a country depends upon reciprocal demand, i.e. "the strength and

elasticity of each country's demand for the other country's product". Suppose there are two countries, Germany and England, which produce linen and cloth respectively. If Germany's demand for England's cloth becomes more intense (inelastic), the price of cloth rises more than the price of linen and the commodity terms of trade will move against Germany and in favour of England. On the other hand, if England's demand for Germany's linen becomes more intense, the price of linen will rise more than the price of cloth, and the commodity terms of trade will move in favour of Germany and against England.

- **Changes in Technology:** Technological changes also affect terms of trade of a country. The terms of trade may improve or deteriorate with technological change.
- **Changes in Factor Endowments:** Changes in factor endowments of a country affect its terms of trade. Changes in factor endowments may increase exports or reduce them. With the taste remaining unchanged, this may lead to changes in the terms of trade.
- **Changes in Tastes:** Changes in tastes of the people of a country also influences its terms of trade with another country. Suppose England's tastes shifts from Germany's linen to its own cloth. In this situation, England would export less cloth to Germany and its demand for Germany's linen would also fall. Thus England's terms of trade would improve. On the contrary, a change in England's taste for Germany's linen would increase its demand and hence the terms of trade would deteriorate for England.

- **Economic Growth:** Economic growth is another important factor which affects the terms of trade. The rising of a country's national product or income over time is called economic growth. Given the taste and technology in a country, an increase in productive capacity may affect favorably or adversely its terms of trade.
- **Tariffs:** Tariffs is a tax or duty imposed on goods when they enter and leave the national boundary. Tariff has an impact on the terms of trade of the country. An import tariff generally improves the terms of trade of the importing country.
- **Devaluation:** Devaluation raises the domestic price of imports and reduces the foreign price of exports of a country devaluing its currency in relation to the currency of another country. Devaluation will be successful only if the gross barter terms of trade become adverse.

## MODULE II

### DEVELOPMENTS IN TRADE THEORIES

#### 2.1. Offer Curves

Offer curves (sometimes referred to as reciprocal demand curves) were devised and introduced into international economics by Alfred Marshall and Ysidro Edgeworth, two British economists, at the turn of the twentieth century. The offer curve of a nation shows how much of its import commodity the nation demands for it to be willing to supply various amounts of its export commodity. Offer curves incorporate elements of both demand and supply. Alternatively, we can say that the offer curve of a nation shows the nation's willingness to import and export at various relative commodity prices. The offer curve of a nation can be derived from the nation's production frontier, its indifference map, and the various hypothetical relative commodity prices at which trade could take place.

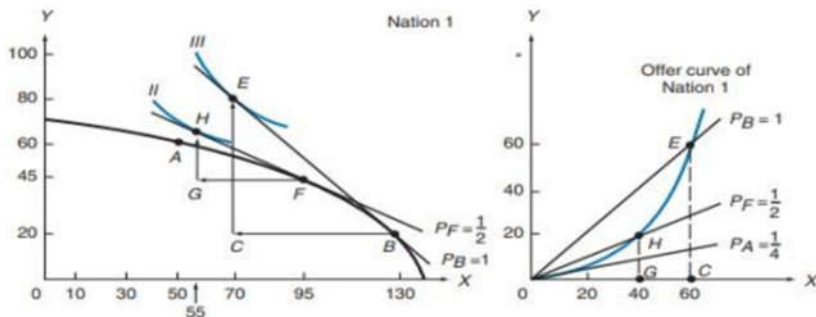
- **Derivation and Shape of the Offer Curve of Nation 1**

In the left panel of Figure.2.1 Nation 1 starts at the no-trade (or autarky) point A. If trade takes place at  $PB = PX / PY = 1$ , Nation 1 moves to point B in production, trades 60X for 60Y with Nation 2, and reaches point E on its indifference curve III. This gives point E in the rightpanel of Figure.2.1. At  $PF = PX / PY = 1/ 2$ , Nation 1 would move instead from point A to point F in production, exchange 40X for 20Y with Nation

2, and reach point H on its indifference curve II. This gives point H in the right panel. Joining the origin with points H and E and other points similarly obtained, we generate Nation 1's offer curve in the right panel. The offer curve of Nation 1 shows how many imports of commodity Y Nation 1 requires to be willing to export various quantities of commodity X. To keep the left panel simple, we omitted the autarky price line  $PA = 1/4$  and indifference curve I tangent to the production frontier and PA at point A. Note that PA, PF, and PB in the right panel refer to the same  $PX/PY$  as PA, PF, and PB in the left panel because they refer to the same absolute slope. The offer curve of Nation 1 in the right panel of Figure.2.1 lies above the autarky price line of  $PA = 1/4$  and bulges toward the X-axis, which measures the commodity of its comparative advantage and export. To induce Nation 1 to export more of commodity X,  $PX/PY$  must rise. Thus, at  $PF = 1/2$ , Nation 1 would export 40X, and at  $PB = 1$ , it would export 60X. There are two reasons for this: (1) Nation 1 incurs increasing opportunity costs in producing more of commodity X (for export), and (2) the more of commodity Y and the less of commodity X that Nation 1 consumes with trade, the more valuable to the nation is a unit of X at the margin compared with a unit of Y.

In the left panel of Figure.2.2 Nation 2 starts at the autarky equilibrium point A. If trade takes place at  $PB = PX/PY = 1$ , Nation 2 moves to point B in production, exchanges 60Y for 60X with Nation 1, and reaches point E on its indifference curve III.

Figure. 2.1: Derivation of the Offer Curve of Nation 1



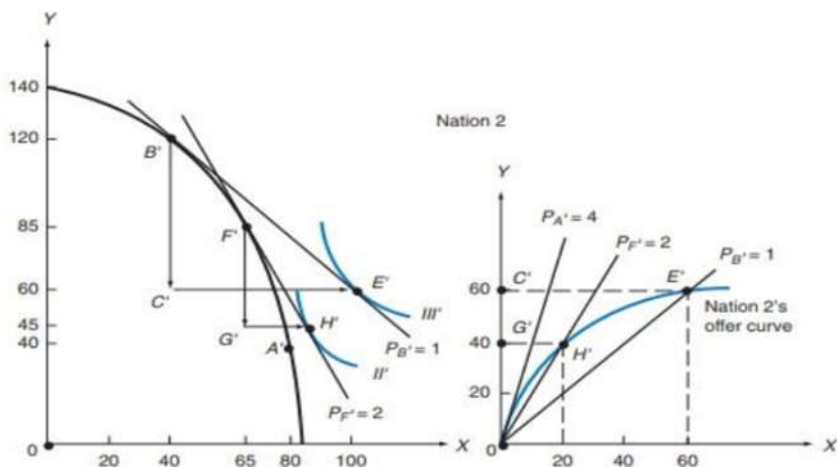
• Derivation and Shape of the Offer Curve of Nation 2

Trade triangle B C E in the left panel of Figure.2.2 corresponds to trade triangle O C E in the right panel, and we get point E on Nation 2's offer curve. At  $P_F = P_X / P_Y = 2$  in the left panel, Nation 2 would move instead to point F in production, exchange 40Y for 20X with Nation 1, and reach point H on its indifference curve II. Trade triangle F G H in the left panel corresponds to trade triangle O G H in the right panel, and we get point H on Nation 2's offer curve. Joining the origin with points H and E and other points similarly obtained, we generate Nation 2's offer curve in the right panel.

The offer curve of Nation 2 shows how many imports of commodity X Nation 2 demands to be willing to export various quantities of commodity Y. The offer curve of Nation 2 lies below its autarky price line of  $P_A = 4$  and bulges toward the Y-axis, which measures the commodity of its comparative advantage and export. To induce Nation 2 to export more of commodity Y, the relative price of Y must rise. This means that its reciprocal (i.e.,  $P_X / P_Y$ ) must fall. Thus, at  $P_F = 2$ ,

Nation 2 would export 40Y, and at  $P_B = 1$ , it would export 60Y. Nation 2 requires a higher relative price of Y to be induced to export more of Y because (1) Nation 2 incurs increasing opportunity costs in producing more of commodity Y (for export), and (2) the more of commodity X and the less of commodity Y that Nation 2 consumes with trade, the more valuable to the nation is a unit of Y at the margin compared with a unit of X.

**Figure.2.2: Derivation of the Offer Curve of Nation 2**



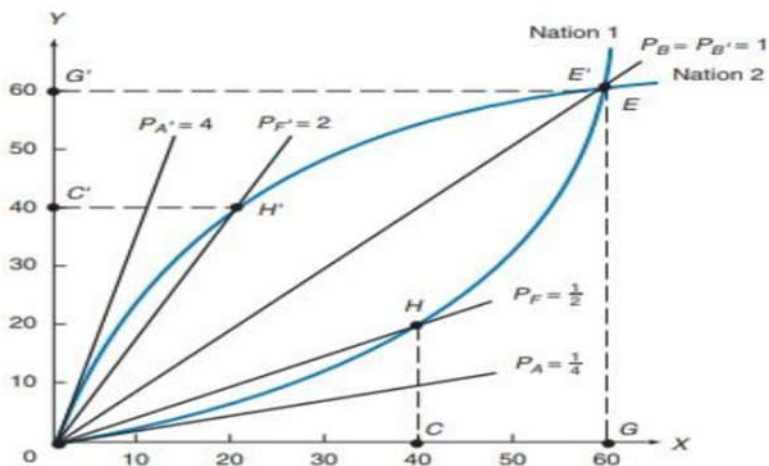
- **The Equilibrium-Relative Commodity Price with Trade—General Equilibrium Analysis**

The intersection of the offer curves of the two nations defines the equilibrium-relative commodity price at which trade takes place between them. Only at this equilibrium price, trade will be balanced between the two nations. At any other relative commodity price, the desired quantities of imports and

exports of the two commodities would not be equal. This would put pressure on the relative commodity price to move toward its equilibrium level.

The offer curves of Nation 1 and Nation 2 intersect at point E, defining equilibrium  $P_X / P_Y = P_B = P_{B'} = 1$ . At  $P_B$ , Nation 1 offers 60X for 60Y (point E on Nation 1's offer curve), and Nation 2 offers exactly 60Y for 60X (point E on Nation 2's offer curve). Thus, trade is in equilibrium at  $P_B$ . At any other  $P_X / P_Y$ , trade would not be in equilibrium. At any  $P_X / P_Y < 1$ , the quantity of exports of commodity X supplied by Nation 1 would fall short of the quantity of imports of commodity X demanded by Nation 2. This would drive the relative commodity price up to the equilibrium level. The opposite would be true at  $P_X / P_Y > 1$ . At  $P_B = 1$ , both nations happen to gain equally from trade.

**Figure.2.3: Equilibrium –Relative Commodity Price with Trade**



## **2.2. Reciprocal Demand Theory**

The share of a country from the gain in international trade depends on the terms of trade. The terms of trade at which the foreign trade would take place is determined by reciprocal demand of each country for the product of the other countries. The theory of reciprocal demand was put forward by J.S. Mill and is thought to be still valid and true even today. By reciprocal demand we mean the relative strength and elasticity of the demand of the two trading countries for each other's product.

J.S. Mill's theory of reciprocal demand is based upon the following main assumptions:

- (i) The trade takes place between two countries, A and B.
- (ii) The trade is in two commodities, X and Y.
- (iii) In both the countries, the production is governed by constant return to scale.
- (iv) The trade between two countries is governed by the principle of comparative costs.
- (v) The pattern of demand is similar in two countries.
- (vi) There are perfectly competitive conditions in the market.
- (vii) There is no restriction on trade and government follows a policy of laissez faire.

Let us take two countries A and B which on the basis of their comparative costs specialise in the production of cloth and wheat respectively. Obviously, country A would export

cloth to country B, and in exchange B import wheat from it. Reciprocal demand means the strength and elasticity of demand of country A for wheat of country B, and the intensity and elasticity of country B's demand for cloth from country A. If country A has inelastic demand for wheat of country B, she will be prepared to give more of cloth for a given amount of wheat. In this case terms of trade will be unfavourable to it and consequently its share of gain from trade will be relatively smaller. On the contrary, if country A's demand for import of wheat is elastic, it will be willing to offer a smaller quantity of its cloth for a given quantity of the imports of wheat. In this case terms of trade would be favourable to country A and its share of gain from trade will be relatively larger.

The equilibrium terms of trade would settle at a level at which its reciprocal demand, that is, quantity of its exports which it will be willing to give for a given quantity of its imports is equal to the reciprocal demand of the other country. We must note that the equilibrium terms of trade are determined by the intensity of reciprocal demand of the two trading countries but they will lie in between the comparative costs (i.e., domestic exchange ratios) of the two countries. This is because no country would be willing to trade at a price which is lower than at which it can produce at home. Let us return to the example of the two countries A and B which specialise in the production of two commodities cloth and wheat respectively, and exchange them with each other. Production conditions in the two countries are given below:

**Table.2.1: Production of one man per week**

Goods	Country A	Country B
Wheat	4 Bushels	12 Bushels
cloth	12 Yards	20 Yards

It will be seen from the above table. 2.1 that before trade production conditions in country B are such that 12 bushels of wheat would be exchanged for 20 yards of cloth, in it, that is, the domestic exchange ratio is 12:20 (or 3:5). On the other hand, in country A production conditions are such that 4 bushels of wheat would be exchanged for 12, yards of cloth, that is, the domestic exchange ratio is 4:12 or 1:3. Obviously, after trade, terms of trade will be settled within these domestic exchange ratios of the two countries.

The domestic exchange ratios of the two countries set the limits beyond which terms of trade would not settle after trade. It is evident that country B will be unwilling to offer more than 12 bushels of wheat for 20 yards of cloth since by sacrificing 12 bushels of wheat it can produce 20 yards of cloth at home. Likewise, country A would not accept less than 6.66 bushels of wheat for 20 yards of cloth, for this is the domestic exchange rate cloth of wheat for(1:3) determined by production or cost conditions at home in country A. It is within these limits that terms of trade will be settled between the two countries as determined by the strength of reciprocal demand of the trading countries. It also follows that it is not mere demand but also the comparative production costs (i.e., the

supply conditions) that go to determine the terms of trade. Indeed, the law of reciprocal demand, if properly understood, considers both the forces of demand and supply as determinants of the terms of trade.

- **Criticisms of the Theory of Reciprocal Demand:**

The theoretical structure of J.S. Mill's theory of reciprocal demand rests upon the foundation of Ricardian principle of comparative costs. That makes Mill's theory of reciprocal demand susceptible to similar weaknesses as are found in the Ricardian analysis. In addition to structural deficiencies, Mill's approach has been attacked by F.D. Graham and Jacob Viner on the following main grounds:

According to Graham, the reciprocal demand theory concentrates too much on demand for determining the international values and the supply aspect has been grossly neglected. Such an approach can be accepted, if the theory of international trade is built in terms of fixed quantities of product. In practice, trade involves such commodities the supply of which undergoes significant variations. Therefore, the supply conditions are bound to have decisive effect on the international exchange ratio.

Graham dismissed the whole idea of reciprocal demand as unnecessary in the theory of international values. If the production takes place under constant cost conditions, as assumed both by Ricardo and Mill, the supply conditions alone are sufficient to settle the final equilibrium rate of exchange.

In this theory, the international exchange is supposed to be

influenced by the demand in one country for the product of the other or the reciprocal demand. The domestic demand in each country for her exportable product can also exert an important influence because each country is likely to export the product, which is left after satisfying the domestic demand. The determination of exchange ratio, by overlooking the domestic demand, was clearly faulty.

The entire analysis in the Ricardian-Mill comparative costs theory is in terms of a two- country and two-commodity model. In the real world multi-country, multi-commodity trade situation, there is strong possibility that the international terms of trade are determined by the cost ratios rather than the reciprocal demand. Mill's theory of reciprocal demand maintains that income levels in two countries remain the same. Such an assumption is unrealistic.

In fact, much of Graham's criticism of reciprocal demand theory was unwarranted and misguided. In the conditions of increasing costs, when the countries are likely to have incomplete specialisation, both cost ratio and reciprocal demand must determine the terms of trade. It is clearly fallacious to dismiss the reciprocal demand as an irrelevant factor in the trade relations among the countries.

### **2.3. Opportunity cost analysis**

The opportunity cost theory was put forward by Gottfried Haberler in 1936. With the help of this theory, Haberler tries to explain the theory of comparative advantage of international trade on the basis of opportunity cost. In Haberler's words, "the

marginal cost of a given quantity ( $x$ ) of a commodity, say, A must be regarded as the quantity of commodity, say, B must be forgone in order that X, instead of  $(X-1)$  units of A can be produced. The exchange ratio on the market between A and B must equal their costs in this sense of the terms." According to the opportunity cost theory, the cost of a commodity is the amount of a second commodity that must be given up to release just enough resources to produce one additional unit of the fixed commodity. This is basically a reformulation of the Comparative Advantage, i.e. Theory of international trade in terms of opportunity cost.

The opportunity cost theory analyses pre-trade and post trade situations under constant, increasing and decreasing opportunity cost. Unlike the Ricardian theory, in this theory, Haberler didn't make assumption that labour is the only factor of production and labour is homogenous. In fact, it is not based on the labour theory of value. The theory is based on the proposition that the country with the lower opportunity cost in production of a commodity enjoys comparative advantage in that commodity and a comparative disadvantage in the second commodity.

The theory rests upon the following assumptions:

- The economic system is in a state of full employment equilibrium.
- There is perfect competition in commodity and factor markets.
- Price of each factor equals its marginal product.

- Price of each commodity equals the marginal cost of producing it.
- The supply of factors is fixed.
- The state of technology is given.
- There are only two countries -A and B.
- Each country produces two commodities viz. commodity x and commodity y.
- There are two factors of production viz. labour and capital.
- Factors are perfectly mobile within the country but immobile between countries.
- There is free trade between the countries.

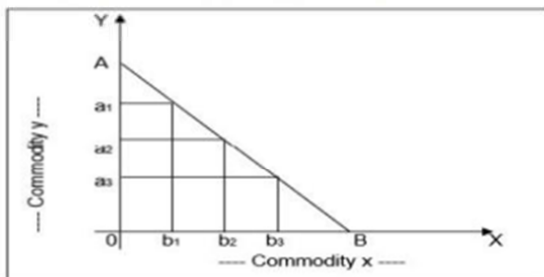
Based on these assumptions, Haberler provides the exchange ratio between two commodities in terms of opportunity cost which can be expressed in terms of production possibility or transformation curve. The opportunity cost curve (or production possibility curve) may be a straight line, convex to the origin or concave to the origin depending on whether return to scale in a country is constant, increasing or decreasing respectively.

### **Constant Opportunity Cost Curve**

In Figure.2.4 commodity-x is measured along the horizontal axis and commodity-y is measured on the vertical axis. AB is the opportunity cost curve. At every point on the straight line or opportunity cost curve AB Marginal Rate of Transformation (MRT) remains equal. That is

$$MRT_{xy} = -\frac{dy}{dx} = -\frac{a_1 a_2}{b_1 b_2} = -\frac{a_2 a_3}{b_2 b_3} = \dots$$

**Figure.2.4 Constant Opportunity Cost Curve**



That is along the curve, the marginal cost of producing commodity-x and commodity-y remains unchanged and production of both the commodities is governed by constant returns to scale or constant opportunity cost. In this, all factors are equally efficient in all lines of production.

If two commodities viz. X and Y are produced by a country using two factors of production such that  $X=f(L, K)$  or  $Y=f(L,K)$ , and some quantities of labour and capital are diverted from the production of commodity-Y to the production of commodity X, the additional production of commodity-X involves sacrifice of some quantities of Y. Thus, the rate at which Y is substituted for one unit gain in X is called as marginal rate of transformation. Symbolically,  $MRT_{xy}=-dy/dx$ .

### **Increasing Opportunity Cost Curve**

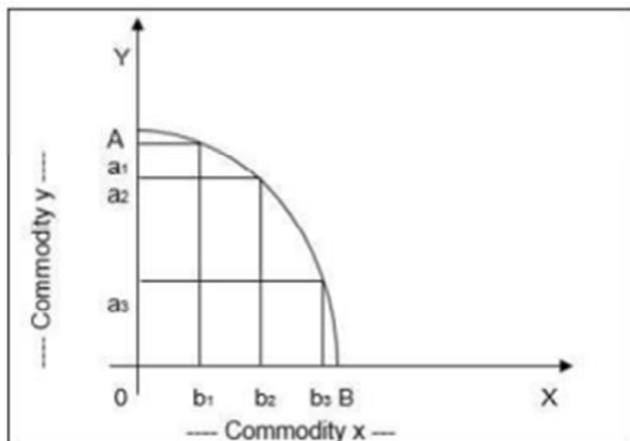
Figure.2.5 represents the case of increasing cost condition.

In the figure, AB is concave to the origin i.e.

$$MRT_{xy} = -\frac{dy}{dx} = -\frac{a_1 a_2}{b_1 b_2} < \frac{a_2 a_3}{b_2 b_3} = \dots$$

It means that for production of each extra unit of commodity-x a larger unit (amount) of commodity-y is to be forgone.

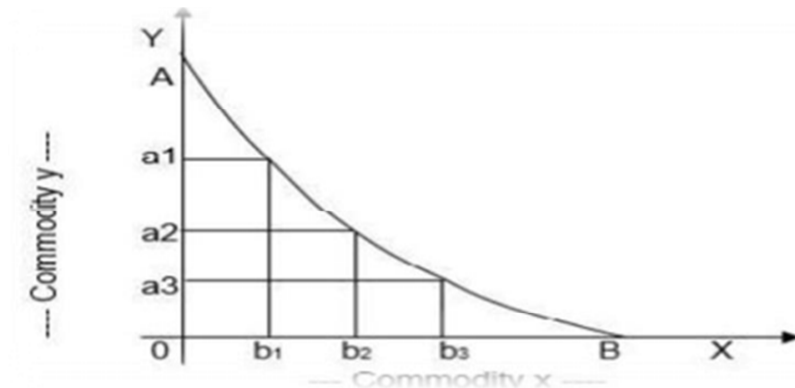
**Figure.2.5: Increasing Opportunity Cost**



- **Decreasing Opportunity Cost Curve**

Figure.2.6 represents the case of decreasing cost condition. It is the case of decreasing cost condition or increasing returns. AB is opportunity cost curve and it is convex to the origin. Here, the Marginal Rate of Transformation (MRT) is decreasing.

**Figure.2.6: Decreasing Opportunity Cost Curve**

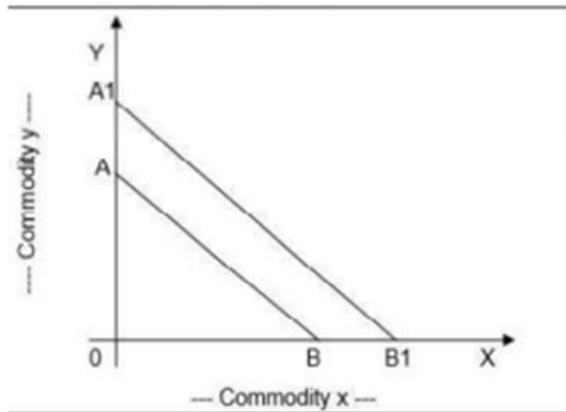


It means that for production of extra unit of commodity-x a smaller amount of commodity-y is to be forgone. The convexity of the opportunity curve implies a negative slope indicating a decreasing  $MRT_{xy}$ .

- **Constant Opportunity Cost and International Trade**

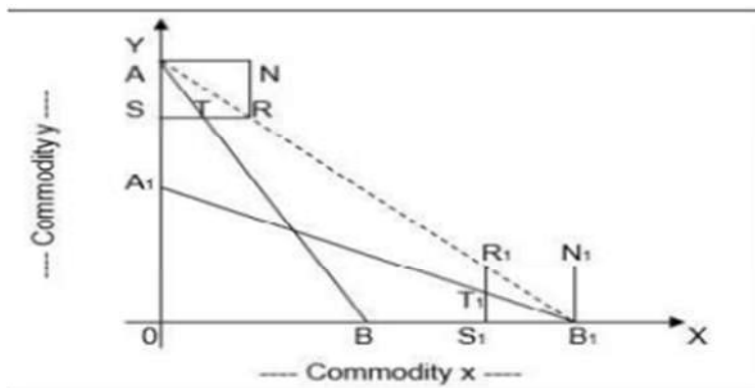
The  $MRT_{xy}$  is constant and the opportunity cost curve is a straight line when the production process is governed by constant returns to scale. Thus, the relative cost of producing the commodities x and y remains constant irrespective of the ratio in which they are demanded. If the slopes of the opportunity cost curves of two countries are same, i.e. the opportunity cost curves are parallel to each other, then in this case no trade is possible between them. In Figure.2.7, AB and  $A_1B_1$  are opportunity cost curves of country A and country B respectively. AB and  $A_1B_1$  i.e. the opportunity cost curves are parallel as their slopes are equal.  $OA/OB$  and  $OA_1/OB_1$  are the slopes of AB and  $A_1B_1$  respectively and  $OA/OB = OA_1/OB_1$

**Figure.2.7: International Trade does not take place when slopes of opportunity cost curves are same**



From Figure.2.7 it can be seen that as the cost ratios of A and B are equal therefore no international trade between the countries take place. The gains from international trade can emerge only when the slopes of opportunity curves are different. This has been explained with the help of Figure 2.8.

**Figure 2.8: International Trade take place when slopes of opportunity cost curves are different**



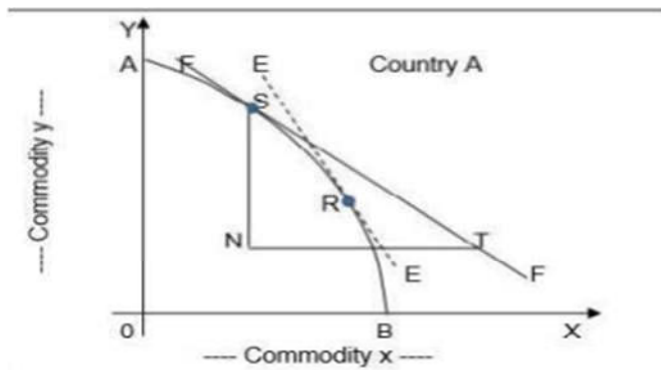
In Figure.2.8 AB and AB1 are opportunity curves of Country A and B respectively. The slopes of opportunity curves AB and AB1 are different. The slopes of AB and AB1 signify that country A has comparative advantage in the production of commodity-y over country B and country B has comparative advantage in the production of commodity-x over country A. Therefore, country A specialises in the production of y and country B specialises in the production of x. The exchange ratio between country A and country B is shown by dotted line AB1. Suppose country A wants to consume at R on AB1, then A can export AS (NR) quantity of Y and import SR (or AN) quantity of commodity x. Similarly, if country B wants to consume at AB1 on AB1, then country B can export S1 B1 (or R1 N1) quantity of x and import R1 S1 or B1 N1 quantity of commodity-y. The opportunity cost curve AB shows that as quantity of commodity Y can be exchanged for ST quantity of X in the domestic market. But as international trade takes place in between A and B, as quantity of commodity y can be exchanged for SR quantity of x. Therefore, country A gains TR quantity of commodity X, in the same way B1 S1 quantity of commodity-x can be exchanged for S1 T1 quantity of commodity-Y in the domestic market. While international trade permits the exchange of B1 S1 quantity of x for R1 S1 quantity of y. Thus the country B gains R1 T1 (=R1 S1 -T1 S1 ) quantity of commodity-y.

- **Increasing Opportunity Cost and International Trade**

When the production process is governed by decreasing

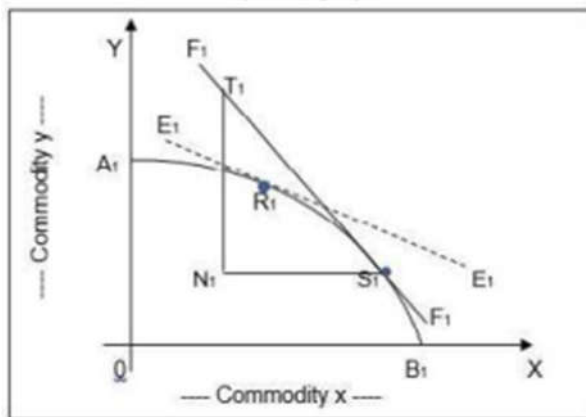
returns to scale the opportunity cost is increasing. The international trade in this situation between country A and B can be explained with the help of Figure.2.9. The case of country A: In Figure 2.9 AB is the opportunity cost curve for country A. It is concave to the origin. EE is the domestic price ratio line before trade in country A. EE is tangent to the opportunity cost curve AB at R. FF is the international price ratio line. FF is tangent to AB at S.

**Figure.2.9: Increasing opportunity cost curves and International Trade (Country A)**



Country A specialises in the production of y and if the point of consumption in A is at T then A will export SN quantity of y to import NT quantity of x. The consumption point T will lie on a higher community indifference curve from the point R before trade. So A will increase its welfare after trade. The case of Country B: In Figure2.10,A1 B1 is the opportunity cost curve of country B. Before international trade, E1 E1 is the domestic price ratio line and it is tangent to A1 B1 at R1 .

**Figure.2.10: Increasing opportunity cost curves and International Trade (Country B)**



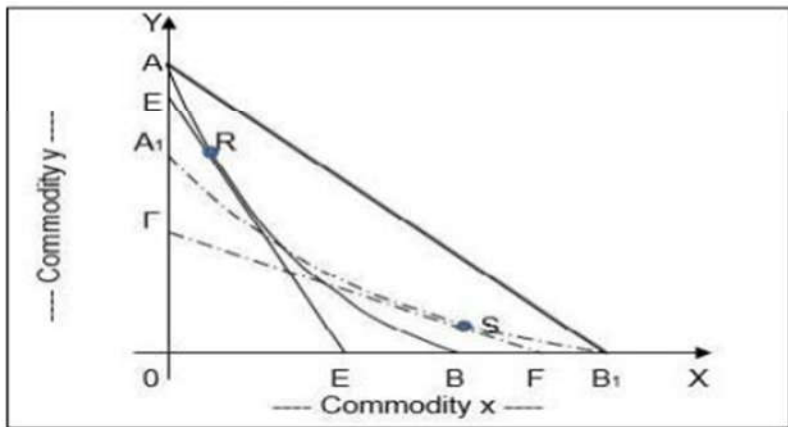
When international trade takes place  $F_1 F_1$  is the international price ratio line and it is tangent to  $A_1 B_1$  at  $S_1$ . Country B specialises in the production of x. if the point of consumption is  $T_1$  country B will export  $N_1 S_1$  quantity of x and import  $N_1 T_1$  quantity of y. Country B will get higher satisfaction at  $T_1$  than at  $R_1$ . When equilibrium situation is achieved by A and B, the export of  $S_1 N_1$  quantity of y equals the import of  $N_1 T_1$  quantity of y and export of  $N_1 S_1$  quantity of x equals the import of  $N_1 T_1$  quantity of x.

- **Decreasing Opportunity Cost and International Trade**

When the production process in both countries A and B are governed by decreasing returns to scale, the opportunity cost curves are convex to the origin. The international trade in this situation has been explained with the help of Figure 2.11. In Figure 2.11,  $AB$  and  $A_1 B_1$  are the opportunity curves of

country A and B respectively. EE is the domestic price ratio for country A and FF is the domestic price ratio for country B. Before international trade, EE is tangent to AB at R and it is production equilibrium for country A and at that point, price line EE becomes equal to the  $MRT_{xy}$ . Similarly, in the absence of international trade, the FF is tangent to  $A_1 B_1$  at point S which determines the production equilibrium for country B. When international trade takes place, the international exchange ratio line is  $AB_1$ .

**Figure.2.11: Decreasing opportunity cost curves and International Trade**



The position of opportunity cost curve and the greater steepness of domestic price line EE relative to international exchange ratio line  $AB_1$  shows that A will specialise completely in the production of y and it will export y and import commodity x. while, the position of opportunity cost curve  $A_1 B_1$  and relatively greater steepness of  $AB_1$  than

domestic price ratio line FF, determines that country B will specialise completely in the production of commodity x. Thus country B will export commodity x and import commodity y. The point of consumption equilibrium for A and B determined by the tangency between opportunity cost curves and the international exchange ratio line AB<sub>1</sub>. This tangency point will provide a higher level of satisfaction than points R and S. Thus, there will be gains from international trade for both the countries A and B.

