

Chapter 1

THEORETICAL FRAMEWORK OF FREE TRADE

This chapter examines the development of trade theory from the seventeenth century through the part of the twentieth century. This historical approach is useful in way of introducing the concepts and theories of international trade from the simple to the more complex and realistic trade practice.

The basic questions that we seek to answer in this chapter are:

1. What is the basis for trade and what are the gains from trade? Presumably (and as in the case of an individual), a nation will voluntarily engage trade only if it benefits from trade. But how are gains from trade generated? How large are the gains and how are they divided among the trading nations?
2. What is the pattern of trade? That is, what commodities are traded and which commodities are exported and imported by each nation?

Theories of International trade

1. Mercantilists' view on trade.
2. Trade based on Absolute Advantage: Adam Smith
3. Trade Based on Comparative Advantage: David Ricardo.
4. Modern theory of International Trade; Heckscher-Ohlin Theory
5. New Theories of International Trade.

(1) Mercantilists' view on trade

During the 17th and 18th centuries a group of men (merchants, bankers, govt. officials and even philosophers) wrote essays and pamphlets on international trade that advocated an economic philosophy known as mercantilism. Briefly, the mercantilists maintained that the way for a nation to become rich and powerful was to export more than it imported. The resulting export surplus would then be settled by an inflow of bullion or precious metals, primarily gold and silver. The more gold and silver a nation had, the richer and more powerful it was. Thus, the govt had to do all in its power to stimulate the nation's exports and discourage and restrict imports (particularly the imports of luxury consumption goods). However, since all nations could not simultaneously have an export surplus and the amount of gold and silver was fixed at any particular point in time, one nation could gain only at the expense of other nations. The mercantilists thus preached economic nationalism.

Note that the mercantilist measured the wealth of a nation by the stock of precious metal it possessed. In contrast, today we measure the wealth of a nation by its stock of human, man made and natural resources available for producing goods and services.

In any event, mercantilist advocated strict govt. control of all economic activity and preached economic nationalism because they believed that a nation could gain in trade only at the expense of other nations (i.e. trade was a zero-sum game). These views are important for two reasons. First, the ideas of Adam Smith, David Ricardo and other classical economists can best be understood if they regarded as reactions to the mercantilists view on trade and on the role of the government. Secondly, today there seems to be a resurgence of neo-mercantilists, as nations

plagued by high levels of unemployment seek to restrict imports in an effort to stimulate domestic production and employment.

(2) Trade Based on Absolute Advantage : Adam Smith

Criticising the mercantilists believed that one nation could gain only at the expense of another nation and advocated strict govt. control of all economic activity and trade, Adam Smith (and the other classical economists who followed him) believed that all nations would gain from free trade and strongly advocated a policy of laissez-faire.

According to Adam Smith, trade between two nations is based on absolute advantage. When one nation is more efficient than (or has an absolute advantage over) another in the production of one commodity but is less efficient than the other nation in producing commodity, then both nations can gain by each specializing in the production of the commodity of its absolute advantage and exchanging part of its output with the other nation for the commodity of its absolute disadvantage. By this process, resources are utilized in the most efficient way and the output of both commodities will rise. This increase in the output of both commodities measures the gain from specialization in production available to be divided between the two nations through trade.

In view of this belief, it seems paradoxical that today most nations impose many restrictions on the free flow of international trade. Trade restrictions are invariably nationalized in terms of national welfare. In reality, trade restrictions are advocated by the few industries and their workers who are hurt by imports.

(3) Trade Based on Comparative Advantage: David Ricardo

In 1817 Ricardo published his *Principles of Political Economy and Taxation*, in which he presented the law of comparative advantage. This is one of the most important and still unchallenged laws of economics, with many practical applications.

According to the law of comparative advantage, even if one nation is less efficient than (has an absolute disadvantage with respect to) the other nation in the production of both commodities, there is still a basis for mutually beneficial trade. The first nation should specialize in the production of and export the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which its absolute disadvantage is greater (this is the commodity of its comparative disadvantage).