- **Advantages of Haberler's Opportunity Cost Theory**

Haberler's opportunity cost theory has the following advantages:

- It is more exact, precise and scientific in explanation of international trade than real cost approach.
- It has better applicability than Ricardian approach as it discarded the labour theory of value and attempted to build the model of international trade more realistically with the assumptions like two or more factors of production.
- Haberler's theory explained the international theory in situations of constant, increasing and decreasing returns to scale.
- Haberler also tried to explain the international trade theory when costs are increasing, decreasing and constant.
- Haberler took into account the factor substitution while explaining gains from international trade.

- **Drawbacks of Haberler's Opportunity Cost Theory**

Though Haberler's opportunity cost theory is very relevant to the international trade, it has some limitations. These are:

- According to Jacob Viner, opportunity cost theory was inferior to the real cost approach. He claimed that opportunity cost theory failed to measure real costs in terms of strain, sacrifice and disutility.
- Jacob Viner also criticised the opportunity cost theory on the ground that it neglects the changes in the factor supplies.
- The opportunity cost theory is based on many unrealistic and invalid assumptions like absence of external economies of scale or diseconomies of scale and perfect competition in both product and factor markets fixed factor supplies etc.
- Jacob Viner also criticised the opportunity cost theory on the ground that it failed to take into account the preference for leisure vis-à-vis income.

Though Jacob Viner put several objections against the Haberler's opportunity cost theory, those were not valid. In fact all these limitations are disapproved by many economists like Kemp, V.C. Walsh, Samuelson etc.

#### **2.4. The Heckscher – Ohlin Theory**

This theory was developed by Swedish economist Eli Heckscher (1919) and his student Bertil Ohlin (1933). The Heckscher- Ohlin Theorem examines the reasons for

comparative cost differences in production and states that a country has comparative advantage in production and export of that commodity which uses more intensively the country's relatively more abundant factor. First we will explain the assumptions of the Theory, then will clarify the meaning of factor abundance and factor intensity abundance and illustrate the theory.

### **The Assumptions**

The Heckscher- Ohlin Theorem is based on following assumptions

1. There are two countries (Country I and Country II), two commodities (commodity X and Commodity Y) and two factors of production (labour and capital)
2. Commodity X is labour intensive and commodity Y is capital intensive in both the countries
3. Both product and factor markets in both the countries are characterised by perfect competition
4. Factors of production are perfectly mobile within each country but immobile between countries
5. Both countries have same technology in production
6. Factors of production are fully employed in both the countries
7. There is free trade between countries and there is no tariff, transportation costs and other obstructions to the free flow of trade
8. Techniques of producing identical goods are the same in both the countries.

9. There is incomplete specialization in both the countries
10. Tastes are equal in both the countries and their demand preferences are identical.
11. International trade between countries are balanced.

- **Factor Intensity and Factor Abundance**

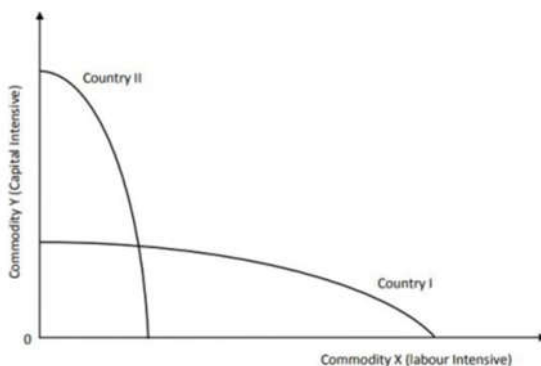
The Heckscher Ohlin Theory is expressed in terms of factor intensity and factor abundance. Thus it is crucial to understand these terms be very clear and precise. Factor intensity is measured using capital-labour (K/L) ratio. That is the amount of capital employed per unit of labour. In the world of two commodities (X & Y) and two factors (labour & capital), we say that commodity Y is capital intensive if the capital-labour ratio (K/L) used in the production of Y is greater than K/L used in the production of X. For example, if 2 units capital and 2 units of labour are required to produce one unit of Y, K/L is  $2/2 = 1$ . If at the same time, 1 unit of capital and 4 units of labour is required to produce one unit of X, K/L is  $1/4 = 0.25$ . Since  $K/L = 1$  for Y and  $K/L = 0.25$  for X, we say that Y is capital intensive and X is labour intensive. It may be noted that it is not the absolute amount of capital and labour used in the production of X and Y is important in measuring factor intensity of commodities; but the amount of capital per unit of labour.

In the Heckscher- Ohlin model, factors of production are regarded scarce or abundant in relative terms. Relative factor abundance may be defined in two ways: the physical definition and the price definition. According to the physical definition, a

country is capital abundant if the ratio of total amount of capital to the total amount of labour ( $TK/TL$ ) is greater than the other country. According to the price definition, a country is capital abundant if the ratio of rental price of capital to the price of labour ( $PK/PL$ ) is lower in the other country. It is assumed that  $TK/TL$  is larger in country II and in face of equal demand and technology  $PK/PL$  will be smaller in country II. Thus country II is the capital abundant country in terms of both definitions.

Since country II is capital abundant and Y is the K-intensive commodity, country II can produce relatively more of commodity Y than country I. on the other hand, since country I is labour abundant and commodity X is the L-intensive commodity, country I can produce relatively more of X than country II. This gives the production possibility curve for country I that is relatively flatter and wider than the production possibility curve of country II as shown below figure.2.12.

**Figure.2.12: Factor Intensity and Factor Abundance**



Thus the production possibility curve of the country I is skewed towards the horizontal axis which measures the labour intensive commodity X. Similarly, the production possibility curve of country II is skewed towards the vertical axis.

### **The Theory**

The classical theory of international trade demonstrated that the basis of international trade was comparative cost difference. Heckscher- Ohlin attributes international difference in comparative cost due to

- (a) Countries differ in their factor endowments. Some have much capital per worker and some have very little.
- (b) Goods differ in their factor requirements. That is, production of various commodities requires that the factors of production be used with different degrees of intensity.

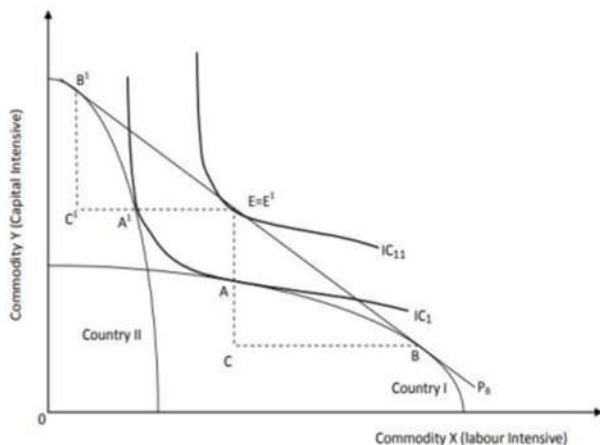
These two suppositions lead to the fundamental theorem of Heckscher- Ohlin model. It states that a country will specialise in the production and export of goods whose production requires a relatively large amount of the factor with which the country is relatively well endowed. That is, a capital abundant country will tend to specialise in capital intensive goods in exchange for labour intensive goods'.

Abundance of a particular factor of production in a country tends to make that factor less costly relative to the cost of same factor in other countries. Given this, a country will tend to produce and export goods that intensively use their less expensive factor of production. A country will have a

comparative advantage in the goods whose production intensively uses its relatively abundant factor of production.

Thus, according to Heckscher- Ohlin Theory, the immediate cause of international trade is the difference in relative prices of commodities between countries and these differences in the commodity prices arise on account of the differences in the factor supplies of the two countries. A country will tend to export the commodity whose production requires the intensive use of the country's relatively abundant factor and import the commodity whose production requires the intensive use of the country's relatively scarce and expensive factor. In short, a relatively labour-rich country exports the relatively labour intensive commodity and imports the relatively capital intensive commodity. Having clarified the meaning of factor intensity and factor abundance, we can now explain Heckscher-Ohlin Theorem graphically in Figure 2.13.

**Figure. 2.13: Heckscher-Ohlin Theorem**



Points A and A1 is the production, when there is no trade or “autarky”. After the establishment of trade between the two countries, country I specialises in the production of commodity X and it reaches point B. Country II specialises in the production of Y and has reached point B1 , where the production possibility curves of two countries are tangent to the common relative price line PB, which is also international terms of trade line. Country I will export commodity X in exchange for commodity Y and consume at point E on the indifference curve IC11. On the other hand, country II will export Y for X and consume at E1 which coincides with point E. Both countries gain from trade because they consume on higher indifference curve IC11.

## **2.5. Empirical Tests of Heckscher- Ohlin Model**

Some notable attempts have been made to empirically test the validity of Heckscher- Ohlin model. We will first present the results of the original empirical test conducted by Leontief and then the issue of factor intensity reversal, which if prevalent, would lead to rejection of Heckscher Ohlin model.

### **(i) The Leontief Paradox**

The first comprehensive and detailed empirical test of the Heckscher- Ohlin Model was conducted by Wassily W Leontief using United States trade data of 1947 and was published in 1951. The United States was believed to be a country with abundant capital endowment and scarce labour endowment. If the Heckscher- Ohlin theorem were correct, then, US should have been exporting capital intensive

commodities and importing labour intensive commodities.

For this test, Leontief used his own invention, namely, an input-output table to calculate the amount of labour and capital in the US export and import substitutes. The results of Leontief's tests were startling. US import substitutes were about 30 per cent more capital intensive than US exports in 1947. That is, US seemed to export labour intensive commodities and import capital intensive commodities. This paradoxical result which was the opposite of what the Heckscher- Ohlin theorem predicted came to popularly known as Leontief Paradox.

In the same study, Leontief tried to rationalize his results rather than reject Heckscher- Ohlin model. He himself has given two explanations for these paradoxical results. First explanation is that since in 1947 US labour was about three times as productive as foreign labour. In that sense, US was really a labour abundant country if we multiply US labour force by three and compare this figure to the availability of capital in the country. Therefore, it was only appropriate that US exports should be labour intensive in relation to US import substitutes. The second explanation given by Leontief for the paradoxical results is that US tastes were biased so strongly in favour of capital intensive commodities resulting in higher relative prices for these commodities in the US. Therefore, the US would export relatively labour intensive commodities.

But Leontief's explanation of his own paradox has not been accepted by others. One possible explanation of the

paradox is that the year 1947, which Leontief used for the test was too close to the World War II to be representative. A more general reason for the paradox is that Leontief used a two factor model (labour and capital), thus abstracting from other factors. However, a commodity might be intensive in natural resources so that classifying it as either capital or labour intensive would be inappropriate. It has also been suggested that the distortions of the trade pattern caused by tariffs have influenced the results of Leontief test. Perhaps, the most important source of bias was the fact that Leontief included only physical capital in his measure of capital and ignored human capital. Since US labour embodies more human capital than foreign labour, adding the human capital component to physical capital would make US exports more capital intensive relative to US imports substitutes. All these comments suggested that Leontief test is not strong enough to disprove the Heckscher- Ohlin theory and basic hypotheses of the Heckscher- Ohlin theory appears to be valid.

### **(ii) Factor Intensity Reversal**

According to Heckscher-Ohlin theory, the pattern of international trade is determined by factor endowments and factor intensities. But changes in relative factor endowments and factor intensities are possible overtime. Such changes could change or even reverse the pattern of trade. A crucial assumption of Heckscher- Ohlin theorem is that the production functions are different for different commodities and they are identical for each good in the two countries. That is, one commodity is capital intensive and the other commodity is

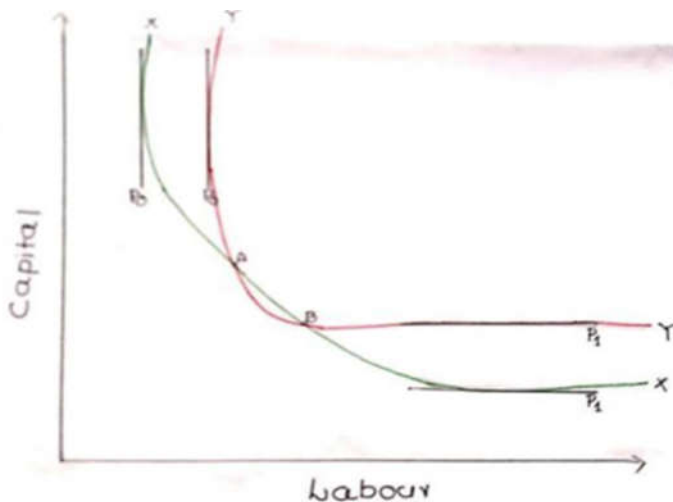
labour intensive, but the same commodity which is capital intensive in one country must be capital intensive in the other country also and the labour intensive commodity remains labour intensive in both the countries.

Factor intensity reversal refers to the situation where a given commodity is labour intensive commodity in the labour abundant country and capital intensive in the capital abundant country. For example, factor intensity reversal is present if the commodity X is the labour intensive in country I (labour abundant country) and at the same time, it is capital intensive commodity in country II (capital abundant country). We can use the concept of elasticity of substitution of factors of production to explain the factor intensity reversal. The elasticity of substitution measures the degree or the ease with which one factor can be substituted for another in the production. Factor intensity reversal is likely to occur if the elasticity of substitution of labour for capital in the production of the commodities are substantially different. For example, if elasticity of substitution of factors is much higher in the production of commodity X than that of Y, country I will produce commodity X with labour intensive techniques as wages are low. On the other hand, country II will also produce commodity X with capital intensive technique because its wages are high and capital is the cheap factor. As a result, commodity X will be the labour intensive commodity in country I and capital intensive in country II and this is the case of factor intensity reversal. Thus both countries produce same homogenous commodity X and countries cannot export. When

factor intensity reversal present, the Heckscher Ohlin theorem no longer holds.

The assumption of Heckscher- Ohlin theorem is guaranteed only when the two production isoquants – for the capital intensive and labour intensive commodities – cut each other only once. But when factor intensity reversal takes place, the two isoquants cut each other more than once and Heckscher- Ohlin theorem would become invalid as shown in the figure.2.14.

**Figure.2.14: Factor Intensity Reversal**



The two production isoquants for commodity X and Y cut each other twice at point A and B. the factor price ratios in country II (capital abundant) is represented by the parallel lines  $P_0P_0$ .  $P_1P_1$  represent the factor price ratios in country I (labour abundant). In country II, commodity X is capital

intensive having higher K/L ratio. Therefore, capital rich country II will specialise in the production of capital intensive commodity X and export commodity X and will import Y, which is labour intensive commodity. On the other hand, in country I, commodity X is labour intensive commodity and Y is capital intensive commodity and because, to produce one unit of X, it takes given amount of labour, but smaller amount of capital as compared to Y. Naturally, country I, which is a labour abundant country will specialise in the production and export of X. Thus in the case of factor intensity reversal, both the countries specialise in the production and export of the same commodity, i.e., X. in the capital abundant country (country II), it is capital intensive commodity and in the labour abundant country (country I), it is labour intensive product. This situation of factor intensity will invalidate the Heckscher-Ohlin theorem regarding the structure of commodity trade. The factor intensity reversal does occur in the real world but question is how prevalent it is, which is an empirical question. The first empirical research on this topic was a study by Minhas in 1962 in which he found that factor intensity reversal to be fairly prevalent. However, Leontief, in 1964, showed that factor intensity reversal was a rare phenomenon which was confirmed by the study of Ball in 1966. From these studies we can conclude that the major predictions of Heckscher-Ohlin theorem do hold in the real world.

## **2.6. The Factor Price Equalisation Theorem**

The Factor Price Equalisation Theorem is a ‘corollary’ of Heckscher- Ohlin theorem because it holds only if the

Heckscher- Ohlin theorem holds. It was Paul A Samuelson who rigorously pointed out factor price equalisation theorem as a corollary of Heckscher- Ohlin theorem in 1949. For this reason, it was sometimes referred to as Heckscher- Ohlin- Samuelson theorem.

Given the assumption of Heckscher Ohlin model, the factor price equalisation theorem states that free international trade equalizes factor prices between countries relatively and absolutely and international trade serves as substitute for the international mobility of factors. This means that international trade will cause the wages of homogeneous labour ( $w$ ) to be same in all the trading countries and will cause the return to homogeneous capital ( $r$ ) to be same as well in all trading countries. Both relative and absolute factor prices will be equalized. That is international trade bring about equalization of relative and absolute returns to homogenous factors across countries.

In the absence of trade, in the country I, wage rate is lower than country II being a labour abundant country. As it specialises in the production of labour intensive commodity X and reduces the production of capital intensive commodity Y, the relative demand for labour rises causing 'w' to rise and fall in 'r', as demand for capital falls. The exact opposite occurs in country II.

To summarise, international trade causes 'w' to rise in low-wage country I and fall in high- wage country II. Thus international trade reduces the pre-trade difference in 'w'

between two countries. Similarly, international trade causes 'r' to fall in capital-expensive country I and to rise in capital-cheap country II, thus reducing the pre-trade difference in 'r' between the two countries. Thus international trade tends to reduce the pre-trade differences in 'w' and 'r' between two countries.

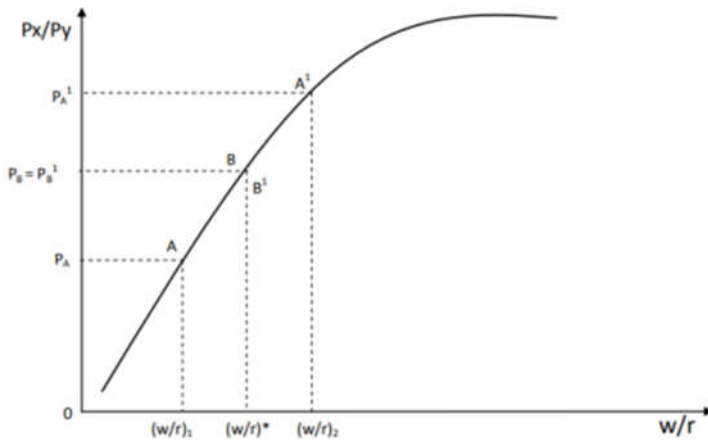
We can show graphically how relative prices are equalized through trade in the two countries. Figure 2.15 shows the relative price of labour ( $w/r$ ) is measured in the horizontal axis and relative price of commodity ( $P_x/P_y$ ) is measured along vertical axis. As per the assumptions each  $w/r$  ratio is associated with a specific  $P_x/P_y$  ratio.

Before trade, country I is at point A, with  $w/r = (w/r)_1$  and  $P_x/P_y = PA$ , while country II is at point A1 with  $w/r = (w/r)_2$  and  $P_x/P_y = PA_1$ . Being a labour abundant, country I has a comparative advantage in the production of X and  $w/r$  and  $PA$  is lower in the country. As it specialises in the production of labour intensive commodity X and reduces the production of Y, the demand for labour increases relative to demand for capital and  $w/r$  rises. This causes an increase in  $P_x/P_y$  in the country I. On the other hand, as country II specialises in the production of capital intensive commodity Y, its relative demand for capital increase and  $w/r$  falls and so is  $P_x/P_y$ . This process will continue until point B=B1 at which  $P_B = (P_B)_1$  and  $w/r = (w/r)^*$  in both the countries.

Thus, trade substitutes for movement of factors between countries leading to an increase in the price of abundant factor and fall in the price of scarce factor among countries, until

relative factor prices are equal. Although the implications of the theorem seem logically correct, we do not observe in practice the complete factor price equalisation suggested by Heckscher-Ohlin. This is because several assumptions of the Heckscher-Ohlin model are not realized or not realized as fully as stated in the model.

**Figure.2.15:Factor Price Equalisation Theorem**

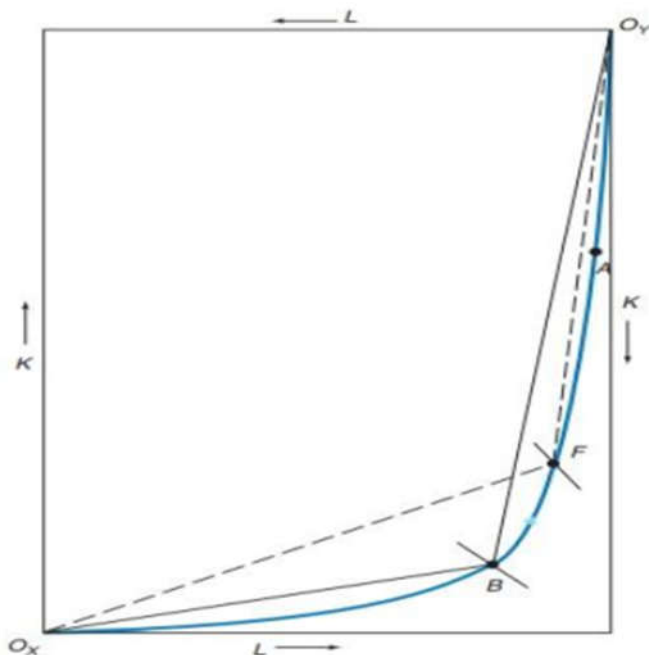


### 2.7. Stolper–Samuelson theorem

The Stolper–Samuelson theorem postulates that an increase in the relative price of a commodity (for example, as a result of a tariff) raises the return or earnings of the factor used intensively in the production of the commodity. Thus, the real return to the nation’s scarce factor of production will rise with the imposition of a tariff. For example, when Nation 2 (the K-abundant nation) imposes an import tariff on commodity X (its

L-intensive commodity),  $P_X / P_Y$  rises for domestic producers and consumers, and so will the real wage of labor (Nation 2's scarce factor).

**Figure.2.15: Stolper–Samuelson Theorem**



To show that the tariff also results in an increase in  $K/L$  in the production of both commodities and thus increases the wage of labor (the nation's scarce factor), as postulated by the Stolper–Samuelson theorem we utilize the Edgeworth box diagram for Nation 2 in Figure.2.15. Point A is the autarky production point, point B is the free trade production point and point F is the production point with 100 percent import tariff on commodity X. Point F is farther away from origin  $O_X$  and

closer to origin OY than point B, indicating that with the rise in  $PX/PY$  as a result of the import tariff on commodity X, Nation 2 produces more of commodity X and less of commodity Y. The slope of the solid line from origin OX to point B measures  $K/L$  in the production of commodity X, and the slope of the solid line from origin OY to point B measures  $K/L$  in the production of commodity Y under free trade. With production at point F (after the import tariff on commodity X),  $K/L$  in the production of commodity X and commodity Y is measured by the slope of the dashed lines from origins OX and OY, respectively, to point F. Since the dashed line from each origin is steeper than the solid line,  $K/L$  is higher in the production of both commodities after the imposition of the import tariff on commodity X than under free trade.

As each unit of labor is combined with more capital in the production of both commodities after the tariff on commodity X, the productivity of labor increases, and therefore the wage rate rises in the production of both commodities. This is reflected in the fact that the absolute slope of the short solid line through point F (measuring  $w/r$ ) is greater than the absolute slope of the short solid line through point B. With the assumption of perfect competition in factor markets, wages will be equalized in the production of both commodities.

The reason for this is that as  $PX/PY$  rises as a result of the import tariff on commodity X, Nation 2 will produce more of commodity X and less of commodity Y. The expansion in the production of commodity X (the L-intensive commodity) requires  $L/K$  in a higher proportion than is released by

reducing the output of commodity Y (the K-intensive commodity). As a result,  $w/r$  rises and K is substituted for L so that  $K/L$  rises in the production of both commodities. As each unit of L is now combined with more K, the productivity of L rises, and therefore,  $w$  rises. Thus, imposition of an import tariff on commodity X by Nation 2 increases  $P_X / P_Y$  in the nation and increases the earnings of L (the nation's scarce factor of production). The Stolper–Samuelson theorem is always true for small nations and is usually true for large nations as well. However, for large nations the analysis is further complicated by the fact that they affect world prices by their trading.

## **2.8. Metzler paradox**

Metzler paradox is the exception to the Stolper–Samuelson theorem. The possibility that tariffs and export subsidies might have perverse effects on internal prices in a country was pointed out and demonstrated by the University of Chicago economist Lloyd Metzler and is known as the Metzler paradox. This paradox has roughly the same status as immiserizing growth and a transfer that makes the recipient worse off; that is it is possible in theory but will happen only under extreme conditions and is not likely in practice.

The conclusion given in Stolper-Samuelson theorem that tariff would hurt the abundant factor and benefit the scarce factor was contradicted by L.A. Metzler in his classic article published in 1949. Metzler stated that the imposition of tariff would improve the terms of trade and raise the ratio of price

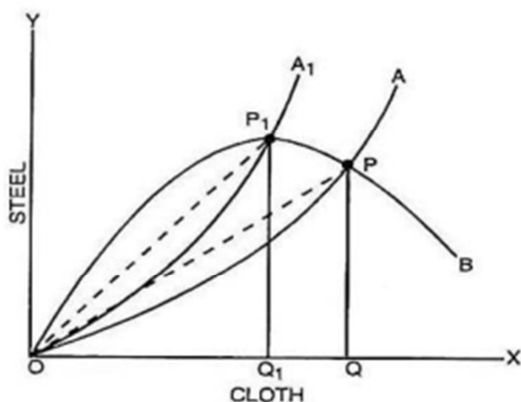
of export good intensive in the abundant factor to the price of import good intensive in scarce factor.

It will raise the price of factor used intensively in the export sector relative to the factor used intensively in import-substitute. Thus Metzler concluded that income distribution will improve in favour of the abundant factor and against the scarce factor. This is known as Metzler Paradox.

According to Metzler, the diversion of productive resources from export industry to import replacement industry, as supposed in Stopler-Samuelson theorem, can take place only if the domestic price of export item falls relative to the import-substitute. However, the imposition of tariff and consequent improvement in terms of trade signifies a rise in the ratio of export price to import price ( $P_X/P_M$ ). In such a situation, the price of the abundant factor is likely to rise relative to that of the scarce factor.

It may lead to the conclusion that the tariff, through improvement in terms of trade will make the income distribution better in the tariff-imposing country. This refutation of Stopler- Samuelson theorem attempted by L.A. Metzler, was called as Metzler's Paradox. This paradox can be illustrated through Figure. 2.16.

Figure.2.16: Metzler Paradox



In Figure.2.16 cloth is the exportable commodity and steel is the importable commodity. OB is the offer curve of the foreign country B. It becomes less elastic and negatively sloped from point P<sub>1</sub>. In the free trade situation, the exchange takes place at P where OA, the offer curve of the home country A and OB intersect each other. The quantity imported of steel is PQ and that of exportable commodity is OQ.

The terms of trade are measured by  $(Q_M/Q_X) = (PQ/OQ) = \text{Slope of Line OP} = \tan \alpha_1$ . The slope of line OP expresses the ratio of price of exportable commodity cloth ( $P_X$ ) to the price of importable commodity steel ( $P_M$ ). When tariff is imposed by country A and its offer curve shifts to the left, the exchange takes place at P<sub>1</sub> where the terms of trade are more favourable for the home country. It is measured by  $P_1Q_1/OQ_1$  slope of line OP<sub>1</sub>.

The quantity imported has risen after tariff. Since the

slope of  $OP_1$  is greater than of  $OP$ , the ratio of prices of two commodities ( $P_X/P_M$ ) is higher after tariff. It implies a rise in wage rate relative to return on capital. Thus tariff benefits the abundant factor labour and hurts the scarce factor capital.

Metzler recognized that expected result from the imposition of tariff was an increase in the price of importable commodity in the home market but the relative price of imports would fall in the home market, when the following condition would apply:

$$\eta = (1 - k)$$

Where  $\eta$  = demand elasticity of country B (foreign country) for the exports of country A (tariff imposing country),  $(1-k)$  = The marginal propensity to consume of its exports in country A.

If the demand elasticity of foreign country B for the export of country A is larger than the marginal propensity to consume of the exportables [ $\eta < (1-k)$ ], the price of import of country A will rise. If this condition does not apply and [ $\eta > (1- k)$ ], the domestic price of imports will instead fall due to tariff. Metzler's conclusion will hold and Stolper-Samuelson theorem will become invalid.

Larger is the marginal propensity to consume of a country of its exportables, larger will be the amount of its tariff revenues spent on the consumption of exportable good. Thus there will be excess demand for exportable good. Consequently, the price of that good will rise. At the same time, if the foreign country's demand elasticity for exportable good of tariff- imposing country is low, the demand for this

good in that country will fall very slightly despite a rise in its relative price.

So under these circumstances, the excess demand for exportable good due to tariff in the home market will imply a relative fall in the price of imports. If it happens, the return to the factor intensive in the exportable that is abundant factor will rise and the return to scarce factor intensive in the import good will fall. Thus the income distribution, subsequent upon the imposition of tariff, will become favourable to the abundant factor and unfavourable to the scarce factor.

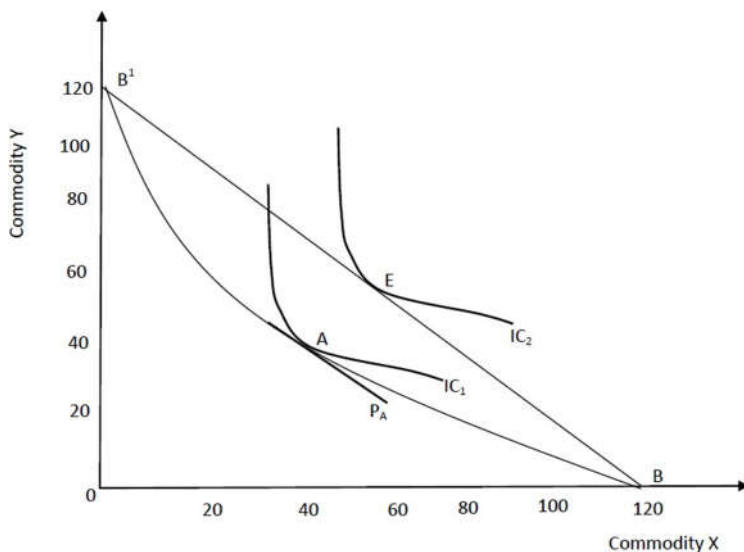
## **2.9. Economies of Scale and International Trade**

One of the assumptions of Heckscher – Ohlin model was that both commodities were produced under conditions of constant returns to scale in the two countries. With increasing returns to scale, mutually beneficial trade can take place, even when two countries are identical in every respect. Thus, this kind of model produces an additional reason for gains from trade, namely, ‘cost reductions because of economies of scale can cause even two identical countries to have incentive to trade’. Heckscher – Ohlin model does not explain this type of trade.

Increasing returns to trade refer to the production situation where output grows more than proportionately than increase in inputs, which occurs as a result of greater division of labour and resultant specialization. Since two countries are assumed to be identical in every respect, we can use single production possibility curve and single indifference map for both the

countries. Increasing returns to scale results in convex or inward bending production possibility curve as depicted in the figure.2.16.

**Figure.2.16: Inward bending production possibility curve-  
Increasing returns to scale results in convex**



Relative commodity prices in the two countries are identical which is  $P_x/P_y = P_A$  and is given by the slope of common tangent to the production possibility curve and indifference curve,  $IC_1$  at point A. With trade country I can completely specialise in the production of commodity X and produce at point B. Country II then specialise in the production of Y and produce at  $B^1$ . Then, exchanging 60X for 60Y with each other, each country can end up consuming at point E on  $IC_2$ , thus gaining 20X and 20Y.

These gains from trade arise from economies of scale in

the production of only one commodity in each country. In the absence of trade, two countries could not specialise in the production of only one commodity because both countries want to consume both commodities.

However, there are some uncertainties with the model. First of all, we have no way of knowing which country will specialise in X and which in Y since both have identical relative prices in autarky. But two countries need not be identical in every respect for mutually beneficial trade to result from increasing returns to scale. Again, if the economies of scale persist over long range of output, then it might lead to monopoly or oligopoly. Finally, there have significant international economies of scale as a result of sharp increase in international trade in parts and components as international corporations utilise components and parts made in different countries to minimize cost.

### **Imperfect Competition and Trade – The Concept of Intra Industry Trade**

Traditional theory of international trade has assumed that commodities being traded were homogeneous or identical. Further, it assumed that all international trade is inter industry trade meaning that countries trade different goods with one another. But a characteristic of a country's trade that has appeared in many new theories and is increasingly recognised as important in the real world is intra industry trade. Intra industry trade occurs when a 'country is both exporting and importing items in the same product classification category'.

Traditional trade theory dealt only with inter-industry trade, but intra industry trade clearly constitutes an important segment of international trade.

Unfortunately, Heckscher-Ohlin factor endowment theorem is of little or no help in predicting intra industry trade. In fact, intra industry trade will be relatively greater the more similar are capital and labour endowments of the countries. Several explanations have been given for the occurrence of intra industry trade in view of the deficiency of Heckscher- Ohlin theory. One explanation is that intra industry trade arises in order to take advantage of economies of scale in production. That is, international competition forces each firm to specialise in the production of only one or a few varieties of the same product and import other varieties from other countries. Product differentiation is also an explanation for intra industry trade as output in the modern economies involves differentiated rather than homogeneous products. Because consumer tastes differ in enumerable ways, more so than the varieties of the products manufactured by any given country, some intra industry trade emerges because of product differentiation.

In addition, most international trade in differentiated products occurs under conditions of imperfect competition. Under imperfect competition, a firm is able to influence the price of the product by changing the quantity of products offered for sale. When a firm in a imperfectly competitive market can influence the price of the product, this means that the firm has some degree of market power.

Although trade in Heckscher-Ohlin model is based on differences in factor endowments among countries, intra industry trade is based on ‘product differentiation and economies of scale’. Thus while trade based on comparative advantage is likely to be larger when the difference in factor endowments among countries is greater, intra industry trade is likely to be larger among countries of similar size and factor proportions.

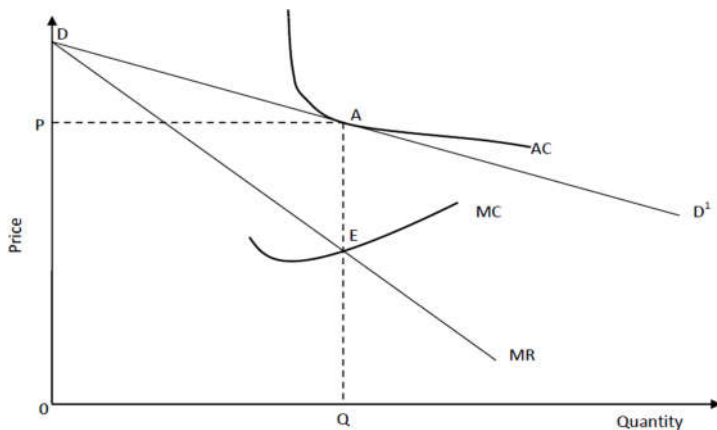
The level of intra industry trade can be measured by the intra industry trade index (T), which is

$$T = 1 - |X - M| / X + M \quad (0 < T < 1)$$

Where X and M represents the value of exports and imports of a particular industry or commodity group. T=0 when a country only exports and only imports the good in question, that is there is no intra industry trade. On the other hand, if T=1, then exports and imports of a good are equal, that is intra industry trade is maximum.

### **Formal model of intra industry trade**

The figure.2.17 presents the formal model of intra industry trade which is the case of monopolistic competition, where many firms sell differentiated products and there is freedom of entry and exit.



DD1 represents the demand curve faced by the firm for differentiated products that it sells. Since there are many firms selling similar products, the demand curve is fairly elastic. Since firm needs to reduce the price to sell more MR curve lies below the demand curve so that  $MR < P$ . By producing only one of a few varieties of the product, the firm also faces increasing returns to scale so that AC curve downward sloping and MC is below the AC curve. The equilibrium level of output is OQ where MC cut MR from below and is given by point E. since DD1 is tangent to AC curve at this level of output, firm will earn only normal profit.

To sum up, we can argue that when products are homogeneous (case of perfect competition), we have only inter industry trade. On the other hand, when products are differentiated (case of monopolistic competition), we have both inter and intra industry trade. The more similar the countries are in their facto endowments and technology, the smaller is the importance of inter industry trade and vice versa.

Since industrial countries have become more similar in factor endowments and technology overtime, the importance of intra industry trade has increased.

## **2.10. Trade Based on Technological Differences**

World trade is becoming more and more profoundly affected by advances in technology. That is, apart from existence of economies of scale and product differentiation, dynamic changes in technology among countries can be separate determinant of international trade. These are examined by Technological Gap and Product Cycle Theories

### **2.10.1. Technological Gap Model**

This theory was introduced by Michael V Posner in 1961. It is also called “imitation lag hypothesis”. It relaxes the assumption in the Heckscher – Ohlin analysis that the same technology is available everywhere. It assumes that the same technology is not always available in all countries and there is a ‘delay in the transmission of technology’ from one country to another.

A great deal of trade among industrialized countries is based on introduction of new products and new production process which give innovating firm and country a temporary monopoly in the world market. Consider country I and country II. Suppose that a new product appears in country I due to successful efforts of research and development (R&D). According to the imitation lag theory, this new product will not be produced immediately by firms in country II. Incorporating the time dimension, the “imitation lag” is

defined as the length of time that takes between product's introduction in country I and the appearance of the version produced by firms in country II. In this approach, a second adjustment lag is the "demand lag", which is the length of time between the product's appearance in country I and its acceptance by consumers of country II as a good substitute for the products they are currently consuming.

A key feature of Posner's theory is the comparison of the length of imitation lag with the length of the demand lag.

Thus, the central point of importance in the imitation lag hypothesis is that trade focuses on new products. A country can become a continually successful exporter by focusing on continuous innovation.

### **2.10.2. Product Cycle Theory**

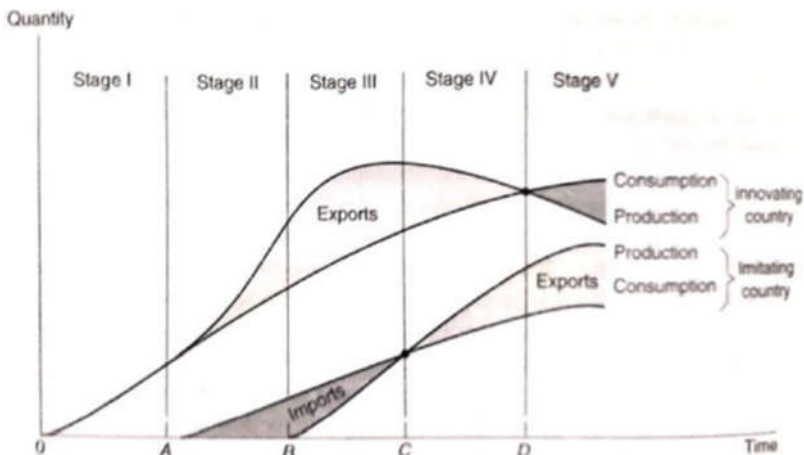
The Product Cycle Theory of trade is a generalization and extension of the Technological Gap Model and builds on its treatment of delay in the diffusion of technology. This theory was developed by Raymond Vernon in 1966.

According to this model, when a new product is introduced, it usually requires highly skilled labour to produce. As the product matures and acquires mass acceptance, it becomes standardized and familiar so that it can be produced with less skilled labour. Therefore, comparative advantage in the product shifts from the advanced nation that originally introduced it to less advanced nations, where labour is relatively cheaper. This may be accompanied by Foreign Direct Investments (FDIs) from the innovating country to

countries with cheaper labour. Vernon pointed out that high income and labour saving products are most likely to be introduced in rich countries because the opportunities for doing it is greatest there and it also requires proximity to markets.

While technological gap model emphasizes the time lag in the imitation process, the product cycle model stresses the standardization process. According to these models, the most highly industrialised economies are expected to export the non-standardised products embodying new and more advanced technology and import products embodying less advanced technology. Trade in these models is originally based on new technology developed by relatively abundant factors in the industrialised economies such as highly skilled labour and R&D. Subsequently, through imitation and product standardization, less developed countries earn a comparative advantage based on their relatively cheap labour. Thus, trade can be said to be based on changes in the relative factor abundance among countries over time. Therefore, technological and product cycle models can be regarded as extensions of basic Heckscher- Ohlin models into a technologically dynamic world. The product cycle theory divides the life cycle of a new product into *five* different stages (according to one version of the theory) as (Figure.2.17).

Figure. 2.17: Product Cycle Theory



In the stage I or *new product stage* (time OA), the products is produced and consumed only in the innovating country. In the stage II or *product growth stage* (time AB), production increases rapidly in the innovating country to accommodate rising demand from home and abroad and has monopoly both at the home and export markets. In the stage III or *product maturity stage* (time BC), product becomes standardised and the imitating country having lower labour and other costs starts producing the product for domestic consumption. In stage IV (time CD), the imitating country begins to undersell the innovating country in the third market and production in the innovating country declines. Brand competition is replaced by price competition. Finally, in the stage V (post point D), the imitating country starts underselling the innovating country in the latter's market as well and the production of the product in the innovating country declines

rapidly. Stage IV and V are often referred to as the *product decline stage*. Thus, technological diffusion, standardization and lower costs abroad bring the end of the life cycle for the product.

In summary, the product cycle theory postulates a dynamic comparative advantage because the country-source of exports shifts throughout the life cycle of the product. Early on, the innovating country exports the product, which is ultimately displaced by the developing countries. It is argued that a casual glance at history of products in the world yield this kindof pattern in a general way.

### **2.11. Kravis theory of Availability**

I. B. Kravis has developed the availability theory against the comparative cost theory as a plausible explanation of international trade in certain cases. His argument is that country exports certain scarce resources in the world because these are available with it. For instance Gulf countries export oil, because oil fields are deposited with them.

Kravis asserted that the nations would export those products which were readily available in the home country. They would tend to import, on the contrary, such products the domestic supply of which had been short of their demand. According to him, the essential basis of international trade has been the ‘non-availability of goods at home’. The non-availability of goods in the home country may either be in the absolute or the relative sense. In the former case, certain goods may not be available at all in the home country such as

diamonds in the Indian economy.

The non-availability in the relative sense signifies that the domestic supply of products is short of their demand and the additional output of those goods can be possible in the home country at much higher costs such as crude oil in the Indian economy. The principle of comparative advantage in such a case comes into its own and countries prefer to import such products from abroad rather than to produce them at home at the prohibitive costs.

Kravis maintains that the domestic availability or otherwise of certain specified products in a particular country is governed by:

(i) Natural Resources:

If a country is well-endowed with minerals like iron ore, bauxite and oil, the products which involve the use of such materials will be produced in large quantity in the home country. A part of production of these products will be exported abroad. On the opposite, if there is scarcity of forest products in a given country, the scarcity thereof can be met by importing them from abroad. Thus the pattern of trade of a given country is influenced by the relative abundance or scarcity of natural resources.

(ii) Technical Progress:

The technical progress can have a significant impact upon factor utilisation, factor costs, expansion in the scale of production and improvement in the quality of product. In

general, technical progress can increase considerably the domestic availability of certain categories of products, the surplus quantities of which can be exported abroad.

(iii) Product Differentiation:

The producers in different countries are inclined to produce different varieties of products. The production of such goods confers temporary monopoly to a specific innovating country and it disposes of its special product variety in the foreign markets.

(iv) Government Policy:

The tariff and non- tariff trade restrictions tend to restrict the international flows of goods. The international cartels like OPEC too follow restrictive policy measures and the availability of a large range of products gets affected on the international plane.

While natural resources, technical progress and product differentiation together lead probably to expansion in the volume of international trade, the trade restrictions imposed by the countries tend to have a limiting impact upon trade.

To explain the availability doctrine theoretically let us assume that there are four countries A, B, C and D. Suppose two goods X and Y are to be produced. Labour and capital are needed for both these goods. But, in the production function of X, greater use of land is necessary, while, for Y a high order of technical know-how is required. Countries A, B and C possess this technical know-how. Countries B, C and D have land.

That means country A can produce only Y, while D can produce only X. Whereas, countries B and C are in a position to produce both goods: Z and Y.

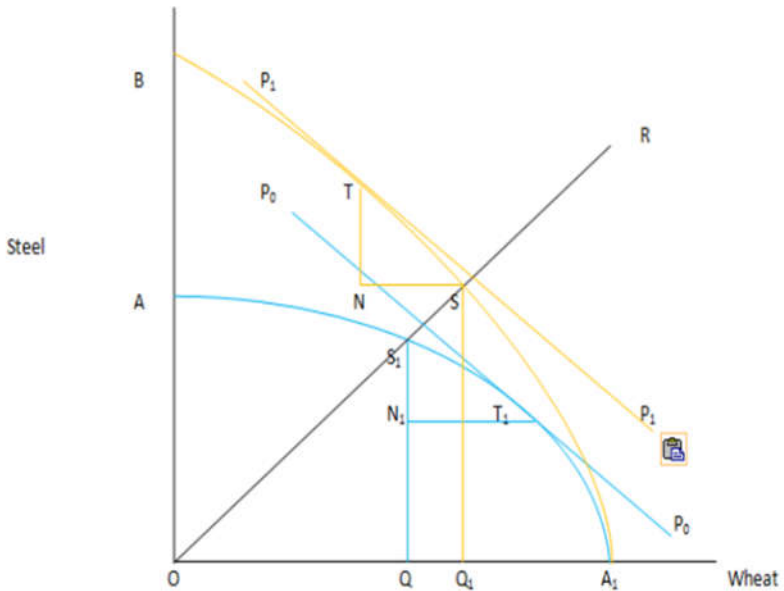
In this example, the exports of countries B and C can be explained by the relative commodity price differences as visualised in Ohlin's model or even in terms of the comparative cost differences. But, the exports of countries A and B will be governed by the availability doctrine. It is obvious that A can produce only Y, so it becomes its export. Similarly, D's export will be X. In short, A exports to D and imports A from the latter is suitably explained by the availability theory. Sometimes specific consumer preference for a particular country's good available with it favours that country in fetching a better terms of trade than its potential rivals. For example, Swiss watches against Japanese watches.

Suppose that two countries A and B can produce two commodities, wheat and steel. They have equal endowments of labour, capital and iron ore. However, country B has more agricultural land than the country A. The pattern of trade between these two countries may be explained through the below figure 2.18.

In the figure.2.18 commodity steel is measured along the horizontal axis and commodity wheat is measured along the vertical axis. Given the equal availability of labour, capital and iron ore in two countries and relatively large availability of wheat- producing land in country B, AA1 is the production possibility curve of country A and A1B is the production

possibility curve of country B. P0P0 and P1P1 are the price lines which have the same slope.

**Figure. 2.18: Kravis theory of availability**



The line OR starting from origin indicates the demand proportions of two commodities in these countries. OR intersects AA1 and A1B at S1 and S respectively. The point S1 indicates that country A requires OQ quantity of steel and S1Q quantity of wheat. The point S indicates that country B requires OQ1 quantity of steel and SQ1 quantity of wheat. The point of production in country A is T1. Thus country A has T1N1 quantity of steel over and above the quantity required by it. The excess availability of steel in this country will be exported to country B.

The point of production in country B is T. At this point country B has TN quantity of wheat over and above its domestic requirement. The excess availability of wheat in this country will be exported to country A.

However, the availability doctrine does not offer a sufficient explanation for international trade. It is not a very deep-seated doctrine. It is neither comprehensive nor highly illuminating. It only serves some purpose in explaining the exports of certain commodities like oil, minerals, etc., by some countries. But, a general pattern of world trade cannot be explained in terms of this theory.

### **2.12. Linder's theory of Volume of Trade and Demand pattern**

Linder Hypothesis is an economic hypothesis that posits countries with similar per capita income will consume similar quality products, and that this should lead to them trading with each other. The Linder hypothesis suggests countries will specialize in the production of certain high quality goods and will trade these goods with countries that demand these goods. The theory was proposed by Staffan Linder in 1961.

According to Linder, a manufactured product will not generally be exported until there is demand for it within the home country. The products are basically produced to meet the domestic requirements. It is only subsequently that the product is exported to other countries. The theory maintains that the countries having identical levels of income have similar demand structure and propensity to trade with other countries.

Linder postulates that it is the per capita income that determines the tastes and preferences of the consumers which in turn determines the pattern of demand. The domestic production and trade is entirely on the basis of this demand patterns. This also leads to export. So it is a demand oriented theory where as the H- O theory is a supply oriented theory.

**Assumptions of Linder’s Theory:**

This theory is based upon the assumptions given below:

- (i) Trade of a country is confined to those goods that have domestic demand.
- (ii) Two trading countries are engaged in the trade of such goods the demand for which exists within their domestic markets.
- (iii) The domestic demand for goods is determined by the level of per capita income.
- (iv) Similar levels of income influence the potential trade between two countries.

According to S. Linder, the trade in primary products is governed essentially by the relative abundance of natural resources. Trade in manufactured products, on the other hand, is governed by a complex of factors. The major emphasis in this theory has been placed upon the prime condition that the countries will trade in those manufactured goods for which domestic demand is present. It happens because foreign trade has always been regarded as an extension of domestic trade.

Moreover, the possibilities of exports arise on account of

the domestic demand. Since the foreign market is viewed as more risky than the home market, it is often considered not prudent to depend exclusively upon foreign market. A large domestic market induces an expansion in output ensuring the economies of scale and consequent reduction in costs. In these conditions, it is very profitable for the country to enter the foreign market. Since the per capita income determines the demand and thus trade, high income countries will produce and export high quality commodities whereas, low income countries will produce and export low quality products. This is because the production and trade will be on the mostly demanded commodity.

Therefore, a country, in the opinion of Linder, will export its products largely to such countries, as have similar patterns of demand and levels of income. He terms it the '*preference similarity*'. As a result of preference similarity, the country will have overlapping demands. According to Linder, just as within a country consumers in high income groups demand the products of high quality and these in low income group demand products of low quality, in the international trade also, the low income country, on an average, will be inclined to demand products of low quality and high income countries will be inclined to demand high quality products.

This preference similarity or overlapping demand pattern can be explained with the help of an example. Suppose there are three countries I, II and III with different levels of per capita income. I is the poorest nation whereas III is the richest nation. Based on the demand patterns I produces commodities

of different qualities A,B,C,D, and E whereas; A is the cheapest commodity and quality increases when we are moving from A to E and E is the fine quality product. Similarly II produces C,D,E,F and G and III produces E,F,G,H and I. It is noted that as income level increases the demand patterns are favourable to more quality commodities.

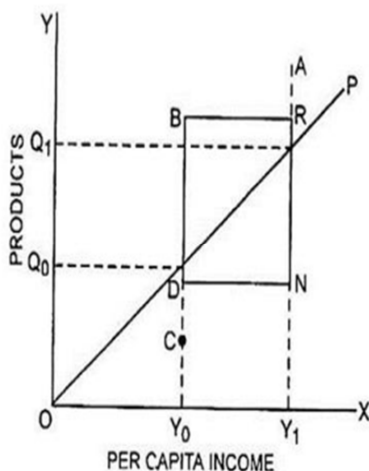
Now we are explaining the preference similarity and overlapping demand between countries. It is clear that between I and II, preference similarity and overlapping demand exists in the commodities C,D and E and traded these commodities across borders. Similarly between II and III preference similarity and overlapping demand exists in the commodities E,F and G and traded these commodities across borders. Considering I and III preference similarity and overlapping demand exists only in the commodity E and this is traded across borders. This reveals that, more trade will be occurred between high income countries because of preference similarity and overlapping demand. This is an addition to H-o theorem.

The preference similarity or overlapping demand pattern can also be discussed through the following figure. 2.19.

In the figure, the per capita income is measured along the horizontal axis. Products are measured along the vertical axis. The line OP starting from origin expresses the relation between products and per capita incomes. Country A has higher per capita income  $Y_1$  and it demands the higher quality product  $Q_1$ . Country B has lower per capita income  $Y_0$  and it demands

the lower quantity product  $Q_0$ .

**Figure.2.19: The preference similarity or overlapping demand pattern**



Since *income distribution is unequal in the two countries*, each one of them has demand for both the products. Let us suppose income distribution in country A leads to the demand for two products taken together in the range of AN. The range of demand for products in country B is BC. The range of overlapping demand in the two countries is  $BD = RN$ . The existence of overlapping demand creates the possibility of trade between them. There will be export of higher quality product  $Q_1$  from country A to meet the demand of high-income group in country B. Similarly the latter will export lower quality product  $Q_0$  to meet the demand for it from lower income group of people in country A.

The H-O theory had specified that trade would take place

between the trading countries, if their factor proportions were different. Linder's theory made an improvement upon the H-O theory as it specified that trade would take place between the countries even if the factor proportions were identical, provided they had similar demand preferences.

### **Criticisms**

- (i) This theory fails to explain why a country should develop the home market for a product which it has to export ultimately.
- (ii) The concept of 'quality' of the product has not been precisely explained in this theory.
- (iii) This theory does not explain why there is co-variation between per capita income and quality of the product.

### **2.13. Transportation Cost and International Trade**

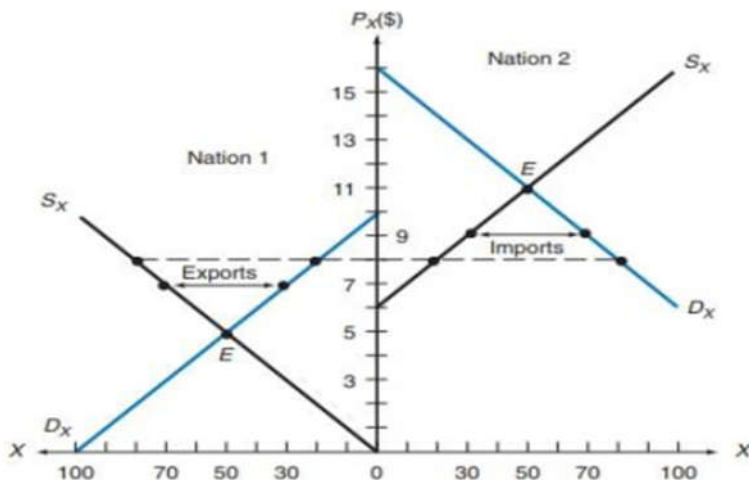
The discussion of Heckscher-Ohlin model of international trade assumed no transport cost. The incorporation of transport cost can alter its results because it affects international trade directly by affecting the price of the traded commodity in the importing and exporting countries and indirectly affecting the international location of production and industry.

Transport or logistic costs include all the costs of transferring goods from one location (country) to another, including freight charges, warehousing costs, cost of loading and unloading, insurance premiums, interest charges while goods are in transit. The incorporation of transport cost is important because it produces a third category of goods,

namely *non-traded goods* that will not enter into international trade, even though one of the two countries may have comparative advantage. They are goods for which transport cost exceeds price differences across countries. The prices of non-traded commodities are determined by domestic demand and supply conditions, while price of traded commodities is determined by world demand and supply conditions.

The following is a partial equilibrium analysis of cost of transport

**Figure. 2.20: Partial Equilibrium Analysis of Transport Costs**



In the figure. 2.20, common vertical axis measures the price of the commodity X in both the countries. A movement to the left of common origin measures increasing quantity of commodity X for country I and its demand curve for X ( $D_x$ )

slopes downwards and supply curve ( $S_x$ ) is positively sloped.

In the absence of trade, country I produces and consumes 50X at equilibrium price of  $P_x = 5$ , given by the intersection of  $D_x$  and  $S_x$ . Country II produces and consumes 50X at  $P_x = 11$ . With the opening of trade, country I will export X to country II and  $P_x$  rises in country I and falls in country II. With the transport cost of Rs 2 per unit,  $P_x$  in country II will exceed country I by Rs 2. This occurs when  $P_x = 7$  in country I and  $P_x = 9$  in country II. At this price, country I will produce 70X, consume domestically 30X and export 40X to country II. On the other hand, country II will produce 30X, import 40X and consume 70X.

Thus, to sum up, the assumption of Heckscher-Ohlin model that there is no transport cost is not valid in real world. Product prices will differ between two countries by the cost of transportation. Again, the participating countries will not necessarily share the transportation cost equally. Ultimately, the incidence of the transportation cost will depend up on elasticities of supply and demand in each country.

Yet, the implication of transportation cost does not alter Heckscher-Ohlin conclusions about the composition of trade, although the amount of trade and specialization of production will be reduced. However, because relative product prices do not equalize between countries, relative factor prices will not equalize and Factor Price Equalisation Theorem breaks down. Finally, if transportation costs are sufficiently large, they can prevent trade from taking place.

### 2.14. Foreign Trade Multiplier

The principle of multiplier says that if MPC is greater than zero, an increment in investment will increase the income greater than the incremental investment.

$$\text{That is, } K = \frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC} \text{ OR } \frac{1}{MPS}$$

If  $MPS=0.25$ , then,  $K=4$  and \$100 increase in investment expenditure ultimately results in \$400 increase in the level of income. Equality between savings and investments is a must for equilibrium because savings represent leakage from income stream while investment is an injection of income. In an open economy, there are two other important variables to be considered, namely imports and exports. Imports like savings, represent leakage as money flows out of the country when we import. On the other hand exports represent an injection as it means expenditure in our economy by the foreigners. In an open economy, the necessary condition for equilibrium will be

$$S+M=I+X \quad (1)$$

The change in the equilibrium level of income induces changes in the amount of savings and imports until the sum of induced changes in savings and imports equals the sum of autonomous changes in investments and exports.

That is, changes in leakages=change in injections

$$\Delta S + \Delta M = \Delta I + \Delta X \quad (2)$$

Induced changes in savings and imports when income

changes are given by  $\Delta S = \text{MPS} \Delta Y$  (3)

$\Delta M = \text{MPM} \Delta Y$  (4)

Substituting equation 3 and 4 in equation 2, we will have  $(\text{MPS} + \text{MPM}) \Delta Y = \Delta I + \Delta X$

$$\Delta Y = \frac{1}{\text{MPS} + \text{MPM}} \Delta I + \Delta X$$

Where the foreign trade multiplier  $K^1$  is

$$K^1 = \frac{1}{\text{MPS} + \text{MPM}}$$

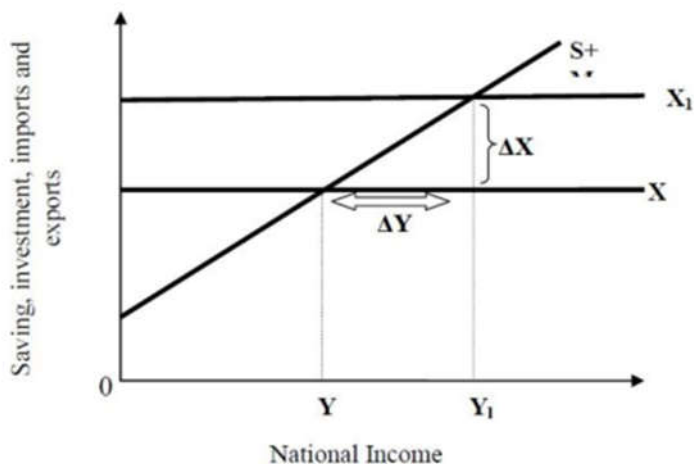
It is also called export multiplier. Thus, foreign trade multiplier equals the reciprocal of the sum of the marginal propensities to save and imports. It is quite clear that the smaller the leakages, the greater the multiplier effect of an increase in exports. If  $\text{MPS} = 0.2$  and  $\text{MPM} = 0.3$ , then

$$K^1 = \frac{1}{0.2 + 0.3} = 2$$

In this formulation, an autonomous change in exports, investment remaining the same, would have an impact on domestic income identical to that of an equivalent change in investment. The foreign trade multiplier can be illustrated graphically as well (Figure. 2.21).

To start with, the economy is in equilibrium at  $Y$  level of income where savings plus imports are equal to exports. Now if there is an autonomous increase in exports so that the export schedule shifts from  $X$  to  $X_1$ , it acts as an injection to the economy. This will cause the income of the exporting country to rise by more than the amount of the new export injection.

Figure.2.21: Foreign trade multiplier



### 2.15. Leamer’s Theorem

One of the most comprehensive empirical studies of the relationship between factor endowments and international trade is by Edward Leamer<sup>1</sup> (1984). It is based on the Heckscher Ohlin theory but tests a broader and looser model; in particular Leamer includes many natural factors and does not explicitly consider the factor intensities of different countries. Leamer tests his model on data from 60 countries (20 industrial and 40 developing) referring approximately to 1958 and 1975, distinguishing 10 aggregate of goods( 6 resource based goods and 4 manufactures) and eleven factors (including capital, professional or technical workers, literate and non-professional workers, illiterate workers, tropical land,

<sup>1</sup> Leamer (1984): “Sources of International Comparative Advantage”, MIT Press.

dry climate land, humid climate land, minerals and so on.)

According to Leamer, the pattern of manufactured trade in from 1958 to 1975 indicates a “ladder of development”. There is a general upward drift with notable jumps for the larger industrial countries and some of the newly industrialised countries. It appears that comparative advantage is explained not only by random factor endowments but by the evolution of endowments during the process of development. Physical and human capital accumulations are the most obvious signs of such evolution. In 1958, the major net exporters of labour intensive manufactures were the industrial countries, including USA and Germany, but subsequently a mixture of newly industrialised and emerging industrialised countries such as Italy, Hongkong, Korea, Japan and Spain, took over. These changes indicate changes in the sources of comparative advantage. The most consistent results on labour intensive goods are the importance of skilled labour.

The capital intensive manufactures are much more province of the established industrial countries, although Korea, one of the NICs was the fourth largest net exporter relative to GDP in 1975. The notable factors behind this trade are the positive role of the skilled labour in both years and reversal of the importance of physical capital (capital) and human capital (professional labour). By 1975, the critical factor was physical equipments and human capital. Leamer points out that this shift reflects the role of MNCs and also the rapid accumulation of capital in the newly industrialised countries where it can substitute human capital. The net trade

in machinery also shows a similar set of determinants to capital intensive goods. Both machinery and chemical net exports are dominated by established industrial countries.

Thus, the Leamer study indicates that, whereas, in 1958 highly skilled (professional) labour was the predominant factor inducing net exports of manufactures, by 1975, it has been displaced by capital and skilled (literate) labour in all cases except chemicals. The study also suggests that, while we need to relax the strict HO model, the factor endowment approach to comparative advantage can explain much of the pattern of international trade in manufactures. Moreover, its predictions seem quite plausible because it appears consistent with a ladder of development, it can cope with the emergence of the newly industrialised countries and it can explain the shifting importance of different industrial countries.

Another analysis of the factor content of trade for 12 different factors of production and 27 different countries by Leamer, Bowen and Sveikauskas<sup>2</sup> (1987) gives a less encouraging message regarding the generality of the HO theory. The sign of the factor content of trade is predicted correctly by relative factor abundance in merely half of the cases considered. Based on the factor content of a country's exports and imports, they checked whether a country was a net exporter of a factor of production whenever it was relatively abundantly endowed with that factor. They ended up with a success rate of only 61 per cent of the 324 possible cases. In

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<sup>2</sup> Leamer, Bowen and Sveikauskas (1987): "Multi Country, Multifactor Tests of the Factor Abundance Theory", *American Economic Review*

other words, the factor content of trade ran the opposite direction to the prediction of the H O theory in 39 per cent of cases. These results confirmed that the Leontief paradox was not an isolated case. The authors pointed out that while consumption pattern was common across countries, technology differs by a simple multiplicative factor between countries.

### 2.16. Trefler's Theorem

Based on his analysis of trade in 1982 for 33 countries and 9 factors of production, David Trefler<sup>3</sup> (1995) observes a basic problem that Heckscher Ohlin predictions systematically perform poorly. That is actual trade flows deviate from predictions based on factor abundance theory in a systematic way which he calls it as “missing trade”.

Poor countries appear to be abundant in most factors, but exports much too little, while rich countries appear to be scarce in most factors, but imports much too little. To account this “missing trade” Trefler allows for differences across countries in technology. Just as in Leontief formulation, this changes the measure of relative factor abundance. Making that adjustment results in much less predicted trade than when technology assumes to be the same everywhere.

Thus, another indication of large technology differences across countries comes from discrepancies between the observed volume of trade and those predicted by the Heckscher Ohlin theorem. Trefler pointed out that the

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<sup>3</sup> Daniel Trefler (1995): “The case of the Missing Trade and Other Mysteries”, *American Economic Review*

Heckscher Ohlin model can also be used to derive predictions for the country's volume of trade based on differences in that country's factor abundance with that of the rest of the world. In fact factor trade turns out to be substantially smaller than the HO model predictions.