Comparative Advantage

Commodity	U.S.	U.K.
Wheat (bushels/man-hour)	6	1
Cloth (yard/man-hour)	4	2

According to Ricardo, from the above table United Kingdom has an absolute disadvantage in the production of both wheat and cloth with respect to the United States. However, since U.K. labour is half as productive in cloth but 6 times less productive in wheat with respect to the United States, the United Kingdom has a comparative advantage in cloth. On the other hand, the United States has an absolute advantage in both wheat and cloth with respect to the United Kingdom, but since its absolute advantage is greater in wheat (6:1) than in cloth (4:2), the United States has

a comparative advantage in wheat. According to the law of comparative advantage both nations can gain if the United States specializes in the production of wheat and exports some of it in exchange for British cloth. (At the same time, the United Kingdom is specializing in the production of and exporting cloth).

To summarize, the United States gains to the extent that it can exchange 6W for more than 4C from the UK. The UK gains to the extent that it can give as less than 12C for 6W from the United States. Thus, the range for mutually advantageous trade is

$$4C < 6W < 12C$$

The spread between 12C and 4C (i.e. 8C) represents the total gains from trade available to be shared by the two nations by trading 6W. For example, we have seen that when 6W are exchanged for 6C, the United States gains 2C and the United Kingdom 6C, making a total of 8C. The closer the rate of exchange is to $4C = 6W$ (the domestic or internal rate in the U.S. – see table), the smaller is the share of the gain going to the United Kingdom. On the other hand, the closer the rate of exchange is to $6W = 12C$ (the domestic or internal rate in the United Kingdom), the greater is the gain of the United States relative to that of the United Kingdom.

The models of Smith and Ricardo together constitute what is sometimes referred to as the supply version of the classical theory of trade because Smith and Ricardo paid almost exclusive attention to considerations of supply or production costs in the determination of exchange rate and gains from trade. The modern version of the classical theory of trade, however treats supply and demand with equal weight. This flaw in the early classical theory was filled by later classical economist like *Mill*, *Marshall* and *Edgworth*, who developed the theory of *reciprocal*

demand and *offer curves*. This approach constitutes what is called as the Demand Version of the classical theory of international trade.

Law of Reciprocal Demand: Offer Curve Analysis

The principle of reciprocal demand was developed by J.S. Mill in the year 1848 when he wrote his book: *Principles of Political Economy*. Later offer curve technique was developed by Edgeworth and Marshall during 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. As the definition indicates, offer curves incorporate elements of both demand and supply. Alternatively, offer curve of a nation shows the nation's willingness to import and export at various relative commodity prices and the interaction of the two offer curve determine the terms of trade. The terms of trade of a nation are defined as the ratio of the price of its export commodity to the price of its import commodity.

$$\text{Terms of Trade} = \frac{\text{Price index of its exports}}{\text{Price index of its imports}} \times 100$$

(4) Modern Theory of international trade : Heckscher Ohlin Model

The two main propositions of the modern theory are as follows:

- (a) The Heckscher – Ohlin Theorem** i.e. the hypothesis that a country has a comparative advantage in the production and exports of that commodity which uses more intensively the country's relatively abundant factor of production; and
- (b) The Factor Price Equalization theorem**, i.e. the hypothesis that the effect of trade is to equalize factor prices between countries, thus serving as a substitute for international factor mobility.

Now, each of the two theorems are discuss in detail.

(a) Heckscher Ohlin Theorem: Two Swedish economists, Eli Hechscher (1919) and Bertil Ohlin (1933) developed this theorem as follows – A nation will export the commodity whose production requires the intensive use of the nation’s relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation’s relatively scarce and expensive factor. In short, the relatively labour rich nation exports the relatively labour intensive commodity and imports the relatively capital-intensive commodity.

This means that Nation 1 exports commodity X because commodity X is the Labour (L)-intensive commodity and L is the relatively abundant and cheap factor in Nation 1. On the other hand, Nation 2 exports commodity Y because commodity Y is the Capital (K)-intensive commodity and K is the relatively abundant and cheap factor in Nation 2 (i.e. r/w is lower in Nation 2 than in Nation 1). For this reason, H–O model is often referred to as the *factor proportions or factor endowments theory*.

Thus, the H–O theorem explain comparative advantage rather than assuming it (as was the case of classical economists). That is, the Hesckscher Ohlin theorem postulates that the difference in relative factor abundance and prices is the cause of the pre trade difference in relative commodity prices between the two nations. This difference in relative factor and relative commodity prices is then translated into a difference in absolute factor and commodity prices between the two nations. It is this difference in absolute commodity prices in the two nations that is the immediate cause of trade.