For example, the United States contributes 25 per cent of world income but have only 5 per cent of world's workers. Trefler showed that allowing for technology differences across countries helped to resolve the factor content and the missing trade. If the workers in the US are much more efficient than the world average, then the "effective labour supply" in the US is correspondingly larger and hence the expected volume of imported labour services into the US is correspondingly lower. Trefler's estimates for a sample of countries suggests that technological efficiency of US labour is in fact very large.

Thus Trefler pursues a line of reasoning suggested by Leontief; if US labour is more productive than foreign labour, due to US technological advantage, then the United States will appear labour abundant if it is possible to measure labour in units of comparable productivity everywhere. That is, Trefler believed that if the quantity of US labour in Leontief test year of 1947 had been adjusted or increased to reflect its relatively greater productivity than labour in other countries, the United States would have been classified as a labour abundant country. the United States would have been expected to export labour intensive commodities. Trefler also point to the importance of differences in technology to explain observed pattern of trade.

**MODULE III**  
**ECONOMIC GROWTH AND**  
**INTERNATIONAL TRADE**

**3.1. Growth of Factors of Production/ Growth of Labour and Capital**

Through time, a nation's population usually grows and with it the size of its labor force. Similarly, by utilizing part of its resources to produce capital equipment, the nation increases its stock of capital. Capital refers to all the human-made means of production, such as machinery, factories, office buildings, transportation, and communications, as well as to the education and training of the labor force, all of which greatly enhance the nation's ability to produce goods and services. Although there are many different types of labor and capital, we will assume for simplicity that all units of labor and capital are homogeneous (i.e., identical). This will leave us with two factors—labor (L) and capital (K). We will also continue to assume that the nation experiencing growth is producing two commodities (commodity X, which is L intensive, and commodity Y, which is K intensive) under constant returns to scale.

**Labor Growth and Capital Accumulation over Time**

An increase in the endowment of labor and capital over time causes the nation's production frontier to shift outward. The type and degree of the shift depend on the rate at which L

and K grow. If L and K grow at the same rate, the nation's production frontier will shift out evenly in all directions at the rate of factor growth. As a result, the slope of the old and new production frontiers (before and after factor growth) will be the same at any point where they are cut by a ray from the origin. This is the case of balanced growth.

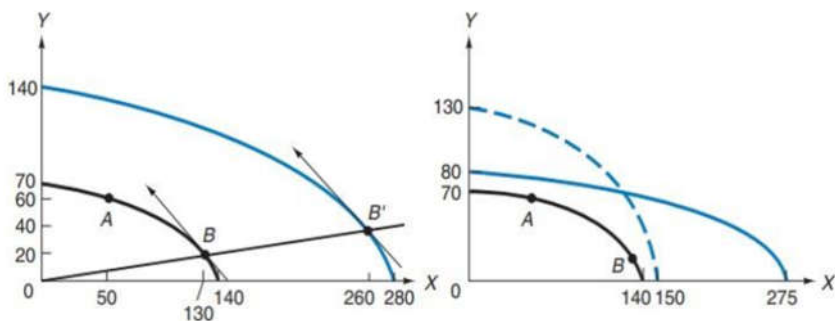
If only the endowment of L grows, the output of both commodities grows because L is used in the production of both commodities and L can be substituted for K to some extent in the production of both commodities. However, the output of commodity X (the L-intensive commodity) grows faster than the output of commodity Y (the K-intensive commodity). The opposite is true if only the endowment of K grows. If L and K grow at different rates, the outward shift in the nation's production frontier can similarly be determined.

Figure 3.1 shows various types of hypothetical factor growth in Nation 1. The presentation is completely analogous for Nation 2. The left panel of Figure 3.1 shows the case of balanced growth under the assumption that the amounts of L and K available to Nation 1 double. With constant returns to scale, the maximum amount of each commodity that Nation 1 can produce also doubles, from 140X to 280X or from 70Y to 140Y. Note that the shape of the expanded production frontier is identical to the shape of the production frontier before growth, so that the slope of the two production frontiers, or  $P_X / P_Y$ , is the same at such points as B and B', where they are cut by a ray from the origin.

The right panel repeats Nation 1's production frontier before growth (with intercepts of  $140X$  and  $70Y$ ) and shows two additional production frontiers—one with only  $L$  doubling (solid line) and the other with only  $K$  doubling (dashed line). When only  $L$  doubles, the production frontier shifts more along the  $X$ -axis, measuring the  $L$ -intensive commodity. If only  $K$  doubles, the production frontier shifts more along the  $Y$ -axis, measuring the  $K$ -intensive commodity. Note that when only  $L$  doubles, the maximum output of commodity  $X$  does not double (i.e., it only rises from  $140X$  to  $275X$ ). For  $X$  to double, both  $L$  and  $K$  must double. Similarly, when only  $K$  doubles, the maximum output of commodity  $Y$  less than doubles (from  $70Y$  to  $130Y$ ).

When both  $L$  and  $K$  grow at the same rate and we have constant returns to scale in the production of both commodities, the productivity, and therefore the returns of  $L$  and  $K$ , remain the same after growth as they were before growth took place. If the dependency rate (i.e., the ratio of dependents to the total population) also remains unchanged, real per capita income and the welfare of the nation tend to remain unchanged. If only  $L$  grows (or  $L$  grows proportionately more than  $K$ ),  $K/L$  will fall and so will the productivity of  $L$ , the returns to  $L$ , and real per capita income. If, on the other hand, only the endowment of  $K$  grows (or  $K$  grows proportionately more than  $L$ ),  $K/L$  will rise and so will the productivity of  $L$ , the returns to  $L$ , and real per capita income.

**Figure.3.1: Growth of Labour and Capital Over Time**



### 3.2. The Rybczynski Theorem

In both Heckscher-Ohlin theory and the factor-price equalisation theory, the assumption was taken that the factor endowments were fixed. T.M. Rybczynski, published a paper in 1955 to investigate the effect of an increase in the quantity of a factor of production upon production, consumption and the terms of trade. The Rybczynski theorem postulates that at constant commodity prices, an increase in the endowment of one factor will increase by a greater proportion the output of the commodity intensive in that factor and will reduce the output of the other commodity. For example, if only L grows in Nation 1, then the output of commodity X (the L-intensive commodity) expands more than proportionately, while the output of commodity Y (the K-intensive commodity) declines at constant  $P_X$  and  $P_Y$ .

In simple words, the increase in the supply of one of the factor of production, other factors remaining the same, causes the output of the good using the accumulating factor

intensively to increase and the output of the other good to decrease in absolute amount, provided that commodity and factor prices remain unchanged. Suppose in a labour- surplus country, the supply of labour gets increased. It will lead to an increased output of the labour- intensive commodity, say cloth, and reduced output of the capital- intensive commodity, say steel.

**Assumptions:**

- (i) The trade takes place between two countries. The case of only one of the two countries will be discussed here.
- (ii) The given country is labour-abundant and capital-scarce.
- (iii) This country produces two commodities— cloth and steel.
- (iv) The production of these commodities requires two factors—labour and capital.
- (v) Capital and labour are perfectly mobile, perfectly divisible and substitutable in some degree.
- (vi) Cloth is labour-intensive good and steel is a capital-intensive good.
- (vii) There are the conditions of perfect competition in the product and factor markets.
- (viii) The production functions related to both the commodities are homogenous of the first degree. That implies constant returns to scale in production.
- (ix) The factor and commodity prices are constant.

- (x) The supply of the factor labour expands while that of capital remains the same.

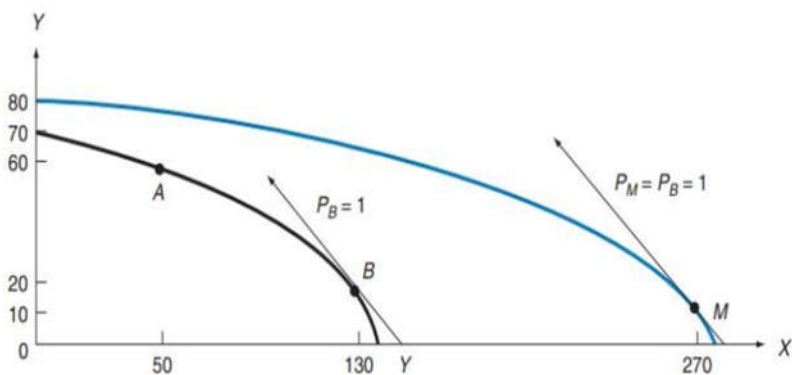
Figure.3.2 shows the production frontier of Nation 1 before and after only L doubles. With trade but before growth, Nation 1 produces at point B (i.e., 130X and 20Y) at  $P_X / P_Y = P_B = 1$ . After only L doubles and with  $P_X / P_Y$  remaining at  $P_B = 1$ , Nation 1 would produce at point M on its new and expanded production frontier. At point M, Nation 1 produces 270X but only 10Y. Thus, the output of commodity X more than doubled, while the output of commodity Y declined (as predicted by the Rybczynski theorem). Doubling L and transferring some L and K from the production of commodity Y more than doubles the output of commodity X.

For commodity prices to remain constant with the growth of one factor, factor prices (i.e.,  $w$  and  $r$ ) must also remain constant. But factor prices can remain constant only if  $K/L$  and the productivity of L and K also remain constant in the production of both commodities. The only way to fully employ all of the increase in L and still leave  $K/L$  unchanged in the production of both commodities is for the output of commodity Y (the K-intensive commodity) to fall in order to release enough K (and a little L) to absorb all of the increase in L in the production of commodity X (the L-intensive commodity). Thus, the output of commodity X rises while the output of commodity Y declines at constant commodity prices.

In fact, the increase in the output of commodity X expands by a greater proportion than the expansion in the amount of labor

because some labor and capital are also transferred from the production of commodity Y to the production of commodity X. This is called the magnification effect. To summarize, we can say that for  $P_X$  and  $P_Y$  (and therefore  $P_X / P_Y$ ) to remain the same,  $w$  and  $r$  must be constant. But  $w$  and  $r$  can remain the same only if  $K/L$  remains constant in the production of both commodities. The only way for this to occur and also absorb all of the increase in  $L$  is to reduce the output of  $Y$  so as to release  $K/L$  in the greater proportion used in  $Y$ , and combine the released  $K$  with the additional  $L$  at the lower  $K/L$  used in the production of  $X$ . Thus, the output of  $X$  rises and that of  $Y$  falls. In fact, the output of  $X$  increases by a greater proportion than the increase in  $L$ . Similarly, when only  $K$  increases, the output of  $Y$  rises more than proportionately and that of  $X$  falls. If one of the factors of production is not mobile within the nation, the results differ and depend on whether it is the growing or the non-growing factor that is immobile.

**Figure.3.2. The Growth of Labor only and the Rybczynski Theorem**



### **3.2.1. Technical Progress**

The most appropriate definitions of technical progress are those advanced by John Hicks, the British economist who shared the 1972 Nobel Prize in economics. Technical progress is usually classified into neutral, labor saving, or capital saving. All technical progress (regardless of its type) reduces the amount of both labor and capital required to produce any given level of output. The different types of Hicksian technical progress specify how this takes place. Neutral technical progress increases the productivity of L and K in the same proportion, so that  $K/L$  remains the same after the neutral technical progress as it was before at unchanged relative factor prices ( $w/r$ ). That is, with unchanged  $w/r$ , there is no substitution of L for K (or vice versa) in production so that  $K/L$  remains unchanged. All that happens is that a given output can now be produced with less L and less K.

Labor-saving technical progress increases the productivity of K proportionately more than the productivity of L. As a result, K is substituted for L in production and  $K/L$  rises at unchanged  $w/r$ . Since more K is used per unit of L, this type of technical progress is called labor saving. Note that a given output can now be produced with fewer units of L and K but with a higher  $K/L$ . Capital-saving technical progress increases the productivity of L proportionately more than the productivity of K. As a result, L is substituted for K in production and  $L/K$  rises ( $K/L$  falls) at unchanged  $w/r$ . Since more L is used per unit of K, this type of technical progress is called capital saving. Note that a given output can now be

produced with fewer units of L and K but with a higher L/K (a lower K/L).

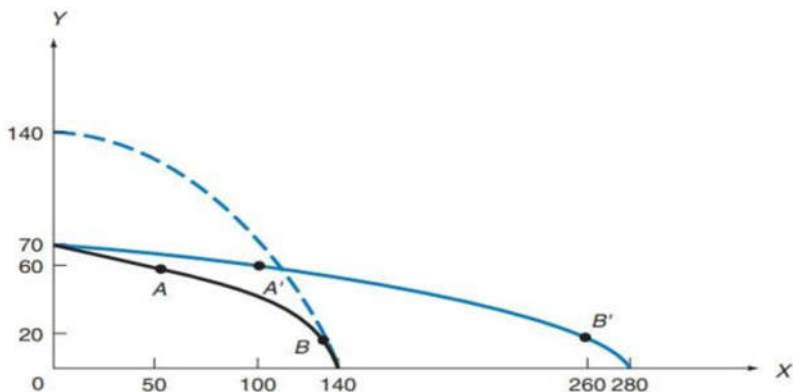
- **Technical Progress and the Nation's Production Frontier**

As in the case of factor growth, all types of technical progress cause the nation's production frontier to shift outward. The type and degree of the shift depend on the type and rate of technical progress in either or both commodities. Here we will deal only with neutral technical progress. With the same rate of neutral technical progress in the production of both commodities, the nation's production frontier will shift out evenly in all directions at the same rate at which technical progress takes place. This has the same effect on the nation's production frontier as balanced factor growth. Thus, the slope of the nation's old and new production frontiers (before and after this type of technical progress) will be the same at any point where they are cut by a ray from the origin. For example, suppose that the productivity of L and K doubles in the production of commodity X and commodity Y in Nation 1 and constant returns to scale prevail in the production of both commodities.

Figure.3.3 shows Nation 1's production frontier before technical progress and after the productivity of L and K doubled in the production of commodity X only, or in the production of commodity Y only (the dashed production frontier). When the productivity of L and K doubles in the production of commodity X only, the output of X doubles for

each output level of commodity Y. For example, at the unchanged output of 60Y, the output of commodity X rises from 50X before technical progress to 100X afterward (points A and A', respectively, in the figure.3.3).

**Figure.3.3: Neutral Technical Progress**



Similarly, at the unchanged output of 20Y, the output of commodity X increases from 130X to 260X (points B and B'). When all of Nation 1's resources are used in the production of commodity X, the output of X also doubles (from 140X to 280X). Note that the output of commodity Y remains unchanged at 70Y if all of the nation's resources are used in the production of commodity Y and technical progress took place in the production of commodity X only. Analogous reasoning explains the shift in the production frontier when the productivity of L and K doubles only in the production of commodity Y (the dashed production frontier). In the absence of trade, all types of technical progress tend to increase the nation's welfare. The reason is that with a higher production

frontier and the same  $L$  and population, each citizen could be made better off after growth than before by an appropriate redistribution policy.

### **3.3. Growth and Trade: The Small-Country Case**

Here we analyze the effect of growth on production, consumption, trade, and welfare when the nation is too small to affect the relative commodity prices at which it trades (so that the nation's terms of trade remain constant).

#### **3.3.1. The Effect of Growth on Trade**

The factor growth and technical progress result in an outward shift in the nation's production frontier. What happens to the volume of trade depends on the rates at which the output of the nation's exportable and importable commodities grow and on the consumption pattern of the nation as its national income expands through growth and trade. If the output of the nation's exportable commodity grows proportionately more than the output of its importable commodity at constant relative commodity prices, then growth tends to lead to greater than proportionate expansion of trade and is said to be protrade. Otherwise, it is antitrade or neutral. The expansion of output has a neutral trade effect if it leads to the same rate of expansion of trade.

On the other hand, if the nation's consumption of its importable commodity increases proportionately more than the nation's consumption of its exportable commodity at constant prices, then the consumption effect tends to lead to a greater than proportionate expansion of trade and is said to be

protrade. Otherwise, the expansion in consumption is antitrade or neutral. Thus, production and consumption can be protrade (if they lead to a greater than proportionate increase in trade at constant relative commodity prices), antitrade, or neutral. Production is protrade if the output of the nation's exportable commodity increases proportionately more than the output of its importable commodity. Consumption is protrade if the nation's consumption of its importable commodity increases proportionately more than consumption of its exportable commodity.

What in fact happens to the volume of trade in the process of growth depends on the net result of these production and consumption effects. If both production and consumption are protrade, the volume of trade expands proportionately faster than output. If production and consumption are both antitrade, the volume of trade expands proportionately less than output and may even decline absolutely. If production is protrade and consumption antitrade or vice versa, what happens to the volume of trade depends on the net effect of these two opposing forces. In the unlikely event that both production and consumption are neutral, trade expands at the same rate as output. Since growth can result from different types and rates of factor growth and technical progress, and production and consumption can be protrade, antitrade, or neutral, the effect of growth on trade and welfare will vary from case to case.



### 3.4. Growth and Trade: The Large-Country Case

Here we analyze the effect of growth on production, consumption, trade, and welfare when the nation is sufficiently large to affect the relative commodity prices at which it trades (so that the nation's terms of trade change).

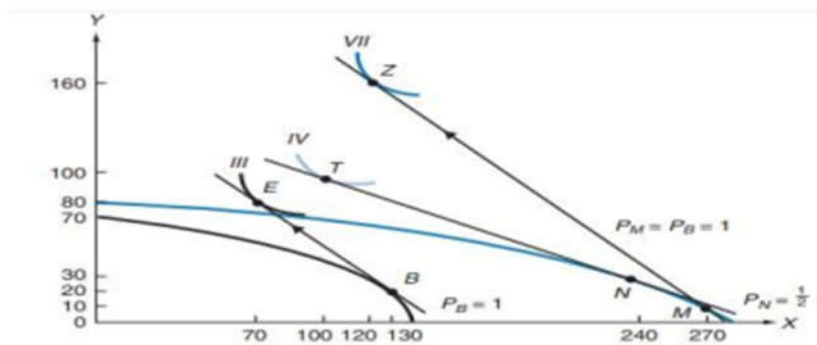
#### 3.4.1. Growth and the Nation's Terms of Trade and Welfare

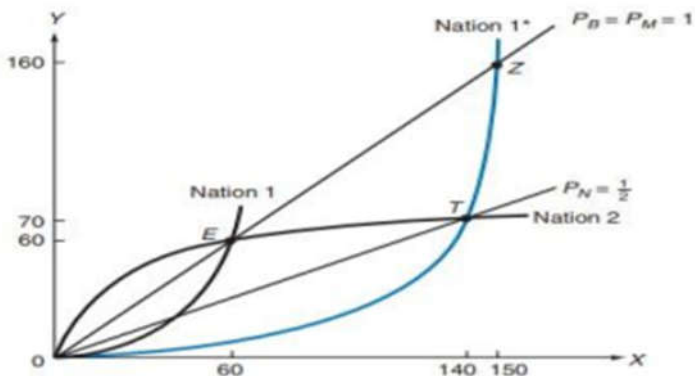
If growth, regardless of its source or type, expands the nation's volume of trade at constant prices, then the nation's terms of trade tend to deteriorate. Conversely, if growth reduces the nation's volume of trade at constant prices, the nation's terms of trade tend to improve. This is referred to as the **terms-of-trade effect of growth**. The effect of growth on the nation's welfare depends on the net result of the terms-of-trade effect and a wealth effect. The wealth effect refers to the change in the output per worker or per person as a result of growth. A positive wealth effect, by itself, tends to increase the nation's welfare. Otherwise, the nation's welfare tends to decline or remain unchanged. If the wealth effect is positive and the nation's terms of trade improve as a result of growth and trade, the nation's welfare will definitely increase. If they are both unfavorable, the nation's welfare will definitely decline. If the wealth effect and the terms-of-trade effect move in opposite directions, the nation's welfare may deteriorate, improve, or remain unchanged depending on the relative strength of these two opposing forces.

For example, if only  $L$  doubles in Nation 1, the wealth

effect, by itself, tends to reduce Nation 1's welfare. Furthermore, since this type of growth tends to expand the volume of trade of Nation 1 at  $P_M = P_B = 1$ , Nation 1's terms of trade also tend to decline. Thus, the welfare of Nation 1 will decline for both reasons. Now Nation 1 is assumed to be large enough to affect relative commodity prices. With the terms of trade deteriorating from  $P_M = P_B = 1$  to  $P_N = 1/2$  with growth and trade, Nation 1 produces at point N, exchanges 140X for 70Y with Nation 2, and consumes at point T on indifference curve IV. Since the welfare of Nation 1 declined (i.e., the wealth effect was negative) even when it was too small to affect its terms of trade, and now its terms of trade have also deteriorated, the welfare of Nation 1 declines even more. This is reflected in indifference curve IV being lower than indifference curve VII. The bottom panel of Figure.3.5. shows with offer curves the effect of this type of growth on the volume and the terms of trade when Nation 1 does not affect its terms of trade.

**Figure.3.5: Growth and Trade: Large country cases**





### 3.5. Immiserizing growth

Immiserizing growth is a theoretical situation first proposed by Jagdish Bhagwati, in 1958, where economic growth could result in a country being worse off than before the growth. If growth is heavily export based it might lead to a fall in the terms of trade of the exporting country. In rare circumstances this fall in the terms of trade may be so large as to outweigh the gains from growth. If so, this situation would cause a country to be worse off after growth than before. This result is only valid if the growing country is able to influence world prices. Harry G. Johnson had, independently, worked out conditions for this result in 1955.

The process of economic growth may bring about an increase in level of output in the growing economy and the wealth effect may even be positive but the deterioration in the terms of its trademay be so large that it more than offsets the positive wealth effect. In such a situation, there can be a net decline in the welfare of the nation. In other words, it become

worse off than before. The process of growth and trade, resulting in the country becoming poorer in respect of welfare, has been termed as 'immiserising growth' by Jagdish Bhagwati.

**Assumptions:**

- (i) There are two countries, the home country A and the foreign country B.
- (ii) The home country experiences growth while the other country is not experiencing any growth is real output.
- (iii) There are two commodities X and Y.
- (iv) X commodity is the exportable commodity of country A whereas Y is its importable commodity.
- (v) There is full employment of resources.
- (vi) The technical progress is neutral.
- (vii) The growth results in an expansion in the supply of abundant factor, say labour.
- (viii) Productive factors are mobile between the two countries.

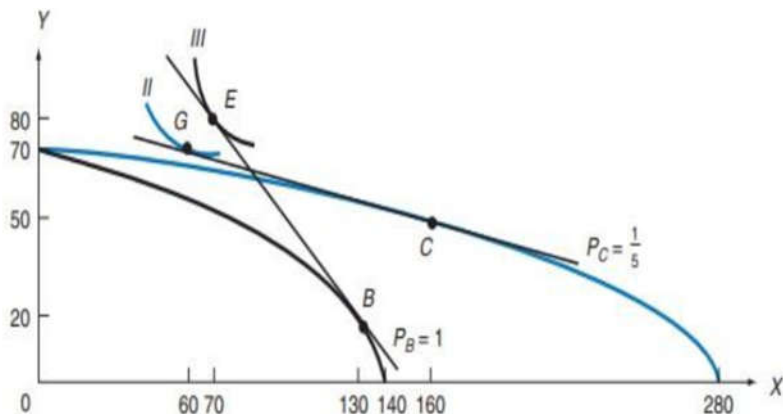
This phenomenon is likely to prevail in the large developing countries having inelastic demand for their exports in foreign countries. In case they produce a bumper crop, the international prices tend to crash and their terms of trade become unfavourable. That involves them in the immiserising growth. However, this phenomenon does not seem to be greatly prevalent in the real world. Even if it is recognized that there has been a secular deterioration of terms of trade for

the developing countries, that has been made up by a substantial increase in production and resultant increase in real per capita income and welfare. The increase in real per capita income would have been much greater, if the growth of population had occurred at a relatively lesser rate.

The production frontier of Nation 1 before and after neutral technical progress doubled the productivity of L and K in the production of commodity X only. The wealth effect, by itself, would increase Nation 1's welfare at constant prices because Nation 1's output increases while its labor force (L) and population remain constant. However, since this type of technical progress tends to increase the volume of trade, Nation 1's terms of trade tend to deteriorate. With a drastic deterioration in its terms of trade, for example, from  $PB = 1$  to  $PC = 1/5$ , Nation 1 would produce at point C, export 100X for only 20Y, and consume at point G on indifference curve II (which is lower than indifference curve III, which Nation 1 reached with free trade before growth).

Immiserizing growth is more likely to occur in Nation 1 when (a) growth tends to increase substantially Nation 1's exports at constant terms of trade; (b) Nation 1 is so large that the attempt to expand its exports substantially will cause a deterioration in its terms of trade; (c) the income elasticity of Nation 2's (or the rest of the world's) demand for Nation 1's exports is very low, so that Nation 1's terms of trade will deteriorate substantially; and (d) Nation 1 is so heavily dependent on trade that a substantial deterioration in its terms of trade will lead to a reduction in national welfare.

Figure.3.6: Immiserizing Growth



### 3.6. Dutch disease

Dutch disease explains the case of developing natural resources domestically which was imported earlier that many times creates some economic problems in industrialised countries. Dutch disease is that kind of a problem faced by Netherlands when they tried to explore oil resources, the natural gas.

An interesting situation arises when an industrial nation begins to exploit a domestic natural resource that it previously imported. An example of this is provided by Great Britain when it started to extract substantial quantities of petroleum from the North Sea in 1976, thus eliminating the need to import it. The nation's exchange rate might then appreciate so much as to cause the nation to lose international competitiveness in its traditional industrial sector and even face deindustrialization. This is known as the Dutch disease. The name is derived from the Netherlands' loss of relative

competitiveness in its traditional industrial sector as a result of the appreciation of the Dutch florin after the development of the Dutch natural gas industry, which eliminated the need for the Netherlands to import natural gas.

Potential effects/problems with discovering oil/gas

1. **Appreciation in currency:** Due to the discovery of oil and an increase in oil exports, the country will see an appreciation in the exchange rate. This is because higher demand for exports leads to increased demand for Sterling. For example, in the late 1970s, the UK saw a rapid appreciation in Sterling after the discovery of North Sea oil.
2. **Decline in competitiveness:** The problem of this appreciation in the exchange rate is that other trade-able sectors of the economy will become uncompetitive. Manufacturing industries will see a substantial fall in demand, due to the higher exchange rate. Therefore, the economy will shift from manufacturing towards the primary sector. In the early 1980s, UK manufacturing output fell significantly as a result of the appreciation in the Pound.
3. **Growth in luxury imports:** Higher output of oil will enable those who benefit to spend on luxury goods and luxury services. These luxury goods tend to be imported meaning that domestic firms gain little benefit.
4. **Growth in real wages:** Due to the increased wealth and spending on services, there will be higher demand for service sector workers (waiters, hairdressers, chauffeurs e.t.c). This will cause rising real wages in the economy, causing another

problem for manufacturing firms as they have to increase real wages to retain workers. This will further decrease the competitiveness of manufacturing exports.

5. Indirect de-industrialisation: With manufacturing becoming uncompetitive due to higher exchange rate and higher wages, output will fall, and there will be a decline in investment, leading to lower growth. These sectors will begin to lag behind other countries. It can be very difficult to catch up later.

6. Income inequality. Often the discovery of raw materials, such as oil benefits a relatively small percentage of the population. Those who own the oil fields can see huge wealth, but the benefits of oil and gas are often not equally distributed within society. Workers may benefit from rising real wages in the service sector, but the discovery of raw materials often creates a few billionaires, so the increase in GDP is often concentrated in the hands of a small number. In several developing economies, oil fields are developed by foreign multinationals, causing some of the wealth to be taken away from the country.

7. Tax revenue. The high output of oil and gas can lead to substantial tax revenues for the government. The government has the ability to run a budget surplus and spend more on public services, such as infrastructure and education. But, the government will often cut other taxes and come to rely on oil tax revenues.

Many countries who produce raw materials may find the

high output only lasts for a few years. But, when the oil runs out, the economy has been adversely affected and struggles to catch up where it left off. Manufacturing export industries have shrunk and fallen behind. Because of declining output and investment, it can take many years for the exporting industries to catch up. Therefore, post-oil economies can struggle with lower economic growth.

**Current account deficit:** With oil exports, countries can run a current account surplus, but when oil exports drop their old exporting industries have faded away so they are left with large current account deficits,

**Falling tax revenue:** With oil, governments find it easy to raise tax revenue. But, when oil revenues dry up, they need to raise taxes on income and spending which can lead to lower growth and lower living standards. Ambitious government spending patterns have to be curtailed.

**Unemployment:** With falling GDP, the demand for high-end services will decline, causing unemployment amongst many service sector workers.

### **How to Prevent Dutch Disease**

**Limit the rise in the real exchange rate:** For example, China limited its real exchange rate by purchasing US bonds to keep the value of the relatively Yuan lower.

- **Reduce foreign capital flows:** If a country moved from a budget deficit to a budget surplus, it would attract less foreign investment to purchase the government bonds.

Lower capital inflows would limit the rise in the exchange rate.

- Spend proceeds of oil revenue on infrastructure and education: The government could earmark taxes from oil to be spent on improving the infrastructure of an economy – better public transport, better education, subsidies for investing in technologies with positive externalities. All these can help improve the competitiveness of manufacturing export industries and help them deal with higher wages and higher exchange rate.
- Immigration: Many oil-rich economies have encouraged immigration to provide service sector jobs, this keeps real wage growth down.
- Sovereign wealth funds: A sovereign wealth fund is a government saving scheme, where income from oil revenues is not spent but saved to give a future income stream. E.g. Government pension fund in Norway.
- Greater equality of distribution: This paper at the World Bank states that the ‘Dutch Disease’ effect is worse when wealth is concentrated in the hands of a few billionaires – because there is a marked increase in luxury goods and luxury services. Greater income distribution enables a more diverse economy.
- Higher tax on luxury services and luxury imports: This would prevent the economy becoming too skewed towards luxury services which may not be sustainable in the long- term.

### **3.7. Prebisch - Singer Thesis (Secular Deterioration Hypothesis)**

There is empirical evidence related to the fact that the terms of trade have been continuously moving against the developing countries. On the basis of exports statistics concerning the United Kingdom between 1870 and 1940, Raul Prebisch demonstrated that the terms of trade had secular tendency to move against the primary products and in favour of the manufactured and capital goods.

This viewpoint has been strongly supported by H. W. Singer. The essence of Prebisch-Singer thesis is that the peripheral or LDC's had to export large amounts of their primary products in order to import manufactured goods from the industrially advanced countries. The deterioration of terms of trade has been a major inhibitory factor in the growth of the LDC's.

Prebisch and Singer maintain that there has been technical progress in the advanced countries, the fruit of which have not percolated to the LDC's. In addition, the industrialised countries have maintained a monopoly control over the production of industrial goods. They could manipulate the prices of manufactured goods in their favour and against the interest of the LDC's.

Except the success of OPEC in raising the prices of crude oil since mid 1970's, there has been a relative decline in the international prices of farm and plantation products, minerals and forest products. Consequently, the terms of trade have

remained unfavourable to the developing countries.

Assumptions in the Prebisch-Singer thesis:

The main assumptions in the Prebisch-Singer thesis are as under:

- (i) As income rises in the advanced countries, the pattern of demand shifts from primary products to the manufactured products due to Engel's law.
- (ii) There is slow rise in demand for products in the developed countries.
- (iii) The export market for product of LDC's is competitive.
- (iv) The export market for products of developed countries is monopolistic.
- (v) Wages and prices are low in LDC's.
- (vi) The appearance of substitutes for products of LDC's reduces demand for them.
- (vii) The benefit of increased productivity is not passed by the producers of manufactured products in advanced countries to the LDC's through lower prices.
- (viii) The economic growth in the LDC's is indicated by income terms of trade.

Singer has pointed out that the recent increase in debt problem of the LDC's has imparted another twist to the hypothesis of secular deterioration of terms of trade for them in two ways. Firstly, a high proportion of proceeds from exports are not available for imports.

Secondly, there is an increased pressure upon the LDC's to raise exports in order to repay external debts on account of IMF-induced adjustment policies. These pressures make the debt-ridden LDC's to compete with other poor countries to enlarge their export earnings. It results in decline in the prices of export products of these countries.