(b) Factor price Equalization Theorem : International trade will bring about equalization in the relative and absolute returns to homogenous factors across nations.

According to factor price equalization theorem, international trade causes w to rise in Nation 1 (the low wage nation) and to fall in Nation 2 (the high wage nation). Thus international trade reduces the pretrade difference in w between the two nations. Similarly for K-expensive nation. This proves that international trade tends to reduce the pre trade difference in wage and profit between two nations

But some empirical studies, however, give conflicting results. The first empirical test of the H–O model was conducted by Leontief using 1947 U.S. data. Leontief found that U.S. import substitutes were about 30% more Capital (K) intensive than U.S. exports. Since the U.S. is the most Capital (K)-abundant nation, this result was the opposite of what the H–O model predicted and became known as *Leontief paradox*.

Similarly, H–O model was also criticized on the factor intensity reversal criteria. Factor intensity reversal refers to a situation where a commodity is L intensive in the labour abundant nation and K intensive in the capital abundant nation. This occur when the elasticity of substitution of factors in production varies greatly for the two commodities. With factor reversal, both the H–O theorem and the factor price equalization theorem fail.

(5) New Theories of International Trade

After the Heckscher-Ohlin trade model, there are several new hypotheses and theories have been put forward which attempt to either supplement the factor-proportion theory or to replace it with different approaches, which are as follows:

- (i) Trade and labour skills – Donald B. Keasing.
- (ii) R and D factor and structure of commodity trade – Gruber, Mehta and Vernon.

(iii) A product life cycle hypothesis – Louis T. Wells.

(iv) Demand Structures and Trade Patterns – Linder

(i) Trade and labour skills – Donald B. Keesing

According to Donald, the quantity and the quantity of trade depends upon the labour skills. The quantity of labour, measured by the levels of skills and technical knowledge embodied in human beings, varies significantly between the countries of the world. Two factor (capital and labour) approach has to be abandoned in favour of a new theory which distinguishes countries and commodities on the basis of labour skills available and required. So keesing confirms the relationship between the labour skills and the structure of commodity trade.

On the basis of his approach, Peter Kenen was able to resolve the Leontief's study of the US economy, a capital abundant country, had paradoxically shown US exports to be labour intensive. Kenen resolve and reverse the paradox by adding his estimates of "human capital" involved in U.S. exports to the "physical capital" embodied in those exports. So according to this approach, the U.S. exports come out to be not "labour intensive" but "human capital intensive."

(ii) Research and Development factor and structure of commodity trade – Gruber, Mehta and Vernon

Gruber, Mehta and Vernon studies the export performance of U.S. in 1962, and had able to establish a link between exports and research and development effort. According to them, there is a positive correlation between research effort and export performance. In their experiments they found that U.S. experienced a strong export position for research-oriented industries and a weak export position for industries with small research inputs.

(iii) A product life cycle hypothesis – Louis T. Wells

According to Louis in his product life cycle hypothesis claims that many products move in a cycle during which a country begins as an exporter and make profit and in their latter phase due to increasing competition, loose its domestic market and become an importer of that product.

Louis T. wells explain his model taking the example of U.S. which has monopoly in the manufacturing of high income product (e.g. automatic transmission for cars). In the initial phase it enjoys the status of monopoly in manufacturing the cars but letter the foreign manufactures becomes so competitive that they captured the American market despite transport costs and import duties in the U.S.

(iv) Demand Structures and Trade Patterns – By Linder

According to Linder argues that a manufactured product will not be generally exported untill after a domestic demand for the product exists; because a clear domestic need for the product must exist before it can be produced either for home consumption or for exports overseas. Linder has also argued the scope for trade is potentially greatest between countries with same per capita income and similar demand structures.

But all these theories are not full proof applicable in all the circumstances and for all countries. They only suggest that we have to go beyond the factor proportions approach of Heckscher–Ohlin and consider several other factors in order to understand the commodity structure of a country's trade.