They also pointed out some of the reasons for this long run deterioration of terms of trade of under developed countries.

1. Differences in income elasticities:- this is the most important reason for the long run deterioration of terms of trade of under developed countries. They pointed out that the income elasticity of primary commodities is less than one and that of manufactured goods are greater than 1. As the world income increases people tend to demand more manufactured goods. Thus the benefit of the increased world income is enjoyed by developed countries who are the producer and exporter of manufactured goods. There take place a transfer of income from less developed nations to developed nations.
2. Technological change:- technological change that is taken place in developed countries or in most of the countries are essentially raw material saving innovations. As a result there is a worldwide reduction of the demand for primary commodities. This adversely affected the terms of trade of under developed countries or the developing countries.

3. Unequal market power:- unequal market power implies that the market where the manufactured commodities are sold by developed countries is characterised by oligopolistic nature (few sellers) whereas the primary products that are sold by under developed countries or the developing countries is characterised by competitive nature (large sellers). The price in oligopoly market is obviously higher than that of competitive market and so the manufactured goods will get higher prices due to the features of the market where it sold too compared to that of primary products.

This theory uses the data before Second World War. Singer examined this case also with the post Second World War data during 1955 to 1975. He found that, during this period, the terms of trade of developed nations is essentially steady or constant whereas that of underdeveloped countries 20% decline happens in terms of trade. In fact during 1980s there was consistent decline in the international prices of primary commodities. That is the secular deterioration of terms of trade of under developed nations is valid even after the Second World War.

### **Criticisms of Prebisch-Singer Thesis:**

The Prebisch-Singer Thesis has come to be criticized on several grounds:

- (i) Not Firm Basis for Inference: The inference of secular deterioration of terms of trade for the LDC's rests upon the exports of primary vis-a-vis manufactured products. In

this regards, it should be remembered that the LDC's export wide variety of primary products. Sometimes they export also certain manufactured products.

They, at the same time, do not import only manufactured products but also a number of primary products. It is, therefore, not proper to draw a firm inference about terms of trade just on the basis of primary versus manufactured exports.

- (ii) **Faulty Statement of Gains and Losses of Primary Exporters:** Jagdish Bhagwati has pointed out that the index of terms of trade employed in this thesis understates the gains of exporters of primary products. At the same time, there is over statement of losses of primary producers.
- (iii) **Faulty Index of TOT:** The Prebisch- Singer hypothesis rests upon the index, which is the inverse of the British commodity terms of trade. This index overlooks the qualitative changes in products, appearance of new varieties of products, services like transport etc. The generalisation based on British terms of trade for the period 1870 to 1930, according to Kindleberger, is not true for the other developed countries of Europe.
- (iv) **Neglect of Supply Conditions:** In the determination of terms of trade, the Prebisch-Singer thesis considers only demand conditions. The supply conditions, which are likely to change significantly over time, have been neglected. The relative prices, in fact, depend not only

upon the demand conditions but also on the supply conditions.

- (v) **Little Effect of Monopoly Power:** One of the arguments in support of this thesis was that the higher degree of monopoly power existing in industry than in agriculture led to secular deterioration of terms of trade for the developing countries. In this connection, it was also agreed that the monopoly element prohibited the percolation of benefits of technical progress to the LDC's. The empirical evidence has not supported such a line of argument.
- (vi) **Inapplicability of Engel's Law:** The secular decline in the demand for primary products in developed countries was attributed to Engel's Law. But this is not true because this law is applicable to food and not to the raw materials, which constitute sizeable proportion of exports from, the LDC's.
- (vii) **Benefits from Foreign Investment:** The deterioration of the terms of trade for the LDC's is sometimes linked not to non-transmission of productivity gains to them by advanced countries through lower prices of manufactured goods, yet the benefits from foreign investments have percolated to the LDC's through the product innovations, product improvement and product diversification. These benefits can amply offset any adverse effects of foreign investment upon terms of trade and the process of growth.
- (viii) **Difficult to Assess Variation in Demand for Primary**

Products: The secular deterioration in terms of trade of the LDC's during 1870 to 1930 period was supposed to be on account of the declining world demand for primary products. During that period, there were tremendous changes in world population, production techniques, living standards and means of transport. Given those extensive developments, it is extremely difficult to assess precisely the changes in world demand for primary products and the impact of those changes upon the terms of trade.

- (ix) **Export Instability and Price Variations:** The Prebisch-Singer thesis suggested that export instability in the LDC's was basically due to variations in prices of primary products relative to those of manufactured products. Mc Been, on the contrary, held that the export instability in those countries could be on account of quantity variations rather than the price variations.
- (x) **Development of Export Sector not at the Expense of Domestic Sector:** In this thesis, Singer contended that foreign investments in poor countries, no doubt, enlarged the export sector but it was at the expense of the growth of domestic sector. This contention is, however, not always true because the foreign investments have not always crowded out the domestic investment. If foreign investments have helped exclusively the growth of export sector, even that should be treated as acceptable because some growth is better than no growth. It is far-fetched to relate worsening of terms of trade to the non-growth of

domestic sector.

- (xi) **Faulty Policy Prescription:** Prebisch prescribed the adoption of protectionist policies by LDC's to offset the worsening terms of trade. Any gains from tariff or non-tariff restrictions upon imports from advanced countries can at best be only short-lived because they will provoke retaliatory actions from them causing still greater injury to the LDC's.

In the present W.T.O regime of dismantling of trade restrictions, Prebisch suggestion is practically not possible to implement. There should be rather greater recourse to export promotion, import substitution, favourable trade agreements and adoption of appropriate monetary and fiscal action for improving the terms of trade in the developing countries.

- (xii) **Lack of Empirical Support:** The studies made by Morgan, Ellsworth, Haberler, Kindelberger and Lipsey have not supported the secular deterioration of terms of trade hypothesis, Lipsey has observed, "Although there have been very large swings in U.S. terms of trade since 1879, no long term trend has emerged. The average level of U.S. terms of trade since World War II has been almost the same as before World War I." This objection of lack of empirical support against the Prebisch-Singer hypothesis is actually not very sound. A number of more recent empirical studies have, in fact, gone in favour of this hypothesis.

Despite all the objections raised against the Prebisch-Singer thesis, the empirical evidence has accumulated in support of it. The studies made by UNCTAD for 1950-61 and 1960-73 periods showed that there was a relative decline in the terms of trade of LDC's vis-a-vis the developed countries. A study attempted by Thirlwall and Bergevin for the period 1973-82 indicated that there was an annual decline of terms of trade of LDC's for all the primary commodity exports at the rate of 0.36 percent.

On the basis of their study related to exports of manufactured products for LDC's to the advanced countries during 1970-87 period, Singer and Sarkar found that the terms of trade of LDC's declined by about 1 percent per annum. Even the World Development Report 1955 recognised that the world prices of primary products declined sharply during 1980's and the terms of trade of LDC's deteriorated during 1980-93 period.

According to the 1997 Human Development Report of UNDP, the terms of trade for the least developed countries declined by a cumulative 50 percent over the past 25 years. According to South Commission, compared with 1980, the terms of trade of developing countries had deteriorated by 29 percent in 1988. The average real price of non-oil commodities had declined by 25 percent during 1980-88 period compared with the previous two decades. The terms of trade of non-oil developing countries had deteriorated during 1980-88 period by 8 percent compared with 1960's and 13 percent compared with 1970's.

### **3.8. Myrdal's - Circular and Cumulative Causation Hypothesis**

Circular and Cumulative Causation Hypothesis was popularised by Gunnar Myrdal in the year 1957 in his work 'Economic Theory and Under-developed Regions'. In this theory Myrdal tried to explain the reasons behind the differences in the level of development between countries or between different regions within a country. The theory provides a valid explanation of the backwardness of LDCs. Since it explains the differences in the level of development between countries as well as between regions of a country, it is an analysis of geographical dualism. Myrdal's views are in sharp contrast to the traditional neo-classical equilibrium theory, ie, the argument of the play of opposing forces that brings the economy to equilibrium always. Myrdal's argument is that if this traditional static model is correct there will be no differences between countries or between the regions of a country in terms of development. But there are significant differences exist in this aspect. That is, there is no balanced development between countries or no balanced regional development within the country.

Myrdal's argument is that there are forces in the economy that will take the economy towards disequilibrium rather than equilibrium. So his analysis is towards disequilibrium. That is there are circular and cumulative causation in the economy that will take the economy towards disequilibrium rather than equilibrium. And this is the reason of persistent differences in the level of development between countries or between

different regions within the country.

We can explain the circular and cumulative causation with the help of an example. Suppose there are two countries, A and B with similar income and wage rates. Because of any external stimuli suppose that the wage rate of country A is increased. As per the traditional theory, labour will migrate from country A to country B and as a result the supply of labour in country A is increased that will push the wage rate down and thus re-established the equilibrium wage rate that is equal in both countries. But Myrdal's argument is different. According to him, as wage rate increases in country A because of any external stimuli, labour will migrate from B to A, that will reduce the total demand in B whereas rise the total demand in A and as a result more capital investment, production demand for labour happened in country A that again rise the wage level. That is not the differences between countries coming down but it enlarges. That is if once the diversion from equilibrium or move towards disequilibrium happens it will continue. That is not the convergence take place but the divergence. This is called by Myrdal as 'backwash effect'.

The 'backwash effect' (the forces away from equilibrium) of Myrdal can be explained with three indicators of changes.

1. Labour migration,
2. Capital movement and
3. International trade.

How the backwash effect is happened due to the labour migration is explained earlier. Myrdal pointed out that with the

labour migration; some productive capital is also moved from country B to country A where the demand and thus stimuli for production is higher or from a less prosperous area to a more prosperous area. That will push the differences in two regions to enhance.

According to Myrdal international trade have a very strong backwash effect. He argued that, the benefit of international trade is highly biased in favour of richer country. Corollary, it will harm to less developed countries (similar to the argument of Singer, Prebish , Baghawati...). He argues that, the free trade between LDCs and industrialised countries will strengthen the industrialised countries, where as it impoverish the LDCs. That is the backwash effect of international trade is very strong.

Myrdal provides another effect called ‘spread effect’. It is the favourable repercussion that will experienced by an area that experiencing economic prosperity and a nearby area. It is a spill over or trickle-down effect. It is a positive effect of economic prosperity to under developed regions. There can be two ways by which the spread effect takes place.

1. As a result of the increase in the demand for products from country B:- as a result of prosperity in country A, there will be greater demand of the products of country B also. This will be benefited to country B.
2. Spread of technology:- the positive externalities of technological progress in country A will be availed by country B also even after a time lag.

Myrdal's point of argument is that the backwash effect is stronger than the spread effect and therefore circular and cumulative causation works and will lead to more and more disequilibrium or differences between countries and regions.

How to tackle the circular and cumulative causation? That is how to control the backwash effect that caused for persistent disequilibrium or regional disparities. Myrdal's argument is that, the only way to tackle the circular and cumulative causation is State intervention. The policy intervention should be in favour of deprived or less developed regions. Then only a balanced regional development and balanced international development is possible. Otherwise, we have to wait for a natural end.

## MODULE IV

### INTERNATIONAL TRADE POLICIES

#### 4.1 Import substitution versus export orientation

Import substitution is an aggressive economic policy employed by emerging economies to promote domestic production and self-sufficiency in many sectors. It is also seen as a means to reduce dependency on developed nations. Import substitution seeks to provide added protection to domestic industries via tariffs, import quotas, government loans at subsidised rates of interest. This encourages people to start new production units. The boost to domestic manufacturing sector leads to employment opportunities being created and considerably lowers the demand for foreign exchange. The economies adopt this policy to protect its budding industry from international competition that has easily attained economies of scale due to large-scale production.

Import substitution gained widespread prominence and adopted by many countries after World War II to bolster domestic industry and growth. This was also done to reduce dependence on other countries. India too had resorted to import substitution which was later reversed during 1991 currency crisis. Indian industry could not be expanded to its full potential due to severe lack of sophisticated basic infrastructure. Import substitution although can prove beneficial for certain sectors of economy for some specific phases in economic conditions but if the policy is stretched

over the entire industrial sector as a long term policy can eventually lead to less competitive production which will gradually start to decline. Thus, the output will also dip and so will the job creation avenues as the incentive to produce more will fade due to absence of global competition.

Import substitution will lead to reduction in domestic competition, production inefficient and thereby leading increase in commodity prices. Such increased prices shrink demand for products. Thus, over protectionism can lead to dynamic inefficiency as domestic players replace foreign producers. This often leads to poor allocation of resources as there is no incentive for domestic producers for innovation.

### **Advantages of Import Substitution**

- (1) The market for the industrial product already exists, as evidenced by imports of the commodity, so that risks are reduced in setting up an industry to replace imports.
- (2) It is easier for developing nations to protect their domestic market against foreign competition than to force developed nations to lower trade barriers against their manufactured exports.
- (3) Foreign firms are induced to establish so-called tariff factories to overcome the tariff wall of developing nations.

### **Disadvantages of Import Substitution**

- (1) Domestic industries can grow accustomed to protection from foreign competition and have no incentive to

become more efficient.

- (2) Import substitution can lead to inefficient industries because the smallness of the domestic market in many developing nations does not allow them to take advantage of economies of scale.
- (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-oriented Industrialization**

#### **Advantages**

- (1) It overcomes the smallness of the domestic market and allows a developing nation to take advantage of economies of scale. This is particularly important for the many developing countries that are both very poor and small.
- (2) Production of manufactured goods for export requires and stimulates efficiency throughout the economy. This is especially important when the output of an industry is used as an input of another domestic industry.
- (3) The expansion of manufactured exports is not limited (as in the case of import substitution) by the growth of the domestic market.

**Disadvantages:**

- (1) It may be very difficult for developing nations to set up export industries because of the competition from the more established and efficient industries in developed nations.
- (2) Developed nations often provide a high level of effective protection for their industries producing simple labor-intensive commodities in which developing nations already have or can soon acquire a comparative advantage.

A policy of import substitution may be of some benefit in the early stages of development (especially for larger developing nations), while an export orientation becomes an absolute necessity later in the development process. Thus, rather than being alternatives, policies of import substitution and export orientation could profitably be applied to some extent sequentially, especially in the larger developing nations.

**4.2. Trade Restrictions**

In spite of the strong theoretical case that can be made for free international trade, every country in the world has erected at least some barriers to trade. Trade restrictions are typically undertaken in an effort to protect companies and workers in the home economy from competition by foreign firms. A protectionist policy is one in which a country restricts the importation of goods and services produced in foreign countries. Protectionist policies reduce the quantities of foreign goods and services supplied to the country that imposes the

restriction. Protection often takes the form of an import tax or a limit on the amount that can be imported, but it can also come in the form of voluntary export restrictions and other barriers. Governments restrict foreign trade to protect domestic producers from foreign competition. There are several kinds of trade barriers:

1. Tariffs are excise taxes on imports and may be used for revenue purposes, or more commonly today as protective tariffs.
2. Import quotas specify the maximum amounts of imports allowed in a certain period of time. Low import quotas may be a more effective protective device than tariffs, which do not limit the amount of goods entering a country.
3. Non-tariff barriers refer to licensing requirements, unreasonable standards, or bureaucratic red tape in customs procedures.
4. Voluntary export restrictions are agreements by foreign firms to voluntarily limit their exports to a particular country.

### 4.2.1. Tariffs

A tariff is a tax or duty levied on the traded commodity as it crosses a national boundary. An import tariff is a duty on the imported commodity, while an export tariff is a duty on the exported commodity. Import tariffs are more important than export tariffs. A tariff raises the cost of selling imported goods.

Developing nations rely heavily on export tariffs to raise revenues because of their ease of collection. Conversely, industrial countries invariably impose tariffs or other trade restrictions to protect some (usually labor-intensive) industry, while using mostly income taxes to raise revenues.

Tariffs can be ad valorem, specific, or compound. The ad valorem tariff is expressed as a fixed percentage of the value of the traded commodity. The specific tariff is expressed as a fixed sum per physical unit of the traded commodity. Finally, a compound tariff is a combination of an ad valorem and a specific tariff. Tariffs have been sharply reduced since the end of World War II and now average 3 percent on industrial products in developed nations, but they are much higher in developing nations. Trade in agricultural commodities is still subject to relatively high trade barriers.

The economic impacts of tariffs are as follows:

1. When a tariff is imposed, domestic consumption declines due to higher prices.
2. Domestic production will rise because of the higher price.
3. Imports will fall.
4. Government tariff revenue will represent a transfer of income from consumers to government.
5. Indirect effects also may occur in that relatively inefficient industries are expanding and relatively efficient industries abroad have been made to contract.

Here, first we analyze the effects of a tariff on production,

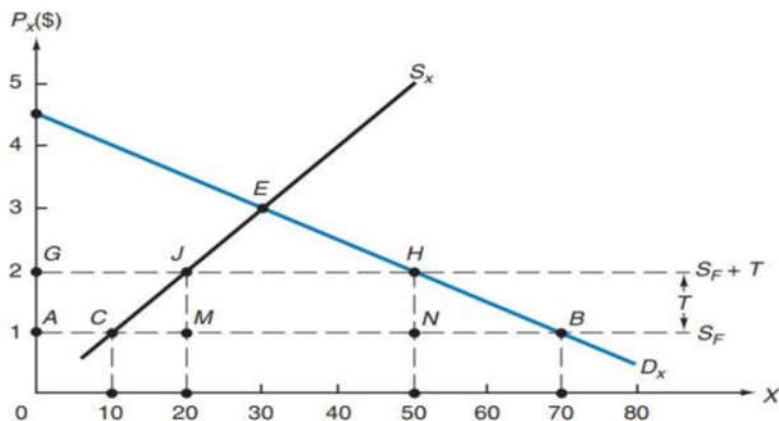
consumption, trade, and welfare in the nation imposing the tariff and on its trade partner(s). We will first do this with partial equilibrium analysis (i.e., by utilizing demand and supply curves) and then by the more complex general equilibrium analysis, which makes use of production possibility frontiers and community indifference curves, or offer curves.

- **Partial Equilibrium Analysis of a Tariff**

When a small country imposes tariff on import of the product that competes with the product of the small domestic industry, then the tariff will neither affect the international prices (because the nation is small) nor it affect the rest of the economy (because the industry is small). In such conditions, the partial equilibrium analysis that concerns the market for a particular product becomes the most appropriate. In the following figure 4.1, which  $DX$  is the demand curve and  $SX$  is the supply curve of commodity  $X$  in Nation 2. Nation 2 is now assumed to be small and so is industry  $X$ . In the absence of trade, the intersection of  $DX$  and  $SX$  defines equilibrium point  $E$ , at which  $30X$  is demanded and supplied at  $PX = \$3$  in Nation 2. With free trade at the world price of  $PX = \$1$ , Nation 2 will consume  $70X$  ( $AB$ ), of which  $10X$  ( $AC$ ) is produced domestically and the remainder of  $60X$  ( $CB$ ) is imported. The horizontal dashed line  $SF$  represents the infinitely elastic free trade foreign supply curve of commodity  $X$  to Nation 2. If Nation 2 now imposes a 100 percent ad valorem tariff on the imports of commodity  $X$ ,  $PX$  in Nation 2 will rise to  $\$2$ . At  $PX = \$2$ , Nation 2 will consume  $50X$  ( $GH$ ),

of which 20X (GJ ) is produced domestically and the remainder of 30X (JH ) is imported. The horizontal dashed line SF + T represents the new tariff-inclusive foreign supply curve of commodity X to Nation 2.

**Figure. 4.1: Partial Equilibrium Effects of a Tariffs**



Thus, the consumption effect of a tariff (i.e., the reduction in domestic consumption) equals 20X (BN); the production effect (i.e., the expansion of domestic production resulting from the tariff) equals 10X (CM ); the trade effect (i.e., the decline in imports) equals 30X (BN + CM ); and the revenue effect (i.e., the revenue collected by the government) equals \$30 (\$1 on each of the 30X imported, or MJHN). Note that for the same \$1 increase in  $P_X$  in Nation 2 as a result of the tariff, the more elastic and flatter  $D_X$  is, the greater is the consumption effect. Similarly, the more elastic  $S_X$  is, the greater is the production effect. Thus, the more elastic  $D_X$  and  $S_X$  are in Nation 2, the greater is the trade effect of the tariff

(i.e., the greater is the reduction in Nation 2's imports of commodity X) and the smaller is the revenue effect of the tariff.

- **Effect of a Tariff on Consumer and Producer Surplus**

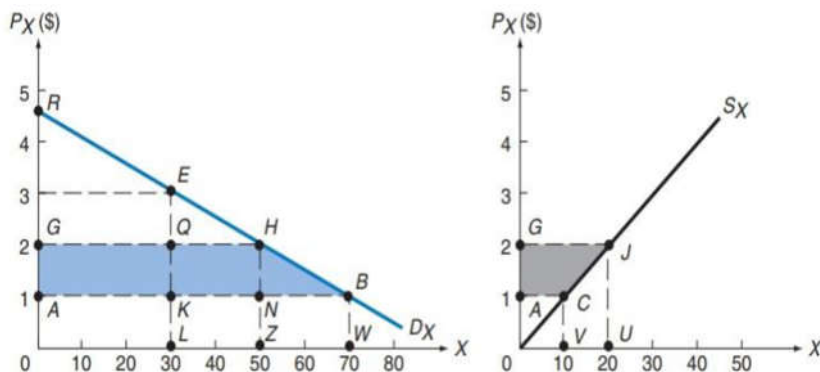
The increase in the price of commodity X from  $P_X = \$1$  to  $P_X = \$2$  as a result of the 100 percent tariff that Nation 2 imposes on the importation of commodity X leads to a reduction in consumer surplus and an increase in producer surplus. The left panel of Figure.4.2 shows that the loss of consumer surplus that results from the tariff is equal to shaded area  $AGHB = \$60$ . The reason for this is as follows. Before the imposition of the tariff, consumers in Nation 2 consume 70X at  $P_X = \$1$ . Consumers pay for each unit as much as they are willing to pay for the last, or 70th, unit of commodity X (given by point B on  $DX$ ). Consumers, however, receive more satisfaction and would therefore be willing to pay higher prices for earlier units of commodity X that they purchase. In fact, the height of the demand curve shows the maximum price that consumers would be willing to pay for each unit of the commodity rather than go without it. The difference between what consumers would be willing to pay for each unit of the commodity (indicated by the height of  $DX$  at that point) and what they actually pay for that unit (the same as for the last unit that they purchase) is called consumer surplus. Thus, consumer surplus is the difference between what consumers would be willing to pay for each unit of the commodity and what they actually pay.

Graphically, consumer surplus is measured by the area under the demand curve above the going price. For example, the left panel of Figure.4.2 shows that consumers in Nation 2 would be willing to pay  $LE = \$3$  for the 30th unit of commodity X. Since they only pay  $\$1$ , they receive a consumer surplus of  $KE = \$2$  on the 30th unit of commodity X that they purchase. Similarly, for the 50th unit of commodity X, consumers would be willing to pay  $ZH = \$2$ . Since they only pay  $ZN = \$1$ , they receive a consumer surplus of  $NH = \$1$  on the 50th unit of X. For the 70th unit of commodity X, consumers would be willing to pay  $WB = \$1$ . Since this is equal to the price that they actually pay, the consumer surplus for the 70th unit of X is zero. With the total of 70X being purchased at  $PX = \$1$  in the absence of the import tariff, the total consumer surplus in Nation 2 is equal to  $ARB = \$122.50$  ( $\$3.50$  times 70 divided by 2). This is the difference between what consumers would have been willing to pay ( $ORBW = \$192.50$ ) and what they actually pay for 70X ( $OABW = \$70$ ).

When Nation 2 imposes a 100 percent import tariff, the price of commodity X rises from  $PX = \$1$  to  $PX = \$2$  and purchases of commodity X fall from 70X to 50X. With the tariff, consumers pay  $OGHZ = \$100$  for 50X. The consumer surplus thus shrinks from  $ARB = \$122.50$  (with  $PX = \$1$  before the tariff) to  $GRH = \$62.50$  (when  $PX = \$2$  with the tariff), or by  $AGHB = \$60$  (the shaded area in the left panel of Figure). The imposition of the 100 percent import tariff by Nation2 thus leads to a reduction in consumer surplus. In the right panel of Figure, the increase in rent or producer surplus

that results from the tariff is given by shaded area  $AGJC = \$15$ . The reason for this is as follows. At free trade  $P_X = \$1$ , domestic producers produce  $10X$  and receive  $OACV = \$10$  in revenues. With the tariff and  $P_X = \$2$ , they produce  $20X$  and receive  $OGJU = \$40$ . Of the  $\$30$  increase ( $AGJC + VCJU$ ) in the revenue of producers,  $VCJU = \$15$  (the unshaded area under the  $S_X$  curve between  $10X$  and  $20X$ ) represents the increase in their costs of production, while the remainder (shaded area  $AGJC = \$15$ ) represents the increase in rent or producer surplus. This is defined as a payment that need not be made in the long run in order to induce domestic producers to supply the additional  $10X$  with the tariff. The increase in rent or producer surplus resulting from the tariff is sometimes referred to as the subsidy effect of the tariff.

**Figure. 4.2: Partial Equilibrium Effects of a Tariffs**



- **Costs and Benefits of a Tariff**

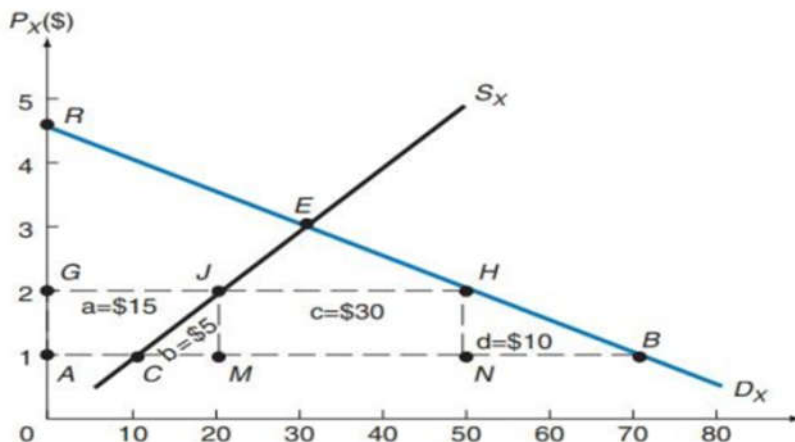
The concept and measure of consumer and producer surplus can now be used to measure the costs and benefits of

the tariff. Figure 4.3 shows that when Nation 2 imposes a 100 percent import tariff, the price of commodity X increases from  $PX = \$1$  to  $PX = \$2$ . Consumption falls from  $AB = 70X$  to  $GH = 50X$ , production increases from  $AC = 10X$  to  $GJ = 20X$ , imports decline from  $CB = 60X$  to  $JH = 30X$ , and the government of Nation 2 collects  $MJHN = \$30$  in import duties. Furthermore, consumer surplus declines by  $AGHB = \$60$  and producer surplus increases by  $AGJC = \$15$ .

Figure 4.3 shows that of the reduction of the consumer surplus of  $AGHB = a + b + c + d = \$60$ ,  $MJHN = c = \$30$  is collected by the government as tariff revenue.  $AGJC = a = \$15$  is redistributed to domestic producers of commodity X in the form of increased producer surplus or rent, while the remaining \$15 (the sum of the areas of triangles  $CJM = b = \$5$  and  $BHN = d = \$10$ ) represents the protection cost, or deadweight loss, to the economy. The production component ( $CJM = b = \$5$ ) of the protection cost, or deadweight loss, arises because, with the tariff, some domestic resources are transferred from the more efficient production of exportable commodity Y to the less efficient production of importable commodity X in Nation 2. The consumption component ( $BHN = d = \$10$ ) of the protection cost, or deadweight loss, arises because the tariff artificially increases  $PX$  in relation to  $PY$  and distorts the pattern of consumption in Nation 2. Thus, the tariff redistributes income from domestic consumers (who pay a higher price for the commodity) to domestic producers of the commodity (who receive the higher price) and from the nation's abundant factor (producing exportables) to the

nation's scarce factor (producing importables). This leads to inefficiencies, referred to as the protection cost, or deadweight loss, of the tariff. By dividing the loss of consumer surplus by the number of jobs "saved" in the industry because of the tariff (or equivalent rate of protection), we can calculate the cost per domestic job saved.

**Figure. 4.3: Partial Equilibrium Costs and Benefits of a Tariffs**



### The Theory of Tariff Structure

Here we extend the partial equilibrium analysis of the previous section to define, measure, and examine the importance of the rate of effective protection. This is a relatively new concept developed only since the 1960s but widely used today.

- **The Rate of Effective Protection**

Very often, a nation imports a raw material duty free or

imposes a lower tariff rate on the importation of the input than on the importation of the final commodity produced with the imported input. The nation usually does this in order to encourage domestic processing and employment. For example, a nation may import wool duty free but impose a tariff on the importation of cloth in order to stimulate the domestic production of cloth and domestic employment. When this is the case, the rate of effective protection (calculated on the domestic value added, or processing, that takes place in the nation) exceeds the nominal tariff rate (calculated on the value of the final commodity). Domestic value added equals the price of the final commodity minus the cost of the imported inputs going into the production of the commodity. While the nominal tariff rate is important to consumers (because it indicates by how much the price of the final commodity increases as a result of the tariff), the effective tariff rate is important to producers because it indicates how much protection is actually provided to the domestic processing of the import-competing commodity.

Suppose that \$80 of imported wool goes into the domestic production of a suit. Suppose also that the free trade price of the suit is \$100 but the nation imposes a 10 percent nominal tariff on each imported suit. The price of suits to domestic consumers would then be \$110. Of this, \$80 represents imported wool, \$20 is domestic value added, and \$10 is the tariff. The \$10 tariff collected on each imported suit represents a 10 percent nominal tariff rate since the nominal tariff is calculated on the price of the final commodity (i.e.,

\$10/\$100 = 10 percent) but corresponds to a 50 percent effective tariff rate because the effective tariff is calculated on the value added domestically to the suit (i.e.,  $\$10/\$20 = 50$  percent). While consumers are only concerned with the fact that the \$10 tariff increases the price of the suits they purchase by \$10 or 10 percent, producers view this \$10 tariff as being 50 percent of the \$20 portion of the suit produced domestically. To them, the \$10 tariff provides 50 percent of the value of domestic processing. This represents a much greater degree of protection (five times more) than the 10 percent nominal tariff rate seems to indicate. It is this effective rate of tariff protection that is important to producers in stimulating the domestic production of suits in competition with imported suits. Whenever the imported input is admitted duty free or a lower tariff rate is imposed on the imported input than on the final commodity produced with the imported input, the effective rate of protection will exceed the nominal tariff rate.

- **Generalization and Evaluation of the Theory of Effective Protection**

A tariff on imported inputs is a tax on domestic producers that increases their costs of production, reduces the rate of effective protection provided by a given nominal tariff on the final commodity, and therefore discourages domestic production. In some cases, even with a positive nominal tariff on the final commodity, less of the commodity is produced domestically than would be under free trade. Clearly, the nominal tariff rate can be very deceptive and does not give

even a rough idea of the degree of protection actually provided to domestic producers of the import-competing product. Furthermore, most industrial nations have a “cascading” tariff structure with very low or zero nominal tariffs on raw materials and higher and higher rates the greater is the degree of processing. This “tariff escalation” makes the rate of effective protection on a final commodity with imported inputs much greater than the nominal tariff rate would indicate.

The highest rates in developed nations are often found on simple labor-intensive commodities, such as textiles, in which developing nations have a comparative advantage and, as such, are of crucial importance to their development. The concept of effective protection must be used cautiously, however, because of its partial equilibrium nature. Specifically, the theory assumes that the international prices of the commodity and of imported inputs are not affected by tariffs and that inputs are used in fixed proportions in production. Both assumptions are of doubtful validity. For example, when the price of an imported input rises for domestic producers as a result of an import tariff, they are likely to substitute cheaper domestic or imported inputs in production. Despite these shortcomings, the rate of effective protection is definitely superior to the nominal tariff rate in estimating the degree of protection actually granted to domestic producers of the import-competing product.

- **General Equilibrium Analysis of a Tariff in a Small Country**

When a very small nation imposes a tariff, it will not

affect prices on the world market. However, the domestic price of the importable commodity will rise by the full amount of the tariff for individual producers and consumers in the small nation. Although the price of the importable commodity rises by the full amount of the tariff for individual producers and consumers in the small nation, its price remains constant for the small nation as a whole since the nation itself collects the tariff. For example, if the international price of importable commodity X is \$1 per unit and the nation imposes a 100 percent ad valorem tariff on imports of commodity X, domestic producers can compete with imports as long as they can produce and sell commodity X at a price no higher than \$2. Consumers will have to pay \$2 per unit of commodity X, whether imported or domestically produced.

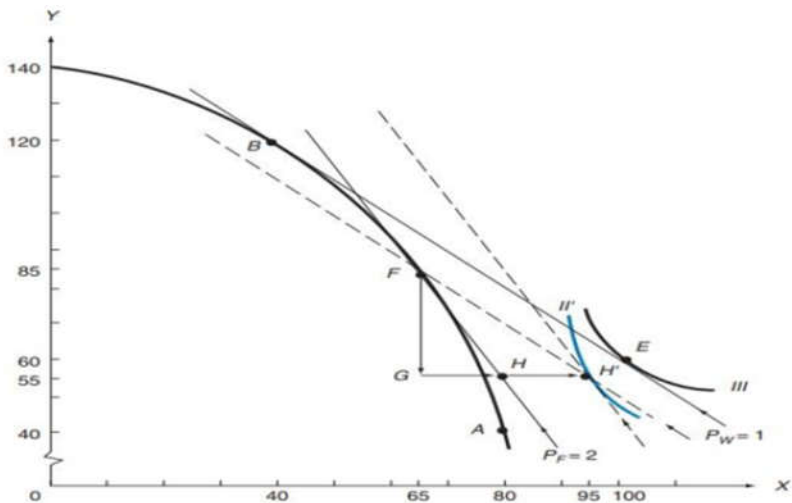
We assume throughout that the imported commodity and the domestically produced commodity are identical. However, since the nation itself collects the \$1 tariff on each unit of commodity X imported, the price of commodity X remains \$1 as far as the nation as a whole is concerned. We further assume that the government of the small tariff-imposing nation uses the tariff revenue to subsidize public consumption (such as schools, police, etc.) and/or for general income tax relief. That is, the government of the small nation will need to collect less taxes internally to provide basic services by using the tariff revenue.

### **Illustration of the Effects of a Tariff in a Small Country:**

Nation 2 is the capital-abundant nation specializing in the

production of commodity Y (the capital-intensive commodity), which it exports in exchange for imports of commodity X. From Figure 4.4, we see that if  $P_X / P_Y = 1$  on the world market and Nation 2 is too small to affect world prices, it produces at point B, exchanges 60Y for 60X with the rest of the world, and consumes at point E on its indifference curve III with free trade. If the nation now imposes a 100 percent ad valorem tariff on imports of commodity X, the relative price of X rises to  $P_X / P_Y = 2$  for domestic producers and consumers but remains at  $P_X / P_Y = 1$  on the world market and for the nation as a whole (since the nation itself collects the tariff).

**Figure.4.4: General Equilibrium Effects of a Tariff in a Small Country**



Facing  $P_X / P_Y = 2$ , domestic producers will produce at point F, where price line  $P_F = 2$  is tangent to the nation's production frontier. Thus, the nation produces more of importable

commodity X and less of exportable commodity Y after imposition of the tariff than under free trade (compare point F to point B). The figure also shows that for exports of FG, or 30Y, the nation demands imports of GH, or 30X, of which GH, or 15X, goes directly to the nation's consumers and HH (i.e., the remaining 15X) is collected in kind by the government in the form of the 100 percent import tariff on commodity X. Note that indifference curve II is tangent to the dashed line parallel to  $PF = 2$  because individual consumers in the nation face the tariff-inclusive price of  $PX / PY = 2$ . However, since the government collects and redistributes the tariff in the form of public consumption and/or tax relief, indifference curve II must also be on the dashed line parallel to  $PW = 1$  (since the nation as a whole still faces the world price of  $PX / PY = 1$ ). Thus, the new consumption point H' is defined by the intersection of the two dashed lines (and therefore is on both). Production then takes place at point F; thus, more of importable commodity X is produced in the nation with the tariff than under free trade. 30Y is exchanged for 30X, of which 15X is collected in kind by the government of the nation in the form of a 100 percent import tariff on commodity X. Consumption takes place at point H on indifference curve II after imposition of the tariff. This is below the free trade consumption point E on indifference curve III because, with the tariff, specialization in production is less and so are the gains from trade. With a 300 percent import tariff on commodity X,  $PX / PY = 4$  for domestic producers and consumers, and the nation would return to its autarky point A

in production and consumption. Such an import tariff is called a prohibitive tariff. The 300 percent import tariff on commodity X is the minimum ad valorem rate that would make the tariff prohibitive in this case. Higher tariffs remain prohibitive, and the nation would continue to produce and consume at point A.

- **A General Equilibrium Effects of a Tariff in a Large Country**

To analyze the general equilibrium effects of a tariff in a large nation, it is more convenient to utilize offer curves. When a nation imposes a tariff, its offer curve shifts or rotates toward the axis measuring its importable commodity by the amount of the import tariff. The reason is that for any amount of the export commodity, importers now want sufficiently more of the import commodity to also cover (i.e., pay for) the tariff. The fact that the nation is large is reflected in the trade partner's (or rest of the world's) offer curve having some curvature rather than being a straight line.

Under these circumstances, imposition of a tariff by a large nation reduces the volume of trade but improves the nation's terms of trade. The reduction in the volume of trade, by itself, tends to reduce the nation's welfare, while the improvement in its terms of trade tends to increase the nation's welfare. Whether the nation's welfare actually rises or falls depends on the net effect of these two opposing forces. This is to be contrasted to the case of a small country imposing a tariff, where the volume of trade declines but the terms of trade

remain unchanged so that the small nation's welfare always declines.

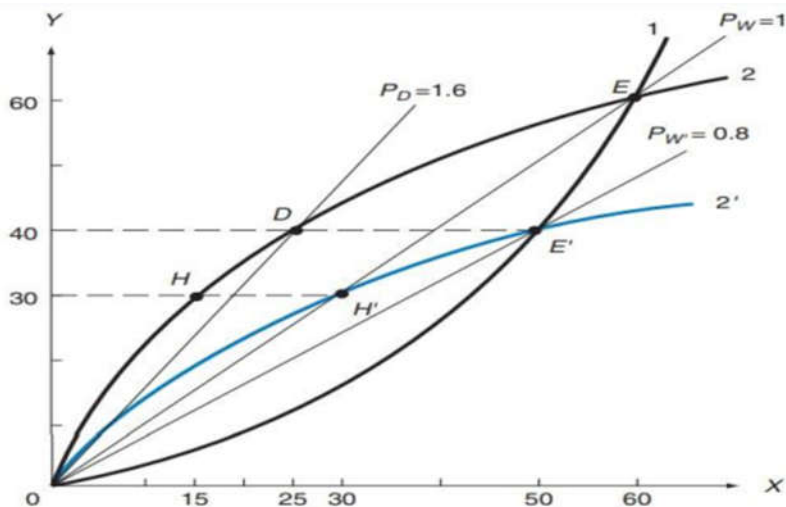
### **Illustration of the Effects of a Tariff in a Large Country**

The imposition by Nation 2 of a 100 percent ad valorem tariff on its imports of commodity X is reflected in Nation 2's offer curve rotating to offer curve 2 in Figure 4.5. Note that tariff-distorted offer curve 2 is at every point 100 percent or twice as distant from the Y-axis as offer curve 2. Before imposition of the tariff, the intersection of offer curve 2 and offer curve 1 defined equilibrium point E, at which Nation 2 exchanged 60Y for 60X at  $P_X / P_Y = P_W = 1$ . After imposition of the tariff, the intersection of offer curve 2 and offer curve 1 defines the new equilibrium point E', at which Nation 2 exchanges 40Y for 50X at the new world price of  $P_X / P_Y = P_W = 0.8$ . Thus, the terms of trade of Nation 1 (the rest of the world) deteriorated from  $P_X / P_Y = P_W = 1$  to  $P_X / P_Y = P_W = 0.8$ . On the other hand, Nation 2's terms of trade improved from  $P_Y / P_X = 1 / P_W = 1$  to  $P_Y / P_X = 1 / P_W = 1 / 0.8 = 1.25$ . Note that for any tariff rate, the steeper or less elastic Nation 1's (or the rest of the world's) offer curve is, the more its terms of trade deteriorate and Nation 2's improve. Thus, when large Nation 2 imposes a tariff, the volume of trade declines but its terms of trade improve. Depending on the net effect of these two opposing forces, Nation 2's welfare can increase, decrease, or remain unchanged.

At tariff-distorted offer curve 2, Nation 2 is in equilibrium at point E' by exchanging 40Y for 50X so that  $P_Y$

$P_X = P_W = 0.8$  on the world market and for Nation 2 as a whole. However, of the 50X imported by Nation 2 at equilibrium point E, 25X is collected in kind by the government of Nation 2 as the 100 percent import tariff on commodity X and only the remaining 25X goes directly to individual consumers. As a result, for individual consumers and producers in Nation 2,  $P_X / P_Y = P_D = 1.6$ , or twice as much as the price on the world market and for the nation as a whole (see the figure).

**Figure.4.5: General Equilibrium Effects of a Tariffs in a Large Country**



Since the relative price of importable commodity X rises for individual consumers and producers in Nation 2. Thus, when a large nation imposes a tariff, the volume of trade declines but the nation's terms of trade improve. The decline in the volume of trade, by itself, tends to reduce the nation's

welfare. On the other hand, the improvement in its terms of trade, by itself, tends to increase the nation's welfare

- **The Optimum Tariff**

The optimum tariff is that rate of tariff that maximizes the net benefit resulting from the improvement in the nation's terms of trade against the negative effect resulting from reduction in the volume of trade. That is, starting from the free trade position, as the nation increases its tariff rate, its welfare increases up to a maximum (the optimum tariff) and then declines as the tariff rate is raised past the optimum. Eventually the nation is pushed back toward the autarky point with a prohibitive tariff. However, as the terms of trade of the nation imposing the tariff improve, those of the trade partner deteriorate, since they are the inverse, or reciprocal, of the terms of trade of the tariff-imposing nation. Facing both a lower volume of trade and deteriorating terms of trade, the trade partner's welfare definitely declines. As a result, the trade partner is likely to retaliate and impose an optimum tariff of its own. While recapturing most of its losses with the improvement in its terms of trade, retaliation by the trade partner will definitely reduce the volume of trade still further. The first nation may then itself retaliate. If the process continues, all nations usually end up losing all or most of the gains from trade. Note that even when the trade partner does not retaliate when one nation imposes the optimum tariff, the gains of the tariff-imposing nation are less than the losses of the trade partner, so that the world as a whole is worse off than under free trade. It is in this sense that free trade maximizes world welfare.

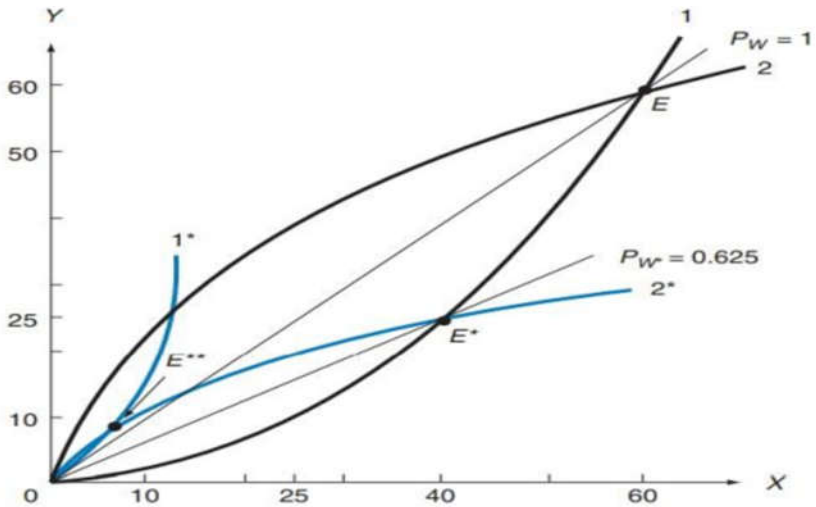
**Illustration of the Optimum Tariff and Retaliation**

The free trade offer curves 1 and 2 from defining equilibrium point E at  $PW = 1$ . Suppose that with the optimum tariff, Nation 2's offer curve rotates to  $2^*$ . If Nation 1 does not retaliate, the intersection of offer curve  $2^*$  and offer curve 1 defines the new equilibrium point  $E^*$ , at which Nation 2 exchanges 25Y for 40X so that  $PX / PY = P^* W = 0.625$  on the world market and for Nation 2 as a whole. As a result, Nation 1's (the rest of the world's) terms of trade deteriorate from  $PX / PY = PW = 1$  to  $PX / PY = P^* W = 0.625$ , and Nation 2's terms of trade improve to  $PY/PX = 1/P^* W = 1/0.625 = 1.6$ . With the tariff associated with offer curve  $2^*$ , not only does the improvement in Nation 2's welfare resulting from its improved terms of trade exceed the reduction in welfare due to the decline in volume of trade, but it represents the highest welfare that Nation 2 can achieve with a tariff (and exceeds its free trade welfare).

With deteriorated terms of trade and a smaller volume of trade, Nation 1 is definitely worse off than under free trade. As a result, Nation 1 is likely to retaliate and impose an optimum tariff of its own, shown by offer curve  $1^*$ . With offer curves  $1^*$  and  $2^*$ , equilibrium moves to point  $E^{**}$ . Now Nation 1's terms of trade are higher and Nation 2's are lower than under free trade, but the volume of trade is much smaller. At this point, Nation 2 is itself likely to retaliate, and in the end both nations may end up at the origin, representing the autarky position for both nations. By so doing, all of the gains from trade are lost. Finally, note that the optimum tariff for a small country is

zero, since a tariff will not affect its terms of trade and will only cause the volume of trade to decline (see points E and H in Figure). Thus, no tariff can increase the small nation's welfare over its free trade position even if the trade partner does not retaliate.

**Figure.4.6: The Optimum Tariff and Retaliation**



### Non tariff barriers

A nontariff barrier is a way to restrict trade using trade barriers in a form other than a tariff. It include quotas, embargoes, sanctions, levies and other restrictions. During the past two decades, these nontariff trade barriers (NTBs), or the new protectionism, have become more important than tariffs as obstructions to the flow of international trade and represent a major threat to the world trading system. Non-tariff barriers can be of two types, one that has direct influence on the price of

the goods being imported and the other that influences or controls the quantity of the goods being imported.

## **5. Direct Price Influences**

**Subsidies:** Subsidies are the direct payments made by the government to domestic producers. It can take form of cash payments, low interest loans, government participation in ownership, tax incentives, etc. it helps in lowering down the cost of production of domestic goods as a result of which the prices also come down. It helps domestic producers to capture export markets by making their products cheaper in international markets. Export subsidies under the WTO agreement are treated as unfair trade practice. The importing countries counter such subsidies by levying countervailing duties on imported goods so as to offset the impact of these subsidies.

## **6. Quantity Controls**

**Quotas:** It refers to the direct restriction on the quantity of goods that can be imported into a country during any period of time. In other words quotas limit the quantity of imports of any particular commodity coming into a country during a certain period of time. This is normally done through giving of import licenses to the importers. For example, the United States has a quota on cheese imports; India has a quota on import of gold.

**Voluntary Export Restraints (VERs):** VERs are bilateral agreements instituted to restrain the rapid growth of exports of specific goods. Essentially, the government of country X asks the government of country Y to reduce its companies' exports

to country X voluntarily to help the importing country X to protect its domestic industry.

**Local Content Requirement:** A local content requirement is a requirement that some fraction of the product must be produced locally or in the domestic market. The requirement can either be expressed in physical terms (60% of the parts of the product) or in value terms (60% of the value of the product). Thus, it ensures that if any company wants a contract from the government agency, it must ensure that at least a certain portion of the product must be produced or procured locally. E.g: Domestic content Requirement under Jawaharlal Nehru National Solar Mission (JNNSM)

**“By Local” Legislation:** Under this form of trade policy the government makes its purchases from domestic producers only. This legislation forbids the government departments to make use of imported goods. However, the government may at times permits the use of imported products only if the price is below than that of the domestic producer. The economic effect of local content requirement and buy local legislation is same as that of quota. It limits foreign competition thereby benefiting the domestic producers. The restrictions on imports raise the price of goods for the consumers.

**Labeling and Testing Standards:** Some countries require that goods entering into their boundaries must meet certain requirements in terms of packaging, labeling and testing standards. Such countries allow sale of only those goods which satisfy these standards.

**Sanitary and Phytosanitary (SPS):** These measures are taken to protect against risks linked to food safety, animal health and plant protection or to prevent or limit damage within the territory of a country from the entry, establishment and spread of pests from a foreign country.

**Specific Permission Requirements:** This measure requires that potential importers or exporters secure permission from governmental authorities. This involves the issuing of import or export licences which may be costly and time consuming.

**Counter trade:** The exchange of goods with goods between countries is referred to as countertrade. This practice is common in case of aerospace and defense industries whereby the importer country may not have enough foreign currency to pay for imports.

**Administrative Barriers to Trade:** Administrative barriers to trade are a special category of non-tariff barriers and their main sources are administrative regulations and procedures that have a restrictive effect on international trade. Delays may be made with respect to issue of licences, customs valuation, and clearance of consignment of goods and so on. E.g: Anti-dumping. Dumping can be defined as selling goods in foreign market at below their fair market value or selling goods in foreign market at below their costs of production. Anti-dumping is a measure to rectify the situation arising out of the dumping of goods and its trade distortive effect.

- **Import Quotas**

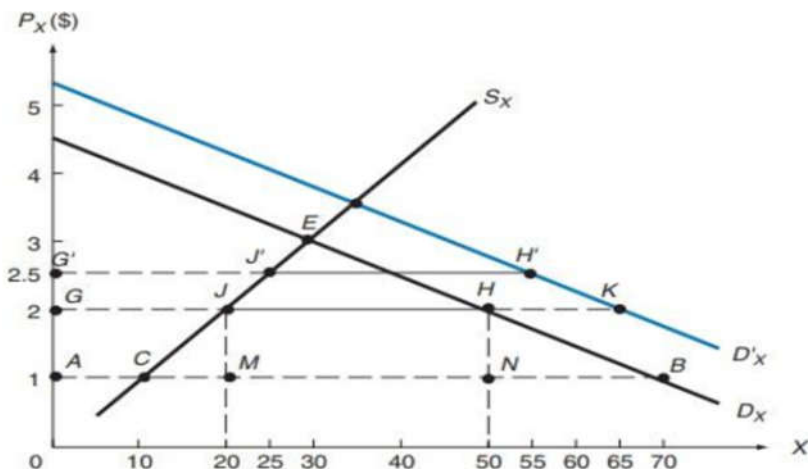
A quota is the most important nontariff trade barrier. It is

a direct quantitative restriction on the amount of a commodity allowed to be imported or exported. An import quota is a trade restriction on the quantity of a particular product that can be imported. For example, a country may impose an import quota on the volume of the material of cloth that is to be imported. Import quotas can be used to protect a domestic industry, to protect domestic agriculture, and/or for balance-of-payments reasons. Import quotas were very common in Western Europe immediately after World War II. Since then import quotas have been used by practically all industrial nations to protect their agriculture and by developing nations to stimulate import substitution of manufactured products and for balance-of-payments reasons.

The partial equilibrium effects of an import quota can be illustrated with Figure 4.7,  $DX$  is the demand curve and  $SX$  is the supply curve of commodity  $X$  for the nation. With free trade at the world price of  $PX = \$1$ , the nation consumes  $70X$  ( $AB$ ), of which  $10X$  ( $AC$ ) is produced domestically and the remainder of  $60X$  ( $CB$ ) is imported. An import quota of  $30X$  ( $JH$ ) would raise the domestic price of  $X$  to  $PX = \$2$ . The reason is that only at  $PX = \$2$  does the quantity demanded of  $50X$  ( $GH$ ) equal the  $20X$  ( $GJ$ ) produced domestically plus the  $30X$  ( $JH$ ) allowed by the import quota. Thus, consumption is reduced by  $20X$  ( $BN$ ) and domestic production is increased by  $10X$  ( $CM$ ) with an import quota of  $30X$  ( $JH$ ). If the government also auctioned off import licenses to the highest bidder in a competitive market, the revenue effect would be  $\$30$  ( $\$1$  on each of the  $30X$  of the import quota), given by area

JHNM . Then the import quota of 30X would be equivalent in every respect to an “implicit” 100 percent import tariff. With an upward shift of  $D_X$  to  $D'_X$  , the given import quota of 30X ( $J'H'$ ) would result in the domestic price of X rising to  $P_X = \$2.50$ , domestic production rising to 25X ( $G'J'$ ), and domestic consumption rising from 50X to 55X ( $G'H'$ ). On the other hand, with the given 100 percent import tariff (in the face of the shift from  $D_X$  to  $D'_X$  ), the price of X would remain unchanged at  $P_X = \$2$  and so would domestic production at 20X ( $GJ$ ), but domestic consumption would rise to 65X ( $GK$ ) and imports to 45X ( $JK$ ).

**Figure.4.7: Partial Equilibrium Effects of an Import Quota**



### Voluntary Export Restraints

One of the most important of the nontariff trade barriers, or NTBs, is voluntary export restraints (VERs). Voluntary export restraints (VER) are arrangements between exporting

and importing countries in which the exporting country agrees to limit the quantity of specific exports below a certain level in order to avoid imposition of mandatory restrictions by the importing country. The arrangement may be concluded either at the industry or government level. This limit is self-imposed by the exporting country. VERs came about in the 1930s and gained a lot of popularity in the 1980s when Japan used one to limit auto exports to the U.S. In 1994, World Trade Organization (WTO) members agreed not to implement any new VERs and to phase out existing ones.

Voluntary export restraints (VERs) fall under the broad category of non-tariff barriers, which are restrictive trade barriers, such as quotas, sanctions, levies, embargoes, and other restrictions. Typically, VERs are a result of requests made by the importing country to provide a measure of protection for its domestic businesses that produce competing goods, though these agreements can be reached at the industry level, as well. VERs are often created because the exporting countries would prefer to impose their own restrictions than risk sustaining worse terms from tariffs or quotas. They have been in use since the 1930s, applied by large, developed economies to a wide range of products, from textiles to footwear, steel, and automobiles, and became a popular form of protectionism in the 1980s. After the Uruguay Round and the updating of the General Agreement on Tariffs and Trade (GATT) in 1994, WTO members agreed not to implement any new VERs, and to phase out any existing ones within one year, with some exceptions.

With functioning VERs, producers in the importing country experience an increase in well-being as there is decreased competition, which should result in higher prices, profits, and employment. These benefits to producers and the labor market, however, come with some notable caveats. VERs reduce national welfare by creating negative trade effects, negative consumption distortions, and negative production distortions.

### **Exchange Controls**

Exchange controls are government-imposed limitations on the purchase and/or sale of currencies. These controls allow countries to better stabilize their economies by limiting in-flows and out-flows of currency, which can create exchange rate volatility. Not every nation may employ the measures, at least legitimately; the 14th article of the International Monetary Fund's Articles of Agreement allows only countries with so-called transitional economies to employ exchange controls.

Many western European countries implemented exchange controls in the years immediately following World War II. The measures were gradually phased out, however, as the post-war economies on the continent steadily strengthened; the United Kingdom, for example, removed the last of its restrictions in October 1979. Countries with weak and/or developing economies generally use foreign exchange controls to limit speculation against their currencies. They often simultaneously introduce capital controls, which limit the amount of foreign investment in the country.

Countries with weak or developing economies may put controls on how much local currency can be exchanged or exported—or ban a foreign currency altogether—to prevent speculation. Exchange controls can be enforced in a few common ways. A government may ban the use of a particular foreign currency and prohibit locals from possessing it. Alternatively, they can impose fixed exchange rates to discourage speculation, restrict any or all foreign exchange to a government-approved exchanger, or limit the amount of currency that can be imported to or exported from the country.

### **Dumping**

Dumping in economics is a type of predatory pricing talked about particularly in the international commerce space. Dumping is said to happen when manufacturers or marketers export a product to another nation at a price that is lesser than the home country price or lesser than the production cost. This is done with the intention of enhancing the market share in a foreign market or to remove competition. Dumping happens when a country or a firm exports an item at a price lower than the price of that product in its domestic market. Dumping impacts the price of that product in the importing country, hitting margins and profits of local manufacturing firms.

Dumping is classified as persistent, predatory, and sporadic. **Persistent dumping**, or international price discrimination, is the continuous tendency of a domestic monopolist to maximize total profits by selling the commodity at a higher price in the domestic market (which is insulated by

transportation costs and trade barriers) than internationally (where it must meet the competition of foreign producers). **Predatory dumping** is the temporary sale of a commodity at below cost or at a lower price abroad in order to drive foreign producers out of business, after which prices are raised to take advantage of the newly acquired monopoly power abroad. **Sporadic dumping** is the occasional sale of a commodity at below cost or at a lower price abroad than domestically in order to unload an unforeseen and temporary surplus of the commodity without having to reduce domestic prices.

Trade restrictions to counteract predatory dumping are justified and allowed to protect domestic industries from unfair competition from abroad. These restrictions usually take the form of antidumping duties to offset price differentials, or the threat to impose such duties. However, it is often difficult to determine the type of dumping, and domestic producers invariably demand protection against any form of dumping. By so doing, they discourage imports (the “harassment thesis”) and increase their own production and profits (rents). In some cases of persistent and sporadic dumping, the benefit to consumers from low prices may actually exceed the possible production losses of domestic producers.

**Anti-dumping duty** is imposed to rectify the situation arising out of the dumping of goods and its trade distortive effect. The anti-dumping duty was imposed after the Directorate General of Trade Remedies (DGTR), in its probe, found that the steel products imported in India from these three countries were below its associated normal value, which

resulted in dumping. The duty has been imposed for five years with a view to guard domestic manufacturers from cheap imports from these countries. Earlier, a provisional duty was imposed in October 2019 on these products from these three countries, which expired in April 2020. According to global trade norms, including the World Trade Organization (WTO) regime, a country is allowed to impose tariffs on such dumped products to provide a level-playing field to domestic manufacturers. The duty is imposed only after a thorough investigation by a quasi-judicial body, such as DGTR, in India.

Directorate General of Trade Remedies is the apex national authority under the Ministry of Commerce and Industry for administering all trade remedial measures including anti-dumping, countervailing duties and safeguard measures. It provides trade defence support to the domestic industry and exporters in dealing with increasing instances of trade remedy investigations instituted against them by other countries.

Anti-dumping duty is different from countervailing duty. The latter is imposed in order to counter the negative impact of import subsidies to protect domestic producers. Countervailing Duties (CVDs) are tariffs levied on imported goods to offset subsidies made to producers of these goods in the exporting country. CVDs are meant to level the playing field between domestic producers of a product and foreign producers of the same product who can afford to sell it at a lower price because of the subsidy they receive from their government.

## **Export Subsidies**

Export subsidies are direct payments (or the granting of tax relief and subsidized loans) to the nation's exporters or potential exporters and/or low-interest loans to foreign buyers to stimulate the nation's exports. As such, export subsidies can be regarded as a form of dumping. Although export subsidies are illegal by international agreement, many nations provide them in disguised and not-so-disguised forms.

Export subsidies consist of all subsidies on goods and services that become payable to resident producers when the goods leave the economic territory or when the services are delivered to non-resident units; they include direct subsidies on exports, losses of government trading enterprises in respect of trade with non-residents, and subsidies resulting from multiple exchange rates.

Export subsidies are subsidies given to traders to cover the difference between internal market prices and world market prices, such as through the EU export refunds and the US Export Enhancement Program. Export subsidies are now subject to value and volume restrictions under the Uruguay Round Agreement on Agriculture.

**Countervailing duties** (CVDs) are often imposed on imports to offset export subsidies by foreign governments. Countervailing duties (CVDs) are trade import tariffs imposed to nullify the adverse effects of subsidies. They are imposed only under World Trade Organisation rules and are also called anti-subsidy duties. They are levied if a country investigates

and finds out that a foreign country is subsidizing its imports to the home country thus harming domestic suppliers. Then, as per WTO rules, the country can charge additional duties in agreement with the GATT Agreement on Subsidies and Countervailing Measures and the GATT Article VI. The rate of Countervailing duty is equivalent to the rate of excise levied on such goods if it had been manufactured within the importing country.

### **International Cartels**

An international cartel is an organization of suppliers of a commodity located in different nations (or a group of governments) that agrees to restrict output and exports of the commodity with the aim of maximizing or increasing the total profits of the organization. Although domestic cartels are illegal in the United States and restricted in Europe, the power of international cartels cannot easily be countered because they do not fall under the jurisdiction of any one nation. The most notorious of present-day international cartels is OPEC (Organization of Petroleum Exporting Countries), which, by restricting production and exports, succeeded in quadrupling the price of crude oil between 1973 and 1974. Another example is the International Air Transport Association, a cartel of major international airlines that met annually until 2007 to set international air fares and policies. An international cartel is more likely to be successful if there are only a few international suppliers of an essential commodity for which there are no close substitutes. OPEC fulfilled these requirements very well during the 1970s. When there are many

international suppliers, however, it is more difficult to organize them into an effective cartel. Similarly, when good substitutes for the commodity are available, the attempt by an international cartel to restrict output and exports in order to increase prices and profits will only lead buyers to shift to substitute commodities. This explains the failure of, or inability to set up, international cartels in minerals other than petroleum and tin, and agricultural products other than sugar, coffee, cocoa, and rubber. Since the power of a cartel lies in its ability to restrict output and exports, there is an incentive for any one supplier to remain outside the cartel or to “cheat” on it by unrestricted sales at slightly below the cartel price. This became painfully evident to OPEC during the 1980s when high petroleum prices greatly stimulated petroleum exploration and production by nonmembers (such as the United Kingdom, Norway, and Mexico). The resulting increase in supply, together with conservation measures that reduced the increase in the demand for petroleum products, led to sharply lower petroleum prices in the 1980s and most of the 1990s as compared to the 1970s. It also showed that, as predicted by economic theory, cartels are inherently unstable and often collapse or fail. If successful, however, a cartel could behave exactly as a monopolist (a centralized cartel) in maximizing its total profits.

### **Technical, Administrative, and Other Regulations**

International trade is also hampered by numerous technical, administrative, and other regulations. These include safety regulations for automobile and electrical equipment,

health regulations for the hygienic production and packaging of imported food products, and labeling requirements showing origin and contents. Some of these regulations are, undoubtedly, legitimate, while some are meant essentially for protecting domestic production against imports from abroad. For instance, French ban on advertisement of Scotch whisky, British restriction on the showing of foreign films on British T.V. are veiled devices for restricting imports. Still another form of trade restriction is one, which has emanated from laws. For example, 'Buy American' Act passed in the U.S.A. in 1933 provided for procurements by the government agencies.

These procurement plans assure price advantage to the domestic suppliers. Many countries, including both the advanced and less developed countries, have their procurement programmes out of the domestic production. The Tokyo Round of GATT negotiations led to an agreement that countries would avoid such practices and allow the foreign suppliers also a fair chance. One more form of restrictions on trade is the tax rebates given to the exporters from such indirect taxes as sales tax, excise duty and value added taxes.

This practice is extensively followed by both less developed and the advanced countries to place their respective exporters in a relatively better position. The trade is also restricted by such measures as international commodity agreements, multiple exchange rates, government procurements, customs valuation and classification, stiff import licensing procedures, local content regulations etc.

All these measures are clearly intended to benefit the home country at the expense of the rest- of-the-world. No doubt, there is need for removing these trade barriers but much progress in this direction is not likely to take place in the near future. The advanced countries like the U.S.A. want to maintain the trade restrictions against the other countries. As regards other countries, they are being pressurised to liberalise trade. Such an attitude is a major hindrance in the dismantling of the regime of technical, administrative and other regulations.