Ongoing Debates on Opening the Agricultural Sector

In the academia, we have three distinct currents arguing various viewpoints pertaining to the current transition phase from the earlier development process towards the new phase of liberalisation. The new economic policy opened up the trade sector, and India has comparative advantages in some of the agricultural commodities. These need to be taken care of before embarking on the analysis of crop specific issues. The first view is marked by the faith in the paradigm of growth leading to fair distribution. It is believed that the agricultural sector is more controlled and thus it is not allowed to catch up with its natural growth potential. The intervention of the state has been nagging the sector right from independence and intensified during the seventies and eighties. In the process, the structure of the crop economy is more guided by these decisions. Thus, naturally, the crop economy depicts a particular pattern. This state prominence in the sector has to be reduced firmly to improve the efficiency of the sector. The interventions in the agricultural sector both in the product market as well as factor market have been responsible for depressing the initiatives coming from the producers. Hence, while liberalisation is an essential process, it must be accompanied with firm withdrawal of the state, thereby enhancing the agricultural growth trends. International trade sector is, hitherto, based on the optimisation of the inherent trends and only with residual exportable surplus (based on the differential calculus optimisation process). As a result the trade sector is dominated by the residual sector than responding to the comparative advantages. Now we must look forward to a game theoretical process of optimisation in the trade sector which probably may bring significant changes in the crop sector. In other words, India must negotiate towards greater advantage for the country by making use of the provisions in the

legal text of the WTO. Hitherto, the efforts of Indian contingent to negotiate with the WTO have not been quite encouraging. Well preparedness for the negotiations is an essential component and if we fail on that probably we will miss the opportunity.

This has to be supported by intensive domestic market reforms relaxing the present control regime on factor as well as product markets. More than that, the immediate task is to reduce the current market inefficiency. It is necessary to establish a common Indian market by removing the existing restrictions and embarking upon the deep domestic market reform process. On the one hand, it is important to utilise the opportunity in reinvesting on creation of better infrastructure and boosting-up the investment trends, whereas, on the other hand, the domestic price policy should be carefully monitored in order to pass on the legitimate advantage to the producers. Distortions in fertilizer prices and the subsidy regimes in fertilizers, electricity, credit and water have caused the uneconomic use of resources and inefficiency in the production process.

The second viewpoint favouring the earlier policy regime of protected agriculture sector emphatically records that the present pace of liberalisation will leave out the weaker sections, some of the traditional crops and fragile regions. It is felt that India's foodgrain trade is being mishandled and we must continue to hold a wedge between border and domestic prices. The productivity trends during the nineties have not been very encouraging. Eight years after the initiation of economic liberalisation, instead of experiencing any unprecedented boom in the growth pattern, the agricultural sector is showing signs of decelerated growth. It has been estimated that the agricultural output recorded an annual compound rate of growth of 3.46 per cent between 1980 and 1990 as against 2.38 per cent between 1990 and 1999. Though the deceleration

cannot be directly connected to the process of globalisation, it is pointed out that the technological advancement in agriculture has slowed down along with the pace of capital formation and quality of inputs. It is also argued that the transfer of labour from developing sector to the developed sector described as Lewis process has failed in the country. This has caused dampening of the growth in incremental rural income. Given the distribution of land across various classes it is stated that phenomenally a large portion of Indian farmers have holdings below 2 hectares. This leaves the marketable surplus management and the market participation only to the remaining big farm groups. Therefore, the process of marketisation will lead to incremental income accruing to a small minority. In this context, it is also stated that the liberalisation process may lead to increased inequality.

The third viewpoint emerging in the process of liberalisation is expressed by those who strongly believe that the process of liberalisation would usher in new trends in the growth of Indian agriculture. Similarly, it is expected that the quality of growth will also undergo significant changes in addition to increased efficiency. Competitive forces will spur growth but this view is marked by its distinct and careful approach to the process of liberalisation. While it is believed that we must take greater advantage by properly negotiating under the WTO regime, but at the same time, the domestic reforms, in order to avoid the probable welfare loss, must be taken on priority. This emphasises the earnest requirement of domestic market reforms and infrastructural facilities to precede the process of liberalisation. Therefore, this group can be identified as 'cautious liberalisers'. Here again, a finer difference has to be marked between the two groups, which stems from the process of the withdrawal of the state from the sector. The cautious liberalizers do not necessarily feel that the state should at once withdraw its controls on the agricultural sector, but it can be done gradually over the years and can be graded positively.

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