**Trade in Wastes**

The global waste trade is the international trade of waste between countries for further treatment, disposal, or recycling. Toxic or hazardous wastes are often imported by developing countries from developed countries. It is not only ordinary goods that are imported/exported, but also different kinds of waste are being traded. From harmless goods such as paper, suitable for recycling, to toxic waste dumped as landfill.

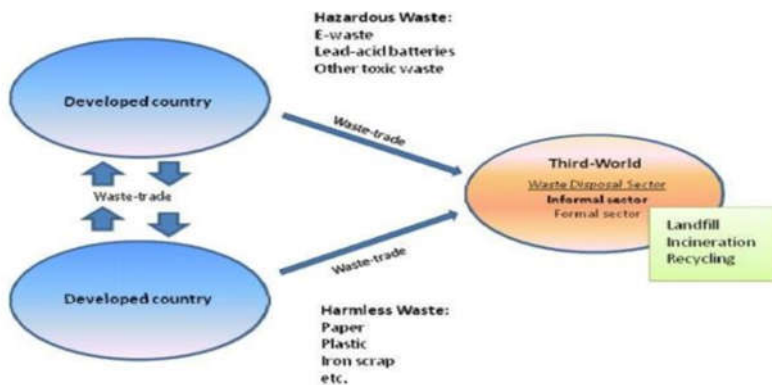


Figure 1. Flow of waste traded between developed countries and third-world.

Most of the world's trade with waste goes from one developed country to another. But a considerable amount of waste also goes from developed countries to countries in the third-world. There are three ways for the waste-importing country to deal with waste; landfill, incineration or recycling. Generally waste can be divided into two different groups; harmless or hazardous. Example of harmless waste are waste-paper, PET bottles, iron-scrap. Hazardous waste is material that contains toxic substances. This kind of waste causes pollution that can harm the environment and human health. The pollution in this case can be defined as externalities, i.e. an extra cost for the waste-importing country. Hazardous electronic waste is continuously exported to China, Pakistan and India, primarily from North America. The waste contains toxic metals that are harmful for the people handling it and poison the surrounding environment.

In the late 1980s, stricter environmental regulations dramatically increased the cost of hazardous waste disposal. In search for cheaper alternatives to get rid of the waste, industries in developed countries began shipping their hazardous waste to developing countries and to Eastern Europe. To prevent possible dumping of hazardous waste in the developing countries, the “Basel Convention on the Transboundary Movements of Hazardous Waste” was created to protect the developing countries. At first the Basel Convention meant to regulate the trade with hazardous waste but, nowadays, trade in hazardous waste is totally banned. Currently, approximately 170 countries have ratified the

Convention (Basel Convention 2008-04-16). The main problem with the Convention is the lack of distinction between “waste” and “products” which gives the opportunity for trade in hazardous waste in the name of products.

On the other hand, several developing (and developed) countries have considerable recycling industries that are driven by imported waste, including hazardous waste. These imports of secondary-raw materials are important to those developing countries and they may experience serious consequences from the ban on trade with hazardous waste. Industries will be forced to close which will lead to increased unemployment and decreased living standards for the country’s population. One example of this is the import of lead-acid batteries into India and the Philippines, which are needed in their domestic industries such as batteries in motor vehicles, telecommunications, and computer equipments. The trade with waste therefore creates a trade- off between the gains from trade and the hazardousness to the environment and human health.

### **Arguments supporting global waste trade**

Current supporters of global waste trade argue that importing waste is an economic transaction which can benefit countries with little to offer the global economy. Countries which do not have the production capacity to manufacture high quality products can import waste to stimulate their economy.

The Cato Institute published an article supporting global waste trade suggesting that “there is little evidence that

hazardous wastes, which are often chronic carcinogens, contribute to death rates in developing countries.” Elaborating on this point, the article argues that “people in developing countries would rationally accept increased exposure to hazardous pollutants in exchange for opportunities to increase their productivity—and, hence, their income.” Overall, the argument for global waste trade rests largely upon a perception that developing countries need to further their economic development. Supporters suggest that in engaging in global waste trade, developing countries of the Global South will expand their economies and increase profits.

### **Critiques of global waste trade**

Critics of global waste trade claim that lack of regulation and failed policies have allowed developing nations to become toxic dump yards for hazardous waste. The ever-increasing amounts of hazardous waste being shipped to developing countries increases the disproportionate risk that the people in these nations face. Critics of the effects of the global waste trade emphasize the enormous amount of hazardous wastes that people in poorer countries must deal with. They highlight the fact that most of the world’s hazardous wastes are produced by Western countries (the United States and Europe), yet the people who suffer negative health effects from these wastes are from poorer countries that did not produce the waste.

This type of trade reinforces environmental inequality and, at the same time reflects, other forms of hierarchy and

exploitation along lines of class, race and gender. The detrimental effects of hazardous waste trade affect the disadvantaged more than others, critics of global waste trade suggest that the implications of dumping hazardous waste has significant consequences for People of Color, women, and low-income people in particular.

Critiquing the global waste trade for reproducing inequality on a global scale, many activists, organizers, and environmentalists from regions affected in the Global South have vocalized their disappointment with global waste trade policies.

### **Toxic colonialism**

Toxic colonialism, defined as the process by which underdeveloped states are used as inexpensive alternatives for the export or disposal of hazardous waste pollution by developed states, is the core critique against the global waste trade. Toxic colonialism represents the neocolonial policy which continues to maintain global inequality today through unfair trade systems. Toxic colonialism uses the term colonialism because the characteristics of colonialism, involving economic dependence, exploitation of labour, and cultural inequality are intimately associated within the new realm of toxic waste colonialism.

### **Electronic waste**

Electronic waste, also known as e-waste, refers to discarded electrical or electronic devices. A rapidly growing surplus of electronic waste around the world has resulted from

quickly evolving technological advances, changes in media (tapes, software, MP3), falling prices, and planned obsolescence. An estimated 50 million tons of e-waste are produced each year, the majority of which comes from the United States and Europe. Most of this electronic waste is shipped to developing countries in Asia and Africa to be processed and recycled.

Heavy metals, toxins, and chemicals leak from these discarded products into surrounding waterways and groundwater, poisoning the local people. People who work in these dumps, local children searching for items to sell, and people living in the surrounding communities are all exposed to these deadly toxins. One city suffering from the negative results of the hazardous waste trade is Guiyu, China, which has been called the electronic waste dump of the world. It may be the world's largest e-waste dump, with workers dismantling over 1.5 million pounds of junked computers, cell phones and other electronic devices per year.

### **Incinerator ash**

Incinerator Ash is the ash produced when incinerators burn waste in order to dispose of it. Incineration has many polluting effects which include the release of various hazardous gases, heavy metals, and sulfur dioxide.

### **Chemical waste**

Chemical waste is the excess and unusable waste from hazardous chemicals, mainly produced by large factories. It is extremely difficult and costly to dispose of. It poses many

problems and health risks upon exposure, and must be carefully treated in toxic waste processing facilities. One example of chemical waste being exported from the Global North onto the Global South was the event of an Italian business man seeking to avoid European economic regulations.[24] Allegedly exporting 4,000 tons of toxic waste, containing 150 tons of polychlorinated biphenyls, or PCBs, the Italian businessman made \$4.3 million in shipping hazardous waste to Nigeria.[25]

### **Shipbreaking in Asia**

Another danger to developing countries is the growing issue of shipbreaking, which is occurring mainly in Asia. Industrialized countries seeking to retire used vessels find it cheaper to send these ships to Asia for dismantling. China and Bangladesh are seen as the two hubs of shipbreaking in Asia. One of the main issues lies in the fact that these ships which are now too aged to continue, were constructed at a time with less environmental regulation. In an environmental fact sheet, researchers demonstrate the immense impact this new toxic trade sector has on workers and the environment. For one, the older ships contain health-damaging substances such as asbestos, lead oxide, zinc chromates, mercury, arsenic, and tributyltin. In addition, shipbreaking workers in China and in other developing countries traditionally lack proper equipment or protective gear when handling these toxic substances.

### **Plastic waste**

The trade in plastic waste has been identified as the main

cause of marine litter. Countries importing the waste plastics often lack the capacity to process all the material. As a result, the United Nations has imposed a ban on waste plastic trade unless it meets certain criteria.

### **Impacts of the global waste trade**

The global waste trade has had negative effects for many people, particularly in poorer, developing nations. These countries often do not have safe recycling processes or facilities, and people process the toxic waste with their bare hands. Hazardous wastes are often not properly disposed of or treated, leading to poisoning of the surrounding environment and resulting in illness and death in people and animals. Many people have experienced illnesses or death due to the unsafe way these hazardous wastes are handled.

### **Effects upon the environment**

The hazardous waste trade has disastrous effects upon the environment and natural ecosystems. There are heavy metal chemical concentrations in the air, water, soil, and sediment in and around these toxic dump areas, and the concentration levels of heavy metals in these areas are extremely high and toxic.

### **Implications for human health**

The hazardous waste trade has serious damaging effects upon the health of humans. People living in developing countries may be more vulnerable to the dangerous effects of the hazardous waste trade, and are particularly at risk from developing health problems. The methods of disposal of these

toxic wastes in developing countries expose the general population (including future generations) to the highly toxic chemicals. These toxic wastes are often disposed of in open landfills, burned in incinerators, or in other dangerous processes. Workers wear little to no protective gear when processing these toxic chemicals, and are exposed to these toxins through direct contact, inhalation, contact with soil and dust, as well as oral intake of contaminated locally produced food and drinking water. Health problems resulting from these hazardous wastes affect humans by causing cancers, diabetes, alterations in neurochemical balances, hormone disruptions from endocrine disruptors, skin alterations, neurotoxicity, kidney damage, liver damage, bone disease, emphysema, ovotoxicity, reproductive damage, and many other fatal diseases. The improper disposal of these hazardous wastes creates fatal health problems, and is a serious public health risk.

### **International responses to global waste trade issues**

There have been various international responses to the problems associated with the global waste trade and multiple attempts to regulate it for over thirty years. The hazardous waste trade has proven difficult to regulate as there is so much waste being traded, and laws are often difficult to enforce. Furthermore, there are often large loopholes in these international agreements that allow countries and corporations to dump hazardous wastes in dangerous ways. The most notable attempt to regulate the hazardous waste trade has been the Basel Convention.

## **International treaties and relevant trade law Basel Convention**

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, usually known as the Basel Convention, is an international treaty that plays a crucial role in regulating the transnational movement of hazardous wastes. The Basel Convention was created in 1989 and attempts to regulate the hazardous waste trade, specifically to prevent the dumping of hazardous waste from more developed countries into less developed countries. The Basel Convention was developed following a series of high-profile cases in which large amounts of toxic waste were dumped into less developed countries, poisoning the people and environment. The Convention seeks to reduce the creation of hazardous wastes, and to control and reduce its trade across borders.

The Convention was opened for signatures on 22 March 1989, and officially entered into force on 5 May 1992. As of May 2014, 180 states and the European Union are parties to the Convention. Haiti and the United States have signed the Convention but not ratified it.

### **ENFORCE**

The Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE) is an agency staffed by relevant experts to promote compliance with the Basel Convention. It is an international body created to deal with transboundary issues of the international hazardous waste trade. Because the issue of the transnational hazardous waste

trade crosses many borders and affects many nations, it has been important to have a multinational, multilateral organization presiding over these affairs. The members of ENFORCE include one representative from each of the five United Nations regions that are parties to the Convention as well as five representatives from the Basel Convention regional and coordinating centers, based on equitable geographical representation. Members of organizations such as the United Nations Environmental Programme (UNEP), International Criminal Police Organization (INTERPOL), NGOs working to prevent and stop illegal traffic such as the Basel Action Network (BAN), and many other organizations are also eligible to become members of ENFORCE.

### **Protocol on Liability and Compensation**

In 1999, the Basel Convention passed the Protocol on Liability and Compensation that sought to improve regulatory measures and better protect people from hazardous waste. The Protocol on Liability and Compensation attempts to assign appropriate liability procedures when the transboundary movements of hazardous wastes result in damages to human health and the environment. The Protocol imposes strict liability for damages in situations involving Parties to the Basel Convention, but only while they maintain control of the hazardous waste through their respective notifying, transporting, or disposing entities. It seeks to regulate and ensure countries' and corporations' compliance with the Basel Convention laws. However, this Protocol remains unsigned by most countries, so its applicability is limited.

### **Lomé IV Convention and Cotonou Agreement**

In an effort to protect themselves against unfair hazardous waste dumping, the African, Caribbean, and Pacific States (ACP) signed the Lomé IV Convention, which is a supplement to the Basel Convention and prohibits the export of hazardous wastes from the European Community to ACP States. This Convention is one attempt by developing countries to protect themselves from Western countries exporting their waste to poorer nations through the hazardous waste trade. When the Lomé IV Convention expired in 2000, the ACP countries and the European countries entered into a new agreement known as the Cotonou Agreement, which recognizes the existence of disproportionate risks in developing countries and desires to protect against inappropriate hazardous waste shipments to these countries.

### **The Bamako Convention**

In 1991 multiple developing nations in Africa met to discuss their dissatisfaction with the Basel Convention in regulating the dumping of hazardous waste into their countries, and designed a ban on the import of hazardous wastes into their countries called the Bamako Convention. The Bamako Convention is different from the Basel Convention in that Bamako essentially bans the import of all hazardous waste generated outside of the OAU [the Organization of African Unity] for disposal or recycling and deems any import from a non-Party to be an illegal act. However, these countries could not effectively implement the

stipulations of the Convention and could not prevent the dump of toxic wastes due to limited resources and a lack of powerful enforcement. Therefore, the application of the Bamako Convention was very limited.

## MODULE V

### ECONOMIC INTEGRATION

#### 5.1. Economic Integration

Economic Integration is a process whereby countries cooperate with one another to reduce or eliminate barriers to the international flow of products, people or capital. It occurs when two or more countries within a geographic region create a formal agreement to cooperate in ways that facilitate economic development and regional prosperity. There are two approaches to international trade liberalization and economic integration. They are the international approach and the regional approach. The international approach involves international conferences under WTO. The purpose of these international conferences is to reduce barriers to international trade and investment. The regional approach involves agreements among a small number of nations whose purpose is to establish free trade among them while maintaining barriers to trade with the rest of the world

#### Advantages of Economic Integration

1. Trade Creation: Member countries have (a) wider selection of goods and services not previously available; (b) acquire goods and services at a lower cost after trade barriers due to lowered tariffs or removal of tariffs. (c) encourage more trade between member countries the balance of money spend from cheaper goods and services, can be used to buy more products and services; 2. create employment opportunities.

### **Disadvantages of Economic Integration:**

- **Creation of Trading Blocs:** It can also increase trade barriers against non-member countries.
- **Trade Diversion:** Because of trade barriers, trade is diverted from a non-member country to a member country despite the inefficiency in cost. For example, a country has to stop trading with a low cost manufacturer in a non-member country and trade with a manufacturer in a member country which has a higher cost.
- **National Sovereignty:** Requires member countries to give up some degree of control over key policies like trade, monetary and fiscal policies. The higher the level of integration, the greater the degree of controls that needs to be given up particularly in the case of a political union economic integration which requires nations to give up a high degree of sovereignty.

### **5.2. Economic effects of economic integration**

- **Static effects:**
  1. **Short-term effects (shift of production)**
    - **Trade creation:** production shifts to more efficient member countries from inefficient domestic or outside countries.
    - **Trade diversion:** production shift to inefficient member countries from more efficient outsiders.
- **Dynamic effects: Long-term effects:**

1. Cost reduction due to economies of scale
2. Cost reduction due to increased competition.

### **5.3. Levels of Economic Integration:**

Economic integration can take several forms representing different degrees of integrationnamely,

- Preferential trade area
- Free trade area
- Custom Union
- Common Market
- Economic union
- Political Union

➤ **Preferential Trade Area:** Preferential trade agreements provide lower barriers on trade among participating nations than on trade with nonmember nations. That is, lower tariffs on imports of each other. This is the loosest form of economic integration. A goodexample is the Commonwealth Preference System, which was established in 1932 among 48 Common wealth countries of the British empire.

➤ **Free Trade Area (FTA):** A free trade area is a form of economic integration where in all barriers on trade among members are removed, but each nation retains its own barriers on trade with the nonmembers. In a free trade area the group of countries will invoke little or no price control in the form of tariffs or quotas between each other. Free trade areas allow the agreeing nations to focus on their competitive advantage and to freely trade for the goods they lack the experience at making,

thus increasing the efficiency and profitability of each country. Eg: European Free Trade Association (EFTA in 1960) North American Free Trade Agreement (NAFTA in 1993) European Union (EU) formed in 1957.

➤ **Custom Union:** It is an agreement between two or more countries to remove tariffs between themselves and set a common external tariff on imports from non-member countries. A customs union has common policies on product regulations and movement of factors of production in goods, services, capital and labor amongst members. Each country determines its own barriers and maintains its own external tariffs on imports against non-members. An example of a customs union is the established customs union between the European Union and Turkey, which came into effect in 1996.

➤ **Common Market:** It is an agreement between two or more countries to remove all barriers to trade and allow free mobility of capital and labor across member countries. Harmonize trade policies by having common external tariffs against non-members. Example is the European Union (EU) previously known as European Economic Community (EEC).

➤ **Economic Union:** It is an agreement between two or more countries to remove barriers to trade, allow free flow of labor and capital and coordinate economic policies. Sets trade policies through common external tariffs on non-members. Integration is more intense in an economic union compared to a common market, as member countries are required to harmonize their tax, monetary, and fiscal policies and to

create a common currency. Example is the European Union (EU) where economic and monetary integration has created a single market with a common euro currency.

➤ **Political Union:** It is an agreement between two or more countries to coordinate their economic monetary and political systems. Required to accept a common stance oneconomic and political policies against non- members. Example is US where each US state has its own government that sets policies and laws. But, each state grant control to the federal government over foreign policies, agricultural policies, welfare policies and monetary policies. Goods, services, labor and capital can all move freely without any restrictions among the US states and the government sets a common external tradepolicy.

### 5.4. Theories of customs union

Customs unions eliminate barriers to trade between members, which is assumed to provide a considerable incentive to increase trade between members and to reduce trade between members and non-members. The creation of a customs union, with common external tariffs will further alter the existing pattern of trade flows. The assumption is that before the union, members imposed differential tariffs on different countries to protect their own industries. Once a union is created, members agree to eliminate tariffs between themselves. The effect of this is that, facing lower priced, zero-tariff, imports frommembers, consumers increase their demand for these goods, and new trade will be created – a process called trade creation. The terms of trade creation and trade diversion are closely associated with Chicago School

economist Jacob Viner (The Customs Union Issue, 1950). He concentrated on the production effect of trade creation and ignored the consumption effect. Meade extended the theory of customs unions in 1955 and was the first to consider the consumption effect. Johnson then added the two triangles to obtain the total welfare gain of a customs union.

Here we examine a trade-creating customs union, trade-diverting customs union, the theory of the second best, Static welfare effects of customs union, Dynamic benefits from customs union.

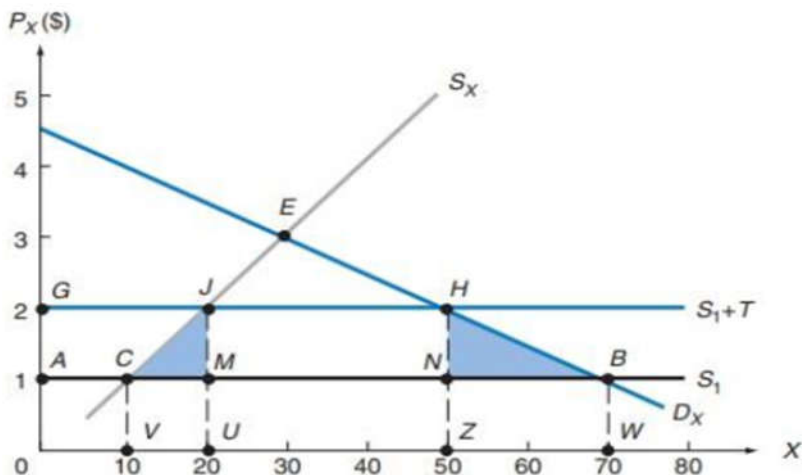
### 5.4.1. Trade creating customs union

**Trade Creation:** The static, partial equilibrium effects of forming a customs union are measured in terms of trade creation and trade diversion. Trade creation occurs when some domestic production in a nation that is a member of the customs union is replaced by lower-cost imports from another member nation. Assuming that all economic resources are fully employed before and after formation of the customs union, this increases the welfare of member nations because it leads to greater specialization in production based on comparative advantage. A trade-creating customs union also increases the welfare of nonmembers because some of the increase in its real income (due to its greater specialization in production) spills over into increased imports from the rest of the world. The effects of a trade-creating customs union are illustrated in Figure 5.1, DX and SX in following figure are Nation 2's domestic demand and

supply curves of commodity X. Suppose that the free trade price of commodity X is  $P_X = \$1$  in Nation 1 and  $P_X = \$1.50$  in Nation 3 (or the rest of the world), and Nation 2 is assumed to be too small to affect these prices. If Nation 2 initially imposes a nondiscriminatory ad valorem tariff of 100 percent on all imports of commodity X, then Nation 2 will import commodity X from Nation 1 at  $P_X = \$2$ . At  $P_X = \$2$ , Nation 2 consumes 50X (GH), with 20X (GJ) produced domestically and 30X (JH) imported from Nation 1. Nation 2 also collects \$30 (MJHN) in tariff revenues. In the figure 5.1, S1 is Nation 1's perfectly elastic supply curve of commodity X to Nation 2 under free trade, and S1 + T is the tariff-inclusive supply curve. Nation 2 does not import commodity X from Nation 3 because the tariff-inclusive price of commodity X imported from Nation 3 would be  $P_X = \$3$ . If Nation 2 now forms a customs union with Nation 1 (i.e., removes tariffs on its imports from Nation 1 only),  $P_X = \$1$  in Nation 2. At this price, Nation 2 consumes 70X (AB) of commodity X, with 10X (AC) produced domestically and 60X (CB) imported from Nation 1. In this case, Nation 2 collects no tariff revenue. The benefit to consumers in Nation 2 resulting from the formation of the customs union is equal to AGHB. However, only part of this represents a net gain for Nation 2 as a whole. That is, AGJC represents a reduction in rent, or producer surplus, while MJHN represents the loss of tariff revenues. This leaves the sum of the area of shaded triangles CJM and BHN, or \$15, as the net static welfare gain for Nation 2. Triangle CJM is the production component of the welfare gain from trade creation

and results from shifting the production of 10X (CM) from less efficient domestic producers in Nation 2 (at a cost of VUJC) to more efficient producers in Nation 1 (at a cost of VUMC). Triangle BHN is the consumption component of the welfare gain from trade creation and results from the increase in consumption of 20X (NB) in Nation 2, giving a benefit of ZWBH with an expenditure of only ZWBN.

**Figure. 5.1: A Trade Creating Custom Union**



### 5.4.2. Trade-Diverting Customs Unions

Trade diversion occurs when lower-cost imports from outside the customs union are replaced by higher cost imports from a union member. This results because of the preferential trade treatment given to member nations. Trade diversion, by itself, reduces welfare because it shifts production from more efficient producers outside the customs union to less efficient producers inside the union. Thus, trade diversion worsens the

international allocation of resources and shifts production away from comparative advantage. A trade-diverting customs union results in both trade creation and trade diversion, and therefore can increase or reduce the welfare of union members, depending on the relative strength of these two opposing forces. The welfare of nonmembers can be expected to decline because their economic resources can only be utilized less efficiently than before trade was diverted away from them. A trade-creating customs union leads only to trade creation and increases the welfare of members and nonmembers. A trade-diverting customs union leads to both trade creation and trade diversion, and can increase or reduce the welfare of members (and will reduce the welfare of the rest of the world).

The effects of a trade-diverting customs union are illustrated in Figure 5.2. In this figure, DX and SX are Nation 2's domestic demand and supply curves of commodity X, while S1 and S3 are the free trade perfectly elastic supply curves of Nation 1 and Nation 3, respectively. With a nondiscriminatory 100 percent tariff on imports of commodity X, Nation 2 imports commodity X from Nation 1 at  $P_X = \$2$ , along  $S1 + T$ . At  $P_X = \$2$ , Nation 2 consumes 50X (GH), with 20X (GJ) produced domestically and 30X (JH) imported from Nation 1. Nation 2 also collects \$30 (JMNH) in tariff revenues.

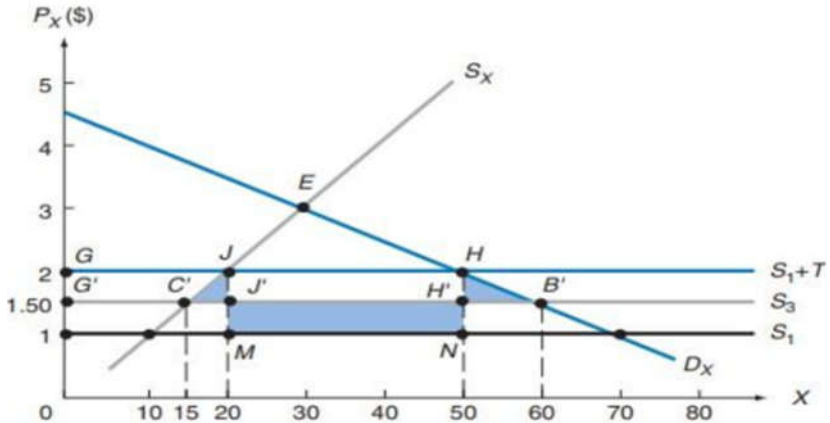
If Nation 2 now forms a customs union with Nation 3 only (i.e., removes tariffs on imports from Nation 3 only), Nation 2 finds it cheaper to import commodity X from Nation 3 at  $P_X =$

\$1.50. At  $P_X = \$1.50$ , Nation 2 consumes 60X (GB), with 15X (GC) produced domestically and 45X (CB) imported from Nation 3. In this case, Nation 2 collects no tariff revenue. The imports of commodity X into Nation 2 have now been diverted from the more efficient producers in Nation 1 to the less efficient producers in Nation 3 because the tariff discriminates against imports from Nation 1 (which is outside the union). Nation 2's imports of commodity X were 30X before formation of the customs union and 45X afterward. Thus, the trade-diverting customs union also leads to some trade creation.

The static welfare effects on Nation 2 resulting from the formation of a customs union with Nation 3 can be measured from the shaded areas shown in Figure 5.2. The sum of the areas of shaded triangles CJ'J and B'H'H (\$3.75) is the welfare gain resulting from pure trade creation, while the area of shaded rectangle MNH J (\$15) is the welfare loss from diverting the initial 30X (JH) of imports from lower cost Nation 1 to higher cost Nation 3. Specifically, of the gain in consumer surplus of G GHB resulting from the formation of the customs union, G GJC represents a transfer from producer to consumer surplus in Nation 2 and therefore washes out (i.e., leaves no net gain or loss for Nation 2 as a whole). Of the JMNH (\$30) tariff revenue collected by Nation 2 before the formation of the customs union with Nation 3, JJ'H'H is transferred to consumers in Nation 2 in the form of the lower price of commodity X after the formation of the customs union. This leaves only shaded triangles C'J'J and B'H'H as the net

gain to Nation 2 and shaded rectangle MNH'J' as the still unaccounted for loss of tariff revenue.

**Figure. 5.2: A Trade- Diverting Customs Union**



**The Theory of the Second Best**

The theory of customs unions is a special case of the theory of the second best. This postulates that when all conditions required to reach maximum social welfare or Pareto optimum cannot be satisfied, trying to satisfy as many of these conditions as possible does not necessarily or usually lead to the second-best welfare position. The conditions under which the formation of a customs union is more likely to lead to trade creation and increased welfare are well known theoretically. From its somewhat vague beginning in the work of Viner, the theory of the second best was then fully developed by Meade in 1955 and generalized by Lipsey and Lancaster in 1956.

### **Conditions More Likely to Lead to Increased Welfare**

A customs union is more likely to lead to trade creation and increased welfare under the following conditions:

1. The higher are the pre-union trade barriers of member countries. There is then a greater probability that formation of the customs union will create trade among union members rather than divert trade from nonmembers to members.
2. The lower are the customs union's barriers on trade with the rest of the world. This makes it less likely that formation of the customs union will lead to costly trade diversion.
3. The greater is the number of countries forming the customs union and the larger their size. Under these circumstances, there is a greater probability that low-cost producers fall within the union.
4. The more competitive rather than complementary are the economies of member nations. There are then greater opportunities for specialization in production and trade creation with the formation of the customs union. Thus, a customs union is more likely to increase welfare if formed by two competitive industrial nations rather than by an industrial nation and an agricultural (complementary) nation.
5. The closer geographically are the members of the customs union. Then transportation costs represent less of an

obstacle to trade creation among members.

6. The greater is the pre-union trade and economic relationship among potential members of the customs union. This leads to greater opportunities for significant welfare gains as a result of the formation of the customs union.

### **Static Welfare Effects of Customs Unions**

There are other static welfare effects resulting from the formation of a customs union. One is the administration savings from the elimination of customs officers, border patrols, and so on, for trade among member nations. This benefit arises whether the customs union is trade creating or trade diverting. Second, a trade-diverting customs union, by reducing its demand for imports from and its supply of exports to the rest of the world, is likely to lead to an improvement in the collective terms of trade of the customs union. However, for a trade-creating customs union, the opposite is likely to be true, since part of the increase in real income resulting from formation of the customs union spills over into a greater demand for imports from the rest of the world. Whether an individual member's terms of trade improve, deteriorate, or remain unchanged depends on the circumstances. Finally, any customs union, by acting as a single unit in international trade negotiations, is likely to have much more bargaining power than all of its members separately. For example, European Union.

### **Dynamic Benefits from Customs Unions**

The nations forming a customs union are likely to receive several important dynamic benefits. These are due to increased competition, economies of scale, stimulus to investment, and better utilization of economic resources. The greatest dynamic benefit from the formation of a customs union is the **increased competition**. That is, in the absence of a customs union, producers (especially those in monopolistic and oligopolistic markets) are likely to grow sluggish and complacent behind trade barriers. But when a customs union is formed and trade barriers among member nations are eliminated, producers in each nation must become more efficient to meet the competition of other producers within the union, merge, or go out of business. The increased level of competition is also likely to stimulate the development and utilization of new technology. All of these efforts will cut costs of production to the benefit of consumers. A customs union must, of course, be careful (by passing and enforcing antitrust legislation) that such oligopolistic practices as collusion and market-sharing agreements, which earlier might have restricted competition nationally, are not replaced by similar union-wide practices after the formation of the customs union.

A second possible benefit from the formation of a customs union is that **economies of scale** are likely to result from the enlarged market. However, it must be pointed out that even a small nation that is not a member of any customs union can overcome the smallness of its domestic market and achieve substantial economies of scale in production by exporting to

therest of the world.

Another possible benefit is the **stimulus to investment** to take advantage of the enlarged market and to meet the increased competition. Furthermore, the formation of a customs union is likely to spur outsiders to set up production facilities within the customs union to avoid the (discriminatory) trade barriers imposed on nonunion products. These are the so-called tariff factories.

Finally, in a customs union that is also a common market, the free community-wide movement of labor and capital is likely to result in better utilization of the economic resources of the entire community. These dynamic gains resulting from the formation of a customs union are presumed to be much greater than the static gains and to be very significant.

### **5.5. The South Asian Free Trade Area (SAFTA)**

The South Asian Free Trade Area was signed in 2004 and came in to effect on January 1st 2006. The members of SAARC signed the agreement in order to promote and sustain mutual trade and economic cooperation within the region. SAFTA required the developing countries in South Asia (India, Pakistan and Sri Lanka) to bring their duties down to 20 per cent in the first phase of the two-year period ending in 2007. While the least developing countries (LDC) consisting of Nepal, Bhutan, Bangladesh, Afghanistan and the Maldives had an additional three years to reduce tariffs

The basic principles regarding SAFTA are as follows:

- Reciprocity and mutuality of advantages in order to benefit equally by considering the level of economic trade, industrial development and trade and tariff systems
- Negotiation of tariff reform which will be implemented in successive stages through periodic reviews.
- Recognition of the special needs of the Least Developed countries and agreement on concrete preferential measures in their favour
- Inclusion of all products, manufactures and commodities in their raw forms
- The purpose of the SAFTA is to encourage and elevate common contract among countries such as medium and long-term contracts. Contracts involving trade operated by states, supply and import assurance in respect of specific products etc.

### **The objective of the South Asian Free Trade Area**

The primary objective of the agreement is to promote competition in the region while providing proper benefits to the countries involved. The agreement will benefit the people of South Asia by bringing transparency and integrity among the nations by reducing tariff and trade barriers. Ultimately, it establishes a robust framework for regional cooperation

The instruments to help fulfill these objectives are as follows:

- a. Trade Liberalisation Programme
- b. Rules of origin
- c. Institutional Arrangements

- d. Consultations and Dispute Settlement Procedures
- e. Safeguard Measures
- f. Any other instrument that may be agreed upon.

**Benefits and Concerns regarding SAFTA**

- The South Asian Free Trade Area agreement could boost foreign investment in SAARC Nations provided such investments don't harm the domestic industries of member-nations.
- The World Bank in its reports has shown that nations who have been involved in Free Trade Agreements have had higher instances of economic growth compared to countries that were not.
- The European Union trade bloc, for instance, led to the formation of the single European market and substantial restructuring of industry on a pan-European basis. The EU also enabled member-countries to exploit economies of scale, scope and specialisation.
- The underlying concern is that certain items can be rerouted through the nations involved in SAFTA. One example is the Palm Oil trade in which India had restricted its import from Malaysia. But Malaysia's had apparently circumvented this loophole by rerouting their trade through other member nations of SAARC.

**5.6. European Union**

European Union is an international organisation consisting of European Countries, which was formed in 1993 operate as a cohesive economic and political block. It came into force

after the signing of the Maastricht Treaty by 28 countries. 19 of these countries use EURO as their official currency. 9 EU members (Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden, and the United Kingdom) do not use the euro. The EU grew out of a desire to form a single European political entity to end centuries of warfare among European countries that culminated with World War II and decimated much of the continent. The EU has developed an internal single market through a standardised system of laws that apply in all member states in matters, where members have agreed to act as one.

### **Goals**

- Promote peace, values and the well-being of all citizens of EU.
- Offer freedom, security and justice without internal borders
- Sustainable development based on balanced economic growth and price stability, a highly competitive market economy with full employment and social progress, and environmental protection
- Combat social exclusion and discrimination
- Promote scientific and technological progress
- Enhance economic, social and territorial cohesion and solidarity among EU countries
- Respect its rich cultural and linguistic diversity
- Establish an economic and monetary union whose currency is euro.

## **History**

After World War II, European integration was seen as a cure to the excessive nationalism which had devastated the continent. In 1946 at the University of Zurich, Switzerland, Winston Churchill went further and advocated the emergence of a United States of Europe. In 1952, European Coal and Steel Community (ECSC) was founded under Treaty of Paris (1951) by 6 countries called Six (Belgium, France, Germany, Italy, Luxembourg and the Netherlands) to renounce part of their sovereignty by placing their coal and steel production in a common market, under it. European Court of Justice (called "Court of Justice of the European Communities" until 2009) was also established in 1952 under Paris Treaty.

European Atomic Energy Community (EAEC or Euratom) is an international organisation established by the Euratom Treaty (1957) with the original purpose of creating a specialist market for nuclear power in Europe, by developing nuclear energy and distributing it to its member states while selling the surplus to non-member states. It has same members as the European Union and is governed by the European Commission (EC) and Council, operating under the jurisdiction of the European Court of Justice. European Economic Community (EEC) was created by the Treaty of Rome (1957). The Community's initial aim was to bring about economic integration, including a common market and customs union, among its founding members (Six). It ceased to exist by Lisbon Treaty-2007 and its activities were incorporated in EU.

Merger Treaty (1965, Brussels) in which an agreement was reached to merge the three communities (ECSC, EAEC, and EEC) under a single set of institutions, creating the European Communities (ECs). The Commission and Council of the EEC were to take over the responsibilities of its

counterparts (ECSC, EAEC) in other organisations. The ECs initially expanded in 1973 when Denmark, Ireland, the United Kingdom became members. Greece joined in 1981, Portugal and Spain following in 1986. Schengen Agreement (1985) paved the way for the creation of open borders without passport controls between most member states. It was effective in 1995. Single European Act (1986): enacted by the European Community that committed its member countries to a timetable for their economic merger and the establishment of a single European currency and common foreign and domestic policies.

The Maastricht Treaty-1992 (also called the Treaty on European Union) was signed on 7 February 1992 by the members of the European Community in Maastricht, Netherlands to further European integration. It received a great push with the end of the Cold War. European Communities (ECSC, EAEC, and EEC) incorporated as European Union. European citizenship was created, allowing citizens to reside in and move freely between Member States. A common foreign and security policy was established. Closer cooperation between police and the judiciary in criminal matters was agreed. It paved the way for the creation of a single European currency – the euro. It was the culmination of several decades of debate on increasing economic cooperation in Europe. It established the European Central Bank (ECB). It enabled people to run for local office and for European Parliament elections in the EU country they lived in.

A monetary union was established in 1999 and came into full force in 2002 and is composed of 19 EU member states which use the euro currency. These are Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, and Spain. In 2002, Treaty of

Paris (1951) expired & ECSC ceased to exist and its activities fully absorbed by the European Community (EEC).

The Treaty of Lisbon 2007: European Community (now composed only of EEC, EAEC, as ECSC already ceased in 2002) was ceased and its activities incorporated in EU. EAEC is only remaining community organization legally distinct from the European Union (EU), but has the same membership, and is governed by many of the EU's institutions.

Euro Crisis: The EU and the European Central Bank (ECB) have struggled with high sovereign debt and collapsing growth in Portugal, Ireland, Greece and Spain since the global financial market collapse of 2008. Greece and Ireland received financial bailouts from the community in 2009, which were accompanied by fiscal austerity. Portugal followed in 2011, along with a second Greek bailout. Multiple rounds of interest rate cuts and economic stimulus failed to resolve the problem. Northern countries such as Germany, the United Kingdom and the Netherlands increasingly resent the financial drain from the south. In 2012, the EU received the Nobel Peace Prize for having "contributed to the advancement of peace and reconciliation, democracy, and human rights in Europe.

Brexit: In 2016, a referendum (called Brexit) was held by U.K. government, and the nation voted to leave the EU. Now the process is under UK Parliament for formal withdrawal from EU.

### **Functions**

- EU's law and regulation is meant to create a cohesive economic entity of its countries, so that goods can flow freely across the borders of its member nations, without tariffs, with the ease of one currency, and the creation of one enlarged labour pool, which creates a more efficient distribution and use of labour.

- There is a pooling of financial resources, so that member nations can be "bailed out" or lent money for investment.
- Union's expectations in areas such as human rights and the environment have political implications for member countries. Union can exact a heavy political cost such as severe cutbacks and an austerity budget on its members as a condition of giving aid.
- This is a great experiment, really, in cooperation amongst nations, who wish to be economically unified, ceding as little political and national power as possible.
- Trade: Free trade among its members was one of the EU's founding principles. This is possible thanks to the single market. Beyond its borders, the EU is also committed to liberalising world trade. The European Union is the largest trade block in the world. It is the world's biggest exporter of manufactured goods and services, and the biggest import market for over 100 countries.
- Humanitarian aid: The EU is committed to helping victims of man-made and natural disasters worldwide and supports over 120 million people each year. EU and its constituent countries is the world's leading donor of humanitarian aid.
- Diplomacy and security: The EU plays an important role in diplomacy and works to foster stability, security and prosperity, democracy, fundamental freedoms and the rule of law at international level.

### **Challenges & Reforms**

- It is no longer self-evident that all old member states will stay in the Union. The Treaty of Lisbon gave the members the right to leave the EU. The financial crisis has hit Greece so hard that many people have predicted for a long

time that the country will exit from the Union.

- Layoffs, redundancies and migration of jobs to countries where labour is cheap affect the daily lives of European citizens. The EU is expected to find solutions to economic problems and employment.
- There is also demand for standard labour agreements on terms of employment and working conditions that would apply across Europe and even worldwide. As a member of the World Trade Organisation, the European Union is in a position to influence developments worldwide.
- EU is a global leader in the development of Key Enabling Technologies (KETs). However, EU's record in translating this knowledge advantage into marketable products and services doesn't match this. KETs-related manufacturing is decreasing in the EU and patents are increasingly being exploited outside the EU.
- Europe is experiencing a renaissance of national sovereignty supported by a nationalistic turn of public opinion and represented by parties on both ends of the political spectrum. Popular disaffection toward EU membership is fuelled by the contemporaneous occurrence of two shocks, the economic and the migration crises.
- USA, by withdrawing from the Paris climate change deal, by pulling out of the Joint Comprehensive Plan of Action (JCPOA) on Iran's nuclear programme, and by attacking the integrity of the international trading system through the unilateral imposition of tariffs, has called into question Europeans' formerly unshakeable faith in diplomacy as a way to resolve disagreements and to protect Europe.
- European leaders now fear that the transatlantic security

guarantee will centre not on alliances and common interests but purchases of American technology and materiel.

- Like the United States, the EU has been forced to reconsider its relationship with a more assertive Russia with implications for European security and stability. The EU has sought to support Ukraine's political transition, condemned Russia's annexation of Crimea in March 2014, and strongly urged Russia to stop backing separatist forces in eastern Ukraine. Democratic regression in Ukraine combined with a hardening attitude in Moscow imposes constraints on the Ukrainian government's freedom of maneuver in pursuing its European Union membership.
- Brexit: EU has imposed too many rules on business and charged billions of pounds a year in membership fees for little in return. The EU added eight eastern European countries in 2004, triggering a wave of immigration that strained public services. In England and Wales, the share of foreign-born residents had swelled to 13.4 percent of the population by 2011, roughly double the level in 1991. Brexit supporters wanted Britain to take back full control of its borders and reduce the number of people coming here to live and/or work. They argued that the EU is morphing into a super-state that increasingly impinges on national sovereignty. Britain has global power without the bloc, they said, and can negotiate better trade treaties on its own. Withdrawal from the EU is governed by Article 50 of the Treaty on European Union. A deal between UK & EU that gives it control over immigration and also preferential access to the EU's tariff-free single market of 500 million people (UK), the economic backbone of the world's largest trading bloc is rejected by Germany & other EU leaders.

**EU & India**

- The EU works closely with India to promote peace, create jobs, boost economic growth and enhance sustainable development across the country.
- As India graduated from low to medium income country (OECD 2014), the EU-India cooperation also evolved from a traditional financial assistance type towards a partnership with a focus on common priorities.
- At the 2017 EU-India Summit, leaders reiterated their intention to strengthen cooperation on the implementation of the 2030 Agenda for Sustainable Development and agreed to explore the continuation of the EU-India Development Dialogue.
- The EU is India's largest trading partner, accounting for €85 billion (95 billion USD) worth of trade in goods in 2017 or 13.1% of total India trade, ahead of China (11.4%) and the USA (9.5%).
- The EU's share in foreign investment inflows to India has more than doubled from 8% to 18% in the last decade, making the EU the first foreign investor in India.
- EU foreign direct investment stocks in India amounted to €73 billion in 2016, which is significant but way below EU foreign investment stocks in China (€178 billion).
- INDIA-EU Bilateral Trade and Investment Agreement (BTIA): It is a Free Trade Agreement between India and EU, which was initiated in 2007. Even after a decade of negotiations, India and EU have failed to resolve certain issues which have led to a deadlock.
  - "Data Secure" status not granted by EU affecting prospects of India's IT-enabled exports.
  - Presence of non-tariff barriers on Indian agricultural

products in the form of sanitary and phytosanitary (SPS) measures which are too stringent and enable the EU to bar many Indian agricultural products from entering its markets.

- EU wants India to liberalise accountancy and legal services. India denies on the ground of already shortage of jobs.
- EU demands tax reduction on wines and spirits but in India these are regarded as ‘sin goods’ and the states which derive huge revenue from liquor sales would be reluctant to cut taxes.
- Reduction of taxes on automobiles not acceptable to India as its own automobile industry would not be able to match the competition from EU automobiles.
- India has rejected an informal attempt by the European Union (EU) to work towards a global investment agreement at the World Trade Organisation (WTO)-level that would incorporate a contentious Investor-State Dispute Settlement (ISDS) mechanism which will allow corporations to take sovereign governments to international arbitration. The ISDS mechanism permits companies to drag governments to international arbitration without exhausting the local remedies and claim huge amounts as compensation citing losses they suffered due to reasons, including policy changes.
- The non-tariff barriers in pharmaceuticals that EU has imposed include requirement of WTO—Good Manufacturing Practice certification, import bans, antidumping measures and pre-shipment inspection among others.
- India has cancelled most individual bilateral investment agreements with EU member states on

grounds that they were outdated. By doing this India is putting pressure on EU to sign BTIA on favouring terms.

### **5.7. ASEAN**

The Association of Southeast Asian Nations is a regional organization which was established to promote political and social stability amid rising tensions among the Asia-Pacific's post-colonial states. The motto of ASEAN is "One Vision, One Identity, One Community". 8 August is observed as ASEAN Day. ASEAN Secretariat – Indonesia, Jakarta.

#### **Member Nations of ASEAN:**

Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, Cambodia.

#### **Genesis of ASEAN**

- 1967 – ASEAN was established with the signing of the ASEAN Declaration (Bangkok Declaration) by its founding fathers. Founding Fathers of ASEAN are: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- 1990s – Membership doubled after the changing conditions in the region following the end of the Vietnam War in 1975 and the Cold War in 1991. Addition of Brunei (1984), Vietnam (1995), Laos and Myanmar (1997), and Cambodia (1999).
- 1995 – Members signed a deal to create a nuclear-free zone in Southeast Asia.
- 1997 – Adoption of ASEAN Vision 2020.
- 2003 – Bali Concord II for the establishment of an ASEAN Community.
- 2007 – Cebu Declaration, to accelerate the establishment of ASEAN Community by 2015.

- 2008 – ASEAN Charter comes into force and becomes a legally binding agreement.
- 2015 – Launch of ASEAN Community. ASEAN Community is comprised of three pillars: ASEAN Political-Security Community, ASEAN Economic Community, ASEAN Socio-Cultural Community.

### **Objectives:**

- To accelerate economic growth, social progress and cultural development for a prosperous and peaceful community of Southeast Asian Nations.
- To promote regional peace and stability through abiding respect for justice and the rule of law and adherence to the principles of the United Nations Charter.
- To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields.
- To collaborate more effectively for the greater utilisation of agriculture and industries, the expansion of their trade, the improvement of transportation and communications facilities and the raising of the living standards of peoples.
- To promote Southeast Asian studies.
- To maintain close and beneficial cooperation with existing international and regional organisations.

The ASEAN fundamental principles, as contained in the Treaty of Amity and Cooperation in Southeast Asia (TAC) of 1976

- Mutual respect for the independence, sovereignty, equality, territorial integrity, and national identity of all nations.
- The right of every State to lead its national existence free

from external interference,subversion or coercion.

- Non-interference in the internal affairs of one another.
- Settlement of differences or disputes by peaceful manner.
- Renunciation of the threat or use of force.
- Effective cooperation among themselves.

### **Institution Mechanism**

- Chairmanship of ASEAN rotates annually, based on the alphabetical order of the English names of Member States.
- ASEAN Summit: The supreme policy making body of ASEAN. As the highest level of authority in ASEAN, the Summit sets the direction for ASEAN policies and objectives. Under the Charter, the Summit meets twice a year.
- ASEAN Ministerial Councils: The Charter established four important new Ministerial bodies to support the Summit. They are ASEAN Coordinating Council (ACC), ASEAN Political-Security Community Council, ASEAN Economic Community Council, ASEAN Socio-Cultural Community Council.
- Decision Making: The primary mode of decision-making in ASEAN is consultation and consensus. However, the Charter enshrines the principle of ASEAN-X – This means that if all member states are in agreement, a formula for flexible participation may be used so that the members who are ready may go ahead while members who need more time for implementation may apply a flexible timeline.

### **ASEAN-led Forums**

- ASEAN Regional Forum (ARF): Launched in 1993, the twenty-seven-member multilateral grouping was

developed to facilitate cooperation on political and security issues to contribute to regional confidence-building and preventive diplomacy.

- ASEAN Plus Three: The consultative group initiated in 1997 brings together ASEAN's ten members, China, Japan, and South Korea.
- East Asia Summit (EAS): First held in 2005, the summit seeks to promote security and prosperity in the region and is usually attended by the heads of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States. ASEAN plays a central role as the agenda-setter.

### **Strengths & Opportunities**

ASEAN commands far greater influence on Asia-Pacific trade, political, and security issues than its members could achieve individually.

Demographic dividend – It constitutes 3rd largest population in the world, of which more than half is below thirty years of age.

Economic:

- 3<sup>rd</sup> largest market in the world - larger than EU and North American markets.
- 6<sup>th</sup> largest economy in the world, 3 in Asia.
- Free-trade agreements (FTAs) with China, Japan, South Korea, India, Australia and New Zealand.
- Fourth most popular investment destination globally.
- ASEAN's share of global exports has also risen, from only 2 percent in 1967 to 7 percent by 2016, indicating the rising importance of trade to ASEAN's economic prospects.

- The ASEAN Single Aviation Market and Open Skies policies have increased its transport and connectivity potential.

ASEAN has contributed to regional stability by building much-needed norms and fostering a neutral environment to address shared challenges.

### **Challenges**

1. Regional imbalances in the economic and social status of its individual markets.
2. Gap between rich and poor ASEAN member states remains very large and they have a mixed record on income inequality.
  - While Singapore boasts the highest GDP per capita—nearly \$53,000 (2016), Cambodia's per capita GDP is the lowest at less than \$1,300.
  - Many regional initiatives were not able to be incorporated into national plans, as the less developed countries faced resource constraints to implement the regional commitments.
3. The members' political systems are equally mixed with democracies, communist, and authoritarian states.
4. While the South China Sea is the main issue exposing the organization's rifts.
5. ASEAN has been divided over major issues of human rights. For example, crackdowns in Myanmar against the Rohingyas.
6. Inability to negotiate a unified approach with regards to China, particularly in response to its widespread maritime claims in the South China Sea.
7. The emphasis on consensus sometimes becomes the a

chief drawback – difficult problems have been avoided rather than confronted.

8. There is no central mechanism to enforce compliance.
9. Inefficient dispute-settlement mechanism, whether it be in the economic or political spheres.

### **India and ASEAN**

India's relationship with ASEAN is a key pillar of her foreign policy and the foundation of Act East Policy. India has a separate Mission to ASEAN and the EAS in Jakarta. India and ASEAN already has 25 years of Dialogue Partnership, 15 years of Summit Level interaction and 5 years of Strategic Partnership with ASEAN.

- **Economic Cooperation:** ASEAN is India's fourth largest trading partner. India's trade with ASEAN stands at approx. 10.6% of India's overall trade. India's export to ASEAN stands at 11.28% of our total exports. The ASEAN-India Free Trade Area has been completed. ASEAN India-Business Council (AIBC) was set up in 2003 to bring key private sector players from India and the ASEAN countries on a single platform.
- **Socio-Cultural Cooperation:** Programmes to boost People-to-People Interaction with ASEAN, such as inviting ASEAN students to India, Special Training Course for ASEAN diplomats, Exchange of Parliamentarians, etc.
- **Funds:** Financial assistance has been provided to ASEAN countries from the following Funds: ASEAN-India Cooperation Fund, ASEAN-India S&T Development Fund, ASEAN-India Green Fund.
- **Delhi Declaration:** To identify Cooperation in the Maritime Domain as the key area of cooperation under the ASEAN-India strategic partnership.

- Delhi Dialogue: Annual Track 1.5 event for discussing politico-security and economic issues between ASEAN and India.
- ASEAN-India Centre (AIC): To undertake policy research, advocacy and networking activities with organizations and think-tanks in India and ASEAN.
- Political Security Cooperation: India places ASEAN at the centre of its Indo-Pacific vision of Security and Growth for All in the Region.

### **5.8. World Trade Organizations (WTO)**

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The WTO has 164 members (including European Union) and 23 observer governments (like Iran, Iraq, Bhutan, Libya etc). The WTO's creation on 1 January 1995 marked the biggest reform of international trade since the end of the Second World War. Whereas the GATT mainly dealt with trade in goods, the WTO and its agreements also cover trade in services and intellectual property. The birth of the WTO also created new procedures for the settlement of disputes.

#### **Global trade rules**

Global rules of trade provide assurance and stability. Consumers and producers know they can enjoy secure supplies and greater choice of the finished products, components, raw materials and services they use. Producers and exporters know foreign markets will remain open to them. This leads to a more prosperous, peaceful and accountable economic world. Decisions in the WTO are typically taken by consensus among all members and they are ratified by

members' parliaments. Trade frictions are channeled into the WTO's dispute settlement process, where the focus is on interpreting agreements and commitments and how to ensure that members' trade policies conform with them. That way, the risk of disputes spilling over into political or military conflict is reduced.

By lowering trade barriers through negotiations among member governments, the WTO's system also breaks down other barriers between peoples and trading economies. At the heart of the system – known as the multilateral trading system – are the WTO's agreements, negotiated and signed by a large majority of the world's trading economies, and ratified in their parliaments. These agreements are the legal foundations for global trade. Essentially, they are contracts, guaranteeing WTO members important trade rights. They also bind governments to keep their trade policies transparent and predictable which is to everybody's benefit. The agreements provide a stable and transparent framework to help producers of goods and services, exporters and importers conduct their business. The goal is to improve the welfare of the peoples of the WTO's members.

### **Trade negotiations**

The World Trade Organization came into being in 1995. One of the youngest of the international organizations, the WTO is the successor to the General Agreement on Tariffs and Trade (GATT) established in the wake of the Second World War. So while the WTO is relatively young, the multilateral trading system that was originally set up under the GATT is over 70 years old.

The past 70 years have seen an exceptional growth in world trade. Merchandise exports have grown on average by 6% annually. This growth in trade has been a powerful engine

for overall economic expansion and on average trade has grown by 1.5 times more than the global economy each year. Total exports in 2016 were 250 times the level of 1948. The GATT and the WTO have helped to create a strong and prosperous trading system contributing to unprecedented growth.

The system was developed through a series of trade negotiations, or rounds, held under the GATT. The first rounds dealt mainly with tariff reductions but later negotiations included other areas such as anti-dumping and non-tariff measures. The 1986-94 round – the Uruguay Round – led to the WTO's creation. The negotiations did not end there. In 1997, an agreement was reached on telecommunications services, with 69 governments agreeing to wide-ranging liberalization measures that went beyond those agreed in the Uruguay Round. In the same year, 40 governments successfully concluded negotiations for tariff-free trade in information technology products, and 70 members concluded a financial services deal covering more than 95% of trade in banking, insurance, securities and financial information.

In 2000, new talks started on agriculture and services. These were incorporated into a broader work programme, the Doha Development Agenda, launched at the fourth WTO Ministerial Conference in Doha, Qatar, in November 2001. The new work programme included negotiations and other work on non-agricultural tariffs, trade and the environment, WTO rules on anti-dumping and subsidies, trade facilitation, transparency in government procurement, intellectual property and a range of issues raised by developing economies as difficulties they face in implementing WTO agreements. A revised Government Procurement Agreement – adopted at the WTO's 8th Ministerial Conference in 2011 – expanded the coverage of the original agreement by an estimated US\$ 100

billion a year.

At the 9th Ministerial Conference in Bali in 2013, WTO members struck the Agreement on Trade Facilitation, which aims to reduce border delays by slashing red tape. When fully implemented, this Agreement – the first multilateral accord reached at the WTO – will cut trade costs by more than 14% and will lift global exports by as much as US\$ 1 trillion per year.

The expansion of the Information Technology Agreement – concluded at the 10th Ministerial Conference in Nairobi in 2015 – eliminated tariffs on an additional 200 IT products valued at over US\$ 1.3 trillion per year. Another outcome of the Conference was a decision to abolish agricultural export subsidies, fulfilling one of the key targets of the UN Sustainable Development Goal on “Zero hunger”. Most recently, an amendment to the WTO’s Intellectual Property Agreement entered into force in 2017, easing poor economies’ access to affordable medicines. The same year saw the Trade Facilitation Agreement enter into force.

### **WTO agreements**

The WTO’s rules – the agreements – are the result of negotiations between the members. The current set is largely the outcome of the 1986- 94 Uruguay Round negotiations, which included a major revision of the original General Agreement on Tariffs and Trade (GATT). The Uruguay Round created new rules for dealing with trade in services and intellectual property and new procedures for dispute settlement. The complete set runs to some 30,000 pages consisting of about 30 agreements and separate commitments (called schedules) made by individual members in specific areas, such as lower tariffs and services market-opening.

Through these agreements, WTO members operate a non-

discriminatory trading system that spells out their rights and their obligations. Each member receives guarantees that its exports will be treated fairly and consistently in other members' markets. Each promises to do the same for imports into its own market. The system also gives developing economies some flexibility in implementing their commitments.

### ➤ Goods

It all began with trade in goods. From 1947 to 1994, the GATT was the forum for negotiating lower tariffs and other trade barriers; the text of the GATT spelt out important rules, particularly non-discrimination. Since 1995, the Marrakesh Agreement Establishing the WTO and its annexes (including the updated GATT) has become the WTO's umbrella agreement. It has annexes dealing with specific sectors relating to goods, such as agriculture, and with specific issues such as product standards, subsidies and actions taken against dumping. A recent significant addition was the Trade Facilitation Agreement, which entered into force in 2017.

### ➤ Services

Banks, insurance firms, telecommunications companies, tour operators, hotel chains and transport companies looking to do business abroad enjoy the same principles of more open trade that originally only applied to trade in goods. These principles appear in the General Agreement on Trade in Services (GATS). WTO members have also made individual commitments under the GATS stating which of their service sectors they are willing to open to foreign competition, and how open those markets are.

### ➤ Intellectual property

The WTO's Intellectual Property Agreement contains rules for trade in ideas and creativity. The rules state how

copyrights, patents, trademarks, geographical names used to identify products, industrial designs and undisclosed information such as trade secrets – “intellectual property” – should be protected when trade is involved.

➤ Dispute settlement

The WTO’s procedure for resolving trade conflicts under the Dispute Settlement Understanding is vital for enforcing the rules and therefore for ensuring that trade flows smoothly. Governments bring disputes to the WTO if they think their rights under the WTO agreements are being infringed. Judgments by specially appointed independent experts are based on interpretations of the agreements and individual members' commitments. The system encourages members to settle their differences through consultation with each other. If this proves to be unsuccessful, they can follow a stage- by-stage procedure that includes the possibility of a ruling by a panel of experts and the chance to appeal the ruling on legal grounds. Confidence in the system is borne out by the number of cases brought to the WTO – more than 500 cases since the WTO was established compared with the 300 disputes dealt with during the entire life of the GATT (1947-94).

### **Agreement On Agriculture (AoA)**

AoA is aimed to remove trade barriers and to promote transparent market access and integration of global markets. Agreement on agriculture stands on three pillars:

- Domestic Support: It calls for reduction in domestic subsidies that distorts free trade and fair price. Under this provision, the Aggregate Measurement of Support (AMS) is to be reduced by 20% over a period of 6 years by developed countries and 13% over a period of 10 years by developing countries. Under this, Subsidies are categorized into:

- Green Box: subsidies that do not distort trade, or at most cause minimal distortion. They are government-funded and must not involve price support. They also include environmental protection and regional development programmes. “Green box” subsidies are therefore allowed without limits, provided they comply with the policy-specific criteria.
- Amber Box: All domestic support measures considered to distort production and trade (with some exceptions) fall into the amber box as all domestic supports except those in the blue and green boxes. These include measures to support prices, or subsidies directly related to production quantities.
- Blue Box: This is the “amber box with conditions”. Such conditions are designed to reduce distortion. Any support that would normally be in the amber box is placed in the blue box if the support also requires farmers to limit production. At present, there are no limits on spending on blue box subsidies.
- Market Access: Market access for goods in the WTO means the conditions, tariff and non-tariff measures, agreed by members for the entry of specific goods into their markets. The market access requires that tariffs fixed (like custom duties) by individual countries be cut progressively to allow free trade. It also required countries to remove non-tariff barriers and convert them to Tariff duties.
- Export Subsidy: Subsidy on inputs of agriculture, making

export cheaper or other incentives for exports such as import duty remission etc are included under export subsidies. These can result in dumping of highly subsidized (and cheap) products in other country and damage domestic agriculture sector of other country.

### **TRIPS Agreement (Trade Related Intellectual Property Rights)**

The TRIPS Agreement has been in force since 1995 and is to date the most comprehensive multilateral agreement on intellectual property. It introduced global minimum standards for protecting and enforcing nearly all forms of intellectual property rights (IPR), including those for patents. It covers 7 areas of intellectual property, namely patents, copy right, geographical indications, industrial design, integrated circuits (layouts), trademarks and trade secrets. International conventions prior to TRIPS did not specify minimum standards for patents. At the time that negotiations began, over 40 countries in the world did not grant patent protection for pharmaceutical products. The TRIPS Agreement now requires all WTO members, with few exceptions, to adapt their laws to the minimum standards of IPR protection. In addition, the TRIPS Agreement also introduced detailed obligations for the enforcement of intellectual property rights.

### **Doha Declaration on the TRIPS Agreement**

In November 2001, WTO members adopted the Doha Declaration on the TRIPS Agreement and Public Health, which is categorical that every member has the right to grant

compulsory licences (CLs) and the freedom to determine the grounds upon which such licences are granted. The Doha Declaration did not require any amendment to the text of the TRIPS accord because the grounds for CLs were listed in the original text. The Declaration merely served to reinforce that logic. India, as the leader of the developing world, was expected to make full use of these provisions. But it has been loath to do so for fear of upsetting the US and other big trading partners. After issuing one CL in 2008, it has stepped back and refused to issue any more. This is despite the urgent need to provide life-saving drugs at a reasonable cost to a people who are forced to bear the brunt of medical expenses.

### **Trade monitoring**

The WTO's Trade Policy Review Mechanism is designed to improve transparency, to create a greater understanding of the trade policies adopted by WTO members and to assess their impact. Many members see the reviews as constructive feedback on their policies. All WTO members must undergo periodic scrutiny, each review containing reports by the member concerned and the WTO Secretariat. In addition, the WTO undertakes regular monitoring of global trade measures. Initially launched in the wake of the financial crisis of 2008, this global trade monitoring exercise has become a regular function of the WTO, with the aim of highlighting WTO members' implementation of both trade-facilitating and trade-restricting measures.

### **Building trade capacity in developing economies**

Over three-quarters of WTO members are developing or least-developed economies. All WTO agreements contain special provisions for them, including longer time periods to implement commitments, measures to increase their trading opportunities and support to help them build the infrastructure needed to participate in world trade.

A WTO Committee on Trade and Development looks at developing economies' special needs. Its responsibility includes implementation of the WTO agreements, technical cooperation and the increased participation of developing economies in the global trading system.

The Aid for Trade initiative, launched by WTO members in 2005, is designed to help developing economies build trade capacity, enhance their infrastructure and improve their ability to benefit from trade-opening opportunities. So far, over US\$ 340 billion has been disbursed to support Aid for Trade projects. A Global Review of the initiative is held every two years at the WTO's headquarters.

The Enhanced Integrated Framework (EIF) is the only multilateral partnership dedicated exclusively to assisting least developed countries (LDCs) in their use of trade as an engine for growth, sustainable development and poverty reduction. The EIF partnership of 51 countries, 24 donors and eight partner agencies, including the WTO, works closely with governments, development organizations, civil society and academia. The EIF has invested in over 170 projects, with US\$

220 million committed to supporting the poorest countries in the world.

Another partnership supported by the WTO is the Standards and Trade Development Facility (STDF), set up to help developing economies meet international standards for food safety, plant and animal health and access global markets. The WTO houses the Secretariat and manages the STDF trust fund, which has provided financing of over US\$ 40 million to support projects in low-income economies.

### **Technical assistance and training**

The WTO organizes hundreds of technical cooperation missions to developing economies annually. It also holds many trade policy courses each year in Geneva for government officials. Regional seminars are held regularly in all regions of the world, with a special emphasis on African countries. E-learning courses are also available. In 2017, some 18,500 participants benefited from WTO training aimed at improving understanding of WTO agreements and global trade rules.